

According to Reiche, l. c., it occurs in the interior of the province of Antofagasta, Chile.

8. *C. PARVIFLORA* Phil. Cat. Pl. Itin. Tarapaca 55 (1891); Reiche, Fl. Chile v. 190 (1910). *C. elongata* Rusby, Descr. New Sp. So. Amer. 106 (1920).—Yura, "Peru," *Williams* 2562 (NY, type of *C. elongata*). Arequipa, "Bolivia," *Williams* 2521 (NY). Southern slopes of Chachani Mountain near Arequipa, *Hinkley* 11 (G).—Apparently ranging from southern Peru and adjacent Bolivia, southward to the province of Tarapacá, Chile. The species seems to differ from *C. atacamensis* in its small corollas and more northern range.

#### EXCLUDED SPECIES.

*Coldenia glabra* Phil. Anal. Univ. Chile xc. 230 (1895). According to Reiche, Fl. Chile v. 191 (1910), this is a synonym of *FRANKINIA GLABRATA* Phil.

*Coldenia phaenocarpa* Phil., Cat. Pl. Itin. Tarapaca 55 (1891). Reiche, l. c., has shown this to be a *Heliotropium*, *H. PHAENOCARPA* (Phil.) Reiche.

## II. TAXONOMIC RECORDS CONCERNING AMERICAN SPERMATOPHYTES.

### 1. PARKINSONIA AND CERCIDIUM.

Both *Cercidium* and *Parkinsonia* appear to be valid genera, but their acceptance can be justified only after a slight change in their traditional limits and the stressing of characters not heretofore emphasized by those who have maintained the genera. All authors have sanctioned the recognition of *Parkinsonia*, and most recent students have insisted on the validity of *Cercidium*. The writers on the flora of Argentina, disregarding the obviously albuminous seeds produced by their "Brea," have persisted in treating their species of *Cercidium* as a *Caesalpinia*, but there are good morphological characters and overwhelming usage arguing against this treatment. Karsten, Fl. Colomb. ii. 25, t. 113 (1862), proposed a segregate genus *Rhetinophloem*, but later, Engler's Jahrb. viii. 346 (1887), reduced it to a subgenus of *Cercidium*. In 1876, Watson, Proc. Am. Acad. xi. 135 (1876), concluded that the characters used to separate *Cercidium* and *Parkinsonia* failed when applied to the North American species and proceeded to merge the two genera. Watson's opinion prevailed until 1889 when Sargent, Gard. & Forest ii. 388 (1889), reopened the



matter and reestablished *Cercidium*. This decision was based on his finding that "the valvate imbrication of the calyx-lobes is constant in *Cercidium* and that the thickened glandular claw of its petals does not appear in our species of *Parkinsonia*," and further and more important that "the fruit which in *Parkinsonia* is linear, rounded and torose," is in *Cercidium* "linear-oblong compressed, and in one of our species slightly contracted between the seeds." Since 1889 the acceptance of *Cercidium* has been almost universal.

A study of the material in the Gray Herb. (G), and some very interesting collections from the United States National Herbarium (US) which were loaned me through the interest of Dr. J. N. Rose, has shown that the sepals are not always simply valvate in *Cercidium*, but rather that there seems to be intraspecific variation between valvate and induplicate-valvate conditions. In fact these variations were used by Karsten as characters of his subgenera, *Eucercidium* and *Rhetinophloem*. I am unable to see even specific differences in this character since both conditions frequently occur on the same specimen. In *Parkinsonia*, as currently taken, the calyx-lobes are not always imbricate, since *P. microphylla* has valvate calyx-lobes quite indistinguishable from those in indubitable *Cercidiums*. It is only in *Parkinsonia aculeata* (the type species of *Parkinsonia*) and *P. africana* that very definitely imbricate aestivation occurs, and then in such an extreme form as not to be even approached by the conditions in the species of *Cercidium* or the other species of *Parkinsonia*. A study of the claw of the petal has revealed no difference between the two genera.

The characters of generic import currently ascribed to the fruit of *Cercidium* and *Parkinsonia* fail miserably when they are applied to all the known species of the genera. *Parkinsonia aculeata* and *P. africana* are very closely related and are obviously congeneric, but the latter has the legumes somewhat compressed with thickened almost straight margins, so that they appear quite different from the terete torose pods of *P. aculeata*. The fruits of *P. africana* and *C. texanum* are very similar as to margin, width, and thickness, in fact the only conspicuous difference is in the length. Practically every species of *Cercidium* frequently has the margin of its legumes more or less sinuate or even contracted between the seeds.

Sargent, Man. Trees N. Am. 585 (1922), finds generic difference in the relations of the spine to the leaves, giving the leaf-rachis as spinous in *Parkinsonia* and not so in *Cercidium*. In fact the leaf-rachis is spinescent only in *P. aculeata* and *P. africana*. In the plant called



*P. microphylla* there are no spines, whereas in its near relative, *Cercidium sonorae*, the spines are clearly below the leaf-rachises and exactly as in other indubitable *Cercidium*s.

Past authors have accepted *Parkinsonia microphylla* Torr., as a member of *Parkinsonia*, being largely influenced in so doing, no doubt, by the extreme similarity in its fruit with that of *P. aculeata*. However, *P. microphylla* differs from *P. aculeata* and *P. africana* in having short corymbose rather than very elongate racemes, short filiform terete rather than extremely long phyllodial leaf-rachises, and calyx-lobes that are valvate or a trifle induplicate-valvate rather than extremely imbricate in the bud. It is significant that these characters are possessed by all the species of *Cercidium*, and that *P. microphylla* in habit resembles the species of *Cercidium* much more than it does the two species of genuine *Parkinsonia*. In brief, *Parkinsonia microphylla* is clearly a species of *Cercidium* and is consequently transferred to that genus. *Parkinsonia* thereby reduced to homogeneity consists only of *P. aculeata* and *P. africana*. *Parkinsonia* and *Cercidium*, then, become two well marked and very natural genera eminently worthy of recognition, as may be appreciated by a study of the following key:—

Inflorescence an elongate raceme, 8–18 cm. long; rachis of pinnae phyllodial, 1–6 dm. long, apparently borne on the spines; calyx-lobes very strongly imbricate in the bud.....*Parkinsonia*.  
 Inflorescence a short corymb, 1–3 cm. long; rachis of pinnae 1–4 cm. long, terete, never phyllodial, clearly borne below the spines; calyx-lobes valvate or induplicate-valvate in bud.....*Cercidium*.

PARKINSONIA [Plum.] L. Sp. Pl. 375 (1753); Gen. Pl. 177 (1754).

#### KEY TO SPECIES.

Rachis of pinnae winged, 1.5–3 mm. wide, 15–60 cm. long; pinnae ca. 25-jugate; legumes torose, terete, margin very strongly undulate but scarcely thickened.....1. *P. aculeata*.  
 Rachis of pinnae not winged, 1 mm. wide, 5–15 cm. long; pinnae 15-jugate or less so; legumes somewhat compressed, scarcely torose, margins slightly undulate and evidently thickened.  
 2. *P. africana*.

1. PARKINSONIA ACULEATA L. Sp. Pl. 375 (1753). *P. spinosa* HBK. Nov. Gen. et Sp. vi. 335 (1823). *P. Thornberi* Jones, Contr. W. Bot. xii. 12 (1908).—Native of America, but widely cultivated over the warmer parts of the world. For notes regarding its distribution see the account by Sargent, Silva N. Am. iii. 87, t. 81 (1892). The name "*Parkinsonia spinosa* HBK" is evidently a *lapsus* meant for *P. aculeata* L. The specimen cited by Kunth is apparently not



*P. aculeata*, however, but is the collection which finally became the type of *Cercidium spinosum* Tul.

2. *P. AFRICANA* Sond. Linnaea xxiii. 38 (1850); Engler, Veg. der Erde ix. Band 3, Heft 1, 501, fig. 267 (1915).—Known only from South Africa.—AFRICA: on a stony plain, Damaraland, Marloth 1216; without locality, Zeyher 557.

CERCIDIUM Tul. Arch. Mus. Paris iv. 133 (1844). *Rhetinophloeum* Karsten, Fl. Colomb. ii. 25, t. 113 (1862)

#### KEY TO SPECIES.

Pinnae 1-3-jugate.

Ovary densely sericeous-strigose; pinnae 1- or occasionally 2-jugate.....1. *C. texanum*.

Ovary glabrate; pinnae commonly 3-jugate.

Pod very flat, 2-3 mm. thick, 8-11 mm. wide; leaves green; branches dull green.....2. *C. macrum*.

Pod thickened, 5 mm. thick, 10-15 mm. wide; leaves pale; branches pallid.

Twigs glabrate, very pale.....3. *C. floridum*.

Twigs densely short-pubescent, cinerascens.....4. *C. peninsulare*.

Pinnae 4-15-jugate.

Leaves appearing simply pinnate, primary rachises undeveloped; pinnules minute, ca. 1-1.5 mm. broad, 1-2.5 mm. long.

Plant unarmed; leaflets orbicular or ovate; fruit torose, terete; North American.....5. *C. microphyllum*.

Plant with long spines; leaflets narrowly oblong; fruit very flat, margin straight; South American.....7. *C. andicola*.

Leaves or most of them evidently bipinnate, primary rachises developed; pinnules larger, 1-2.5 mm. broad, 2-7 mm. long.

Leaves conspicuously pubescent, cinereous.....8. *C. praecox*.

Leaves glabrate or glabrous, glaucous or yellow-green.

Legumes 4-7 cm. long, 4 mm. thick, margin strongly undulate; Sonora.....6. *C. sonorae*.

Legumes 3-5 cm. long, 1-2 mm. thick, margin not at all undulate; Argentina.....9. *C. australe*.

1. CERCIDIUM TEXANUM Gray, Pl. Wright. i. 58 (1852). *Parkinsonia texana* Wats. Proc. Am. Acad. xi. 136 (1876).—Southwestern Texas. TEXAS: Uralde, 90 mi. northwest of San Antonio, 1879, Palmer 270; Eagle Pass, 1879, Palmer 271; Rio Grande, 1848, Wright; without locality, Pope; western Texas, 1849, Wright 149; without locality, 1852 [Wright]; "New Mexico," 1851, Wright 115.

2. *C. macrum*, sp. nov., arboreum; ramulis glabratis opacis viridibus; spinis 0.7 mm. longis; foliis opacis sparse inconspicueque strigosis unijugis, rachibus primariis 4-8 mm. longis; pinnis trijugis, rachillis 7-15 mm. longis; pinnulis oblongis vel oblongo-obovatis emarginatis vel rotundatis sessilibus 4-6 mm. longis 2-3.5 mm. latis, basi acutis



saepe paullo obliquis, costis conspicuis; floribus in racemas pauciflores axillares subcorymbosas congestis; ovario glabro; leguminibus valde compressis 2-3 mm. crassis 8-11 mm. latis 3-6 cm. longis, margine rectis vel paullo undulatis; seminibus brunneis oblongis ca. 7 mm. longis 4 mm. latis.—*C. floridum* of authors. *C. floridum* of Sargent, Silva N. Am. iii. 83-4, t. 129 (1892), as to plant described and pictured. *Hoopesia arborea* Buckley, Proc. Acad. Philad. 1861, 453 (1861), in part; 1870, 137 (1870); Gray, Proc. Acad. Philad. 1862, 163 (1862).—TEXAS: Rio Hondo, Cameron Co., *Chandler 7034*; Fordyce, 1905, *Tracy 9065*; hills, La Salle Co., 1881, *Buckley*. TAMAULIPAS: San Fernando to Jimeney, 1902, *Nelson 6608*; vicinity of Victoria, 1907, *Palmer 125*. NUEVO LEON: mesas near Monterey, 1889, *Pringle 2537* (TYPE, Gray Herb.); near Pesquerea Grande, northwest of Monterey, 1847, *Gregg*; without locality, *Gregg*; Nuevo Leon, *Berlandier 3142* (707).—This species is the well known one of Texas and northeastern Mexico current as *Cercidium floridum* Benth. That species, however, is based upon a flowering specimen made by Coulter who did not collect within the range of *C. macrum*. Coulter did, on the other hand, collect within the range of the common "Palo Verde" of Arizona. It therefore seems evident that Bentham's name cannot properly be applied to the plant here called *C. macrum*, since it was impossible for Coulter to have collected it, and since it seems more than probable that Bentham's name should be applied to the closely related species of Arizona which Coulter could scarcely have missed collecting. The Gregg and Wislizenus collections cited under Gray's original description of "*Cercidium floridum* Benth." represent *C. macrum*, those of Emory and Fremont are true *C. floridum*. From their source, Corpus Christi, it seems probable that the fragments of *Cercidium* in the complex type of *Hoopesia arborea* belong to *C. macrum* rather than to *C. texanum*. *Hoopesia arborea* was based, according to Gray, Proc. Philad. 1862, 163 (1862), upon material representing three distinct leguminous genera (*Cercidium*, *Acacia*, and *Pithecollobium*). No particular one of the three elements predominates in Buckley's description nor in his material. I am not definitely associating *Hoopesia arborea* with any species, but am dropping it from consideration as a *nomen confusum*.

3. *C. FLORIDUM* Benth. in Gray, Pl. Wright. i. 58 (1852). *Parkinsonia florida* Wats. Proc. Am. Acad. xi. 135 (1876). *P. Torreyana* Wats. l. c. *C. Torreyanum* Sarg. Gard. & Forest ii. 388 (1889); Silva N. Am. iii. 85, t. 80 (1892).—Southern Arizona to the Colorado Desert of California, southward into adjacent Sonora and Lower



California.—ARIZONA: near Fort Yuma, 1880, *Lemmon* 39, 40; rocky hills at Camp Grant, 1867, *Palmer* 62; Gila [River], *Sutton Hayes* 209; valley of the Gila, *Emory*; Gila [River], 1852, *Thurber*; near the Colorado [River], *Bigelow*; without locality, 1867, *Palmer*. CALIFORNIA: Palm Springs, alt. 150–200 m., *Parish* 4115; in desert sand, Palm Spring, alt. 120 m., *Spencer* 755; Palm Springs, *Eastwood* 3004.—For the present use of the name "*Cercidium floridum* Benth." see discussion under *C. macrum*.

4. *C. PENINSULARE* Rose, Contr. U. S. Nat. Herb. viii. 301 (1905); Goldman, Contr. U. S. Nat. Herb. xvi. 336, t. 114 (1916).—Southern Lower California.—LOWER CALIFORNIA: La Paz, 1890, *Palmer* 112; San José del Cabo, 1897, *Anthony* 363.—This differs from *C. floridum* in scarcely more than pubescence. In range, however, it is widely separated from that latter species.

5. *C. microphyllum* (Torr.) Rose & Johnston, comb. nov. *Parkinsonia microphylla* Torr. Bot. Mex. Bound. 59 (1859); Pacif. R. R. Rep. iv. 82 (1857); Sargent, Silva iii. 91, t. 132 (1892).—Southern Arizona, Sonora, and middle and northern Lower California.—ARIZONA: poor rocky hills, Camp Grant, 1867, *Palmer* 63; Gila [River], *Sutton Hayes* 217; Williams River, *Bigelow*; desert near Fort Yuma, 1880, *Lemmon* 41; Maricopa, 1881, *Parry*; Lowell, 1884, *W. F. Parish* 49; without locality, 1871, *Lieut. Wheeler*.

6. *C. sonorae* Rose & Johnston, sp. nov., arboreum; ramulis breviter strigosis canescentibus; spinis 0–9 mm. longis; foliis sparse pubescentibus 1–2-jugis, rachibus primariis 0–5 mm. longis apice subulato caduco 1–2 mm. longo; pinnis 2–4-jugis 12–32 mm. longis; pinnulis subsessilibus 1.5–2 mm. latis 2–3 mm. longis oblongis basi oblique rotundatis, apice obtusis mucronatis costa conspicua; inflorescentiis axillaribus corymboso-racemosis paucifloris; dense breviterque pubescentibus; leguminibus 4–7 cm. longis 4 mm. crassis 7–8 mm. latis margine valde undulatis; seminibus oblongis 1 cm. longis 4 mm. latis.—SONORA: Guadeloupe, Feb., *Parry* 321a (G); Torres, 1903, *Coville* 1664 (US); Guaymas, 1922, *Orcutt* 1196 (US); dry hills in the vicinity of Guaymas, 1910, *Rose, Standley & Russell* 12586 (TYPE, U. S. Nat. Herb.).—A very well marked species apparently nearest to *C. microphyllum*, but differing in its thorny stems, larger, petioled and frequently several-jugate leaves, more compressed less torose legumes, and much smaller seeds. The species is known only from Sonora.

7. *C. ANDICOLA* Griseb. Abh. Ges. Wiss. Goett. xxiv. 114 (1879). *Caesalpinia praecox*, var. *andicola* Hoss. Bol. Acad. Córdoba xxvi.



145 (1921).—Northern Argentina and southern Bolivia.—BOLIVIA: Toldos near Bermejo, 1800 m. alt., 1903, *Fiebrig 2193* (G).

8. *C. PRAECOX* (R. & P.) Harms in Engler Jahrb. xlii. 91 (1908). *Sappania praecox* R. & P. Fl. Peruv. t. 376, ined. *Caesalpinia praecox* H. & A. Bot. Misc. iii. 208 (1833), as to description and accepted name. *Cercidium spinosum* Tul. Arch. Mus. Hist. Nat. Paris iv. 134 (1845). *Rhetinophloem viride* Karsten, Fl. Colomb. ii. 25, t. 113 (1862). *Cercidium viride* Karsten in Engler, Jahrb. viii. 346 (1887). *Cercidium plurifoliolatum* Micheli, Mém. Soc. Phys. et Hist. Nat. Genève xxxiv. 269, t. 18 (1903). *Cercidium Goldmani* Rose, Contr. U. S. Nat. Herb. viii. 301 (1905). *Cercidium unijugum* Rose, l. c.—Extreme middle-western Peru to northern Venezuela, the Leeward Islands (Curaçao *fide* Urban, Margarita), Santo Domingo (*fide* Urban), and southern and western Mexico.—ECUADOR: between Loja and Portovelo, *Rose, Pachano & Rose 23330* (US). VENEZUELA: El Valle, Margarita Island, alt. 200 m., 1903, *J. R. Johnston 31* (G). La Vela de Coro, 1917, *Curran & Haman 423, 468, 499* (G); Cumana, 1917, *Curran & Haman 1251* (G). MEXICO: Santa Lucia, Oaxaca, 1908, *Purpus 3187* (G); hills, Dominguito, Oaxaca, alt. 900 m., 1895, *L. C. Smith 437* (G); between Teotitlan and San Antonio, Oaxaca, alt. 900 m., 1907, *Conzatti 2119* (G); San Luis, Guerrero, alt. 100 m., 1899, *Langlassé 933* (G); Orizaba, Vera Cruz, *Botteri 994* (G); Maria Madre Island, Tepic, 1897, *Maltby 62* (US); vicinity of Fuerte, Sinaloa, 1910, *Rose, Standley & Russell 13516* (US); San José del Cabo, Lower Calif., 1911, *Rose 14466* (US); Guaymas, Sonora, 1897, *Maltby 186* (US); dry cactus plain near Navojoa, Sonora, 1910, *Rose, Standley & Russell 13176* (US); La Tinajo, Sonora, 1890, *Hartman 241* (G).—I have searched in vain for characters of sufficient constancy to justify the treating of the Mexican material as representing a valid species. It can be generally said that the South American material has smaller flowers and darker branches than the Mexican, but these characters are erratic and can scarcely be used for specific distinction. The type of Ruiz & Pavon's species came from middle western Peru and is distinct from the plant of the Argentine which authors, following Hooker & Arnott, have confused with it. A discussion of this subject will be found under the next species.

9. *C. australe*, sp. nov., arboreum vel arbusculum 1–8 m. altum spinosum; ramulis glabratis vel sparsissime strigoso-pilosis striatis pallide viridibus; spinis 8–15 mm. longis rectis; foliis bipinnatis 1–2-jugis glabratis vel sparsissime adpresseque pilosis flavo-viridibus, rachibus primariis 5–10 mm. longis; pinnis 5–7-jugis rachibus 1–2



cm. longis; pinnulis oblongis 1–2 mm. latis 2–5 mm. longis obtusis basi subobliquis; petiolulis ca. 0.2 mm. longis; floribus breviter corymbosoracemosis; petalis luteis immaculatis maxime ca. 1 cm. longis; leguminibus membranaceis valde compressis acutis reticulatim venosis glabratis 3–5 cm. longis 8–10 mm. latis 1–1.5 mm. crassis margine rectis.—*Caesalpinia praecox* of H. & A., Bot. Misl. iii. 208 (1833); as to plant of Gillies, not as to R. & P. name or plate. *Cercidium praecox* of Manganara, Anal. Soc. Cient. Argent. lxxxvii. 163 (1919), and other recent authors. *Cercidium andicola*, var. *petiolata* Chod. & Hass. Bull. Herb. Boiss. n. s. iv. 828 (1904).—Central Argentina and adjacent Paraguay.—ARGENTINA: Andalgalá, Prov. Catamarca, *Jørgensen* 1119 (G); vicinity of General Roca, Rio Negro, alt. 250–360 m., 1915, *W. Fischer* 20 (TYPE, Gray Herb.); San Juan, Mendoza, *Jameson* (G).—Although this tree of the Argentine has long borne the name *Caesalpinia praecox* or *Cercidium praecox*, it seems clear that it has been improperly so called. *Caesalpinia praecox* was published by Hooker & Arnott in 1833 after they had concluded that a plant collected by Gillies in Mendoza was specifically identical with Ruiz & Pavon's manuscript species, *Sappania praecox*, and its unpublished plate. Gillies's specimen represents the Argentine plant that has passed as *C. praecox* and which is here named, *C. australe*. Since Ruiz & Pavon did not collect in Argentina or at all close to the range of *C. australe*, and described in their flora only material collected by themselves or Dombey in either Chile or Peru, it must be clear that *Sappania praecox* R. & P. cannot be the plant that Hooker & Arnott thought it to be. Since there is a *Cercidium* which occurs in middle-western Peru where Ruiz & Pavon did much collecting, it certainly seems much more natural to assume this to be the *Cercidium* collected and illustrated by them. This plant I doubtfully associate with the Venezuelan species, current as *Cercidium spinosum* Tul. Hooker & Arnott's description of "*Caesalpinia* (*Sappania*) *praecox* (R. et Pav. *Fl. Peruv. t. 376. ined.*)" is perfectly ambiguous, applying equally well to the Argentinian and to the more northern plant. Since Ruiz & Pavon's name was taken up and their plate cited, and since their plant is not at all excluded by the original description but agrees with the diagnosis as well as does the Argentinian plant, I am confining their name to the plant for which it was originally intended, and am consequently giving a new name to the "Brea" of the Argentine. The plant from Mendoza differs from the common form of *C. australe* in having its ovary velvety-pubescent. It may be worthy of nomenclatorial recognition.



## 2. NEW OR OTHERWISE NOTEWORTHY PLANTS.

**Persea Hartmanii**, sp. nov., glabrata arborea 6–9 m. alta; ramis juventate fulvo-tomentosis; foliis anguste ellipticis vel lanceolatis glabratis 6–11 cm. longis 15–36 mm. latis basi cuneatis apice saepe acutis subtus pallidioribus; petiolis 1–2 cm. longis vetustis glabratis canaliculatis; inflorescentiis paucifloris laxè paniculatis 7–10 cm. longis glaberrimis folia paullo superantibus; pedunculis gracilibus 4–7 cm. longis; pedicellis 4–6 mm. longis; floribus ca. 4 mm. longis; calycis lobis ovatis acutis ca. 2.5 mm. longis subaequalibus extus glaberrimis intus paullo strigosis medium versus articulatis superiori parte decidua; staminibus exterioribus introrsis 2 mm. longis, antheris oblongo-linearibus ca. 0.9 mm. longis 4-ocularibus, loculis inferioribus latis longioribus superiores lateraliter oblique tangentibus, filamentis sparse villosis angustis; staminibus introrsis exteriores simulantibus sed basem versus biglanduliferis, glandulis ovatis sessilibus; staminodiis ca. 9 mm. longis, capitulis acute sagittatis quam stipes duplo longioribus, stipitibus villosis crassis capitula latitudine aequantibus; ovariis glabris globosis.—MEXICO: Batopilas, Chihuahua, April 1892, *C. V. Hartman 1029* (TYPE, Gray Herb.).—Although in gross habit suggesting a species of *Phoebe*, in technical characters this seems clearly a *Persea*. It is well marked in the latter genus appearing to be without immediate relatives. The outstanding features of the plant are its glabrous ovary and flowers, and peculiar calyx-lobes. These latter have a transverse medial line of abscission.

**Persea podadenia** Blake, var. **glabriramea**, var. nov.; caulibus et pedunculis glaberrimis castaneis.—MEXICO: Orizaba, *Botteri 81* (TYPE, Gray Herb.), 1166.—The type of *P. podadenia* comes from Durango and is very densely strigose.

**Phoebe longipes**, sp. nov., glaberrima; foliis lanceolatis 12–22 cm. longis 4–5.5 cm. latis longe falcato-acuminatis subtriplinerviis supra laevibus subtus paullo pallidioribus delicate reticulatis basi rotundatis vel rare cuneatis; petiolis 25 mm. longis; ramulis laevibus glaucescentibus fuscis; inflorescentiis laxissime paniculatis ca. 1 dm. longis quam foliae valde brevioribus paucifloris; pedunculis gracilibus ca. 6.5 cm. longis ascendentibus; pedicellis gracilibus 15–25 mm. longis; bracteolis deciduis; floribus ca. 4 mm. longis; calycis segmentis ovatis acutis 2.5 mm. longis subaequalibus extus glaberrimis intus paullo strigosis; staminibus exterioribus 1.8–2 mm. longis introrsis, antheris oblongis ca. 1 mm. longis, loculis 4 valde 2-seriatis; staminibus interioribus exterioribus similibus sed extrorsis et cum filamentis saepe villosis basin versus abrupte dilatatis et cum glandulis disciformibus



munitis; staminodiis ca. 1.6 mm. longis, capitulis ca. 4 mm. longis deltoideo-ovatis stipite compresso strigoso duplo longioribus; ovariis glabris globoso-ovoideis; stylo glabro quam ovarium  $\frac{1}{2}$  longiori.—MEXICO: without precise locality, *Pringle 8829* (TYPE, Gray Herb.).—Apparently most closely allied to *P. salicifolia* Nees, but differing in having longer petioles and pedicels, as well as larger leaves and flowers. The type was probably collected in south-central Mexico.

**Misanteca costaricensis**, sp. nov., paniculata arborea 7–10 m. alta; ramis glabris; foliis elliptico- vel obovato-oblongis glabris concoloribus 10–14 cm. longis 3–5 cm. latis, subtus sparse delicateque reticulatis; supra inconspicue reticulatis, basi cuneatis, apice breviter acuminatis, petiolis ca. 15 mm. longis quadrangularibus; inflorescentiis paniculatis 5–10 cm. longis dense brunnescenterque villosa-velutinis; floribus ad apices pedunculorum laxa pyramidaliterque congestis; pedicellis 1–2 mm. longis sparse villosis; calyce ca. 1.5 mm. longo infundibuliformi vel subobconico brunneo extus glabrato, lobis 6 late ovatis obtusis intus sparse pubescentibus, exterioribus ca. 0.8 mm. longis, interioribus ca. 0.6 mm. longis; staminibus 3 connatis ca. 1 mm. longis conspicuis; antheris glabris crasse bilocularibus; filamentis latis dense villosis; glandulis 3 distinctis semiorbicularibus vel ellipticis basi ad androphorum adfixis; staminodiis absentibus; ovario glabro ovato quam stylus  $\frac{1}{2}$  breviori.—COSTA RICA: Santiago Hills near San Ramon, 1100 m. alt., June 1, 1901, *A. M. Brenes 14403* (TYPE, Gray Herb.).—Related to the West Indian *M. triandra* (Sw.) Mez, but differing in its villose-velutinous inflorescence, distinct entire glands on the androphore, and larger more elongate less gradually acuminate leaves. It is readily separated from the remaining species of the genus, all close allies of *M. capitata* C. & S., by its velutinous loose paniculate inflorescence and smaller less prominently reticulate leaves.

**Misanteca Peckii**, sp. nov., arbor parva cum floribus racemosis; ramis brunnescenter et dense hirsuto-villosis; foliis oblanceolatis vel obovato-oblongis basi cuneatis apice abrupte longeque acuminatis margine paullo revolutis supra nitidis glabris conspicue impresseque nervatis subtus setosis opacis pallidis valde conspicueque nervatis petiolis 9–12 mm. longis, inflorescentiis racemosis 2–3 cm. longis; paucifloris brunnescenti-velutinis; floribus atro-coeruleis valde depressis 1.8–2.2 mm. diametro 1.5 mm. altis subcarnosis; pedicellis 0.2–1 mm. longis lobis 6 valde 2-seriatis, exterioribus latissime triangularibus ca. 1.5 mm. latis 0.6 mm. altis, interioribus deltoideis obscuris ca. 0.3 mm. altis; staminibus 3 in androphorum latum pyra-



midale connatis; antheris 2-locellatis late obovatis glabratis, locellis supra medium impositis; filamentis nullis (?); staminoidiis nullis; glandulis confluentibus ad basem androphori in annulum undulatum confluentibus; ovario globoso glabrato; bacca ellipsoidea ca. 2.2 cm. longa 11 mm. diametro coccinea; cupulo cyathiformi conspicue duplo-marginato, basi incrassato.—BRITISH HONDURAS: locality not given, 1905-7, *M. E. Peck 826* (TYPE, Gray Herb.).—A very distinct species and perhaps representing an undescribed genus since it differs from the other members of *Misanteca* in its few-flowered racemose inflorescence, depressed broad rather pulpy flowers, strongly bicolored leaves, and stamens which appear to lack filaments and are connate to form a very broad pyramidal rather than columnar androphore. The type was probably collected in middle eastern British Honduras.

**Calliandra socorrensis**, sp. nov., fruticosa glabra; caulibus rigidis laxe multiramosis; foliis glaberrimis numerosis; pinnis bijugis 15-30 mm. longis; foliolis 5-7-jugis congestis 4-12 mm. longis 2-4.5 mm. latis firmis oblongis apice obtusis basi valde obliquis; stipulis persistentibus oblongo-lanceolatis ca. 2-3 mm. longis acutis; pedicellis 1-2 mm. longis; pedunculis axillaribus 2-3 cm. longis ascendentibus; floribus ignotis; leguminibus glabris ca. 5-spermis, valvis membranaceo-coriaceis reticulatis incrassato-marginatis 5-6 cm. longis 8-9 mm. latis.—MEXICO: Socorro Island, 1897, *A. W. Anthony* (TYPE, Univ. Calif. Herb. no. 83534).—Most nearly allied to *C. formosa* (Kunth) Benth., a species ranging widely over northern and western Mexico, from which it differs in its much branched compact wood habit, and much smaller crowded leaflets.

**Piscidia acuminata** (Blake), comb. nov. *Ichthyomethia acuminata* Blake, Jour. Wash. Acad. ix. 249 (1919).

**Piscidia communis** (Blake), comb. nov. *Ichthyomethia communis* Blake, Jour. Wash. Acad. ix. 247 (1919).

**Piscidia grandifolia** (Donn. Sm.), comb. nov. *Derris grandifolia* Donn. Sm. Bot. Gaz. lvi. 55 (1913).

**Fagonia cretica**, var. **canariensis**, var. nov., prostrata ramosa *F. creticae*, var. *typicam* simulans sed differt floribus et fructibus perspicue minoribus; fructibus 5-6 mm. crassis; petalis 6-7 mm. longis.—CANARY ISLANDS: roadside near Guia, Gran Canaria, Dec. 1893, *Cook 77*; arid open lower parts of Teneriffe, Jan. 1845, *Bourgeau 46*; littoral belt near Santa Cruz, Teneriffe, April 1888, *J. Ball* (TYPE, Gray Herb.).—This plant of the Canary Islands has passed as *F. cretica* L., but that is a plant of the Mediterranean basin which has fruit 6-7.5 mm. thick and petals 7-10 mm. long. The variety



*canariensis*, because of its smaller fruit and flowers, is very suggestive of the common American forms of the genus, and it was perhaps this fact that gave Engler, *Veg. der Erde* ix. Band 3, Heft 1, 731 (1915), his reasons for treating the plants of America as *F. cretica* var. *chilensis* (H. & A.) Engler, var. *californica* (Benth.) Engler, and var. *asper* (Gay) Engler. However, Standley, *Proc. Biol. Soc. Wash.* xxiv. 244 (1911), has pointed out that the American plants are distinguishable from true *F. cretica* by the possession of a fruit which is noticeably smaller in size, and which has a shorter, scarcely thickened beak. As the American plants are widely separated geographically from their closest ally, *F. cretica*, of the Old World, and since the collections from the two regions are distinguishable by their fruit, it seems best to consider them specifically distinct, and to take up *F. chilensis* H. & A. as the comprehensive name for the American relatives of *F. cretica*.

Some writers, such as Anderson, *Jour. Linn. Soc.* v. suppl. 11 (1860), and the editors of the *Index Kewensis*, have referred practically all the described forms of *Fagonia* to *F. cretica*. This treatment, however, is extreme, for there appears to be a goodly number of species in northern Africa and southwestern Asia which are well defined entities with characteristic habit and natural ranges. Most of the species have several synonyms, and in a number of cases the current name is not always the oldest. For example, *F. indica* Burm. f., founded on a good description and plate, has been disregarded for such comparatively recent synonyms as *F. persica* DC., *F. mysorensis* Roth, *F. microphylla* Boiss., *F. myriacantha* Boiss., and *F. parviflora* Boiss.

**Protium panamense** (Rose), comb. nov. *Icica panamensis* Rose, *N. Am. Fl.* xxv. 260 (1911).

**Euphorbia** (§**Tithymalus**) **Hinkleyorum**, sp. nov., perennis e radice erecta crassa oriens 1-2 dm. alta glaberrima; caulibus compluribus erectis herbaceis medium versus laxè dichotomeque ramosis; foliis caulinis inferioribus alternatis sparsis, caulinis superioribus et rameis oppositis valde conspicuis, omnibus glabris concoloribus late adfixis 8-24 mm. longis et latis palminerviis distinctis lacerato-dentatis orbicularibus vel obovatis vel subflabelliformibus basi truncatis vel cuneatis edentatis symmetricis; stipulis nullis; involucris solitariis axillaribus glabris cyathiformibus ca. 2 mm. longis ca. 1 mm. longe pedunculatis, fauce cum lobis subulatis vel anguste deltoideis hirsutis ca. 0.5 mm. longis munita; glandulis 5 ca. 1.3 mm. longis et latis, subtus pallidis rariter hirsutis, supra laminato-rugosis brunneis,



margine retusis vel truncatis undulatis; stylis ca. 1.5 mm. longis, lobis bipartitis glabris; stigmatibus paullo incrassatis; capsula glabra ca. 2 mm. longa ca. 4 mm. pedunculata; seminibus oblongis obscure quadrangularibus ca. 2 mm. longis ca. 1.3 mm. crassis ecarunculatis griseis delicate impresse atromaculatis.—PERU: sandy pampa on the southern slopes of Chachani Mountain near Arequipa, alt. 3300 m., March 1920, *Mr. & Mrs. F. E. Hinkley* 7 (TYPE, Gray Herb.).—This species evidently belongs to Boissier's subsection *Ipecacuanhae*, and probably has its nearest relative in the variable but very different *E. portulacoides* Spreng., from which it differs in its larger dark-colored coarsely toothed apparently connate (though really distinct) broader leaves, and much more loosely branched habit. In foliage *E. Hinkleyorum* suggests the Galapagean, *E. amplexicaulis* Hook. f., in the shape and attachment of its upper leaves. It is, however, not at all closely related to that species. According to its discoverers the plant is known as "esquera" and is used in the treatment of fevers.

**Malvastrum Hinkleyorum**, sp. nov., annum simplex erectum 1.5–4.5 dm. altum glabratum vel apicem versus sparse villosum et setosum; caulibus stramineis gracilibus; foliis palmate 3-foliolatis 3–4.5 cm. longis; foliolis acutis oblanceolatis lacerato-dentatis vel lobatis glaberrimis subtus pallidis, dentibus cum seta terminatis; petiolis 1–2.5 mm. longis gracilibus canaliculatis supra minute viscidulo-villosis; stipulis conspicuis oblique acuminateque lanceolatis vel oblongo-lanceolatis 8–13 mm. longis 2–4 mm. latis longe sparseque ciliatis; pedunculis gracilibus 2–6 cm. longis 2–4-floris unilateraliter congesti-floris, ab axillis superioribus orientibus; calycibus ca. 4 mm. longis conspicue ciliatis sparse setosis, fructiferis ca. 4.5 mm. latis, lobis ovatis acutis ca. 2.5 mm. longis; pedicellis 0.5–1 mm. longis; bracteolis 3 lineari-filiformibus 3–4 mm. longis; corollis ochroleucis (in sicco rosaceis) ca. 3.5 mm. longis; tubo staminali 2–2.5 mm. longo; stylo ca. 1.2 mm. longo, lobis 10–13 glabris non dilatatis; stigmatibus capitellatis lobo styli vix crassioribus minute pubescentibus; carpellis glabratis valde rugosis 1–1.5 mm. longis.—PERU: hillsides on the southern slope of Chachani Mountain near Arequipa, 2100 m. alt., March 1920, *Mr. & Mrs. F. E. Hinkley* 43 (TYPE, Gray Herb.).—A very distinct annual species, well marked by its glabrous herbage, three-parted lacerate-dentate leaves, and conspicuous stipules. In Baker's synopsis, Jour. Bot. xxix. 168 (1891), it falls with *M. peruvianum* (L.) Gray, a species from which it is clearly distinct. It is a pleasure to be able to name this and the previous species in honor of Mr. and Mrs. F. E. Hinkley, who in 1920, during their hours of recreation while connected



with the Arequipa Station of the Harvard College Observatory, made on the southern and lower slopes of the volcano of Chachani (about 10 km. north of Arequipa) a small but highly interesting plant-collection which has materially enriched the Gray Herbarium with well prepared material of many new or rare species.

**Malvastrum arequipense**, sp. nov., annuum herbaceum simplex erectum 5–20 cm. altum stellato-setosum gracile; foliis paucis oblongo-ovatis 3-lobatis sinuato-dentatis 1–3 cm. longis 8–15 mm. latis stellato-setosis basi obtusis; petiolis 3–13 mm. longis pubescentibus; stipulis lineari-lanceolatis ca. 3.5 mm. longis acutis; pedunculis gracilibus 1–3 cm. longis unilateraliter 2–6-floris ex axillis superioribus orientibus; calyce 4–5 mm. longo stellato-setoso, fructifero 4–5 mm. lato, lobis 2–3 mm. longis ovatis acutis; bracteolis 3 lineari-filiformibus ca. 2 mm. longis; pedicellis setosis 0.5–1 mm. longis; corolla 4 mm. longa in sicco rosacea, lobis obovatis rotundatis; tubo stamineo 2 mm. longo; antheris 8–10; stylis ca. 1.5 mm. longis ca. 0.5 mm. longe connatis glabris linearibus; stigmatibus capitellatis hirtellis quam styli ramus paullo crassioribus; ovarii loculis 15–18; carpellis oblongo-ovatis 1–1.2 mm. altis ca. 1.5 mm. longis, sinu angusto longo, lateribus medium versus reticulato-rugosis marginem versus crasse rugosis, dorso sparse stellatis marginem versus saepe breviter cristatis, apice cum appendicula aristata hirsuta 2–3 mm. longa subpersistenti ornatis; spermatibus brunneis laevibus compressis pedicellato-ovatis vel cum sinu obliquo.—PERU: hillside on the south slope of Chachani Mountain near Arequipa, alt. 2100 m., March 1920, Mr. & Mrs. F. E. Hinkley 43a (TYPE, Gray Herb.).—In Baker's synopsis of the *Malvaceae*, Jour. Bot. xxix. 168 (1891), this species falls with *M. bolivi-anum* Baker, but that has much larger petals, much larger pinnatifid leaves, biaristate carpels, and taller growth.

**Malvastrum congestiflorum**, sp. nov., annuum herbaceum 1–3 dm. altum subsimplex; caulibus flexuosis decidue stellato-tomentosis apicem versus dense lanuginosis; foliis opacis sparse stellatis rhomboideo-ovatis acutis elobatis triplinerviis grosse sinuato-dentatis basin versus integris 2–5 cm. longis 1.5–3 cm. latis basi cuneatis, rare foliis palmato-trilobatis 2.5–4 mm. latis basi obtusis lobis obovatis grosse paucisque obtusidentatis; petiolis 5–20 mm. longis stellatis; stipulis ca. 5 mm. longis lanceolatis; floribus in glomerulos densos sessiles terminales 4–8-floros congestis; calyci ca. 5 mm. longi tomentosi lobis ovatis acutis ca. 3.5 mm. longis; bracteolis 3 linearibus 3–4 mm. longis; corolla pallida ca. 4 mm. longa calycem vix superante, lobis obovatis rotundatis 2.5–3 mm. longis; tubo stamineo 1.5 mm.



longo sparse longeque villosa; columna styli glabra ca. 1.5 mm. longa, lobis ca. 8 filiformibus 0.5–0.7 mm. longis sparse villosulis; stigmatibus capitellatis; ovario depresso globoso dense stellato-tomentoso; fructu ignoto.—PERU: rocky ravines on the south slope of Chachani Mountain near Arequipa, alt. 2745 m., March 1920, *Mr. & Mrs. F. E. Hinkley 37* (TYPE, Gray Herb.).—Apparently related to *M. tarapacanthum* (Phil.) Baker, but distinguished by its larger green, rather than tomentose, foliage, pale corollas, and non-aristate fruit.

**Malvastrum Shepardae**, sp. nov., annuum humile herbaceum stellato-setosum 2–6 cm. altum multicaule; caulibus erectis vel decumbentibus teretibus viscido-villosis setosis; stipulis scariosis ciliatis 3–4 mm. longis 0.8–1 mm. latis; foliis subsemiorbicularibus vel late ovatis 1–2.5 cm. latis 1–2 cm. longis palmate lateque trilobatis vel irregulariter dentatis setosis subtus pallidioribus prominenter nervatis basi truncatis vel obtusis; petiolis 1–3 cm. longis; floribus axillaribus solitariis 2–5 mm. longe pedicellatis; calycibus ca. 5 mm. longis setosis, lobis oblongo-lanceolatis ca. 3.5 mm. longis acutis, fructiferis 5–6 mm. latis; bracteolis duabus 0.5–0.9 mm. infra calycem locatis; corollis purpureis ca. 5 mm. longis sepala ca. 1 mm. superantibus; tubo stamineo 1.5 mm. longo; stylo ca. 1.5 mm. longo, lobis ca. 1 mm. longis glabris vix dilatatis; stigmatibus capitellatis glabris; carpellis ca. 2.5 mm. longis 1.5 mm. latis glabris ovatis valde rugosis.—PERU: in meadows, Puno, Dec. 1919, *Mrs. R. S. Shepard 123* (TYPE, Gray Herb.).—Apparently a relative of *M. pygmaeum* (Remy) Gray, but differing from the description of that species in its acute calyxlobes, pedicellate flowers, more numerous stamens, and glabrous fruit. Perhaps also related to *M. mollendöense* Ulbrich, but differing from the diagnosis of that species in having larger stipules, shorter pedicels, smaller flowers, smaller glabrate calyces, and leaves which are merely dentate or have three broad shallow palmate lobes. In naming this species for the collector it is a pleasure to give recognition to the botanical work of Mrs. Shepard who, in company with her husband, has for some years diligently prepared for the Gray Herbarium excellent specimens of the floras visited during her missionary work in the region west of Lake Titicaca and in Tacna-Arica.

**Malvastrum catamarcense**, sp. nov., annuum herbaceum stellatum 8–20 cm. altum basin versus longe ascendenterque ramosum; foliis 2–3.5 mm. longis 1.3–3 cm. latis rhomboideo-ovatis irregulariter inciso-serratis vel crenato-serratis, subtus pallidioribus dense stellatis prominenter nervatis supra plerumque setosis nervis immersis, basi truncatis vel late subcordatis, apice obtusis; stipulis lanceolatis 2–3



mm. longis; petiolis 1–2.5 cm. longis; inflorescentiis axillaribus, pedunculis gracilibus 8–16 mm. longis 1–3-floris; calycibus cupuliformibus ca. 4 mm. longis infra medium partitis lobis uninerviis stellato-setosis 2–3 mm. longis anguste acuteque ovatis; bracteolis lineari-filiformibus 2–3 mm. longis; petalis albis vel dilute rosaceis quam sepala  $1/5$ – $1/3$  longioribus 3–3.5 mm. longis; tubo stamineo 2.5 mm. longo; stylo ca. 2 mm. longo, lobis 6–7 ca. 0.5 mm. longis glabris vix dilatatis; stigmatibus subcapitellatis glabris; ovario glabro; carpellis maturitate reniformibus glabris 2 mm. longis 1.2 mm. latis ca. 0.9 mm. crassis dorso convexis rugosis lateraliter laevibus; seminibus glabris reniformibus 1.2 mm. longis 9 mm. latis minute faveolatis brunneis.—ARGENTINA: El Candado, Dept. of Andalgalá, Prov. of Catamarca, Sept. 2, 1916, *Pedro Jörgensen 1388* (TYPE, Gray Herb.).—A very distinct addition to the rather small assemblage of annual *Malvastrums*. In Baker's synopsis of the *Malvaceae*, Jour. Bot. xxix. 168 (1891), the species falls with *M. peruvianum* (L.) Gray, from which it is unquestionably distinct differing in habit, cut of leaf, calyx, and pubescence. The conspicuous, slender, very few-flowered peduncles of *M. catamarcense* will usually serve to distinguish it.

***Malvastrum Jorgensenii***, sp. nov., annuum; radice erecta simplici, radicellis fibrillatis divaricatis; caulo erecto gracili subsimplici 4–6 dm. alto ad 3 mm. crasso basin versus suffruticuloso apicem versus folioso decidue stellato-tomentoso; foliis ovatis paucis acutis sparse stellatis 3-lobatis 4–7 cm. longis 3.5–5 cm. latis basi truncatis vel subcordatis subtus pallidioribus cum nervis prominentibus margine serrato-crenatis; petiolis 1.5–2.5 cm. longis; stipulis lanceolatis 1–2 mm. longis; inflorescentia terminali 10–30-flora congeste corymbosa; calyce dense stellato-tomentoso ca. 5–6 mm. longo, lobis deltoideis acutis 3–4 mm. longis, bracteolis linearibus 2–3 mm. longis; petalis laete roseis (in sicco coeruleis) ca. 1 cm. longis ca. 5 mm. latis oblongo-obovatis rotundatis quam calyx 2–3-plo longioribus; tubo stamineo ca. 6–7 mm. longo; stylo 2–2.5 mm. longo, lobis ca. 2 mm. longis stigma versus subdilatatis glabris; stigmatibus oblongo-capitellatis; ovario dense stellato-tomentoso cylindrato-globoso; fructibus ignotis.—ARGENTINA: near Suncho, Prov. of Tucuman, Sept. 5, 1915, *Pedro Jörgensen 1389* (TYPE, Gray Herb.).—Distributed as *M. peruvianum* (L.) Gray, and somewhat resembling that species in its subsimple habit. The new species has, however, smaller stipules, a tomentose rather than stellate-setose pubescence, and conspicuous corymbose rather than small unilaterally racemose flowers. *Malvastrum Jorgensenii* suggests *M. capitata* (Cav.) Griseb. in its floral structures, but that is a branched and densely tomentose shrubby perennial.



**Monnina ramosa**, sp. nov., fruticulosa 15–20 cm. alta laxa ramosa paullo canescens adpresse compressequ albo-villosa ut videtur furfuracea (?) annua; foliis lanceolato-linearibus 15–25 mm. longis 1.5–2.5 mm. latis obtusis integerrimis concoloribus basi attenuatis; petiolis 0.5 mm. longis; stipulis nullis; inflorescentia racemosa 5–10 cm. longa ca. 1 cm. longe pedunculata ramulos laterales terminanti pedicellis ca. 0.7 mm. longis; sepalis ciliato-fimbriatis duobus inferioribus ovatis acutis basim versus connatis ca. 1.7 mm. longis, superiori lanceo-ovata 2 mm. longa; alis albis oblique obovatis 4–4.5 mm. longis 2–2.2 mm. latis basi deltoideis; carina (in sicco) aurea emarginata orbiculari plicata a latere visa oblonga 4–5 mm. longa ca. 2.5 mm. alta obtusa; petalo superiori albo obtuso ligulato; androecio paullo ciliolato; staminibus 8; ovario glabro; stigmate inferiori tuberculato horizontali; samara oblique obovata membranacea in lateribus medium versus dense albo-strigosa, ala undulata evidenti.—PERU: on sandy pampa at 3300 m. alt. on south slope of Chachani Mountain near Arequipa, March 1920, *Mr. & Mrs. F. E. Hinkley 13* (TYPE, Gray Herb.).—Related to *M. Weberbaueri* Chodat, Engler Jahrb. xlii. 102 (1908), a species of central Peru, from which it differs in its more elongate narrower leaves, glabrate stigma, and differently shaped floral keel.

**Oenothera verrucosa**, sp. nov., annua herbacea pilosa erecta simplex foliosa 5–25 cm. alta; foliis 2.5–6 cm. longis 5–9 mm. latis inconspicue undulatis vel denticulatis concoloribus marginem versus pubescentibus, infimis spathulato-oblanceolatis petiolatis, superioribus lanceolatis sessilibus basi rotundatis vel cordatis; floribus axillaribus; alabastro erecto ellipsoideo villosa ca. 1 cm. longo; hypanthio infundibuliformi usque ad ca. 3 mm. longo paullo longiori quam lato; sepalis in alabastro apice libris, anthesi separatim reflexis lineari-lanceolatis; petalis luteis obcordatis ca. 5 mm. longis ca. 3 mm. latis; staminibus glabris ut videtur 2-seriatis; antheris anguste oblongis dorsaliter medium versus adfixis; stylo glabro ca. 3 mm. longo; stigmate 4-lobato lobis ligulatis 1–1.3 mm. longis; ovario viscido-villoso; capsulis 15 mm. longis 2–3 mm. crassis sparse villosis oblanceolato-fusiformibus obtusi-quadrangularibus, valvis verrucosis medialiter longitudinaliterque costatis; seminibus erectis uniseriatis ellipsoideis pallidis 1–1.4 mm. longis vix rugosis.—PERU: ravines and rocky slopes at 3600 m. alt. on southern slope of Chachani Mountain near Arequipa, March 1920, *Mr. & Mrs. F. E. Hinkley 17* (TYPE, Gray Herb.).—Certainly a near relative of *Oe. coquimbensis* Gay, from which it differs in its narrower more elongate leaves, and short



hypanthium. From descriptions it seems to be also closely related to the Chilian *Oe. bracteata* Phil., but it differs from that in having a lower stature, more elongate leaves, smaller flowers, and a sparse villous pubescence. The new species is locally known a "chochillo," and is used for urinal troubles.

**Jarrilla**, nom. nov. *Mocinna* La Llave, Registro Trimestre i. 351 (1832); not *Mocinna* Lag. Gen. et Sp. Pl. Nov. 31 (1816); nor *Mozinna* Ort. Nov. Pl. Descr. Decad. 104 (1798).—The generic name given by La Llave is not only later than the exactly homonymous one proposed by Lagasca, which is now referred to *Calea*, but is later also than the practically homonymous one published by Ortega. La Llave and Ortega both dedicated their names to Don José Mociño, latinizing the latter's name slightly differently. Ortega's genus has been accepted as valid by some recent authors and has appeared in print, at least once, Benth. Pl. Hartw. 9 (1839), spelled "*Mocinna*." I am therefore discarding the generic name given by La Llave, since it is essentially homonymous, being the same in origin and intent, and since its acceptance would lead to confusion. The generic name substituted is formed from one of the vernacular names given by La Llave. The genus *Jarrilla* evidently belongs to the *Caricaceae* and its recognition adds a fourth well-marked genus to the family. It appears to be most closely related to *Carica*, but differs in having low herbaceous stems, tuberous-thickened roots, and cornutely appendaged fruit. Ramírez, Anal. Inst. Med. Nac. Mexico i. 209–211 (1894) and Naturaleza ser. 2, ii. 449–450 (1894), has excellently shown the numerous characters of the genus by means of a tabular comparison.

**Jarrilla heterophylla** (La Llave), comb. nov. *Mocinna heterophylla* La Llave, Registro Trimestre i. 351 (1832); Naturaleza ser. 1, vii. append. 70 (1887). (?) *Carica nana* Benth. Pl. Hartw. 288 (1848). *M. heterophylla*, var. *Sesseana* Ramírez, Anal. Inst. Med. Nac. Mexico i. 207, t. 1–4 (1894); Naturaleza ser. 2, ii. 447, t. 25–26 (1894). *C. caudata* Brandg. Zoe iv. 401 (1894).—The type of this very variable species is said to have come from Guanajuato, Mexico. Its description agrees well with the plates of Ramírez's variety *Sesseana* which presumably was based upon cultivated material from Guanajuato furnished by Dugès. The species as here accepted is quite variable as to foliage. The Jalisco plant figured as typical *M. heterophylla* by Ramírez has sagittate or definitely hastate leaves and may be distinct. I have seen a quite similar plant collected at La Palma, Jalisco, in 1892 by M. E. Jones (no. 7331a). The type of Brandegée's species comes from the mountains of southern Lower California.



***Jacaratia costaricensis***, sp. nov., dioica arborea pyramidalis; ramis brunneis aculeatis; aculeis acutis duris ca. 2 mm. altis conicis vel lateraliter compressis; foliis herbaceis longe petiolatis digitatis ambitu rotundatis 10–15 cm. diametro; petiolis 10–16 cm. longis; foliolis 5–7 oblanceolatis integerrimis acuminatis, supra viridibus subtus densissime glaucis; foliolo centrali 6–11 cm. longo 2–3 cm. lato cum petiolulo 2–3 mm. longo; inflorescentiis masculis axillaribus petiolo brevioribus 6–12 cm. longis laxe racemosi-paniculatis multifloris, femineis axillaribus erectis longe pedunculatis unifloris; floribus masculis ca. 17 mm. longis extus glaucissimis, in alabastro tenuiter clavatis, lobis ca. 7 mm. longis linearibus subobtusis, tubis tenuiter cylindratis ca. 1.2 mm. crassis intus sparse villosis, staminibus extus strigosis valde inaequalibus, filamentis conspicue connatis, antheris similibus sine connectivo ligulato, processis erectis spiniformibus; floribus masculis ca. 2.7 cm. longis glaucis, tubo ca. 2 mm. longo ca. 6 mm. crasso.—COSTA RICA: forest of Las Vueltas, Tucurrique, 650–700 m. alt., Dec. 1898, *Adolfo Tonduz 12881* (TYPE, Gray Herb.).—*Jacaratia costaricensis* is evidently a close relative of the Guianian, *J. spinosa* (Aubl.) DC., but differs from that species in its longer (5–9 mm. long) fruiting peduncles, and very strikingly bicolored foliage. The new species is quite unique in the genus on account of its excessively glaucous flowers and lower leaf-surfaces. The vernacular name given by Senior Tonduz is “papayillo de venado.”

***Pileus mexicanus*** (A. DC.), comb. nov. *Jacaratia mexicana* A. DC. Prodr. xv. pt. 1, 420 (1864); Calq. Fl. Mex. t. 1163–1164 (1874). *J. conica* Kerber, Jahrb. Bot. Gart. Berlin ii. 282, t. 9 (1883). *Carica heptaphylla* Sesse & Moc. Pl. N. Hisp. 172 (1887); not Vellozo (1827). *P. heptaphyllus* Ramírez Anal. Inst. Med. Nac. Mexico v. 28, t. 1–4 (1901); Naturaleza ser. 2, iii. 707, t. 41–45 (1903).—In its alate or strongly costate fruit and in its quite anomalous habit this species differs strikingly from all other members of the *Caricaceae*, and appears to merit well the generic rank accorded it by Dr. Ramírez. There are, however, two names older than the particular one taken up by Ramírez; the above combination being the proper one. The species has been almost universally referred to *Jacaratia*, but in habit it is anomalous in that genus and in addition differs in having unarmed branches and non-connate stamens. The plant differs from *Carica* in its habit, divided leaves, costate or angled fruit, and oppositisepalous corolla-lobes. It differs from *Jarrilla* in its habit, 5-celled costate or alate non-cornute fruit, divided leaves, oppositisepalous corolla-lobes, and linear (not lingulate) glabrous stigmas. Ramírez



reports the plant from the state of Morelos and Guerrero. Kerber collected it in Colima and mentions a collection from Campeche. I have seen a specimen (*Millspaugh 96* in part, mixed with *Jatropha Gaumeri* Greenm.) from between Merida and Izamal, Yucatan.

**Caiophora** (§ **Bicallosae**) **Jorgensenii**, sp. nov., volubilis; foliis oblongis vel late lanceolatis acutis pinnatisectis vel pinnatilobatis 2.5–5.5 cm. longis 1–3 cm. latis 3–6 mm. longe petiolatis, lobis acutis oppositis vel subalternis serratis; floribus axillaribus solitariis 5-meris; pedicellis florigeris tortuosis 10–15 mm. longis, fructiferis ca. 25 mm. longis apicem versus cernuis; hypanthiis hirsutis graciliter cylindratis ad basin sensim attenuatis ca. 8 mm. longis ca. 2 mm. crassis, lobis linearibus ca. 4 mm. longis ca. 0.5–0.7 mm. latis; petalis patentibus 8–10 mm. longis late navicularibus extus setosis; squamis pubescentibus 3–4 mm. longis ca. 2–2.5 mm. latis a latere visis semilunatis a dorso ovato-oblongis sub collo callos 2 valde incrassatos decurrentes transversos gerentibus apice valde bicalloso-incrassatis, nervis 3 ad  $\frac{3}{5}$  altitudinis squamae filum emittentibus, filis 3 filiformibus basin versus paullo dilatatis squamas paullo vel vix superantibus; staminodiis 2 subulatis gibbere papillois tortuosis 4–5 mm. longis quam squama sensim longioribus; filamentis numerosis; capsulis cylindro-claviformibus inferne in pedicellum attenuatis 2–2.5 cm. longis 4–5 mm. crassis nutantibus setosis conspicue spiraliterque contortis; seminibus 0.6–1 mm. longis ca. 0.6 mm. diametro pallide brunneis faveolato-reticulatis irregulariter alatis.—ARGENTINA: El Candado, Dept. of Andalgalá, Prov. Catamarca, Jan. 16, 1916, *Pedro Jörgensen 1163* (TYPE, Gray Herb.).—This species is evidently a close ally of *C. stenocarpa* Urb. & Gilg, and *C. Arechavaletae* Urb., and has a range geographically intermediate between these species. It differs from *C. stenocarpa* in its smaller solitary axillary flowers, elongate pedicels, and evidently contorted capsules. From *C. Arechavaletae* it differs in its shorter petioles, smaller less deeply cut narrower leaves, solitary axillary flowers, and longer more slender capsules. In *C. Jorgensenii* the scales in the flower appear to be nearly intermediate between the conditions illustrated by Urban & Gilg, Monog. Loasac. t. 8, fig. 4 and 7 (1900), for its near relatives. The staminodia in the proposed species are subulate, tapering very gradually from the broadened base. About 1 mm. above the base, and slightly below the first bend, the staminodia are provided with a pair of spreading linear coarsely and densely villous appendages about 1 mm. long. Above the attachment of the appendages the pale staminodia is covered to the very tip with gibbous tuberculations.



The staminodia in *C. Jorgensenii* is hence quite different from those of *C. stenocarpa* and *C. Arechavaletae* as illustrated by Urban & Gilg, l. c. fig. 6 and 8.

**Gilibertia amplifolia**, sp. nov., arborea glaberrima; ramis cortice griseo spongioso tectis; foliis paucis ovatis vel oblongo-ovatis coriaceis undulatis vel sinuatis obtusis 15–18 cm. longis 9–11 cm. latis conspicue nervatis bicoloribus basi rotundatis vel abrupte cuneatis; petiolis 6–7 cm. longis; inflorescentia terminali pyramidaliter paniculata, rachibus crassis ca. 3.5 cm. longis, bracteis conspicuis latis persistentibus saepe ad 2–3 mm. longis; ramulis primariis patentibus 2.5–3.5 cm. longis inarticulatis bracteatis; pedunculis 1–3 cm. longis saepe medium vel basin versus bracteolatis; capitulis 10–20-floris; pedicellis 1.5–2.5 mm. longis; hypanthiis anguste obconicis; corollis 5-meris; alabastris subglobosis; petalis saepe ca. 2.5 mm. longis anguste triangularibus crassiusculis acutis quam stamina paullo brevioribus; ovario glabro; baccis ca. 5 mm. longis 4 mm. latis valde 5-costatis; stylis medium versus connatis apice valde recurvatis.—COLOMBIA: Santa Marta, alt. 1200 m., Feb. 1898–1901, *H. H. Smith 1778* (TYPE, Gray Herb.).—Related to *G. arborea* (L.) March., but differing in having short pedicels, paler broader leaves, and a more compound inflorescence with a thicker main axis.

**Gilibertia Smithiana**, sp. nov., arbor glaberrima; foliis oblongis vel elliptico-oblongatis 2 dm. longis 4–7 cm. latis margine obscure crenatis et involutis, basi cuneatis vel rotundatis, apice valde acuminatis, subtus pallidioribus valde nervatis; petiolis saepe 3–8 cm. longis; racemis terminalibus, rachibus 2–6 cm. longis gracilibus erectis, pedunculis gracilibus elongatis non articulatis ima basi et medium versus bracteas breves ovatas concavas acutas gerentibus; calycis late obconici lobis acutis; corolla sphaerica paullo depressa, petalis deltoideo-ellipticis acutis uninerviis crassiusculis purpureis ca. 1.5 mm. longis stamina paullo superantibus; stylis sub anthesi in conum rugosum diametro disci circiter aequantem connatis maturitate valde recurvatis; ovariis glabris; baccis globosis laevibus 5–6 mm. longis.—GUATEMALA: Cubilquitz, Dept. Alta Verapaz, alt. 350 m., Aug. 1907, *von Türckheim 11407* (TYPE, Gray Herb.); Aug. 1901, *von Türckheim 7882*. HONDURAS: San Pedro Sula, Dept. Santa Barbara, alt. 500 m., *Thieme 5253*. MEXICO: Misantla, Vera Cruz, Aug. 1912, *Purpus 5917*; (?) Cerro del Boqueron, Chiapas, June 1914, *Purpus 7363*.—Related to the Antillean *G. arborea* (L.) March. under which name it has been distributed by Captain John Donnell Smith and treated in his key, Bot. Gaz. lv. 436 (1913), to the Central American species of



the genus. *Gilibertia Smithiana*, however, differs from its West Indian relative in having smaller flowers in a more slender less projected inflorescence, and in possessing less firm usually more elongate leaves. The only specimen of *G. arborea* in the Gray Herbarium from Central America is *Fendler 131* from Panama.

***Gilibertia eurycarpa***, sp. nov., arborea; ramis cortice griseo longitudinaliter sulcato tectis; foliis glaberrimis saepe obtuse breviterque acuminatis integerrimis, subtus pallidioribus costa prominenti et nervis ascendentibus arcuatis ad basin inferioribus cum costa decurrentibus, foliis ramulorum juvenum 3-5-palmato-lobatis cum petiolis 2 dm. longis, eis ramulorum maturorum ovatis acutis vel obtusis 10-15 cm. longis 5-11 cm. latis basi cuneatis; umbellis 25-40-floris in racemum 2-5 cm. longum axillarem digestis; pedunculo 4-5 cm. longo gracili medium versus bracteis brevibus ovatis concavis acutis instructo, apice in receptaculum hemisphaericum mediocre dilatato; floribus 5-meris, pedicellis filiformibus ca. 7 mm. longis bracteolis scariosis ferrugineis brevissimis basi stipatis; tubo calycis obconico, limbo anguste triangulari 1.52 mm. longo; corolla hemisphaerica paullo depressa; petalis ovatis vel triangulari-ovatis acutis ca. 2 mm. longis; staminis filamentis flexuosis petalis longiore; stylis valde arcuato-reflexis basin versus connatis; bacca oblate globosa ca. 5 mm. longa cum exocarpio corrugato; pedicellis 8-10 mm. longis.—MEXICO: Tamasopo Canyon, San Luis Potosi, *Pringle 3723* (TYPE, Gray Herb.); Gómez Fárías, Tamaulipas, ca. 350 m. alt., *Palmer 275, 312*.—The species is related to *G. stenocarpa* Donn. Sm. of Guatemala and Salvador, but differs in its globose fruit, shorter style, and more uniform leaves. It is also a close relative of *G. insularis* Rose of the Tres Marias Islands, but differs from the description of that species in having larger looser inflorescence with longer pedicels and peduncles, and in having larger fruit and strongly recurved styles.

***Gilibertia alaris*** (C. & S.), comb. nov. *Hedera alaris* C. & S. *Linnaea* ix. 605 (1835).

***Gilibertia darienensis*** (Seem.), comb. nov. *Dendropanax darienense* Seem. *Jour. Bot.* ii. 300 (1864).

***Gilia chachanensis***, sp. nov., glabra glandulosa 15-20 cm. alta stricte vel ascendenter ramosa suffruticulosa (?) annua; ramis numerosis, inferne pallidis nudis, superne brunnescentibus vel viridibus gracilibus rigidusculis foliosis; foliis 1-2 cm. longis integris vel palmatifidis vel varie pinnatifidis, lobis paucis linearibus 0.5-1 mm. latis 5-18 mm. longis compressis vix dilatatis firmissculis cuspidatis sparse glandulosis; floribus foliis oppositis solitariis; pedicellis ascendentibus



1-3 (saepius 2-3) cm. longis glandulosis; calyce campanulato viscido-glanduloso 4-5 mm. alto ca. 2 mm. crasso, lobis triangulari-lanceolatis ca. 1.5 mm. longis; corolla glaberrima ca. 9 mm. longa hypocrateriformi, tubo calycem paullo superanti albo, lobis ovalibus ca. 2.5 mm. longis purpurascens; staminibus infra medium tubo corollae adfixis; filamentis tubum corollae superantibus filiformibus 3.5 mm. longis; antheris orbicularibus 0.3-0.4 mm. diametro basi adfixis; stylo 2 mm. longo; stigmatibus lanceolatis ca. 1 mm. longis; loculis ovarii multiovulatis; capsula cylindrato-ovoidea 4-5 mm. longa sepalis paullo breviori polysperma; seminibus brunneis oblongis sub aqua spirilliferis.—PERU: on a sandy pampa at 3300 m. alt. on the south slope of Chachani Mountain near Arequipa, March 1920, *Mr. & Mrs. F. E. Hinkley* 25 (TYPE, Gray Herb.).—The above species belongs to the § *Eugilia* and is clearly a member of that small group of South American species centering around *G. laciniata* R. & P. In Brand's monograph, *Pflanzenr.* iv. Fam. 250, 95 (1907), it keys out with *G. laciniata*. It differs from that, however, in its very slender glabrous habit, long filaments, solitary long-pedicellate flowers, and linear or simply cleft very slender elongate glabrous leaves. The stems of *G. chachanensis* are very slender, rather rigid, and towards the ground slightly fruticulose. The plant is absolutely glabrous but is sprinkled over with short-stipitate glands, and the upper parts are somewhat viscid. It bears the local name of "romerito del cerro."

***Patima formicaria***, sp. nov., fruticosa ca. 2.4 dm. alta; caulibus 1-5 erectis simplicibus fistulosis tetragonis obtuse angulatis 8-12 mm. crassis in lateribus longitudinaliter sulcatis; foliis herbaceis obovato-ellipticis vel late oblongeque obovatis 30-45 cm. longis 12-17 cm. latis integerrimis apice cum acumine 15-25 mm. longo falcate acuminatis basi cuneatis vel attenuatis subtus pallidis sparse puberulentis, nerviis 30-40 arcuate laxeque ascendentibus; petiolis 4-7 cm. longis lateraliter compressis angulatis; stipulis 4-5 mm. longis lineari-attenuatis vel lanceolatis crassis; inflorescentia glabra axillari; axillis cum 1-3 uni- vel quadri-floris 1 mm. longe pedunculatis umbellis ornatis; pedicellis 4-8 mm. longis; hypanthio glabro hemisphaerico ca. 2 mm. alto; ovario multiovulato multiloculari (?); calyce glabro integro 1.5-2.5 mm. alto cupuliformi; corolla 2.5-2.8 mm. longa firma citrea vel (in saltem sicco) rubiginosa extus glabra, tubo cylindrico ca. 1.5 mm. longo ca. 4 mm. crasso intus glabro supra in fauces infundibuliformes 8-10 mm. longas usque ad 8-10 mm. crassas intus aureo-villosas ampliato, lobis deltoideis ascendentibus graciliter acuminatis in alabastro paullo lateraliter imbricatis ca. 3.5 mm. latis; staminibus glabris inclusis in



faucibus ad corollam affixis; filamentis ligulatis paullo attenuatis 2–2.2 mm. longis; antheris lanceo-linearibus ca. 4 mm. longis basi emarginatis apice acuminatis; stylo corolla breviori tereti glabro ca. 1.5 mm. longo, stigmatibus ligulatis ca. 2.7 mm. longis; bacca 6–7 mm. crassa 5–8 mm. alta; seminibus subglobosis brunneis ca. 0.5 mm. diametro foveolatis.—BRITISH GUIANA: Tumatumari, Potaro River, lat. 5° 20' N., June 1920, *Hitchcock 17348* (TYPE, Gray Herb.); clayey hills at mouth of Merumé Creek, 5° 53' N., 59° 52' W., Dec. 1922, *H. O. Lang 330* and *339*.—Evidently related to *P. guianensis* Aubl., Pl. Guian. 196, t. 77 (1775) and Hoffm. in Mart. Fl. Brasil. vi. pt. 6, 309 (1889), but having taller tetragonal stems, larger long-acuminate leaves, larger flowers, and smaller apparently many-celled fruit. According to Dr. W. M. Wheeler, to whom the Gray Herbarium is indebted for excellent material of the species, the plant is myrmecophilous, its fistulous stems being the habitation of at least five species of ants.

*GNAPHALIUM MICROCEPHALUM* Nutt. Trans. Am. Philos. Soc. ser. 2, vii. 404 (1841). *G. bicolor* Bioletti, Erythea i. 16 (1893).—A photograph of the type of Nuttall's *Gnaphalium microcephalum* has been recently received from the British Museum. A study of this photograph shows conclusively that the species has been universally misinterpreted and that it clearly represents the species well known to Californian botanists as *G. bicolor* Bioletti. The species of Southern California which has been mistaken for the Nuttallian species is hence without a name and may be called:—

***Gnaphalium albidum***, sp. nov., perenne 5–9 dm. altum; caulibus numerosis dense tomentosissimis laxe ramosis, foliis oblanceolatis vel spathulatis late adfixis saepe subdecurrentibus 3–5 cm. longis 5–10 mm. latis acutis tomentosis supra paullo viridioribus; capitulis 5–6 mm. altis ca. 4 mm. diametro in glomerulos lanugineos terminales congestis; tegulis ca. 18 albidis 3-seriatis, exterioribus ovatis acuminatis, interioribus oblongis acutis; floribus perfectis 3.5 mm. longis 5–6, imperfectis 35–40; pappi setis ca. 20 distinctis ca. 4 mm. longis barbatis; achaeniis glabris oblongis ca. 0.6 mm. longis.—CALIFORNIA: in the chaparral, Granite, San Diego Co., 550 m. alt., July 11, 1916, *Mary F. Spencer 69* (TYPE, Gray Herb.); grassy hillside, Laguna Mts., San Diego Co., *Spencer 1034*; border of stream, San Bernardino Mountains, *Parish Bros. 579*; Pasadena, *Grant 518*; Mission Canyon, Santa Barbara Co., *Eastwood 124*.—This species is confined to the coastal drainage of Southern California where it is most common in gravelly places on the alluvial fans along the base of



the mountains, and in open places in the chaparral belt in the foothills or at low altitudes in the mountains. It is probably most related to *G. Wrightii* Gray, a species of northern Mexico and New Mexico, which has smaller heads, more acute tegules, more slender stems, and a much less dense tomentum on its stems and foliage.

*GNAPHALIUM BENEOLENS* Davidson, Bull. So. Calif. Acad. Sci. xvii. 17 (1918).—LOWER CALIFORNIA: San Vicente, *Orcutt* 1241. CALIFORNIA: Saratoga, San Diego Co., *Spencer* 166; Palomar, *Spencer* 1043; Crescenta, *Burlew* 3275 (ISOTYPE); Converse Basin, Fresno Co., *Dudley* 3397; Yosemite, 1877, *Hooker & Gray*; Del Monte, *Elmer* 4038; Black Mt., Santa Clara Co., *Baker* 1542; Mt. Tamalpais, *Eastwood* 1501; near Forest Ranch, Butte Co., *Heller* 12659. NEVADA: Bowers, *Heller* 10659; near Carson City, *Anderson* 19.—This species seems properly to include almost all that material from middle and northern California, and most of that from Southern California, which in the past has gone as *G. microcephalum*. It differs from *G. albidum* in its narrow linear elongate leaves and larger usually stramineous heads. In Southern California where *G. albidum* and *G. beneolens* both occur, the latter appears to flower later, to be more common, and to reach its optimum development at lower altitudes growing in the broad warm valleys and low foothills. The two species have very different habits, at least in Southern California. *Gnaphalium albidum* branches more, particularly towards the base, and has somewhat decumbent stems, and consequently has a decidedly loose habit. On the other hand *G. beneolens* is stiffly erect, with little branching towards the base, and forms close trim clumps. The difference in foliage between the species, while occasionally obscure in very mature specimens, is remarkably accentuated on the vigorous young flowerless shoots.

*GNAPHALIUM THERMALE* E. Nels. Bot. Gaz. xxx. 121 (1901).—WYOMING: on the formations, Norris Geyser Basin, Yellowstone Park, *Nelson* 6139 (ISOTYPE). IDAHO: Lake View, Kootenai Co., *Sandberg*, *MacDougal & Heller* 872; Trinity, Elmore Co., *Macbride* 529. BRITISH COLUMBIA: vicinity of Nanaimo, Vancouver Isl., *Macoun* 430. WASHINGTON: New Port, *Kreager* 454; Peshastin, *Sandberg & Leiberg* 830; Friday Harbor, San Juan Islands, *Zeller* 1213. OREGON: Kamela, *Peck* 4672; Detroit, *Nelson* 1912. CALIFORNIA: near Deetz Station, Siskiyou Co., *Heller* 11702; Truckee, *Heller* 7092; Bear Valley, San Bernardino Mts., *Abrams* 2888.—Although grossly inappropriate, the above name seems the only one correctly applicable to the plant of northwestern United States now current as *G. microcephalum*. The plant in question is a well marked one and ranges from western



Wyoming to Oregon and southern British Columbia and thence southward along the Sierra Nevadas to Southern California. It appears to be most related to *G. Wrightii* of Mexico and New Mexico, but differs in its very different distribution, smaller heads, and sharply acute usually stramineous tegules. *Gnaphalium thermale* is readily distinguished from *G. beneolens* by its very conspicuously smaller heads and northern range. In California where the two latter species both occur, *G. thermale* grows on the mountains in the pine belt at altitudes much higher than *G. beneolens*.

***Gnaphalium texanum***, sp. nov., perenne 3–4 dm. altum; caulibus compluribus laxe ramosis dense tomentosis foliis numerosis oblanceolatis vel oblanceo-linearibus 3–7 mm. latis 1.5–4 cm. longis acutis late affixis, subtus tomentosis, supra sparse decidueque tomentosis; capitulis 4–5 mm. altis 2–2.5 mm. diametro in glomerulos lanuginosos densissimos congestis; tegulis 18–20 albidis 3-seriatis interioribus oblongis acutis, exterioribus ovatis acuminatis tomentosis; floribus perfectis 2.5 mm. longis 8–10, imperfectis ca. 40; pappi setis ca. 18 distinctis ca. 3 mm. longis subnudis; achaeniis glabris oblongis ca. 0.5 mm. longis.—TEXAS: mouth of Tarlinga Creek, Brewster County, Sept. 1883, *V. Havard 26* (TYPE, Gray Herb.); rocky soil, lower slopes, Davis Mts., Aug. 20, 1915, *without collector*.—Although passing as *G. Wrightii* Gray, this species seems unquestionably distinct, differing in its stiff habit and branching, narrow leaves, and particularly in having its small heads crowded into tight capitate clusters terminating short leafy branches. The new species appears to replace *G. Wrightii* in Texas.

***Gnaphalium viridulum***, sp. nov., bienn 2–4 dm. altum; caulibus compluribus erectis simplicibus vel rariter laxe ramosis tomentosis; foliis oblanceolatis superioribus gradatim reductis late affixis 2–6 cm. longis 4–10 mm. latis, apice acutis cuspidatis, subtus dense tomentosis, supra paullo viridioribus; inflorescentia dense corymbosa; capitulis 4–5 mm. altis 2–3 mm. diametro in glomerulos densos congestis; tegulis ca. 18 albidis basem versus viridulis 3-seriatis exterioribus ovatis acutis sparsissime laxequae tomentosis, interioribus oblongis acuminatis; floribus perfectis 5–6 ca. 3.5 mm. longis, imperfectis 30–35; pappi setis ca. 15 distinctis solitariter deciduis ca. 4 mm. longis antrorse hispidulis; achaeniis glabris oblongis 0.6 mm. longis.—NEW MEXICO: Bear Mts. near Silver City, 2400 m. alt., Sept. 19, 1903, *O. B. Metcalfe 742* (TYPE, Gray Herb.). ARIZONA: Gooseneck, Paradise, Chiricahua Mts., 1950 m. alt., *Blumer 2207*; Tucson, 1907, *Lloyd*.—This species has been confused with *G. Wrightii* although dif-



fering in its lower stature, smaller cylindrical greenish heads, and less sharply acute partly green tegules. The plant has a characteristic habit. It appears to range more to the westward than does *G. Wrightii* and perhaps replaces it in Arizona.

*GNAPHALIUM USTULATUM* Nutt. Trans. Am. Philos. Soc. ser. 2, vii. 404 (1841).—It has been the current practice to apply the name *G. purpureum* L. to an indigenous plant which ranges along the Pacific Coast from British Columbia to Southern California and seemingly reappears in Arizona and northern Mexico. Comparison of this plant with the true *G. purpureum* of eastern United States shows the former to be uniformly coarser, to have a much looser tomentum, and a broader dense stout somewhat leafy spike of commonly brown heads. The plants from the two coasts are readily recognized and may be quickly separated merely on their difference of gross habit and aspect. A study of the photograph of Nuttall's type of *G. ustulatum*, recently received from the British Museum, shows that both of the specimens cited by Nuttall clearly belong to the Pacific Coast plant and hence that his name is properly applicable to the "*G. purpureum*" of Californian authors. Although Nuttall cites one specimen as collected "On the plains of the Platte, towards the Rocky Mountains" the species is not known there, and it seems almost certain that the locality is the result of mislabeling. In Southern California *G. ustulatum* is not known south of Santa Barbara and Santa Rosa Island. The specimens from San Diego and Claremont cited by Hall, Univ. Calif. Pub. Bot. iii. 111 (1907), represent the amphigean weed, *G. spathulatum* Lam., a plant readily recognized by its distinctly annual weedy habit, floccose greenish foliage, and yellowish or greenish heads embedded in tomentum.

### 3. A. NEGLECTED PAPER BY JEAN LOUIS BERLANDIER.

It was recently discovered that the library of the Gray Herbarium contained copies of a sixteen page brochure, apparently written by J. L. Berlandier, which seems to have escaped the notice of recent authors. The title-page of the paper reads: Memorias | de la | Comision | de | limites | a | las ordenes del | General Manual de Mier y Teran. The first numbered page bears at its head: Memorias de la Comision | de limites. | Historia Natural | Botanica. | por | El General Teran y L. Berlandier. The preface is dated thus: Matamoros de las Tamaulipas Junio 20 de 1832. The commission referred to is evidently that which, according to Bancroft, Hist. Mex. v. 154 (1885), was appointed "in 1827, with General Manual Mier y Teran



as its chief, to ascertain the boundary between the Mexican and American republics under the treaty of 1819." According to Alcocer, *Naturaleza* ser. 2, iii. 556-557 (1901), the commission operated as late as 1830 or 1831. Since the date to the preface of the botanical report is over a year after the disbanding of the commission, it seems probable that the time mentioned is within a year, if not a month, of the exact date of publication, since the paper is a small one and especially since certain crudities in printing suggest that it was printed (in all probability very promptly) on some frontier press such as would have been found at that period in Matamores. The brochure is hence taken as having been published in 1832.

In substance the paper consists of dual Latin and Spanish descriptions of eleven newly proposed species and four new genera. The descriptions are carefully prepared and are evidently the work of Berlandier. The identification of the proposed genera and species, which appear to have been completely neglected and which are not listed in the Kew Index, has been greatly facilitated by the specimens from the Berlandier herbarium now preserved in the Gray Herbarium. These in a number of cases are labeled in Berlandier's handwriting with the names published in the brochure. Further help has been derived from the volume of Berlandier's unpublished plates, now preserved in the library of the Gray Herbarium. In the present paper these plates are cited: Berl. Icon. Ined. It seems probable that the brochures and the Berlandier manuscripts all came to the Gray Herbarium through the gift of Dr. Short under the conditions mentioned by Gray, *Am. Jour. Sci.* ser. 2, xxxv. 16 (1863).

*Rivina vernalis* Teran & Berl. Mem. Comision Limites 1 (1832); Berl. Icon. Ined. no. 1, pt. 1, t. 3, fig. 3.—"Crescit in locis sterilibus siccis humidisve, prope Matamoros de las Tamaulipas." = *R. HUMILIS* L. Sp. Pl. 121 (1753).

*Cactus bicolor* Teran & Berl. Mem. Comision Limites 1 (1832); Berl. Icon. Ined. no. 1, pt. 2, t. 4; no. 6, t. 4.—"Crescit in locis siccis sterilibusque prope Matamoros de las Tamaulipas." = **Hamatocactus bicolor** (Teran & Berl.), comb. nov. *Echinocactus setispinus* Engelm. Bost. Jour. Nat. Hist. v. 246 (1845).—Britton & Rose, *Cactaceae* iii. 105 (1922), say that *E. setispinus* is "very different from *Cactus bicolor* Berlandier." Berlandier's description, however, agrees very closely with their description of Engelmann's species, while pencilings on Berlandier's plates, which certainly represent the species as illustrated by Britton & Rose, show that Engelmann also considered his species synonymous soon after the publication of the latter.



*CACTUS CHLORANTHUS* Teran & Berl. Mem. Comision Limites 3 (1832); Berl. Icon. Ined. no. 1, pt. 2, t. 3.—“Crescit in locis sterilibus siccisve prope Matamoros de Tamaulipas.” This species is a *Mammillaria* apparently belonging to the genus *Escobaria* of Britton & Rose, *Cactaceae* iv. 53 (1923).

*CACTUS TAMAULIPENSIS* Teran & Berl. Mem. Comision Limites 3 (1832).—“Crescit in locis sterilibus inter ripam fluvii dicti Rio Bravo del Norte et locum dictum arroyo colorado prope Matamoros de las Tamaulipas.” Unrecognized.

*Terania frutescens* Berl. in Teran & Berl. Mem. Comision Limites 4 (1832); Berl. Icon. Ined. no. 6, t. 2.—“Habitat in regionibus septentrionalibus et orientalibus Reipublicae Mexicanae; prope San Antonio de Bejar in Texas, circa Monterrey in Nuevo Leon, prope Matamoros et Victoria in Tamaulipas.” Berlandier's genus, *Terania*, is evidently a late synonym of *Leucophyllum*, but his species is some years older than *L. texanum* Benth. in DC. Prodr. x. 344 (1846). The correct name for the plant is, therefore, ***Leucophyllum frutescens*** (Berl.), comb. nov.

*Gaza anacua* Teran & Berl. Mem. Comision Limites 5 (1832); Berl. Icon. Ined. no. 4, t. 9.—“Habitat in locis siccis humidive; in Texas prope la Bahia del Espiritu Santo; in Tamaulipas prope Matamoros ubi vulgo adpellatur Anacua.” The genus *Gaza*, described at the above citation, is a synonym of *Ehretia*. The species, *G. anacua*, however, is an older name for the plant current as *E. elliptica* DC. Prodr. ix. 503 (1845), which therefore should be called ***Ehretia anacua*** (Teran & Berl.), comb. nov.

*Chrysodendron tinctoria* Teran & Berl. Mem. Comision Limites 7 (1832).—“Habitat in locis umbrosis montium dictorum Sierra de Tamaulipas del norte, prope San Carlos et San Nicolas, et forsan in omnibus montibus del Nuevo Leon prope Monterrey. Vulgo Palo amarillo.” The generic name *Chrysodendron* was proposed at the above reference. It is a synonym of *Mahonia*. As the specific name is much older than the synonymous *Berberis chochoco* Schlecht Bot. Zeitg. xii. 652 (1854), the plant should properly be called ***Mahonia tinctoria*** (Teran & Berl.), comb. nov. Three varieties of *C. tinctoria* were published, namely *oblongifolia*, *latifolia*, and *longifolia*. Authentic material in the Gray Herbarium, however, shows them to be trivial leaf-forms.

*JATROPHA CATHARTICA* Teran & Berl. Mem. Comision Limites 9 (1832).—“Crescit in locis sterilibus fere totius Tamaulipae, praecipue



ad margines fluvii dicti Rio de las Nuecas et prope Matamoros urbem."  
= *Jatropha Berlandieri* Torr. Bot. Mex. Bound. 198 (1858).

*Mimosa pseudo-Echinus* Teran & Berl. Mem. Comision Limites 11 (1832); Berl. Icon. Ined. no. 1, pt. 2, t. 7.—"Habitat in sylvis provinciarum internarum Orientalium prope San Luis Potosi ad ripam fluminis dicti Rio Grande usque ad Texas. Habitus Echini mollis."  
= *PROSOPIS JULIFLORA* (Sw.) DC. Prodr. ii. 447 (1825). It is evident that the specific name was meant to be "*pseudo-Schinus*" and it is so spelled on herbarium specimens. In the brochure and in the unpublished plates, however, it is spelled as given above. Standley, Contr. U. S. Nat. Herb. xxiii. 353 (1922), has commented on the spelling of the specific name.

*Calia erythrosperma* Teran & Berl. Mem. Comision Limites 13 (1832).—"Habitat in Texas, prope S. Antonio de Bejar urbem, in Tamaulipas inter Palmillas et Jaumave locis ruderatis." *Calia* was described as a new genus. It is, however, much later than the homonymous and universally recognized genus of the *Compositae*. The species is clearly a synonym of *SOPHORA SECUNDIFLORA* (Ortega) Lag. in DC. Cat. Hort. Monspl. 148 (1813).

*Lantana rubra* Berl. in Teran & Berl. Mem. Comision Limites 15 (1832); Berl. Icon. Ined. no. 1, pt. 1, t. 5, fig. 1.—"Habitat in Tamaulipas circa Matamoros urbem, in Tejas ad ripam maris, in loco dicto Bahia de Matagorda et prope San Antonio de Bejar urbem." This is a synonym of either *L. CAMARA* L. or *L. HORRIDA* HBK.

#### 4. ON THE VALIDITY OF MOLINA'S SCIENTIFIC NAMES.

In the most recent addition to his list of critical papers on the flora of the Argentine, Professor Lucien Hauman, Physis vii. 67-76 (1923), has reviewed and discussed the validity of the plant-names proposed by Molina in the first (1782) edition of the "Saggio sulla storia naturale del Chili." It is surprising that Professor Hauman, admitting the priority of many of Molina's names, has refused to accept the necessary name-changes, considering the names published in the Saggio to be "*nomina nuda*" because they are more frequently identifiable by items of folk-lore or by philological or pharmaceutical details mentioned by Molina, than by the formal latin diagnoses. It must be admitted that Molina's botanical descriptions are very brief and are frequently inaccurate. The descriptions, however, are always accompanied by a discussion in the text of the Saggio relative to the habit and to the native names and uses of the plant treated. Such discussion, supplementing the poorly prepared technical matter,



commonly serves to identify the species positively. In the brevity of his descriptions Molina was not at all exceptional in his age, and his names are about as readily identified from their diagnoses as are the species described by Linneus in the "Systema Naturae." If we are to accept the principle upon which Professor Hauman rejects Molina's names, treating all species as nomina nuda which are unidentifiable from their original description alone, and refusing to admit any *a posteriori* evidence as to the identity of such species, then botanical nomenclature is destined to a highly undesirable and caty-cismic reorganization, since most of the early species, and even a goodly proportion of the recent ones, are more readily, if not exclusively, identifiable from some locality, use, or local-name mentioned, or from a study of the original material, than they are from the whole of the formal portion of the description. Consistency, therefore, demands that we accept Molina's names when they are satisfactorily identified, as most of them have been through the efforts of Philippi, Anal. Univ. Chile xxii. 699-741 (1863). It is also to be noted that most of Molina's names were considered sufficiently well identified to be cited in the synonymy of Reiche's Flora de Chile. When the identity of such names has been determined with accuracy sufficient to warrant citing them, unquestioned, in synonymy, it would seem that we are logically obliged, if our acceptance of priority be more than a pretense, to take them up if they fulfill in other respects the necessary nomenclatorial requirements. Although Molina's names were disregarded in the past, their neglect was not from their inadequate definition, but because the earlier workers on the flora of southern South America followed, more or less closely, the principle finally formulated as the "Kew Rule" which calls for the acceptance, not of the oldest specific name, but of the first specific name under the accepted generic name. While it is regrettable that well known specific names should be displaced by the neglected ones of Molina, there seems no other course for those who find their guide in the modern International Rules of Nomenclature formulated at Vienna, which call for the acceptance of the oldest specific name irrespective of the genus under which it was described. With the exception of the few changes made at this time, most nomenclatorial adjustments occasioned by the priority of Molina's names, have been made by previous writers.

**Fitzroya cupressoides** (Molina), comb. nov. *Pinus cupressoides* Molina, Sagg. Chile 168 (1782). *Libocedrus cupressoides* Kuntze, Rev. Gen. iii. 375 (1893). *F. patagonica* Hook. f. ex Lindl. Jour. Hort. Soc. vi. 264 (1851).



**Frankenia salina** (Molina), comb. nov. *Ocymum salinum* Molina, Sagg. Chile 239 (1782). *F. Berteroana* Gay, Fl. Chile i. 247 (1845).

**Gomortega keule** (Molina), comb. nov. *Lucuma keule* Molina, Sagg. Chile 187 (1782). *G. nitida* R. & P. Syst. Fl. Peruv. i. 108 (1798).

**Larrea balsamica** (Molina), comb. nov. *Mimosa balsamica* Molina, Sagg. Chile 165 (1782). *L. nitida* Cav. Anal. Hist. Nat. Madrid ii. 120 (1800).

**Myrceugenia luma** (Molina), comb. nov. *Myrtus luma* Molina, Sagg. Chile 173 (1782). *Myrceugenia apiculata* (DC.) Niedz. in E. & P. Nat. Pflanzenf. iii. Abt. 7, 74 (1893).

**Nierembergia minima** (Molina), comb. nov. *Nicotiana minima* Molina, Sagg. Chile 153 (1782). *Nierembergia repens* R. & P. Fl. Peruv. ii. 13, t. 123 (1799).

**Statice guaicura** (Molina), comb. nov. *Plegorhiza guaicura* Molina, Sagg. Chile 164 (1782). *S. chilensis* Phil. Anal. Univ. Chile xx. 58 (1861).

**PROSOPIS CHILENSIS** (Molina) Stuntz, U. S. Bur. Pl. Indust., Invent. xxxi. 85 (1914). *Ceratonia chilensis* Molina, Sagg. Chile 172 (1782). *P. juliflora* (Sw.) DC. Prodr. ii. 447 (1825).—As the above combination was made in an obscure place it is repeated here to call attention to the fact that it is the proper name for the widely distributed, variable, and much named species known as "mesquite" in Mexico and southwestern United States, and generally current as *Prosopis juliflora*. The combination is not given in the Kew Index, nor is **ARISTOTELIA CHILENSIS** (Molina) Stuntz, l. c. [= *Cornus chilensis* Molina], nor **VILLARESIA CHILENSIS** (Molina) Stuntz, l. c. xxxii. 39 (1914) [= *Citrus chilensis* Molina].





Johnston, I. M. 1924. "Taxonomic records concerning American Spermatophytes." *Contributions from the Gray Herbarium of Harvard University* (70), 61–92. <https://doi.org/10.5962/p.336075>.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/123406>

**DOI:** <https://doi.org/10.5962/p.336075>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/336075>

**Holding Institution**

Missouri Botanical Garden, Peter H. Raven Library

**Sponsored by**

Missouri Botanical Garden

**Copyright & Reuse**

Copyright Status: Permission to digitize granted by rights holder

Rights Holder: Harvard University Herbaria

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://www.biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.