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PLANTÆ TEXANO-MEXICANÆ.

PART I.

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SMITHSONIAN CONTRIBUTIONS TO KNOWLEDGE.

Agelmann
1852

PLANTÆ WRIGHTIANÆ

TEXANO—NEO-MEXICANÆ:

(300)

AN ACCOUNT OF A COLLECTION OF PLANTS

MADE BY

CHARLES WRIGHT, A. M.,

IN AN

EXPEDITION FROM TEXAS TO NEW MEXICO, IN THE SUMMER AND AUTUMN OF 1849,
WITH CRITICAL NOTICES AND CHARACTERS OF OTHER NEW OR INTERESTING
PLANTS FROM ADJACENT REGIONS, &c.

BY

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PLANTÆ WRIGHTIANÆ TEXANO-NEO-MEXICANÆ:

AN ACCOUNT

OF

A COLLECTION OF PLANTS MADE BY CHARLES WRIGHT, A. M.,

IN AN EXPEDITION FROM TEXAS TO EL PASO, NEW MEXICO, IN THE
SUMMER AND AUTUMN OF 1849.

MR. CHARLES WRIGHT, who has for several years past devoted much attention to the botany of Texas, returned to Galveston from the North in the spring of 1849, and proceeded to San Antonio, purposing to avail himself of the opportunity afforded by the movement of a body of United States troops from this place across the country to El Paso, in Southern New Mexico, to investigate the natural history, and especially the botany, of this hitherto untrodden region. A recommendation from the War Department, that all proper facilities should be furnished to Mr. Wright, in furtherance of his arduous and entirely scientific undertaking, procured for him only the free transportation of his paper for preserving specimens, and of the collections he was enabled to make. This favor he owes to the kindness of Captain French, the quartermaster of the expedition, to whom and to Major Henry and Major Van Horn, Mr. Wright desires to express his thanks. The train left the frontier settlement of Castroville about the first of June, and reached El Paso early in September. The remainder of that month was devoted to making collections in the vicinity of that interesting station. Finding that much time would necessarily be lost in passing the long winter in New Mexico, Mr. Wright retraced his steps, and accompanied his rich collections back to Texas by the return train, leaving El Paso in October, and reaching San Antonio late in November. In returning he was enabled to add to his collection some species which had escaped notice during the outward journey, or which were not then in season, as well as largely to increase his collection of seeds, and of living Cactaceous plants. Specimens of the latter have been placed in the hands of Dr. Engelmann, of St. Louis, for examination. The seeds have been divided between the Botanic Garden of Harvard University, under my charge, and the Royal Botanic Gardens at Kew, under the direction of Sir Wm. Hooker.

A full set of the plants here enumerated or described is retained in my own
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herbarium; another becomes the property of the Smithsonian Institution, which has efficiently patronized this exploration. It will there form, with similar sets of the collections of Fendler and Lindheimer, made in New Mexico and Texas, the nucleus of an important and authentic North American herbarium, destined to be enriched, I trust, by continued accessions, especially from our newly-acquired territories, until it shall comprise representatives of our whole flora, and specimens of all the vegetable products of our wide country.

Another set of these plants will be found in the herbarium of John A. Lowell, Esq., of Boston, who has liberally patronized Mr. Wright's scientific explorations. The others, eight or nine in number, are about to be issued to the subscribers who have applied for them.

The numbers prefixed to the names are those under which the specimens are distributed. Those marked with a †, in place of a number, were collected in single specimens, or at least not in sufficient quantity for distribution.

The whole will give a good idea of the vegetation, and consequently of the climate, general character, and capabilities, of the region traversed. I append, from time to time, notices or characters of plants gathered by other collectors in adjacent regions, especially by Dr. Wislizenus in the valley of the Rio Grande and in Chihuahua, and by the indefatigable Dr. Gregg * in the same district and in the northern provinces of Mexico, — chiefly from materials obligingly furnished by Dr. Engelmann.

Orders or genera elaborated by Dr. Engelmann, Dr. Torrey, Mr. Bentham, or others, have the name of the author prefixed.

A proper account of the topography and physical character of the region traversed by the United States troops in their march from Texas to New Mexico will doubtless be officially published, before the printing of this memoir is completed. It is therefore unnecessary for me to attempt to compile any such account from Mr. Wright's disjointed and necessarily imperfect memoranda.

A. GRAY.

HARVARD UNIVERSITY, CAMBRIDGE, May, 1850.

* Tidings of the lamented death of this most assiduous collector, in California, have just been received.

PART I.

RANUNCULACEÆ.

1. CLEMATIS DRUMMONDII, Torr. & Gray, *Fl.* 1. p. 9; Gray, *Pl. Lindh.* 2. no. 319; var. foliis parvulis ramulisque magis sericeis. Bluffs of the Rio San Felipe, July; also in the pass of the Limpia, in valleys between the mountains, Aug.; in fruit. Apparently the same as No. 634 and 637 of Coulter's Mexican collection, named by Dr. Harvey "*C. caudata*, Hook.," — a species which I have not found described. A few specimens of the normal form were gathered in Western Texas.

† RANUNCULUS REPENS, Linn.; var. caulibus elongatis; floribus pleiopetalis. Margin of the Limpia, August.

MENISPERMACEÆ.

2. COCCULUS CAROLINUS, DC.; Gray, *Gen. Ill.* 1. t. 28. High prairies, between the San Felipe and San Pedro Rivers, July.

NYMPHÆACEÆ.

3. NYMPHÆA MEXICANA, Zuccarini, *Abhand. Math.-Phys. Bayersch. Acad.* 1. p. 365? ex char. in *Walp. Repert.* 1. p. 108. In a pond near the head of the Leona; June. (In flower and fruit.) — A slender species, with a short rhizoma. Leaves three or four inches long, obscurely crenate or mostly entire. Petals an inch and a half long, tinged with blue in the dried specimens; the color of the recent flowers not recorded. Seeds smaller than in *N. odorata*, globular, smooth.

† *N. AMPLA*, DC. *Syst.* 2. p. 54; Hook. *Bot. Mag.*, t. 4469. A specimen of this plant was gathered by Mr. Wright in 1848 on the Rio Grande, above Presidio de Rio Grande. The anthers are terminated by a slender tip.

CRUCIFERÆ.

4. STREPTANTHUS LINEARIFOLIUS, Gray, *Pl. Fendl. in Mem. Amer. Acad. n. ser.* 4. p. 7. Valley of the Limpia or Wild Rose Creek; Aug. — The root is plainly perennial. I was doubtless mistaken in attributing to Fendler's specimens an annual or biennial root.

5. *S. PETIOLARIS*, Gray, *Pl. Fendl. l. c. in not.* San Marcos Spring, Texas.

6. *S. BRACTEATUS*, Gray, *Gen. Ill.* 1. p. 146, t. 60, & *Pl. Lindh.* 2. p. 143. Sand-bars of the Colorado; April. — With entire and with lyrate parted or divided leaves.

7. THELYPODIUM WRIGHTII (sp. nov.): foliis lanceolatis repando-dentatis vel denticulatis omnibus in petiolum brevem angustatis; petalis calycem vix superantibus; racemo fructifero denso modice elongato; siliquis patentissimis elongatis brevissime stipitatis. — Pass of the Limpia, on the mountains of New Mexico; Aug. (in flower and with immature fruit). — Stem two or three feet high, from a biennial or annual root. Leaves broadly lanceolate, or lanceolate-oblong, from two to four inches in

N. elegans
see pag.
= *N. stellata*
p. 30

length, all repand-toothed or denticulate. Flowering racemes short and dense; the flowers, &c., much as in *T. integrifolium*, *Endl.* (*Pachypodium integrifolium*, *Nutt. in Torr. & Gray, Fl. 1. p. 96*), except that the petals are by no means so long; the fruiting raceme becoming four or five inches in length. Pedicels divaricate in flower and fruit, six lines long. Siliques (immature) slender, two inches long, or nearly, widely spreading. Ripe seeds not seen. In *T. integrifolium* the pods are only an inch long, and erect or ascending.

8. *ERYSIMUM ASPERUM*, *DC.*; *Hook. Fl. Bor.-Am. 1. p. 64, t. 22*; var. *siliculis breviusculis adscendentibus*. Plains at the western base of the Guadalupe Mountains, El Paso; Oct.

9. *SISYMBRIUM AURICULATUM* (sp. nov.): annuum seu bienne, parce pilosulum; caule erecto ramoso; foliis lyrato-pinnatifidis subruncinatis petiolatis, caulinis basi auriculis duobus rotundatis stipuliformibus amplexicaulibus instructis, lobis dentatis triangulatis oblongisve; racemo virgato fructifero prælongo; floribus albis majusculis; siliquis patentibus teretibus gracilibus stylo brevi manifesto superatis pedicello divaricato quadruplo longioribus; seminibus ovalibus. — Valley of a stream, about ten miles from the Rio Grande, below El Paso; Sept. — Plant two or three feet high, with somewhat the aspect of *S. Irio*; but with less deeply cut leaves, and larger, white flowers. It is especially characterized by the stipuliform auricles at the base of the leaf, remote from the lower of the proper lobes. Flowers three lines long, on spreading pedicels of about the same length; the spatulate petals conspicuous. Raceme in fruit attaining eighteen inches or more in length. Siliques an inch and a half long, slender, widely spreading, or somewhat ascending on the divaricate pedicels: valves 3-nerved, the midnerve more prominent. — Dr. Gregg has the same species from San Antonio de las Alanzanes, Mexico (No. 428 and No. 367), but with less membranaceous leaves and shorter pods.

10. *S. DIFFUSUM* (sp. nov.): perenne, pube 3-4-fida minuta canescens; caulibus ramosissimis diffusis; ramis usque ad apicem foliosis; foliis oblongis obtusis basi attenuatis sinuato-dentatis imisve pinnatifidis; floribus parvis; petalis calyce brevioribus; siliquis patentibus teretibus fere subulatis brevibus (4-5 lin. longis) canescentibus stylo manifesto superatis; seminibus (immaturis) oblongis. — Pass of the Limpia, in crevices of rocks on the mountains; Aug. — Stems about a foot high, from an elongated and rather ligneous root, much branched, bushy; the branches and branchlets diverging. Cauline leaves about an inch long, the lower somewhat petioled. Racemes short, branching, often bracteate at the base. Flowers minute in all the specimens, with the petals barely discernible; perhaps they are sometimes more manifest. Siliques scarcely thicker than their pedicels, tipped with a style fully half a line in length. — This species is apparently allied to *S. humile* of C. A. Meyer, but it certainly is not the plant figured by Ledebour.

GREGGIA, *Nov. Gen.*

Calyx basi æqualis, sepalis lineari-oblongis patentiusculis. Petala obovato-rotundata, ungue angusto. Discus hypogynus inter petala et stamina annularis, contortolobatus, lobis ante stamina. Filamenta edentula, filiformia. Ovarium oblongum a

latere compressum, stylo æquilongum: stigma cordatum, bilobum, lobis ad placentas respondentibus. Siliqua breviter linearis, septo angusto subnervi contrarie plano-compressa, utrinque retusa, stylo conspicuo superata; valvis naviculari-con-duplicatis, dorso tenuissime uninerviis. Semina in loculis plurima (20-40), uniserialia, e funiculo libero pendula, ovalia, turgida, immarginata. Cotyledones lineari-oblongæ, planæ, septo (ut videtur) parallelæ, radiculae adscendenti incumbentes. — Suffrutex humilis, pube molli stellata canescens; caulibus a basi ramosis diffusis; foliis spathulatis sæpius repandis vel sinuato-dentatis in petiolum angustatis; racemis laxis; floribus majusculis albis; siliquis cano-puberulis (6-8 lin. longis) pedicello æqualibus vel sublongioribus.

11. GREGGIA CAMPORUM. (TAB. I.) High prairies and calcareous hills, at the head of the San Felipe; July (in flower and fruit). Also gathered, some years since, "west of Parras" in Cohahuila, and later at Cerros Bravos, by Dr. Josiah Gregg, the author of the "Commerce of the Prairies," and other writings on the physical character, productions, and resources of New Mexico, and who has for several years past been a most diligent explorer and collector of the botanical treasures of New and Northern Mexico. Intelligence of his lamented decease, in California, (from over-exertion in scientific investigation in the interior,) having reached me while engaged in the study of this interesting plant, — one of his own discoveries, — I dedicate the genus to his memory, and give to the species a name that associates it with the plains of the Southwest, which this enterprising discoverer has so largely explored and so ably illustrated. The genus formerly dedicated to Dr. Gregg by my friend and colleague, Dr. Engelmann, proves to be the *Cowania purpurea* of Zuccarini, and is, without doubt, a true *Cowania*. — It will be seen that the Cruciferous plant here described and illustrated, from Mr. Wright's excellent specimens, is the same as that which is briefly noticed in *Plantæ Fendlerianæ*, p. 116, in a note, under *Synthlipsis*. It proves to have, as I suspected, *incumbent* cotyledons, as well as other characters which abundantly distinguish it from the last-named genus, notwithstanding the similarity in aspect and in the lateral compression of the pods. If the pod be deemed a silicle, the genus would fall into the tribe *Lepidineæ* of De Candolle's arrangement, where it would appear to be out of place. If it be called a silique, the strong compression contrary to the septum would seem to exclude it from the *Sisymbrieæ*. The flowers are apparently somewhat handsome; the broad and rounded petals are nearly four lines long, including the abrupt claw. — The mucilaginous mass which envelopes the seeds of most Cruciferæ when moistened is here pretty evidently seen to arise from the disruption of delicate cells on the surface of the testa, and the uncoiling and softening of a contained gelatinous coil, as in *Collomia*, &c.

12. HYMENOLOBUS PUBENS (sp. nov.): caule erecto ramoso racemisque prælongis densifloris pube stellata subcinereis; foliis caulinis glabratis lanceolatis oblongisve parce dentatis (imis ignotis); silicula ovali cinereo-pubescente stylo brevi apiculata. — Margins of a pond, in a valley about eighty miles beyond the Pecos; August. — Annual or biennial, from twelve to twenty inches high, including the fully-developed fruiting racemes, which are from six to ten inches long, rather

stout and strict, and loaded with pods. All the lower leaves have fallen; the upper are half an inch or more in length. Silicles about three lines long, a little shorter than the pedicels, oval, inflated, moderately compressed contrary to the partition, cinerous, like the pedicels, &c., with a close stellular pubescence, not emarginate, tipped with a short but distinct style; the boat-shaped valves not keeled, obscurely 1-nerved; the septum linear-oblong. Seeds very numerous in two series in each cell, oblong-oval, marginless, compressed contrary to the incumbent cotyledons. — A much stouter plant than any of the species of *Hymenolobus* enumerated by Nuttall, but, except in the distinct style, the characters accord with those of that genus, and with no other known to me.

13. *DITHYREA WISLIZENI*, *Engelm. in Wisliz. Mem. N. Mex.*, p. 11. *Iberis*, n. sp.? *Torr. in Ann. Lyc. Nat. Hist. New York*, 2. p. 166. Valley of the Rio Grande, sixty or seventy miles below El Paso; Sept. (in flower and with ripe fruit). — A striking plant, apparently common in the valley of the Rio Grande del Norte, and well characterized by Dr. Engelmann.

14. *VESICARIA ENGELMANNII*, *Gray, Gen. Ill.* 1. p. 162, t. 70, & *Pl. Lindh.* 2. p. 144. Banks of the Rio Blanco, Western Texas; May.

15. *V. ARGYRÆA*, *Gray, Pl. Lindh.* 2. p. 146; var. *foliis minus argenteis*. Hills of the Leona, and prairies of Live Oak Creek; June.

15^a. *V. DENSIFLORA*, *Gray, Pl. Lindh.* 2. p. 145. Near Austin, Texas; May.

16. *V. STENOPHYLLA*, *Gray, Pl. Lindh. l. c.* p. 149, in not. Gravelly bars of the Rio Frio, Western Texas; June. Calcareous hills of the Rio San Felipe, and of the San Pedro; July. Mountain valleys beyond the Limpia pass; Aug. Also gathered, the previous year, on the Texan side of the Rio Grande, near Presidio. The collection embraces various forms of the species. In some of them the radical leaves are rather broadly spatulate.

17. *LEPIDIUM ALYSSOIDES*, *Gray, Pl. Fendl.*, p. 10. Valley of the Pecos; Aug. Mountain valleys farther towards the Rio Grande, and in the valley of that river sixty or seventy miles below El Paso; Sept.; in flower and fruit. — Cotyledons incumbent. — Dr. Gregg gathered the same species near Buena Vista, and in the valley of Conchos, below St. Rosalia.

18. *L. SORDIDUM* (sp. nov.): humile, bienne; caulibus diffusis a basi ramosissimis ramulisque tenuiter granuloso-viscosis; foliis (imis ignotis) caulinis parvis spathulatis inciso-pinnatifidis glabris; racemis multis, fructiferis elongatis densis; floribus minimis fere apetalis tetrandris; siliculis ovatis emarginatis apteris glabris pedicellis erectiusculis confertis æquilongis; cotyledonibus incumbentibus. — In mountain valleys east of the Rio Grande del Norte; Aug. — A depressed, insignificant species; the specimens loaded with fruiting racemes, on which the pedicels are densely crowded. Silicles barely half as large as those of *L. Virginicum*.

CAPPARIDACEÆ.

19. *POLANISIA UNIGLANDULOSA*, *DC. Prodr.* 1. p. 242. *Cleome uniglandulosa*, *Cav. Ic.* 4. t. 306. Hills near El Paso, and on the San Pedro; Aug. — Sept. — The specimens have more or less stipitate pods, as has the similar plant in Coulter's

Mexican collection from Zimapan, and other New Mexican specimens from Dr. Gregg. But Dr. Engelmann has remarked the same thing in some of Lindheimer's Texan specimens of *P. trachysperma*, which, as already remarked, can hardly be more than a Northern, smaller-flowered form of *P. uniglandulosa*.

20. *WISLIZENIA REFRACTA*, *Engelm. in Wisliz. Mem. N. Mex., p. 15. (TAB. II.)* Along the Rio Grande, five miles below El Paso; Sept., in flower and with abundant ripe fruit. — This very remarkable and quite handsome Capparidaceous plant, abundantly gathered by Mr. Wright in the region where it was discovered by the enterprising scientific traveller whose name it bears, is so well characterized by Dr. Engelmann, as to leave nothing of any importance to add, except to give a figure, with analyses, made by Mr. Sprague from his own dissections. From *Oxystylis*, *Torr. & Frem.*, which I have barely seen in Dr. Torrey's herbarium, it seems to be well distinguished by the characters adduced by Dr. Engelmann, by the filiform (not gladiate and spinous) style, and by a marked difference in habit. — The subjoined note on the species of the allied genus *Cleomella*, drawn up some time since, has been recently communicated by Professor Torrey.*

* *Notes on CLEOMELLA*; by JOHN TORREY.

This genus was founded by De Candolle, on an unpublished drawing of a Mexican plant, of which specimens seem to be almost unknown in European herbaria. The description of De Candolle is brief and unsatisfactory. It was with doubt that I referred to his *Cleomella Mexicana* a plant found in Western Arkansas by Dr. James, in Long's first expedition. The latter plant was afterwards detected by Mr. Drummond, in Texas, and by Mr. Beyrich, on the Upper Platte. It was described and figured by Sir William Hooker, in the first volume of his *Icones*, as *C. Mexicana*, and described under the same name in the *Flora of North America*, as well as in the recent *Genera Illustrata* of Dr. Gray. Another species of the genus was discovered by Colonel Fremont, in California, and published in his second report. About three years ago I received from Dr. Halsted excellent specimens of a *Cleomella*, which he collected on the march of our army from Vera Cruz to the city of Mexico. This is probably the original species of De Candolle, as it seems to be exclusively Mexican, while the *Cleomella* of Texas and Arkansas has not been found beyond those States, except in their immediate borders. I have, therefore, changed the name of the latter plant. A fourth species of the genus was discovered by Dr. Gregg in Chihuahua and San Luis Potosi, in 1847 and 1848. The following synopsis will exhibit the leading characters of all the species.

1. *CLEOMELLA MEXICANA* (DC.): foliolis spathulato-obovatis obtusis vel retusis glabris; bracteis plerumque trifoliolatis; ovario stylum brevissimum multoties superante stipitem subæquante; capsula retusa subbicorni stipitem superante; seminibus lævibus. — *C. Mexicana*, *DC. Prodr. 1. p. 237*; *D. Don. in Edinb. New Phil. Jour., Jan. 1831.* — *Hab.* Mexico, *Moçino & Sesse, ex De Candolle.* Between Vera Cruz and the city of Mexico, *Dr. Halsted.* — This species is about a foot high, much branched, and apparently diffuse. The leaflets are about one third of an inch long, quite glabrous, somewhat fleshy, and mucronate with a short bristle. The petiole is about as long as the leaflets. Stipules minute, subulate and entire. The golden-yellow flowers are in terminal racemes, which are finally much elongated. Petals about three times the length of the sepals. Pod 6–8-seeded, almost two-horned by the projecting upper angles of the valves, the breadth (about $3\frac{1}{2}$ lines) nearly twice as great as the length. Fructiferous pedicels 4–5 lines long.

2. *C. LONGIPES* (sp. nov.): foliolis spathulato-obovatis obtusis vel retusis integerrimis vel margine serrulato-scabris; bracteis superioribus simplicibus; ovario stylum bis superante stipite pluries brevior; capsula retusa subbicorni stipite subduplo brevior. — *Hab.* Valley near San Pablo, Chihuahua, and near San Francisco, San Luis Potosi, Mexico, *Dr. Gregg.* Collected in flower only, April 29th, and in both flower and fruit, Dec. 28th. — Differs from the preceding in the considerably larger and less conspicuously

VIOLACEÆ.

21. *IONIDIUM LINEARE*, Torr. in *Ann. Lyc. Nat. Hist. New York*, 2. p. 168; Torr. & Gray, *Fl.* 1. p. 145; Gray, *Gen. Ill.* 1. t. 82, & *Pl. Lindh.* 2. p. 151. Forma normalis Torreyi, multiceps, humilis; foliis omnibus angustis acutis, majoribus etiam linearibus vel lanceolatis 2-3-pollicaribus; stipulis plerisque parvulis, inferioribus minutis. — Declivities along the San Pedro or Devil's River; July: in flower and fruit. — The numerous specimens are only a span high, from a ligneous root, with quite narrow and slender leaves, scarcely longer, however, than the upper ones of Lindheimer's No. 344. They are principally alternate. Marked as this form is, it is too clearly connected with the next to admit of a specific separation.

22. *I. LINEARE*, Torr.; var. *stipulis majusculis*; foliis plerisque linearibus, imis obovatis. — *I. stipulaceum*, Nutt. Western Texas; May.

23. *I. LINEARE*, Torr.; var. *PLATYPHYLLUM*: magis puberulum; caulibus erectis sesquipedalibus; foliis oblongo-lanceolatis 4-6 lin. latis rariter serratis. — Valley of the Limpia or Wild Rose Creek; Aug. — This appears to be widely different from No. 21, but I cannot regard it as other than the opposite extreme of the same species, which varies greatly as to the foliage.

ELATINACEÆ.

24. *ELATINE TEXANA*, Hook. *Ic. Pl. t.* 278 (sub "*Merimea seu Burgia*"); Gray,

mucronate leaves, the remarkably long stipe, and the conspicuous style; while the upper bracts seem to be uniformly simple. Seeds the same as in *C. Mexicana*.

3. *C. OBTUSIFOLIA* (Torr. & Frem.): foliolis cuneato-obovatis obtusissimis integerrimis supra glabris subtus pubescentibus; bracteis unifoliolatis; sepalis lacerato-3-5-dentatis; ovario stipite 4-5-ties brevior stylo bis brevior; capsula . . . — Torr. & Frem. in *Frem. Second Report*, p. 311. — *Hab.* On the American Fork of the Sacramento River, California; flowering in March, *Colonel Fremont*. — My only specimen of this species is that of an annual, about a span high, but doubtless much larger when mature. The stem is branched from the base, and glabrous. The leaflets are about half an inch long, and are tipped with a deciduous bristle. Stipules laciniately fimbriate. Calyx much shorter than the corolla. Petals yellow, oblong-lanceolate. Stipe much exserted. Ovary obovate, with apparently but few (about 6) ovules. Capsule unknown. — This species in its fimbriate stipules and long style resembles *Wislizenia* of Engelmann (in *Wislizenus's Report on New Mexico*, p. 99, 1848). It was named when the only *Cleomella* known to our botanists was the narrow-leaved one described below. Were it not possible that it may prove to be a distinct genus (which can be told only when the fruit is known), I should propose to call it *C. Fremontii*.

4. *C. ANGUSTIFOLIA*: foliolis oblongo-linearibus acutiusculis integerrimis; bracteis superioribus simplicibus; ovario stylum multoties superante stipite bis terve brevior; capsula dilatato-rhomboidea acuta; seminibus transverse rugulosis. — *C. Mexicana*, Torr. in *Ann. Lyc. Nat. Hist. New York*, 2. p. 167; Hook. *Ic. t.* 28; Torr. & Gr. *Fl. N. Am.* 1. p. 121; Gray, *Gen. Ill.* 1. p. 174, t. 75, & *Pl. Lindh.* no. 10 (in *Bost. Jour. Nat. Hist.* 5, 1845), non DC. — *Hab.* Western Arkansas, *Dr. James*. On the Upper Platte, *Mr. Beyrich*. San Felipe, Texas, *Drummond*. High prairies west of Houston, *Lindheimer*.

[Don's account of *Cleomella Mexicana*, from original specimens, in the journal above cited, suffices to identify the Candolleian species with the Mexican plant gathered by Dr. Halsted. Had not this account been overlooked, the mistake in respect to the Arkansan and Texan plant would have been long since corrected. I have also the true *C. Mexicana* from Coulter's Mexican collection. A second species, which I do not possess, recorded in Professor Harvey's list as *Cleomella Coulteri*, n. sp., is (probably the *C. longipes*, characterized above. A. G.]

is Wislizenia refracta
See pg 129

Gen. Ill. 1. p. 218, t. 96, & *Pl. Lindh.* 2. p. 187. Valley of the Rio Grande, sixty or seventy miles below El Paso; Sept.

CARYOPHYLLACEÆ.

25. *LÆFLINGIA SQUARROSA*, *Nutt. in Torr. & Gray, Fl.* 1. p. 174; *Hook. Ic. Pl.* t. 285; *Gray, Gen. Ill.* 2. t. 106. Sandy road-sides, Austin, Texas; May.

26. *PARONYCHIA LINDHEIMERI*, *Engelm. in Pl. Lindh.* 2. p. 152. Mountains between the Limpia or Wild Rose Creek and the Rio Grande; Aug. — The specimens well accord with Lindheimer's and with Wright's Texan specimens.

27. *P. JAMESII*, *Torr. & Gray, Fl.* 1. p. 170; *Gray, Pl. Fendl.* p. 14. Hills of the San Pedro River; July. — Resembles the larger form among Fendler's specimens, No. 69; but with the calyx rather more hairy: in both, the sepals are tipped with a cusp or awn as long as that of *P. dichotoma*.

28. *P. JAMESII*, var. *canescenti-puberula*, cymis confertis multifloris. — Crevices of rocks on a creek beyond the Pecos, growing in strong tufts; Aug.

PORTULACACEÆ.

29. *SESUVIUM PORTULACCASTRUM*, *Linn. Sp. ed.* 2. p. 684; *DC. Prodr.* 3. p. 453: var. *floribus subsessilibus*. (*S. sessile*, *Pers.*; *DC. Pl. Grass.* t. 9.) Low bottoms of the Rio Grande below El Paso; Sept. — The specimens, as well as those gathered by Gregg and Wislizenus in Northern Mexico, all belong to the form with subsessile flowers.*

30. "*PORTULACA RETUSA*, *Engelm. Pl. Lindh.* 2. p. 154. Valley of the Rio Grande below El Paso, in sandy soil. The long style and the broadly winged sepals are decisive as to the identity of this species. The seeds are of the same size and roughness as those of Lindheimer's specimens, but opaque and black, not grayish. The only specimen before me is a small erect plant, without any flowers. [In Mr. Wright's notes the flowers are said to be "yellow and minute."] — To the character of the *Spathulatæ* in *Pl. Lindh.* l. c. add: *Operculo capsulæ acuto sub apice constricto semina unum plurave includente*. I had overlooked this remarkable fact; but it constantly occurs in all the species of this section, both European and American." *Engelmann*.

31, 32. "*P. PILOSA*, *Linn.* W. Texas to New Mexico. I have before me specimens from six different localities, from the Brazos westward, collected by Lindheimer and Wright, differing from one another in the size and appearance of the seeds, and in the shape of the capsule; but these differences vary so much, that even varieties can hardly be characterized. In some the capsule is small with a long stipe, the operculum conic, the seeds very minute, and more or less shining with metallic lustre. In others the capsule is more than twice as large, the operculum semiglobose, the stipe very short, and the much larger seeds black and opaque." *Engelmann*.

* *Sesuvium pentandrum*, *Ell. Sk.* 1. p. 556 (figured in *Gen. Illustr.* t. 100), has been republished under the same name by Fenzl, in *Ann. Wien. Mus.* 2. p. 347, from Drummond's New Orleans specimens.

† *TALINUM AURANTIACUM*, *Engelm. Pl. Lindh. l. c.* Common throughout South-western Texas. Also found by Dr. Wislizenus in the Jornada del Muerto.

33. "*T. AURANTIACUM*, β . *ANGUSTISSIMUM*: foliis anguste linearibus; pedunculis ad basin vel vix supra basin articulatis; sepalis magis membranaceis quam petala brevioribus; stylo stamina æquante ovario vix longiore." *Engelmann*. — Bottoms of Live Oak Creek, and on the San Felipe; July. — The flowers, according to Mr. Wright, expand in the afternoon and last till the next mid-day. No. 92 of Drummond's 3d Texan collection, from San Felipe, is the same form. The earlier flowers in one of Wright's specimens show peduncles nearly as long below the articulation as in the ordinary *T. aurantiacum*; the later flowers of which have it abbreviated: so that it is not a distinct species, as Dr. Engelmann suspected it might be. To *T. aurantiacum* I must also refer Nos. 41, 714, and 715 of Coulter's Mexican collection, from Zimapan, &c., as well as (from the character) one from Wislizenus's North Mexican collection, which Engelmann had characterized as a new species. The peduncles in vigorous specimens are sometimes 2–3-flowered.

34. *T. SARMENTOSUM*, *Engelm. Pl. Lindh. l. c.* On the Leona; June. — "Root thick, tuberous." To char. add, "bracteolis subulatis." *Engelm.* — Very near *T. patens*, which is cultivated in the gardens under the name of *T. purpureum*, and perhaps a prostrate variety of it.

35. "*T. SPATHULATUM* (sp. nov.): caule erecto gracili folioso; foliis carnosis oblanceolato-spathulatis breviter cuspidatis in petiolum sensim attenuatis; cymulis axillaribus bracteatis laxè trifloris versus caulis apicem in paniculam dispositis; bracteis ovatis cuspidatis minutis deciduis; floribus longe pedicellatis [corolla ex cl. Wright flava]; seminibus nigris nitentibus tuberculatis." *Engelmann*. — Mountains of New Mexico east of the Rio Grande; August. — "Well distinguished from the nearly related *T. sarmentosum* by the narrower, spatulate leaves (2–3 inches long, and half an inch or more wide), by the short ovate bracts, the larger capsule, and the very much larger seeds, which are much more distinctly tuberculate." *Engelm.* To which I may add that the flowers are yellow, according to Mr. Wright's note. I believe it is in Coulter's Mexican collection, and have scarcely a doubt that it is *T. reflexum*, *Cav.*

TALINOPSIS, *Nov. Gen.*

Calyx ebracteatus, diphyllus; sepalis æqualibus, ovatis, muticis, membranaceis, persistentibus. Petala 5, hypogyna, libera, ovalia, exunguiculata, æstivatione imbricata, cito gelatinoso-marcescentia. Stamina circ. 20, in phalanges 5 petalis oppositas iisque adhærentes disposita: filamenta subulata: antheræ biloculares, loculis oblongis discretis. Ovarium fusiforme uniloculare: stylus columnaris, brevis, apice trifidus, lobis oblongis intus stigmatosis. Ovula numerosissima, subamphitropa, columellæ gracili centrali funiculis gracillimis inserta. Capsula fusiformis, subtrigona, calyce semiinclusa, ab apice trivalvis; epicarpio coriaceo valvarum ab endocarpio chartaceo 6-valvi dissiliente. Semina indefinita, uncinata, inappendiculata; testa laxa granulata; tegmine membranacea embryoni hamosi-arcuato conformi. Albumen fere nullum. — Fruticulus glaber, ramis gracilibus nodosis; foliis carnosis line-

aribus plerisque oppositis, axillis obsolete barbatis; inflorescentia terminali cymosa, internodiis articulatis, floribus in dichotomiis sessilibus; "corolla purpurea."

36. *TALINOPSIS FRUTESCENS*. (Tab. III.) Mountain valleys, seventeen miles east of the Rio Grande, New Mexico; Sept. — Plant apparently two feet high; the slender stems and branches entirely woody below, glabrous, except the minute hairs in the axils. Leaves 6 to 12 lines long, scarcely a line wide, probably nearly terete in the living state. Cyme few-flowered; the branches short, angled, articulated. Flowers closely sessile in the forks, disarticulating and readily falling away in the dried specimens. Sepals thin, very obtuse, several-nerved, with narrow scarious margins. Petals not unguiculate, in anthesis longer than the calyx. Filaments apparently all somewhat connate at the base, and further adnate, usually in fours, to the base of each petal. Anthers of two oblong and discrete cells, without any connec-15-18 inchtive, as in *Talinum teretifolium*, *Portulaca*, &c. Style shorter than the ovary, rather longer than the somewhat dilated lobes or stigmas, which become gelatinous-confluent after anthesis. The free central placenta reaches quite to the narrowed apex of the cell, but is very slender, and not ovuliferous towards the summit: below the middle it is crowded with ovules, in shape like those of *Portulaca oleracea*. Capsule nearly half an inch long, covered, except the tapering summit, by the persistent, and, in the dried state, at length subscarious calyx, one-celled, three-valved from the apex: valves rather coriaceous, separating from a thin and white papery endocarp, each of the three valves of which splits into two; and the sutural nerves also incline to separate. Seeds crowded on the central placenta, uncinatè or arcuate; the granulated testa rather loose and soft, but conformed to the thin internal integument, which is exactly conformed to the uncinatè-arcuate, slender embryo; the albumen being reduced to a mere vestige, or to a few loose starch-grains, within the curvature. Radicle straight, when the seed is uncinatè, or a little curved; the cotyledons incumbently incurved, as in *Talinum teretifolium*, &c., but sometimes, if I mistake not, accumbent. — A genus closely allied to *Anacampseros* of South Africa, and *Grahamia*, *Gillies*, of Chili, with much the habit of the latter; from which it is distinguished by the ebracteate flowers, the dissilient endocarp, and the wingless seeds.* From *Anacampseros* it differs in habit, in the persistent equal sepals, the short style, the coriaceous valves of the capsule, which do not separate from the base and fall away, &c.

37. *TRIANTHEMA MONOGYNA*, *Linn. Mant. p. 69*; *Lam. Ill. t. 375*. Road-sides and banks of the Rio Grande, New Mexico; Sept.

MALVACEÆ.

38. *CALLIRRHÖE PEDATA*, *Gray, Pl. Fendl., & Gen. Ill. 2. p. 53. t. 118*, excl. syn. Edges of thickets, near San Marcos; May. — The specimens sent by Nuttall to De Candolle and to Hooker, under the name of "*Nuttallia pedata*," are both the form of his *Callirrhoe* (demum *Nuttallia*) *digitata*, with shorter lobes to the leaves, and I

* The mature seeds of *Gillies*'s specimens in the Hookerian herbarium furnish the means of completing the generic character of *Grahamia*, as follows: — Semina late membranaceo-alata, testa lævi. Embryo curvatus (radicula gracilis recta, cotyledonibus accumbenti-incurvis) albumen parcum semicingens.

now can hardly doubt that the drawing sent to Sir Wm. Hooker, from which the figure in the *Exotic Flora* was made, represents the same plant. *Nuttallia pedata* therefore merging in the earlier *Callirrhoe digitata* (of which it is merely a state, not a distinct variety), my name of *Callirrhoe pedata* may be allowed to stand for the present plant, excluding the Nuttallian synonymy, rather than that a new specific name should be introduced.

39. *SIDALCEA MALVÆFLORA*. (*Sida malvæflora*, Moç. & Sesse, *Fl. Ic. Mex. ined.*; *DC. Prodr.* 1. p. 194.) *Sidalcea Neo-Mexicana*, Gray, *Pl. Fendl.* p. 23. Margins of the Limpia River; Aug. "Plant 2–8 feet high: flowers purple." — That this is the original *Sida malvæflora*, I am convinced by inspection of the drawing in the collection of Prof. De Candolle, and of a specimen in Pavon's herbarium (now belonging to M. Boissier), ticketed "*Sida palmata*, Nueva Espagna." The drawing represents the stems, petioles, &c., as beset with spreading bristly hairs. The specimen above mentioned is much less so, and the plant is said in the *Prodromus* to be "glabriuscula." I am now of opinion, that the *Sidalcea Oregana*, which is the plant in cultivation under the name of *Sida malvæflora*, is not specifically distinct; and that here also belongs the *Sida delphinifolia*, Nutt., which, from an original specimen in the Hookerian herbarium, I find has a perennial root. It is therefore distinct from the plant of Hartweg's Californian collection, No. 1667, which is characterized in *Pl. Fendl. l. c.*, and in *Plantæ Hartwegianæ*, as *Sidalcea delphinifolia*, and its staminal column and fruit figured in the *Genera Illustrata*, 2. t. 120. The latter may be named *S. hirsuta*.*

40. *MALVASTRUM TRICUSPIDATUM*. *M. carpinifolium*, Gray, *Pl. Fendl.* p. 22 (excl. syn. *Sida carpinifolia* & *S. planicaulis*), & *Pl. Lindh.* 2. p. 161. *Malva tricuspidata*, Ait. *Kew. ed.* 2, 4. p. 210. *M. Lindheimeriana*, Scheele in *Linnaea*, 21. p. 470. W. Texas, &c. — *Sida carpinifolia*, Linn. f. *Suppl.* p. 307, is a true *Sida*, and is well distinguished in the original description by its short petioles, bifarious leaves, suffruticose stem, and biaristate carpels. It was merely a cultivated plant in Madeira. ("Hab. in Madera in horto monasterio Sti Francisci, F. Masson.") Having no specimen of it (and indeed I have as yet seen none from the Canaries), but having, under that name, a Madeira specimen of the *Malva tricuspidata*, Ait. (*Sida carpinoides*, DC.), I incorrectly referred all to one species, and adopted for it the oldest name. Both are doubtless natives of the warmer parts of America, but are now widely diffused over the world. In the Hookerian herbarium I find only *M. tricuspidatum* from the Canary Islands; but Mr. Webb has well described the *Sida carpinifolia*.†

41. *M. COCCINEUM*, Gray, *Pl. Fendl.*, p. 24: a variety with remarkably broad and

* *SIDALCEA HIRSUTA*: annua; caule stricto simplici superne cum racemo denso hirsutissimo; foliis radicalibus rotundo-cordatis sublobatis, caulinis 7–9-partitis sectisve, segmentis linearibus angustis simplicibus; calycis hirsutissimi laciniis lineari-lanceolatis acuminatis tubo pluries longioribus; coccis reticulatis glabriusculis rostello molli erecto hispido apiculatis. — *S. delphinifolia*, Gray, *Pl. Fendl.* p. 19, & *Gen. Ill.* 2. t. 120, fig. 10–12, & in *Benth. Pl. Hartw.* p. 300, non *Sida delphinifolia*, Nutt.

† A plant of Rugel's Southern Florida collection (No. 90), distributed by Mr. Shuttleworth under the name of *Malva Americana*, Linn. var., differs from *Malvastrum tricuspidatum* merely in its apparently suffruticose stems, and its muticous carpels, the three cusps being slightly indicated, but obsolete.

large divisions of the leaves, to which belongs the plant mentioned in *Pl. Fendl.* p. 23, under the name of *Sphæralcea pedata*, *Torr. ined.*, and which makes an evident transition into *Malvastrum grossulariæfolium* (*Sida grossulariæfolia*, *Hook. & Arn.*).
Bed of the Limpia River; Aug.

† *M. COCCINEUM*, a more canescent variety, with narrow divisions to the leaves, approaching the var. *dissectum*. Valley of the Limpia; Aug.

42. *M. PEDATIFIDUM*: suffruticosum; caulibus diffusis gracilibus ramosis; foliis tripartitis profunde trifidisve pilis stellatis parce hirsutis, segmentis lateralibus bifidis, terminali subtrilobo, omnibus subpinnatifido-incisis, lobulis dentibusve patentibus; stipulis subulatis; floribus sparsis axillaribus et secus ramulos laxè racemosis; bracteolis 3 setaceis; laciniis calycis triangulato-lanceolatis acuminatis tubo longioribus; carpellis muticis, rostro brevi complanato membranaceo inflexis. *Gray, Pl. Lindh.* 2. p. 160 (adnot.). — Dry soil along the Rio Grande near Presidio; also on hills near El Paso. — The New Mexican specimens are decidedly suffruticose. Stems 6–12 inches high, much branched, much more slender than in *M. coccineum*; the flowers smaller and paler (between a buff and a brick-color). The leaves are not canescent, but green and sparsely stellate-hirsute, and their segments incised or almost pinnatifid; the lobes are tipped with a deciduous mucro or short seta.

‡ *M. LEPTOPHYLLUM* * (sp. nov.): pube tenui lepidoto-stellata incanum; caulibus e basi lignescente plurimis adscendentibus spithamæis gracilibus; foliis inferioribus petiolatis trisectis, segmentis et foliis superioribus sessilibus anguste linearibus siccate involutis nunc filiformibus integerrimis; stipulis minimis caducis; bracteolis 2–3 setaceis caducis; lobis calycis triangulatis tubo æquilongis; carpellis reniformibus muticis. — Between W. Texas and El Paso, New Mexico, 1851. — Whole plant silvery-canescant with a fine and close lepidote-stellate pubescence: a great number of slender stems arising from a thickened woody base, bearing at the summit a few racemose flowers, which are smaller than those of *M. pedatifidum*. Upper leaves, and lobes of the lower trisected leaves, from 6 to 9 lines long. Calyx 5-cleft to the middle, the lobes ovate-triangular, shorter and less acute than those of *M. pedatifidum*. Corolla brick-red, half an inch in diameter. Carpels 9 or 10, tomentulose, reniform, beakless and pointless, forming a depressed umbilicate capsule, shorter than the calyx.

43. *SPHÆRALCEA HASTULATA* (sp. nov.): humilis, hirtello-pubescent; caulibus herbaceis e basi suffrutescente erectis nunc decumbentibus; foliis oblongis lanceolatisve hastato-subtrilobis sinuato-dentatis heteromorphis, junioribus subtus canescentibus; floribus longiuscule pedunculatis axillaribus solitariis ad apicem ramorum subracemosis; lobis calycis triangulato-lanceolatis acutis tubo subduplo longioribus fructiferis capsulam superantibus; carpellis biovulatis sæpius dispermis dorso hirtis mucrone brevi apiculatis. — Prairies beyond the Pecos, Aug.; in flower. (Also found by Mr. Trecul on the Nueces and Rio Grande, Texas.) Again collected by Mr. Wright during the past season, with fine fruit. — Stems a span to a foot high,

* Under this mark (‡) I introduce some species collected by Mr. Wright during the past season (1851), in a second journey from Texas to New Mexico, while attached to the corps of Colonel Graham, then surveyor of the Mexican boundary.

rather leafy, bearing few flowers towards the summit. Leaves one or two inches in length, on rather long petioles, acute or obtuse, coarsely and irregularly toothed or sinuate, and nearly all of them with two hastate lobes near the base: both surfaces are greenish, or the lower somewhat canescent when young; the upper becomes almost glabrous. "Flowers orange-red," larger than those of *S. incana* and *S. Fendleri* (No. 59, 60), the fruit also larger and with shorter cusps than in the latter, the lobes of the calyx narrower and more prolonged.

44. *SIDA HEDERACEA*, Torr. in *Pl. Fendl.* p. 23. *Malva hederacea*, Dougl. in Hook. *Fl. Bor.-Am.* 1. p. 107. *M. Californica*, Presl. *Rel. Hænk.* 2. p. 121. *M. plicata*, Nutt. in Torr. & Gray, *Fl.* 1. p. 227. *Sida obliqua*, Torr. & Gray, *Fl. l. c.* New Mexico, the locality not recorded.

46. *S. HEDERACEA*, a variety with more toothed leaves; otherwise as the Oregon plant, but less downy. Sandy bottoms of the Rio Grande, below El Paso; Sept. "Flowers pale yellow." — Various forms of this species have just been received from Mr. Wright's New Mexican collection of 1851; among them one with much smaller, more oblique and plicate, and laciniately toothed leaves.

‡ *S. LEPIDOTA* (sp. nov.): undique furfuraceo-lepidota vel argentata; caulibus e radice perpendiculari lignescente procumbentibus diffusis; foliis triangulari-cordatis vel hastato-sublanceolatis acutis basi valde obliquis laciniato-dentatis seu apicem versus integriusculis; pedunculis axillaribus solitariis unifloris; calycis ebracteolati lobis ovato-triangularis acuminatis tubo subduplo longioribus corolla (ut videtur rubella) paulo brevioribus; carpellis dorso puberulis læviusculis rostro brevissimo obtuso apiculatis. — New Mexico; from Mr. Wright's collection of 1851. — Root long and rather woody. Stems 4 to 10 inches long, silvery with close lepidote scurf. Leaves on rather long petioles, clothed, especially when young, with similar scurf (instead of the loose stellate pubescence of *S. hederacea*), which at length becomes more sparse, or is partly deciduous, especially from the upper surface: they are from half an inch to an inch and a half long, quite variable in shape, the lower inclining to cordate or reniform, the uppermost to hastate-lanceolate. Peduncles as long as the petioles, or the lower elongated. Flowers mostly smaller than those of *S. hederacea*. A well-marked, although somewhat polymorphous, species of the section *Pseudo-Malvastrum*.

45. *S. LEPIDOTA*, var. *DEPAUPERATA*: magis argentea, foliis floribusque minoribus. — Hill-sides between El Paso and the mountains, Aug.; in flower only, and insufficient specimens: — hence I have characterized the species as above, from the more normal and better developed specimens gathered during the past summer.

47. *S. LEPIDOTA*, var. *SAGITTÆFOLIA*: foliis lanceolatis hastatis vel sagittatis basim versus sæpe dentibus laciniisve 2–3 instructis, cæterum integerrimis (infimis desunt). Mountain valley, sixty miles west of the Pecos; Aug. — This is evidently no more than a variety of *S. lepidota*, with narrower, chiefly rameal leaves, some of the uppermost nearly linear and entire.

48. *S. CUNEIFOLIA*: cano-tomentosa, humilis; caulibus e basi fruticulosa assurgentibus ramosissimis; foliis parvulis rotundato-cuneiformibus flabellato 3–5-nerviis crenato-dentatis repandisve utrinque concoloribus; stipulis linearibus petiolum

subæquantibus; floribus (flavis) brevissime pedunculatis folio brevioribus; carpellis 5 pubescentibus membranaceis turgidis apice inter rostra brevia mollia demum bivalvibus; semine globoso. — In subsaline soil, Texas, about thirty-five miles north-east of Eagle Pass, on the Rio Grande; September. — A well-marked, low, procumbent species, in foliage and habit not unlike a *Hermannia*. The soft, downy leaves are only about half an inch in length and breadth, on petioles of three or four lines long; the flowers are solitary, or often clustered in the axils, and sometimes scarcely exceed the petioles. The yellow corolla is twice the length of the calyx, and is half an inch in diameter when expanded. The ovate carpels are membranaceous, slightly inflated; the seed is proportionally large and spherical, as in *Abutilon*, with the micropyle somewhat rostellate. — *Gray, Pl. Lindh. 2. p. 165. adnot.*

49. *S. FILIPES*: furfuraceo-canescens; caule erecto gracili herbaceo e radice perenni; foliis brevissime petiolatis lanceolatis basi cordatis dentato-serratis obtusiusculis supra velutino-pubescentibus subtus ramulisque cano-tomentosis nunc fulvis vel ferrugineis; stipulis setaceis petiolum excedentibus; pedunculis unifloris capillaribus (2–3-pollicaribus) foliis longioribus paulo sub flore pendulo articulatis; corolla purpurea calycem subduplo superante; carpellis 7 reticulato-rugosis muticis superne pubescentibus dorso canaliculatis bivalvibus. *Gray, Pl. Lindh. 2. p. 164. adnot.* — Hills of Turkey Creek, near Austin, Texas. Very near, I fear, to *S. venusta, Schlecht.*, from Mexico.

50. *S. LONGIPES* (sp. nov.): pubero-scabrella; caule gracili stricto e radice lignescente; tuberculis infrafoliaribus nullis; foliis linearibus imisve lanceolatis longiuscule petiolatis utrinque obtusis superioribus crebre serratis, serraturis juniorum glandulosis; stipulis setaceis petiolo multum brevioribus; pedunculis solitariis elongatis unifloris, fructiferis folia ter-quaterve superantibus; corolla aurantiaca calyce duplo longiore; carpellis 10 acutis erostratis omnino muticis. — Prairies of Live Oak Creek, June; mostly in fruit. — Stem 6 to 18 inches high. Leaves $1\frac{1}{2}$ –2 inches long, one or two lines wide, or the lower 6 or 8 lines wide, and only repand-serrate, canescently puberulent beneath; the petioles of the lower ones half the length of the blade. Fructiferous peduncles 3–6 inches long, erect. Flowers as large as those of *S. Lindheimeri*. Carpels nearly smooth on the back, obtusely somewhat pointed at the apex, but not at all rostrate, aristate, nor bimucronate, dorsally dehiscent at the apex. — This is probably the same as No. 830 of Coulter's Mexican collection, from Zimapan, and I think I have seen it in other collections from that region. I had supposed it might be *S. linearis, Cav.*; but the short peduncles, small flowers, and spinose tubercle under the leaves, which that species is represented to have, point to a plant like *S. angustifolia, Lam.*,* only with more numerous and

* *S. heterocarpa, Engelm. in Pl. Lindh. 2. p. 163* (note), is this cosmopolite *S. angustifolia, Lam.* (*S. minor, McFadyen in herb. Hook.*), which Planchon, perhaps with good reason, considers only a variety of *S. spinosa*. The awns or cusps of the carpels vary much in length.

S. glabra, Nutt., is the same as *S. stipulata, Cav.* (also *S. Balbisiana, DC.*), and not distinct from *S. acuta, Burm., DC.*; a species now widely scattered over the warmer parts of the world. Varieties of it (*S. glabra* β . ? &c. *Torr. & Gray, Fl.*) from Key West and East Florida are distributed by Mr. Shuttleworth under the name of *S. carpinifolia, Linn. f. var. ?* The *S. carpinifolia* is a related but distinct species, with smooth and even, biaristate carpels.

muticous carpels. Our species is related to *S. Elliottii* and *S. Lindheimeri*, but is distinguished from both by its longer petioles, long peduncles, and entirely muticous carpels.

51. *S. PHYSOCALYX*, *Gray, Pl. Lindh. 2. p. 163.* Western Texas; May – June. — This species, *S. hastata*, *St. Hil.*, and *S. physalodes*, *Presl.*, form a section, remarkable for the bladderly inflated calyx, which may be distinguished by the name of *Physalodes*.*

52. *ANODA HASTATA*, *Cav. Diss. t. 11. f. 2; Gray, Gen. Ill. 2. t. 124.* Presidio de San Elisario; Sept. “Probably introduced.”

53. *ABUTILON HOLOSERICEUM*, *Scheele in Linnæa, 21. p. 471.* *A. velutinum*, *Gray, Gen. Ill. 2. t. 125.* Hills on the Rio Grande, and east to San Marcos, Texas.

† *A. HOLOSERICEUM*, var. *foliis plerisque subtrilobis.* Hills of the San Pedro or Devil’s River; Aug.

54. *A. WRIGHTII* (*Gray, Pl. Lindh. 2. p. 162. adnot.*): caulibus decumbentibus vel suberectis ramosis; ramis viscoso-pubescentibus et pilis gracillimis patentibus villosis; foliis ovato-cordatis obtusiusculis argute dentatis supra viridulis scabrido-pubescentibus subtus mollissime niveo-tomentosis; stipulis subulatis caducis; pedunculis unifloris petiolum æquantibus vel superioribus folium minorem superantibus; calyce tomentoso 5-partito, laciniis sensim acuminatissimis corollam auream subæquantibus; capsula lanuginoso-pilosa calyci æquilonga e carpellis 7 apice subulato-aristatis 3-spermis. — Common from the Rio Seco, Texas, westward; June – July. — Stems herbaceous. Leaves thin, the larger ones only two inches long; the petioles, like the branches and peduncles, beset with soft spreading hairs. Corolla over an inch in diameter. Capsule half an inch long; the thin carpels not inflated, little spreading, the subulate beak about one third its length.†

* *Sida Napæa*, *Cav.* (*Napæa lævis*, *Linn.*), I have just received specimens of, through my friend, the Rev. J. F. Holton, gathered in Kanawha County, Virginia, by the Rev. James M. Brown, who states that the plant is truly indigenous there. It has not before been found since the days of Hermann, who more than a century ago received seeds of it from Virginia.

† A related species, possibly *A. ellipticum*, *Schlecht.*, is Gregg’s No. 495, from Azufrora, and also, I believe, No. 840 of Coulter’s Mexican collection. Another allied North Mexican, and also Texan, species is

ABUTILON HYPOLEUCUM (sp. nov.): herbaceum, caule erecto ramoso albo-tomentoso; foliis e basi profunde cordata (sinu nunc clauso) elongato-ovatis sensim acuminatis seu cordato-lanceolatis erosio-serratis subtus mollissime candido-tomentosis supra scabrido-pubescentibus aut subvelutinis; pedunculis axillaribus sæpius unifloris petiolo longioribus; calycis candido-tomentosi 5-partiti angulati laciniis ovatis quasi cordatis acuminatis corollam flavam capsulamque subæquantibus; carpellis 12 et ultra villosis longe subulato-rostratis 3-spermis. — Monterey, *Berlandier* (v. s. in herb. Hook.), *Dr. Gregg, &c.* Zimapan, *Coulter* (No. 815). Near New Braunfels, *Lindheimer* (1850). — Stems 2 – 4 feet high: branchlets more or less pubescent, with soft spreading hairs, as well as a close and lanuginous covering. Leaves 2 or 3 inches long; the close tomentum of the under surface remarkably soft and white. Carpels over half an inch long, including the subulate beak, which is hardly as long as in *A. Wrightii*; their summits diverging at maturity. — In foliage and indumentum this species considerably resembles the *Abutilon peraffine*, *Shuttleworth, Pl. Rugel, no. 95^b*, from Key West (which is the species I had mentioned in *Gen. Ill. 2. p. 67, note*, and erroneously taken for the Caribbean *Sida periplocifolia*): but that has smaller flowers, a different calyx, and beakless, barely acute carpels, and in this latter character chiefly differs from *A. permolle*, *Shuttleworth, Pl. Rugel, no. 95^a*, from Southern Florida, which has acuminate-subulate carpels. This is very probably the *Sida permollis*, *Willd. Enum.*, and it is the same as a plant collected in Cuba by Drummond, named in Hooker’s herbarium “*Abutilon lignosum, Richard*,” — perhaps his *A. confertiflorum*.

55. *A. TEXENSE*, *Torr. & Gray, Fl. 1. p. 231; Gray, Pl. Lindh. 2. p. 161.* *A. Nuttallii*, *Torr. & Gray! l. c.* Western Texas, common. — From original specimens in the Hookerian herbarium it is abundantly evident that *A. Nuttallii* and *A. Texense* are founded upon the very same species; the former on cauline specimens; the latter on fully developed branches. The carpels are just alike in both.

56. *A. PARVULUM* (sp. nov.): pube minuta laxa cinereo-tomentosum; caulibus e radice perenni lignescente diffusis gracilibus superne paniculatis; ramulis patentipilosis; foliis parvis (6–12 lin. latis) cordatis dentatis nunc subtrilobis sæpius obtusis subtus canescenti-tomentosis; pedunculis axillaribus unifloris folio longioribus; floribus parvis luteis; capsula ovoidea tomentulosa apice breviter 5-loba calyce brevi multoties longiore; carpellis erectis obtusiusculis muticis 2–3-spermis. — Calcareous hills of the San Felipe and the San Pedro Rivers; July. — This species in some respects resembles *A. Texense*, but it is clothed with a lax tomentose pubescence, and the branchlets with slender, soft hairs; the slender stems are diffuse, one or two feet long, many arising from the same woody root; the leaves are remarkably small, the larger cauline barely an inch in diameter, and the numerous rameal ones very much smaller; the flowers are of lesser size; and the carpels are only five.

57. *A. (GAYOIDES) CRISPUM*, *Don; Gray, Gen. Ill. 2. t. 126.* *Beloere crispa, Shuttleworth.** Mountains east of the Rio Grande, New Mexico.

58. *SPHÆRALCEA ANGUSTIFOLIA*, β . floribus fructibusque minoribus. *S. stellata, Torr. & Gray, Fl. 1. p. 228.* Low grounds, near Zacate Creek, July; and in Texas on the Rio Grande. The typical form of this species also occurs in Mr. Wright's collection of 1851.

59. *S. INCANA* (*Torr. in Pl. Fendl. p. 23*): suffruticosa, undique pube minuta appressissima cano-velutina; caule suffrutescente erecto; foliis ovatis subtrilobis obtusis obsolete crenulatis nunc subcordatis; floribus (parvulis) axillaribus confertis et racemoso-paniculatis; ovarii loculis 2–3-ovulatis. — Fields, at Presidio de San Elisario, New Mexico; Sept. (Also Jornada del Muerto, *Wislizenus*, with a var. ? β . *DISSECTA*: foliis tripartitis, segmentis lanceolatis plerumque lobatis. Ojo del Muerto.) — Nearly allied to No. 60: the flowers about the same size; the fruit not known. Stems 2 or 3 feet high. — Good specimens having come to hand of a second species indicated by Dr. Torrey, the characters are here appended.†

60. *S. FENDLERI*: herbacea, minutum stellato-pubescens, subcinerea; foliis trilobis seu hastato-oblongis, infimis cordatis, lobis incisis dentatisve; floribus parvulis axil-

* *Beloere*, "Genus novum ab *Abutilo*, cujus typus mihi est *A. Avicennæ, Gærtn.*, distinctum, carpellis vesicariis inter se demum omnino solutis, sed ad columnam centralem nervo libero longe affixis et dependentibus, serius caducis." *Shuttleworth*, in sched. "*Beloere cistiflora*, n. sp." (Key West, *Rugel*), which, according to Mr. Shuttleworth, is the *Abutilon hirtum, Don*. It is apparently too near *A. graveolens*, which is naturalized in Jamaica.

† *SPHÆRALCEA EMORYI* (*Torr. in Pl. Fendl. l. c.*): suffruticosa, humilis; foliis crassiusculis cordato-trilobis triangulatis vel subhastatis supra incanis subtus ramisque furfuraceo-tomentosis fulvis bullato-venosis; pedunculis unifloris; floribus majusculis; bracteolis involucelli 2–3-filiformibus; capsula depresso-globosa tomentosa 15-cocca calyce tomentissimo obtecta; coccis apice mucronatis dispermis. — Southern New Mexico? *Col. Emory. Mexico* at Rinconada and Saltillo, *Dr. Gregg*. — Flowers reddish: the petals fully an inch long. Capsule half an inch in diameter. Leaves small.

laribus, infimis solitariis, cæteris fasciculatis, superioribus spicato-racemosis; pedunculis unifloris brevissimis; capsula ovoidea lobis calycis ovato-triangulatis paulo longiore, coccis 15 mucronatis dispermis. — *Sphæralcea miniata*, Gray, *Pl. Fendl.* p. 19, & *Gen. Ill.* 2. t. 127, non *Malva miniata*, Cav. — Sides of mountains near El Paso; Sept. "Much branched and spreading from the root." — I had doubtfully referred this species to the *Malva miniata*, Cav.; but that has probably been correctly identified by Hooker and Arnott (*Bot. Misc.* 3. p. 151) with specimens from Mendoza, gathered by the late Dr. Gillies. At least, one of these specimens accords admirably with the figure of Cavanilles, which our plant does not. Wright's specimens are more dwarf, diffuse, and pubescent than those of Fendler, doubtless from having been gathered at a drier season or locality.

61. *PAVONIA WRIGHTII*, Gray, *Gen. Ill.* 2. p. 76. t. 130, & *Pl. Lindh.* 2. p. 161. Rocky cliffs of the Nueces River, and hills of the Rio Frio, Texas. — A pretty plant in cultivation, producing an abundance of its fresh rose-colored flowers during the whole season.

62. *MALVAVISCUS DRUMMONDII*, Torr. & Gray, *Fl.* 1. p. 230; Gray, *Gen. Ill.* 2. t. 131. Bottoms of the Leona River, W. Texas.*

63. *HIBISCUS CARDIOPHYLLUS* (sp. nov.): humilis, tomentosus; caule e radice perenni erecto; foliis cordatis subrotundis crenulato-dentatis obtusis vel acutiusculis supra velutinis subtus densissime cano-tomentosis; stipulis setaceis; pedunculis axillaribus solitariis unifloris folium æquantibus vel superantibus paulo sub apice articulatis; involucello 9–10-phylo; phyllis spathulato-lanceolatis tomentosis laciniis calycis lato-lanceolatis 3–5-nerviis æquilongis vel demum brevioribus; corolla roseo-purpurea columnam stamineum superante; capsula glabella calyce brevior, valvis chartaceis; seminibus puberulis in loculis paucis. — Rocky hill-sides, Turkey Creek, W. Texas, June; and on the Rio Grande, in Southern Texas. Also Zimapan, Mexico, Coulter (No. 805). Near Monterey, Gregg (185, &c.), Dr. Edwards & Major Eaton, Wislizenus (370). — Mr. Wright's specimens are mostly in fruit; the others are finely in flower. The stems are rather stout, from 9 to 20 inches high, from a lignescent perennial root; the exactly cordate leaves are from one and a half to above two inches in diameter. Peduncles 3 or 4 inches long. Leaves of the involucre broad and conspicuous. Petals more than an inch long, spreading, deep rose-purple, considerably longer than the column. Ovules 10 or 12 in each cell. — I know of no species with which this may be particularly compared.

64. *H. (BOMBICELLA) DENUDATUS*, Benth. *Bot. Voy. Sulph.* p. 7. t. 3. β. *INVOLUCELLATUS*: ramis superne minus foliosis; corolla majore; involucello e bracteolis 5–7 modice evolutis setaceis. — Sides of hills near El Paso, New Mexico; Sept. Gathered in the same region by Wislizenus, and at Cerros Bravos, Northern Mexico, by Gregg (481). — Stems suffruticose, one or two feet high, much branched; the flowering branches more naked than in the poor specimens gathered in the voyage

* *Malvaviscus Floridanus*, Nutt., is *Hibiscus (Cremontia) Floridanus*, Shuttleworth, *Coll. Rugel* (Key West) No. 104, and also, I believe, *H. truncatus*, A. Rich. *Fl. Cub.* 1. p. 144. t. 16, as well as *H. Bancroftianus*, McFad. *Fl. Jamaic.* 1. p. 70 (*H. Mackleyanus*, Bancroft.).

of the Sulphur, the (light purple) corolla larger, 2 inches in diameter, and the involucl (of which traces are visible in the South Californian plant) manifest, although inconspicuous, about the length of the tube of the calyx. I see no further difference on comparison of the specimens. The figure cited above is not a good one. — Specimens in Mr. Wright's collection of 1851, just received, are more branched and leafy than those here characterized, and well agreeing with the original Californian specimens, except that the setaceous involucre is manifest. The name of the species is not well chosen.

65. *H. (BOMBICELLA) COULTERI* (*Harvey, ined.*): humilis, strigoso-hispidus; caulibus suffruticosis erectis 1-3-floris; foliis trilobis trisectisve dentatis vel infimis ovatis indivisis; stipulis setaceis; pedunculo folium multo superante; involucello 10-phylo, phyllis lineari-setaceis lacinias calycis 5-partiti lanceolato-acuminatas trinerves subæquantibus corolla speciosa sulphurea dimidio brevioribus; capsula globosa demum glabrata, loculis pleiospermis. — High hills of the San Pedro River; July. Also Zimapan, Mexico, *Coulter* (809), and Paso de Caritas, *Gregg*. — Stems a span to a foot high, strigose with appressed stellate hairs. Leaves strigose, about an inch wide, variable in form and in division, mostly three-lobed; the lobes oblong or lanceolate, irregularly toothed. Peduncles 2 or 3 inches long, one-flowered, articulated near the flower. Calyx, involucl, and the young capsule strongly hispid. Petals spreading, broadly obovate-cuneiform, from an inch to an inch and a half in length. Column much shorter than the corolla. Style filiform, twice the length of the column, 5-cleft at the summit. Seeds clothed with long woolly hairs.*

* We have a new *Kosteletzkya* from Coulter's Mexican collection, viz.:—

KOSTELETZKYA COULTERI (sp. nov.): humilis, parce hispidula; caulibus ramisve gracilibus; foliis rotundis subcordatis dentatis vetustioribus glabris, inferioribus sublobatis, superioribus 5-fidis vel pedatis; pedunculis axillaribus unifloris petiolo florequae parvo luteo sæpius brevioribus; antheris paucis; capsula puberula acute 5-carinata, carinis (suturalibus) ciliato-hispidis; seminibus glabris. — Sonora Alta, Northern Mexico, *Coulter* (No. 804). — The stems or branches are a foot long, simple, sparsely hispid, like the leaves, with simple or sparingly stellate spreading hairs. Leaves an inch or less in breadth, none of them approaching to hastate; the uppermost 5-parted. Involucl of few, setaceous bracteoles, shorter than the 5-cleft calyx. Petals light yellow, narrowly obovate, 4 or 5 lines long. Column rather shorter than the petals, bearing less than a dozen anthers. Styles little exerted. Capsule 3 lines wide, loculicidal, acutely carinate at the dehiscent sutures.

Two new United States species of *Kosteletzkya*, gathered by Rugel along the Manate River, in Southern Florida, are distributed, one, No. 103, under the name of "*Hibiscus (Pentaspermum) smilacifolius*, Shuttleworth, n. sp."; the other, No. 102, as "*Hibiscus (Pentaspermum) althæafolius*, Shuttleworth, n. sp."

The *Fugosia* of Drummond's third Texan collection, No. 42 (not 44), mentioned by Bentham in *Hook. Jour. Bot.* 4. p. 120, may be thus characterized, from the complete specimens which exist in the Hookerian herbarium:—

FUGOSIA DRUMMONDII (sp. nov.): glabrata; caulibus e radice perenni decumbentibus angulatis; foliis ovalibus e basi obtusa 5-7-nervatis grosse et inæqualiter dentatis, dentibus mucronatis; involucello 7-9-phylo, phyllis linearibus calyce profunde 5-fido paulo brevioribus; stigmatibus 4-5 adglutinis; capsula subglobosa calycem æquante glabra 4-5-loculari, loculis dispermis; seminibus breviter lanuginosis. — Gonzales, Texas, *Drummond*. — This has not been gathered, so far as I am aware, by any other collector in Texas. But in the Hookerian herbarium there is a fragment of the same or a closely allied species from South Brazil. The leaves are from one to two inches in length, on rather long petioles. The corolla is sulphur-color, or pale yellow, more than an inch in diameter.

BYTTNERIACEÆ.

66. MELOCHIA PYRAMIDATA, *Linn.*; *Gray, Gen. Ill. 2. t. 134, & Pl. Lindh. 2. p. 165.* Western Texas, in wet places.

67. HERMANNIA TEXANA, *Gray, Gen. Ill. 2. p. 88. t. 135.* On the Sabina and Rio Grande, Western Texas. — I have already remarked, in *Plantæ Lindheimerianæ*, 2. p. 165, that the corolla is wrongly represented as expanded in the figure above cited of this interesting plant; the drawing having been made from a dried specimen.

(644.) AYENIA PUSILLA, *Linn.*; *Cav. Diss. 5. p. 289. t. 147; DC. Prodr. 1. p. 488*: var. tenuiter pubescens; ramorum assurgentium foliis ovato-lanceolatis subcordatis acutatis. — Hill-sides from the San Pedro River to near the Rio Grande, New Mexico; July, Aug. — The seeds are coarsely rugose-corrugated, as in the West Indian *A. pusilla*; of which Mr. Rugel has gathered a small-leaved form at Key West.

(645.) *A. PUSILLA*, var. ramis erectis, foliis superioribus lanceolatis; cæt. præced. — Hills at the head of the San Felipe, Western Texas, July. Also in the collection of 1851. It has a thick, manifestly perennial root. — This and the preceding have so much the aspect of a *Tragia* as to have been passed as such in the distribution.

(77.) *A. MICROPHYLLA* (sp. nov.): fruticosa, humilis; caulibus ramosissimis; foliis parvis ovato-rotundis grosse dentatis pube stellata brevissima fructibusque cinereis in ramulos confertis; stipulis subulatis persistentibus; capsula non stipitata. — Mountain-sides, near El Paso; Sept. — Stems a span high, woody and rigid, as are also the spreading branches; the growth of the preceding year more or less squarrose with the short and the subulate persistent stipules. Leaves only 2 or 3 lines long, roundish, obtuse, coarsely toothed, often subcordate, marked with a few strong, straight veins, on short petioles. Fruit nearly a quarter of an inch in diameter, on a peduncle of less than that length, and not at all stipitate, 5-coccous, cinereous-pubescent, and verrucose-echinate with soft processes. Seed solitary in each cell, oblong. — Unfortunately, I find not a single flower upon the scanty specimens, and only a few capsules; but I doubt not it is an *Ayenia*, and a very distinct one.

TILIACEÆ.

68. CORCHORUS PILOLOBUS, *Link, Enum. hort. Berol. 2. p. 72; DC. Prodr. 1. p. 504, ex Shuttleworth in sched. Pl. Rugel. et. litt.* *C. septentrionalis, Planchon in herb. Hook.* *C. siliquosus, Torr. & Gray, Fl. 1. p. 239; Gray, Gen. Ill. 2. t. 127, non Linn.* Along streams, San Pedro River, &c.; Aug. Also on the Rio Grande, Texas. — This is perfectly distinguished from the West Indian *C. siliquosus, Linn.*, as pointed out by Mr. Shuttleworth, by the proportionally shorter pods, conspicuously acuminate by the undivided style (not obtuse and two-toothed at the apex). Link's name is not an appropriate one, as the pods are only minutely and inconspicuously hairy or pubescent. The true *C. siliquosus* has also been found in Key West, by Mr. Blodgett and Mr. Rugel.

In Chapm. Flor. p. 60 both are considered distinct

LINACEÆ.*

69. LINUM PERENNE, *Linn.*; *Torr. & Gray, Fl. 1. p. 204.* Hills of the San Pedro River; July.

70. L. BERLANDIERI, *Hook. Bot. Mag. t. 3480*; *Engelm. & Gray, Pl. Lindh. p. 5. & 2. p. 156.* With the foregoing.

71. L. RUPESTRE, *Engelm. in Pl. Lindh. 2. p. 232.* Prairies of Turkey Creek,

* The following notes are contributed by Dr. Engelmann:—

LINUM, *L.* (Dehiscence of the capsule only, or at least most readily, through the secondary, or false, dissepiments!)

Sect. ADENOLINUM.

1. LINUM PERENNE, *Linn.* Collected for the first time in Mexico by Dr. Gregg, in dry valleys near Saltillo, Sept. 1848. — Secondary dissepiments incomplete, with capillary fibres on their margins, much as in *L. Boottii*.

Sect. LINOPSIS.

§ 1. Capsules 5-valved; the secondary dissepiments more or less membranaceous, but entire; styles united to above the middle, mostly to near the apex.

2. L. MULTICAULE, *Hook.* — *L. hudsonioides, Planch.*, is a mere variety. Styles mostly united almost to the tips. Capsule obtuse, as long as or a little shorter than the calyx; the secondary dissepiments entirely membranaceous, falling away to let the seed escape. Texas, from the coast (Houston and Victoria) to the West (N. Braunfels, Pierdenales, etc.). — Sepals persistent, even after the fall of the capsule, while in all other species they fall off when the fruit ripens.

3. L. ARISTATUM, *Engelm. in Pl. Wisl. p. 101.* Leaves sometimes with stipular glands. False dissepiments for the greater part membranaceous, with a narrow falciform cartilaginous part exteriorly and inferiorly. — Between El Paso and Chihuahua. Wright's No. 72 is a smaller form of this species; the sepals rather less aristate; the flowers and capsules a little smaller, and with a large and perpendicular ligneous root.

4. L. RIGIDUM, *Pursh.* Glauous; stem simple below; leaves, at least the upper ones, glandular-seriate, without stipular glands; pedicels thickened at the end, forming a cup-shaped exterior caliculus; styles almost entirely united; filaments subulate from a triangular base; capsule not seen. (My specimens were collected by Geyer, on the Upper Missouri.) *Secondary dissepiments more than half membranaceous*

Var. PUBERULUM. Glauous; stems very much branched from the base, puberulent, or rarely glabrate; leaves erect, linear, 1-nerved, mucronate, a pair of stipular glands at their base; pedicels equalling or exceeding the calyx; sepals glandulose-ciliate, the exterior 3-nerved; filaments with an ovate-triangular base, toothless; styles united to the summit; capsule rather shorter than the sepals, ovate, acutish, 5-valved, the secondary dissepiments almost entirely membranaceous. — Santa Fé to the Cimarron River, *Fendler, No. 85.* Prof. Gray in *Pl. Fendl.* considered it a variety of *L. Berlandieri*, and in *Pl. Lindh. p. 157* as belonging to *L. rigidum*. From the former it is distinguished by the glauous appearance, the linear leaves, and especially the small capsule with the almost entirely membranaceous secondary dissepiments. From the latter, the absence of the calyculate cup below the calyx, the smaller flowers, and the entire leaves appear to separate it. [Dr. Engelmann inclined to consider this a distinct species; but the capsules of true *L. rigidum*, in the Hookerian herbarium, show precisely the same structure, and others rightly named "*L. rigidum*" by Planchon have manifest stipular glands, although he has not noticed them; so that it would be wrong, I think, to separate the present plant specifically. It is evident that the stipular glands do not furnish reliable specific distinctions. A. G.]

5. L. BERLANDIERI, *Hook.* Green; leaves lanceolate or lanceolate-linear; stipular glands often present, but not always; filaments lanceolate-subulate at the base; capsules globose-ovate, subacute, 5-valved, the secondary dissepiments partly (the upper and inner half) membranaceous. — From Galveston to the Bra-

is distinct from No. 4 by the green colour, uppermost of which are ciliate; and deeper yellow, almost orange, below. It is found in the same places with the Texas specimens.

W. Texas; June. — This truly perennial species is nearly related to *L. Boottii*, *Planch.*, which includes all that has been called *L. rigidum* from New England, North Carolina, and Georgia. I have it also from Illinois. The distinctions of these species are indicated by Dr. Engelmann, in the subjoined note.

72. *L. ARISTATUM*, *Engelm. in Wisliz. Mem. N. Mex. p. 101.* Locality not recorded; probably from the valley of the Rio Grande, near El Paso, where it was detected by Dr. Wislizenus.

zos, N. Braunfels, and the Pierdenales, *Lindheimer, &c.* On the San Pedro River, *Wright.* — The latter approaches a slightly glaucous form, with narrower and more rigid leaves, which occurs on the Cimarron (*Wislizenus, Fendler*, mixed with No. 85), often only two or three inches high, but much branched, with manifest stipular glands; the capsule ovate and acute. It appears very near to *L. [rigidum, var.] puberulum*; but the structure of the false dissepiments is decisive.

§ 2. Capsules 10-valved.

* *Styles united at the base or below the middle.*

L. sulcatum *Ariz.* 6. *L. BOOTTII*, *Planchon.* Annual; styles in northern (St. Louis) specimens united at or below the lower third only, in Texan specimens (*β. Planchon*) almost to the middle; capsules globose, acute, 10-valved; the secondary dissepiments incomplete, with numerous hair-like fibres on the margin. — No. 86, *Pl. Fendl.* belongs here, and not to *L. rigidum*. This is the only one of our species with a 10-valved capsule, where the styles are somewhat united.

** *Styles free to the base.*

† *Secondary dissepiments incomplete.*

7. *L. RUPESTRE*, *Engelm. in Pl. Lindh. 2. p. 232.* Capsule globose-ovate, acute or cuspidate, like that of the foregoing species, but smaller; secondary dissepiments exactly the same: distinguished principally by the perennial ligneous root, the subulate leaves, the smaller flowers and fruit, and the entirely free styles. — Found by Lindheimer about New Braunfels, and Camanche Spring; by Wright (No. 71) on Turkey Creek. Dr. Gregg collected it near Saltillo in June, and a variety, which may be named *β. cymulosum*, on the battle-field of Buena Vista in May; this latter may be distinguished by the small and crowded cymes at the end of the branches.

8. *L. GREGGII* (sp. nov.): viride, glabrum, caulibus pluribus e rhizomate ligneo adscendentibus a basi fruticulosa ramosis angulatis; foliis alternis inferioribus oblanceolatis superioribus lanceolatis patulis; glandulis stipularibus geminis rarius inconspicuis; cymis virgatis dissitifloris contractis; pedicellis calyce sæpius longioribus; sepalis lanceolatis acutis trinerviis margine glandulosis; filamentis basi brevi dilatatis 2-denticulatis; stylis liberis; stigmatibus cohærentibus; capsula depresso-globosa cuspidata calycem subæquante 10-valvi, dissepimentis secundariis incompletis. — Near Saltillo, Sept. 1st, 1848, *Dr. Gregg*, No. 387. — Stems about 10 inches high. Leaves similar to those of *L. Virginianum*, the capsule and seeds of the same size. Distinguished from *L. rupestre* by the broader leaves, much smaller flowers and fruit, the singular united stigmata, which I have found in all the flowers (and many of them) examined by me, and the hairless false dissepiments. Apparently near *L. Mexicanum*, but that species has opposite leaves, &c. [*L. Mexicanum*, at least the plant coll. Coult. 759, is a very different species, larger in all its parts, with broad ovate sepals, not glandular on their margins. A. G.]

†† *Secondary dissepiments complete and similar to the primary ones: capsule splitting into 10 closed cocci.*

9. *LINUM VIRGINIANUM*, *Linn.* Biennial (or perennial?) with a fibrous root (all the others have a tapering simple root).

Var. β. OPPOSITIFOLIUM: caule erecto; foliis plurimis oppositis obovatis seu oblongis obtusis; panicula patula; sepalis integerrimis late ovatis acutis; petalis flavis. — Little Rock, Arkansas, in springy morasses with *Sphagnum*. Flowers smaller than in the usual form.

Var. γ. ANGUSTIFOLIUM: caule stricto; foliis erectis; panicula contracta sparsiflora; sepalis lanceolatis capsulam superantibus, interioribus glandulosis; petalis sulphureis. — Western Arkansas, on sandy hills in open woods. Flowers and fruit larger than in the common form.

G. ENGELMANN.

73. *L. MULTICAULE*, *Hook. in Torr. & Gray, Fl. 1. p. 678.* *L. multicaule* & *L. hudsonioides*, *Planchon in Lond. Jour. Bot. 7. p. 185; Gray, Pl. Lindh. 2. p. 156.* Border of Post-Oak woods, on the Colorado, Texas; May. — I had endeavored, in *Plantæ Lindheimerianæ* above cited, to distinguish Planchon's *L. hudsonioides*; but now, with the original specimens before me, I am unable in any wise to do so. Berlandier's plant is at most a state of *L. multicaule*.

OXALIDACEÆ.

74. *OXALIS DICHONDRAEFOLIA* (sp. nov.): cinereo-pubescens; caulibus e basi crassa suffruticosa diffusis vel decumbentibus foliosis; foliis unifoliolatis longe petiolatis; foliolo rotundato cordato apice truncato-retuso sinu mucronati-cuspidato; stipulis setaceis; pedunculis axillaribus solitariis unifloris; sepalis e basi subcordata lanceolatis corolla flava dimidio brevioribus; filamentis glabris; stylis pilosis; ovarii loculis 2–3-ovulatis; seminibus tuberculatis. — Turkey Creek to the prairies of the San Felipe, and on the Rio Grande, Texas. Also gathered by Berlandier in Southern Texas, and by Dr. Edwards, Dr. Gregg, &c., in Northern Mexico. — Stems 4 to 10 inches long, often rather ligneous near the thickened, woody root, or with a woody creeping rhizoma. Leaves an inch or less in diameter, mostly shorter than the petiole, usually strongly apiculate at the emarginate apex: the setiform stipules 3 or 4 lines long. Peduncles as long as the petiole, bibracteolate near the flower; the bractlets like the stipules. Petals nearly half an inch long. Capsule subglobose, cinereous, with 2 or 3 strongly tuberculate-rugose seeds in each cell. — This very curious species does not resemble any other with which I am acquainted.

† *O. VESPERTILIONIS*, *Torr. & Gray, Fl. 1. p. 679.* Hills of San Pedro River. This is at once distinguished from *O. violacea* by the narrow and divaricate lobes of the deeply two-cleft leaflets. No. 91 of *Pl. Fendlerianæ*, which was so called, is only *O. violacea*.

‡ *O. WRIGHTII* (sp. nov.): caulescens, trifoliolata, exstipulata; caulibus e radice crassa perpendiculari assurgentibus petiolis pedunculisque hirsutis; foliolis glaucescentibus brevissime petiolulatis basi truncatis dilatatis profunde obcordato-bilobis hirtociliatis junioribus hirsutis, lobis late obovatis; pedunculis solitariis unifloris raro bifloris folio longioribus; staminibus glabris edentulis; stylis brevissimis hirtellis; capsula elongata canescente, loculis 9–12-spermis. — Between Texas and New Mexico: coll. of 1851. — Root simple and fusiform, perpendicular, 6 inches long or more, lignescent but rather fleshy, reddish. From its summit spring a number of slender, assurgent stems, wiry and slightly ligneous at the base, clothed, like all other parts of the plant when young, with appressed hirsute hairs. Leaves of a pale cinereous hue. Leaflets dilated, much broader than long, 3 or 4 lines wide, somewhat truncate at the base, the very broad notch reaching beyond the middle, so as to form two divergent, broadly obovate lobes. Fructiferous peduncle an inch long, and bearing a pedicel (or rarely a pair of pedicels) of nearly the same length. Sepals lanceolate-oblong, obtuse, not glandular, 2 lines long, about half the length of the (apparently purple) petals. Stamens conspicuously monadelphous. Styles much shorter than the ovary: stigmas truncate. Capsule from one half to two thirds of an inch in length. Seeds strongly rugose.

ZYGOPHYLLACEÆ.

75. *KALLSTRÆMIA GRANDIFLORA* (*Torr. in herb. Hook.*): suberecta, setis patentibus hispida; foliis 3–5-jugis; pedunculis folio longioribus; petalis (aureis) sepala lanceolata longe acuminata duplo excedentibus; staminibus 10 conformibus subæqualibus; carpellis dorso rugoso-tuberculatis stylo persistente dimidio brevioribus. — Borders of the Gila, *Col. Emory*. Sonora Alta, Mexico, *Coulter*, No. 783.

Var. *DETONSA*: multo minus hispida vel nuda, foliis minoribus. — New Mexico (near El Paso?), Sept. — Stems a span to a foot high, from an annual root. Leaflets oblong, slightly falcate. Petals an inch long. Style much longer than in *K. maxima*.

76. *LARREA MEXICANA*, *Moricand. Pl. Nouv. Amer. t. 48*; *Torr. in Emory, Rep. p. 137. t. 3*; *Gray, Gen. Ill. 2. p. 120. t. 147*. *L. glutinosa*, *Engelm. App. Wisliz. Mem. N. Mex. p. 93*. *Zygophyllum tridentatum*, *DC. ! Ic. Fl. Mex.* From the Rio Grande in Texas to New Mexico. Shrub 3 or 4 feet, in Northern Mexico from 5 to 8 feet high. — In Dr. Gregg's earlier North Mexican collection I find scanty specimens of a curious new genus of this order, the characters of which are here subjoined.*

77. Vide p. 24 (*Byttneriaceæ*).

78. *PORLIERA ANGUSTIFOLIA*: ramulis foliisque glaberrimis; foliolis 8–16 reticulatis; stipulis espinosis; floribus sæpius 5-meris 10-andris; filamentis breviter squamulosis; stylo subulato apice bidentato; ovario biloculari; capsula obcordato-biloba. — *Guaiacum angustifolium*, *Engelm. in Wisliz. Mem. N. Mex. p. 113*; *Gray, Gen. Ill. 2. p. 121. t. 149, & Pl. Lindh. 2. p. 158* (subgen. *Guaiacidium*). On the San Pedro River, Aug. — In the *Genera Illustrata* above cited, I did not refer this plant to *Porliera*, with which it accords well in habit and in the squamulate filaments (and sometimes even in having tetramerous flowers), chiefly because that genus is figured by *Adr. de Jussieu* as having a strongly arcuate embryo, with the cotyledons parallel to the axis of the fruit. And indeed so I find the not yet fully-grown embryo in a specimen of *Porliera hygrometrica* of *Pavon's* herbarium (now

* *SERICODES*, *Nov. Gen.*

Calyx 5-partitus, persistens; laciniis ovato-lanceolatis. Petala 5, rhombo-ovata, subacuta, vix unguiculata, subperigyna, nempe imo calyci inserta, laciniis ejusdem æquilonga, tarde decidua. Stamina 10, æqualia, cum petalis inserta: filamenta filiformia, 5 petalis opposita nuda, 5 sepalis opposita basi intus squamula bifida pilosa persistente appendiculata: antheræ oblongo-lineares, introrsæ, medio affixæ. Discus nullus. Ovarium sericeo-villosissimum, arcte sessile, 5-loculare, 5-lobum, loculis sepalis oppositis: stylus superne 5-angulatis, clavatis, angulis deorsum longiuscule stigmatosis. Ovula in loculis solitaria, pendula. Fructus 5-coccus, siccus; coccis sericeo-villosissimis, coriaceis, indehiscentibus, ab axi centrali gracili secedentibus. Semen exalbuminosum, loculi conforme, apice ultra hilum rostellatum. Embryo rectum: cotyledones ovales, axi contrariæ: radícula conica supera. — Frutex humilis ramosissimus; foliis simplicibus! parvis oblongo-spathulatis integerrimis sericeis sessilibus fasciculatis, fasciculis alternis! stipulis minutis spinescentibus; floribus 1–3 ex eodem fasciculo foliorum breviter pedunculatis; corolla flava.

S. GREGGII. — In a dry valley near San Lorenzo, in Northern Mexico, *Dr. Gregg*. — This is certainly a *Zygophyllaceous* plant, notwithstanding the obscurely perigynous petals and stamens, and the alternate simple leaves.

in that of M. Boissier). On the other hand, the ripe fruits of the specimens in the Hookerian herbarium (viz. that of Cumings, No. 274, from the Andes of Chili, and that of Bridges from Llayllay) show a nearly straight embryo, the radicle being slightly bent, and with the edges of the broad and flat cotyledons directed to the axis of the fruit. I therefore join our species to *Porliera* without hesitation. But the *Guaiaacum arboreum*, DC., judging from the detailed description of Kunth, cannot belong to the same genus. *G. parvifolium*, *Planchon in herb. Hook. (Andrieux Pl. Mexic. No. 475)*, has similar narrow leaflets, but has esquamulate filaments, and appears to be, like *G. Guatemalense*, *Planchon in herb. Hook.*, a true *Guaiaacum*. The plant figured as *G. sanctum* in *Gen. Ill. 2. t. 148* (*G. Sloanei*, *Shuttleworth, Pl. Rugei*, no. 68, 69) is no doubt *G. verticale* of Ortega; but it has pubescent branchlets; and I know not whether it is distinct from the Linnean *G. sanctum*.

no! Chap. Flor.

COCHLOSPERMÆ.

79. *AMOREUXIA SCHEIDIANA*, *Planch. in Hook. Lond. Jour. Bot. 6. p. 140. t. 1.* *Euryanthe Scheideana*, *Cham. & Schlecht. in Linnæa, 5. p. 225. (Tab. III. B.)* Prairies near the San Pedro River, July; mostly in fruit. "Flowers yellow." Also near Monterey, Northern Mexico, *Dr. Gregg, Dr. Edwards*. — This beautiful and highly remarkable plant has a known geographical range from the western borders of Texas to New Granada. As the peduncles are often by abortion one-flowered, I should without hesitation refer it to the original *Amoreuxia palmatifida* of De Candolle, except that the flowers of the Moçinian plant are said to be "rubelli." The fruit having now for the first time come to hand, I am able to give a figure of it, and to complete Planchon's new character of the genus, which in all other respects leaves nothing to be desired.*

A. Wrightii Gray
in Wright II. 26

Capsula pendula, ovoidea (bipollicaria), trilocularis, 6-valvis; valvis coriaceis ab endocarpis et dissepimentis scariosis tenuissimis, axi centrali persistente adnatis, secedentibus; loculis polyspermis. Semina placentæ centrali incrassatæ affixa, obovoideo-rotundata, breviter anatropa: integumentum exterius tenue membranaceum, laxum, fragile, arilliforme, facie ventrali raphi brevi prominente percursum, hilo parvo notatum, ab integumento interiori osseo nitido leviter reniformi omnino solutum. Embryo in axi albuminis dense carnosi sigmoideo-biarcuatus, ejusdem fere longitudine; cotyledonibus foliaceis subflexuosis; radicula crassissima brevi, hilo proxima.

RUTACEÆ.

80. *RUTOSMA TEXANUM*, *Gray, Gen. Ill. 2. p. 144, t. 155, & Pl. Lindh. 2. p. 158.*

* Whether the *A. Scheideana* be different from *A. palmatifida*, DC., or not, there can be no doubt that an incomplete specimen, characterized below, belongs to a species quite distinct from either.

AMOREUXIA MALVÆFOLIA (sp. nov.): foliis orbiculatis sublobatis, lobis (7) truncatis, costis subtus cum pedunculis calycibusque tomentulosis; staminibus vix inæquilongis. — Northern Mexico, near Chihuahua. The imperfect specimen, in flower only, was gathered by an unknown, and apparently unscientific collector, and sent, with other plants, to Mr. Scheer of Kew, and by him presented to Sir William Hooker, who has kindly permitted me to characterize the species. The flowers are about as large as those of *A. Scheideana*, and accord with them in all essential particulars, except that the stamens are less unequal. The leaves may be compared with those of *Malva rotundifolia*, and are scarcely more deeply lobed than they.

Calcareous hills of the San Felipe River; July. It was likewise gathered by Berlandier, in the southern part of Texas. — To this solitary representative of the proper Rue Family in America hitherto known, the subjoined species of *Peganum*, from Dr. Gregg's collection, is to be added.*

† *Kœberlinia spinosa*, *Zucc. Pl. Hort. & Herb. Monac. fasc. 1. p. 359* (in *Denkschrift. Münchn. 1832*); *Benth. Pl. Hartw. p. 35*. Along the Rio Grande, Texas. Also on the Mexican side of the river, at Bolson de Mapimi, &c., *Dr. Gregg*. — “A much-branched, leafless shrub, consisting of nothing but thorns, flowering in July and August. Flowers greenish-white. Berries oval.” *Wright*. In Dr. Gregg's collection we have young fruit, and from Dr. Torrey I now have ripe fruit, gathered on our Southern frontiers by the U. S. Boundary Commission; which shows that the genus does not belong to Pittosporaceæ, where it was referred by Zuccarini, but tends to confirm the view suggested by Bentham, of its affinity with the American Diosmeæ. I append the characters.† The stamens are not of sensibly unequal length, nor are the anthers attached by the base, as stated by Bentham; nor do I find the style incurved or uncinatè at the apex, at least until after flowering. The ovules are straight and anatropous; but the seeds, which are few, and large for the size of the fruit, are strongly circinate or cochleate.

ZANTHOXYLACEÆ.

81. *ZANTHOXYLUM CAROLINIANUM*, *Lam. ; Torr. & Gray, Fl. 1. p. 214*: var. fruticosum; foliolis brevioribus ovatis oblongisve vix aut ne vix acuminatis magis cre-

* *PEGANUM MEXICANUM* (sp. nov.): caule humili pubescente; foliis multipartitis, laciniis anguste linearibus; calyce 4-sepalo corollam 4-petalam duplo superante; sepalis 3-5-partitis foliiformibus, laciniis subæqualibus; staminibus 12-13. — Saltillo and Monterey, Northern Mexico, abundant, *Dr. Gregg*. — Stems 8 or 9 inches high, very leafy. Peduncles axillary, shorter than the flower. Corolla pale yellow. Disk scarcely cupulæform. Style slender; the three-lobed stigma shorter than that of *P. Harmala*. Filaments scarcely dilated at the base. Except in this last respect, and in the (perhaps not uniformly) quaternary calyx and corolla, our plant wholly accords with the characters of *Peganum*. It is remarkable for the great length of the calyx, the divisions of which resemble those of the leaves. The plant is evidently well known to the Mexicans, who, according to Dr. Gregg, call it *Garbanzilla*, *Romero del Campo*, or *Limoncillo*, and use a decoction of it for gonorrhœa. It is said to be poisonous to cattle.

† *Kœberlinia*, *Zucc.*

Calyx tetrasepalus, parvus, liber; sepalis subcoloratis, obtusis, æstivatione imbricatis, deciduis. Petala 4, hypogyna, calyce 3-4-plo longiora, obovato-oblonga, subunguiculata, æstivatione convoluta-imbricata, decidua. Discus nullus. Stamina 8, hypogyna, libera, petalis subæquilonga: filamenta medio incrassata, utrinque subulato-attenuata: antheræ ovales, dorso supra basim insertæ, introrsæ, biloculares, loculis longitudinaliter dehiscentibus. Ovarium ovoideum biloculare, basi in stipitem brevem, apice in stylum simplicem subulatum, attenuatum: stigma terminale, obtusum, minutissime emarginatum. Ovula plurima, in placentis crassiusculis medio dissepimento utrinque adnatis multiseriata, horizontalia vel dependentia, anatropa. Bacca subglobosa, parvula, stylo persistente apiculata, bilocularis, sarcocarpio tenui; loculis abortu 1-2-spermis. Semina verticalia, circinato-cochleata: testa crustacea, levissime ruguloso-striata: albumen tenuissimum seu vix ullum. Embryo annularis, endopleurum tumidum replens; cotyledonibus semiteretibus; radícula adscendente. — Frutex aphyllus, ramosissimus, glaber; ramis viridibus rigidis; ramulis teretibus omnibus in spinas validas desinentibus; squamulis ad folia respondentibus alternis, minimis, caducis; floribus parvulis in racemis brevibus umbelliformibus sub apice ramulorum lateralibus, albidis.

natis nunc coriaceis supra lucidis; ovariis semper 2. — *Z. coriaceum*, *Wright in Herb. Z. digynum*, *Engelm. in litt. cum descr.* Near Austin; also on the Rio Grande, Texas; May. (Rocky soil, New Braunfels, April, *Lindheimer*, 1850.) — If I rightly remember, this is indicated as a new species by Nuttall, in the herbarium of the Academy of Natural Sciences, I have no record under what name. I have received it in the earliest collections of Mr. Wright, who always insisted it was quite distinct from *Z. Carolinianum*, and was uniformly a shrub of small height. And in *Lindheimer's* collection of 1849–50, Dr. Engelm. has likewise characterized it. I have just received it from Mr. Shuttleworth, under the name of *Z. alveolatum*, *n. sp.*, *Pl. Rugel*. No. 71, from Southern Florida, which name should be preferred, having been applied to it in a named, distributed collection. Still, I am unable to distinguish it as any thing more than a variety of the Southern Prickly Ash, into the ordinary state of which (*viz.* with ovate-lanceolate and acuminate leaflets) the foliage passes in a series of specimens before me; and the flowers appear to be quite the same. A specimen from Norfolk, Virginia, has equally small and short leaves. The apex of the connective of the anthers is thickened and glandular, as it is, perhaps less conspicuously, in the ordinary *Z. Carolinianum*.

82. *PTELEA TRIFOLIATA*, β . *MOLLIS*, *Torr. & Gray, Fl. 1. p. 680.* *P. mollis*, *Curtis, in Sill. Jour.* Along Turkey Creek, W. Texas; June, in fruit.

ANACARDIACEÆ.

83. *RHUS VIRENS*, *Lindh. in Pl. Lindh. 2. p. 159.* Pass of the Limpia, and hills along the San Pedro River, in flower and fruit. — Specimens of what appears to be the same species, from Galeotti's Mexican collection (No. 3,900) are in Hooker's herbarium, named *Rhus Scheideana*, *Schlecht.*, by Planchon, and perhaps correctly. But the leaflets are at most 9, instead of from 11 to 15, and scarcely if at all cordate. — This species is a pinnated Lobadium with panicle aments, according to Dr. Engelm.; the flowers being sessile and tribracteate, and developed in October, not in March, as said in *Pl. Lindh.*

84. *R. MICROPHYLLA* (*Engelm. in litt.*): “fruticosa; ramulis verrucosis; foliis impari-pinnatis 3–4-jugis, rhachidi alata; foliolis sessilibus parvis ovalibus obtusis v. mucronatis basi acutis integerrimis seu levissime crenulatis pilosulis; floribus dioicis amentaceis præcocibus basi tribracteolatis; petalis ciliatis; drupa globosa subcompressa glandulari-pilosa, putamine lævi. — Margins of thickets, on the top of hills, in the large prairie between New Braunfels and San Antonio, 15 miles from the former place, 1850; also gathered, without developed flowers, in 1846. It blossoms in March, and shows ripe fruit in May. A large shrub: stems one or two inches in diameter, branching above, with numerous small branchlets. Leaflets 3 or 4 lines long. Disk 5-lobed, the lobes emarginate. A true Lobadium with pinnated leaves.” *Engelm.* — Mr. Wright's specimens (barely in flower) were gathered between the Leona and Turkey Creek, in June.

‡ *R. TRILOBATA*, *Nutt. in Torr. & Gray, Fl. 1. p. 219; Gray, Pl. Fendl. p. 28.* New Mexico; with ripe fruit. Drupes deep scarlet, sparsely hairy.

SIMARUBACEÆ.

85. CASTELA NICHOLSONI, *Hook. Bot. Misc.* 1. p. 271. t. 56; *Planchon in Lond. Jour. Bot.* 5. p. 568; *Gray, Gen. Ill.* 2. t. 158. On the high prairies of the San Felipe, &c.; July, with forming fruit. Also on the Rio Grande, Texas. — In his revision of the Simarubaceæ, Planchon has united Castela to that family.

VITACEÆ.

86. VITIS ÆSTIVALIS, *Michx.* *Fl.* 2. p. 230: var. foliis tenuioribus magis dentatis, tomento tenui deciduo. On the Blanco River, Texas. — What I had called *V. vulpina* in *Pl. Lindh.* 2. p. 166, is the same thing.*

† *V. INDIVISA*, *Willd.*; *Torr. & Gray, Fl.* 1. p. 243. San Marcos, Texas; May.

† *V. INCISA*, *Nutt. in Torr. & Gray, Fl. l. c.* Austin, &c. — Some specimens, and all of those gathered by Lindheimer in 1850, have barely three-cleft or three-lobed leaves, none of them trifoliolate.

RHAMNACEÆ.

87. ZIZYPHUS OBTUSIFOLIA, *Gray, Gen. Ill.* 2. p. 170. t. 163, & *Pl. Lindh.* 2. p. 168. *Paliurus Texanus*, *Scheele in Linnæa*, 21. p. 580. Prairies, Western Texas.

‡ *Z. LYCIOIDES*, *Gray, Pl. Lindh.* 2. p. 168. *adnot.* Between Western Texas and El Paso, New Mexico, Coll. of 1851.

88. CONDALIA OBOVATA, *Hook. Ic. Pl.* t. 287; *Torr. & Gray, Fl.* 1. p. 685; *Gray, Gen. Ill.* t. 164, & *Pl. Lindh.* l. c. Hills along the Rio Frio and Rio Grande.

88^a. *C. SPATHULATA* (sp. nov.): humilis; ramis divaricatis; foliis spathulatis obtusis retusisve muticis nunc obtuse mucronatis inferne longe attenuatis subpetiolatis, venis latissimis nerviformibus subtus prominulis; pedicellis quam folia dimidio brevioribus. — On the Rio Grande, Texas; and prairies on the San Felipe, July; in flower. — Shrub from one to six feet, very much branched; the rigid branches divaricate, often spinescent: some specimens bear small axillary spines, shorter than the leaves; others are unarmed. Leaves alternate, or on the flowering branches all fascicled, 3 to 6 lines long, including the attenuated base, broadest near the apex, thickish, entire, pinnately 5–7-veined; the veins very broad and prominent underneath, as in *C. microphylla*, but not so numerous nor contiguous, nor are the leaves so coriaceous. Pedicels solitary or fascicled from the centre of the tufts of leaves. Flowers much as in *C. obovata*, but smaller, apetalous, pentandrous. Ovary apparently one-celled and two-ovuled. Fruit not seen. — A congener of *C. microphylla*, *Cav.*, and with the same venation, which is very different from that of *C. obovata*.

89. KARWINSKIA HUMBERTIANA, *Zucc. Nov. Stirp. fasc.* 1. (in *Denkschrift. Baier. Akad. Wissensch.* 4.) p. 351. *K. glandulosa*, *Zucc. l. c. t.* 16. *K. Humboldtiana*, *glandulosa*, *affinis*, & *biniflora*? *Schlecht. in Linnæa*, 15. p. 460. *Rhamnus*

* *Vitis candicans*, *Engelm. ined.* (which is also the *V. coriacea* of Shuttleworth, *Pl. Rugel. exsic.*, from Southern Florida) is not the same as *Vitis Californica*, *Benth.*, to which, in *Pl. Lindh.* 2. p. 166, I was disposed to refer it. Perhaps it may be *V. Caribæa*, *DC.*

Humboldtiana, *H. B. K. Nov. Gen. & Sp.* 7. p. 40. t. 618. *R. biniflorus*, *DC. Prodr.* 2. p. 26? *R. umbellatus*, *Cav.*? — Rocky hills, Turkey Creek, June; in flower. Also near Monterey, *Berlandier, Gregg*. North of Queretaro, *Gregg* (in fruit). Sonora Alta, Real del Monte, and Zimapan, *Coulter* (No. 1–3), and California, No. 113, *Coulter*. New Mexico, *Wislizenus*. — All the collectors agree in stating that this is a shrub, from 2 to 3, or sometimes, according to Gregg, from 4 to 12 feet in height. There is probably an error, therefore, in Kunth's statement that Humboldt's specimens were from an "arbor procerrima." For our plant seems to be the *Rhamnus Humboldtiana*, as well from Schlechtendal's account of original specimens, as from Kunth's character and figure, except that the latter, but not the description, represents the upper leaves as acute. The species varies much in the size of the leaves, &c., and in the number of flowers in the axillary clusters, just as do most *Rhamni*. Wright's and most of our specimens have them raised on a short common peduncle, as in *K. Humboldtiana*. I cannot think that *K. glandulosa* is distinct, nor is the name a good one. The leaves are only pellucid-punctate. The 2–3-celled ovary has two ovules in each cell. The mature drupe is ovoid, 4 or 5 lines long, ripening from one to three seeds. *Rhamnus biniflorus*, *Hook. & Arn.*, is another species of this genus.

90. COLUBRINA TEXENSIS, *Gray, Pl. Lindh.* 2. p. 169. *Rhamnus?* *Texensis*, *Torr. & Gray, Fl.* 1. p. 263. On the Leona, June; in fruit. Common throughout Western Texas. — This is a low, divaricately much-branched and spreading, flexuose shrub, from 2 to 4 feet high, flowering from March to May. In Lindheimer's collection of 1850 are fine specimens of what I take for a larger-leaved variety of *C. Texensis*, but which Dr. Engelmann, under the name of *Colubrina stricta*, considers as specifically distinct. It is "erect, very little branched, only leafy at the end of the slender branchlets, from 5 to 10 feet high; the leaves pendulous (much as in a *Cerasus*), larger, and it flowers much later (June 15), than *C. Texensis*; the flowers and fruit are much the same." *Engelm.* The leaves on vigorous sterile branches are often fully 2 inches long, oval or ovate-oblong, with a rounded base, softly silky-tomentose underneath. These larger leaves on sterile branches are common to our *Zizyphus*, to *Condalia obovata*, and other *Rhamnaceæ*, as Dr. Engelmann remarks.

MICRORHAMNUS, *Nov. Gen.*

Calyx coloratus, 5-fidus; tubo expanso subplano; lobis patentissimis, ovatis, trinervatis, nervo medio intus carinatis. Discus carnosus, pateriformis, calycis tubo adnatus, margine subundulatus, ovarium superum cingens. Petala 5, obcordata, unguiculata, calyce breviora. Stamina 5, petalis æqualia, iisdem libera: antheræ didymæ, biloculares, bivalves. Ovarium liberum, ovoideum, biloculare, in stylum columnarem angustatum: stigma emarginatum. Ovula solitaria. Fructus subdrupeus, siccus, ovoideus, osseus, calycis cupula parva suffultus, abortu subunilocularis monospermus. Cotyledones foliaceæ, oblongæ, planæ. — Fruticulus ericoideus, ramosissimus, glaber; ramis rigidis spinescentibus; foliis alternis et in axillis vel in ramulos brevissimos fasciculatis, persistentibus, parvis, linearibus vel spathulato-

linearibus, marginibus arctissime revolutis, subtus bisulcatis, enervibus; stipulis squamæformibus subulatis deciduis; pedunculis foliis brevioribus; floribus minimis flavis.

91. MICRORHAMNUS ERICOIDES. — Valley of the Pecos, between Western Texas and El Paso, Oct.; in flower; likewise just received in Mr. Wright's collection of 1851, from the same region, in fine fruit. Also on dry plains near Parras, Northern Mexico, *Dr. Gregg*. — A rigid, intricately much-branched, small shrub, from 2 to 5 feet high, thickly clothed with the persistent coriaceous leaves. These are from 2 to 3 lines long, obtuse, their margins for the most part so strongly revolute that they meet the thickened midrib underneath, leaving merely a groove on each side of it. Ovary free, or nearly so, though its base is encircled by the thickened disk. The fruit, about 3 lines long, though dry, is doubtless subdrupaceous, with a thin sarcocarp, like that of *Ceanothus*: the thick and bony putamen has a single small cell, and often the vestige of the second cell or of the dissepiment. The seed, although I have found none quite mature, appears to be like that of *Berchemia*; and the foliaceous narrowly oblong cotyledons are similar. — When known only in flower, I was inclined to refer the plant to *Ochetophila* (although *O. trinervis* has *opposite* leaves, not alternate, as stated by Endlicher); but the fruit proves to be altogether different, and to approximate the plant to *Berchemia* and *Zizyphus*; but I am unable to refer it to any known genus.

91^a. ADOLPHIA INFESTA, *Meisn. Gen. p.* 70 (50); *Benth. Pl. Hartw. p.* 286. *Ceanothus infestus*, *H. B. K. ! Nov. Gen. & Sp. 7. p.* 61. *t.* 574. *Colletia infesta*, *Brongn. in Ann. Sci. Nat. 10. p.* 366. *C. ? multiflora*, *DC. Prodr. 2. p.* 29. *C. ? disperma*, *DC. l. c. ?* *Colubrina infesta*, *Schlecht. in Linnæa, 15. p.* 468. Mountain-sides, in the pass of the Limpia; Aug. (mostly in fruit). Also Zacatecas, *Coulter*, No. 10. — Ours is plainly the plant figured by Kunth, who represents the flowers as mostly fascicled in the axils. But Brongniart characterizes his *Colletia infesta* as having solitary flowers and a longer peduncle. I add the characters of the fruit. — Capsula basi calyce persistente adnato cincta, triloba, tricocca; coccis chartaceis monospermis. Semina et embryo *Ceanothi*. — The genus is hardly sufficiently distinct from *Colubrina*.

CELASTRACEÆ.

MORTONIA, *Nov. Gen.*

Calyx quinquelobus, tubo obconico 10-costato, lobis margine scarioso-albidis. Petala 5, obovata, eroso-crenulata, sub margine disci perigyni carnosi 5-lobi (lobis emarginatis oppositipetalis) inserta. Stamina 5, sinubus disci inserta, petalis breviora: antheræ cordato-didymæ, mucronulatæ. Ovarium ovoideum, liberum vel basi calyce accretum, 5-loculare; loculis biovulatis; ovulis collateralibus erectis. Stylus columnaris, apice 5-dentatus; lobis intus stigmatosis. Fructus siccus, ovoideus vel oblongus, stylo apiculatus, calyce persistente stipatus, coriaceus, abortu unilocularis monospermus, indehiscens. Semen oblongum, pericarpio conforme; arillo nullo; testa tenui membranacea. Embryo intra albumen carnosum parcum rectus, longitu-

dine seminis; cotyledonibus oblongis carnosius; radícula brevissima infera. — Frutices ramosissimi, conferte foliosi, sempervirentes; foliis plerisque alternis parvulis coriaceis enervibus vix petiolatis integerrimis, marginibus crassis pl. m. revolutis; stipulis glandulæformibus minimis caducis; floribus albis ad apicem ramorum thyrsoido-paniculatis, bracteis sæpius oppositis persistentibus.

92. *MORTONIA SEMPERVIRENS* (sp. nov.): fruticulosa; foliis oblongis obtusis parvis (2–3 lin. longis); calyce fructu oblongo dimidio brevior, lobis obtusiusculis muticis; stylo longiusculo. (TAB. IV.) — Calcareous hills along the San Felipe River; July: also gathered in the collection of 1851. — Shrub a foot or two high, much branched from the root, very leafy throughout quite to the inflorescence, glabrous, except that the young branchlets are minutely hirsute-puberulent. The very coriaceous small leaves are obtuse at both ends, and with a distinct, but minute petiole. The flowers are about 3 lines in diameter, and the ripe fruit, including the persistent style, of barely the same length. The disk is expanded, lining the tube of the calyx, much like that of the staminate flowers of *Celastrus scandens*, only more deeply lobed, the five lobes opposite the petals, and so strongly emarginate that the disk should perhaps rather be called 10-lobed. The ovary is free, or with its very base only connate with the base of the calyx-tube, which closely invests it, as it does the base of the fruit, to which at first sight it appears to be adherent. The cells of the ovary are opposite the petals. The dissepiments in the young ovary do not quite meet in the axis, except at the base; and they are obliterated during the growth of the fruit. The dry, indehiscent fruit is slightly 5-grooved: the single seed that matures fills the cell. There is no trace of an arillus. The membranaceous testa is marked with a slender rhaphe; and the albumen is very sparing. — I know of no genus with which this remarkable one may be particularly compared. Deprived, by the preoccupation of the name, of the privilege of dedicating it to the enterprising discoverer of the present species, I had, in the Hookerian herbarium, applied to it the name of my estimable friend, Elias Durand, Esq., of Philadelphia, an excellent botanist and promoter of the science: but I find, just when consigning my manuscript to the printer, that Planchon has already established a *Durandea* (in *Linacæ*). I wish, therefore, to dedicate it to the memory of that most eminent American naturalist, the late Dr. Samuel George Morton, author of the *Crania Americana*, &c., and President of the Academy of Natural Sciences, Philadelphia. — There is a second species in the late Dr. Gregg's collection.*

(635.) *SCHÆFFERIA CUNEIFOLIA* (sp. nov.): foliis fasciculatis parvulis obovato-cuneatis sessilibus sæpe retusis; floribus (fœmineis) sessilibus; stylo subnullo. — High prairies of the San Felipe, and on the Rio Frio; in flower and fruit. Also in the collection of 1851, in fine fruit. Dr. Gregg gathered it at Cerralvo, North-

* *MORTONIA GREGGII* (sp. nov.): foliis spathulatis mucronato-cuspidatis ($\frac{1}{2}$ –1 poll. longis); ovario semiinfero; calyce fructu ovoideo vix brevior, lobis acutissimis; stylo brevi. — Near Rinconada, Monterey, and Encarnacion, Northern Mexico, Dr. Gregg. — “A large shrub, in low grounds.” Tube of the calyx more adnate to the ovary than in *M. sempervirens*; its lobes triangular, with a thick and rigid midrib, tapering to a sharp, rigid point.

ern Mexico. — Shrub 3 or 4 feet high, much branched, rigid, glabrous. Leaves alternate, and mostly fascicled on short axillary spurs, persistent, coriaceous, shining, 3–5-nerved at the base, reticulate-veined, spathulate, obovate, or cuneiform, very obtuse, often retuse, 5 to 8 lines long. Male flowers not seen. Female flowers much smaller than those of *S. frutescens*, several together, closely sessile in the centre of the fascicle of leaves, greenish. Sepals 4, orbicular, scale-like, persistent, doubtless imbricated in æstivation. Corolla of 4 narrowly oblong and obtuse petals, hypogynous, deciduous. Disk none. Filaments of four abortive stamens small, hypogynous, alternate with the petals. Ovary sessile, free, ovate, two-celled, with a solitary anatropous ovule erect from near the base of each cell. Style nearly wanting: stigmas 2, oblong-linear, large, divergent, commonly 2-cleft; the lobes acute, often unequal, papillose. Drupe globular, scarcely two lines in diameter, deep scarlet, containing two separable crustaceous pyrenæ. Seed with a membranaceous testa. Embryo straight, surrounded by a sparing fleshy albumen, nearly of its length: cotyledons oval, foliaceous, plane, occupying nearly the whole breadth of the albumen: radicle very short, inferior. — Plainly a congener of *Schæfferia frutescens*, *Jacq.*, of which I have female specimens only, from Key West, both from Mr. Blodgett and Mr. Rugel's collections. It is uncertain to what family the genus belongs; — surely not to *Rhamnaceæ*, to which De Candolle and Endlicher append it; for the calyx is not valvate, nor are the rudimentary stamens of the female flowers (which alone I have seen) opposite the petals. *S. frutescens* has not a slender style, as described by De Candolle, but has two large stigmas, much like those of the present plant.

MALPIGHIACEÆ.

93. *GALPHIMIA LINIFOLIA*, *Gray, Gen. Ill. 2. p. 196, t. 173, & Pl. Lindh. 2. p. 166.* Banks of the Medina River, Texas; June.

94. *G. LINIFOLIA*, β . *OBLONGIFOLIA*: foliis fere omnibus oblongis; caulibus diffusis. — With the foregoing.

95. *ASPICARPA HYSSOPIFOLIA* (*Gray, Pl. Lindh. 2. p. 167*): caulibus e radice lignescente plurimis erectis (5–12-pollic.); foliis concoloribus lineari-lanceolatis imisve oblongis basi rotundatis vel subcordatis arcte sessilibus; floribus axillaribus solitariis, petaliferis pedunculatis sparsis (pedunculo ebracteato folio brevior, petalis fimbriatis), apetalis præcocioribus in axillis inferioribus sessilibus; coccis reticulatis dorso acute cristatis, lateribus immarginatis. — On the Rio Grande and Rio Seco; also on the San Felipe, July; in flower and fruit; the fruit chiefly from the abnormal and more precocious apetalous flowers, which are closely sessile in the lower axils. In 1851, Mr. Wright gathered a dwarf or early state, barely a span high, exhibiting abundance of apetalous flowers and fruit, but none other. Stems strigose-sericeous. Leaves an inch or less in length, hispid-ciliate, otherwise mostly glabrous, veinless. The later petaliferous and pedunculate flowers are occasionally fruitful. — *A. Hartwegiana*, *Juss.*, has cordate-lanceolate, glabrate, inconspicuously veiny leaves, on very short petioles, the upper acute and mucronate; the apetalous fertile flowers subsessile in the lower axils, bibracteate; the sides of the rugose-

reticulated fruit are sharply carinate-margined; and the petaliferous flowers are umbellate at the summit of the stem. Between this and the original *A. urens*, *La-gasca*, should stand the following.

‡ *A. LONGIPES* (sp. nov.): caulibus gracillimis decumbentibus; foliis cordato-oblongis obtusis longiuscule petiolatis laxè penninerviis hirsutulis subtus pallidis; floribus apetalis axillaribus solitariis longe pedunculatis bracteis 2 foliiformibus fructum subsuperantibus suffultis, petaliferis 3-4 ramulos graciles terminantibus umbellatis; coccis læviusculis, lateribus submarginatis. — Between Texas and El Paso; in Mr. Wright's collection of 1851. — Stems numerous from a ligneous root, very hirsute with Malpighiaceae hairs, from one to three feet long, diffusely decumbent or procumbent. Leaves about three fourths of an inch in length, ovate or ovate-oblong with a cordate base, pubescent both sides, obtuse, or the lower retuse, minutely mucronate; the primary veins conspicuous underneath; the petioles nearly 2 lines long. Peduncles of the apetalous fertile flowers from half an inch to more than an inch in length, furnished with two small leaf-like subpetiolate bracts at the apex, which subtend a pedicel about as long as the flower or fruit. The petaliferous flowers, 3 or 4 together on slender pedicels, terminate similar, but longer and more foliaceous-bracteate peduncles, or axillary filiform branches. The flowers are rather larger than those of *A. hyssopifolia*, but smaller than in *A. Hartwegiana*. Petals broadly ovate, erose-crenulate, and minutely glandular-fimbriate towards the apex, on exserted claws. Filaments 5, slightly monadelphous at the base, three of them with perfect, the others with imperfect anthers. Gynæcium as in *A. Hartwegiana*. Fruit of a single carpel, of nearly the same form as in *A. Hartwegiana*, but more even, with rounded and only slightly margined sides. — *A. urens*, according to the figure in *Mém. du Mus.*, has larger and acute leaves, and subsessile fertile flowers.

96. *JANUSIA GRACILIS* (sp. nov.): suffruticosa, subvolubilis; foliis lanceolato-linearibus brevissime petiolatis utrinque cum caulibus gracillimis sericeis; pedunculis axillaribus dichotome bifloris. — Mountains east of El Paso, Aug.; in fruit. — Stems and branches very slender, twining or trailing. Leaves an inch long, one or two lines wide, mostly acute at both ends, the margin with two or three denticiform glands near the base, the two surfaces equally silky with close-pressed hairs. Bracts linear, as long as the pedicels, which are minutely bibracteolate in the middle. Fruit nearly as in *J. Californica*, *Benth.* I find only one or two late flowers, which are quite minute, with four of the sepals bearing either one or two glands at the base; the petals short and entire; only one or two of the five stamens antheriferous.*

* *Hiræa septentrionalis*, *Juss.*, was gathered on the northern borders of Mexico by Wislizenus, Gregg, Coulter, and others. The former also brought specimens of a remarkable new species, with the inflorescence of Jussieu's second section of the genus, the floral characters of the first, and the samaræ differing from both in the great development of the dorsal wing; viz.: —

HIRÆA SERICEA (*Engelm. ined.*): foliis linearibus vel lineari-oblongis obtusis sessilibus utrinque sericeis subtus cano-argenteis plurimis in axillis fasciculatis; umbellis 2-4-floris sessilibus; sepalis omnibus basi grosse biglandulosis; petalis glabris; ovariis 2; samaris æqualiter late triangularibus, alis distinctis. — Near Cadena, Northern Mexico, *Wislizenus*. Plain west of Mapimi, *Gregg.* — "An erect shrub," apparently

SAPINDACEÆ.

97. *UNGNADIA SPECIOSA*, *Endl. Atakt. t. 36*; *Gray, Gen. Ill. 2. t. 178, 179, & Pl. Lindh. 2. p. 167*. Near Austin, in flower; on the Leona, Western Texas, in fruit.

† *SAPINDUS MARGINATUS*, *Willd.; Gray, Gen. Ill. 2. t. 180*. Western Texas. — *Sapindus Manatensis*, *Shuttleworth, Pl. Rugel. No. 115*, from the Manate River, Southern Florida, is the form of this species with nearly marginless petioles: it also occurs in Gregg's collection from Northern Mexico.

98. *SERJANIA*? aff. *S. racemosæ*. Along the Rio Grande, Southern Texas. In flower, and with some barely forming fruit, which in one specimen has a short basal wing plainly indicated, while another appears as if it would have the pyriform fruit of a *Paullinia*. The foliage is much as in that named *Serjania racemosa*, in *Plantæ Hartwegianæ* (which Eaton and Edwards also gathered near Monterey along with a new *Urvillæa* *); but the leaflets are more obovate and blunter, less serrate, though sparingly incised. It cannot safely be described until the full-grown fruit is known.

POLYGALACEÆ.

99. *POLYGALA ALBA*, *Nutt.! Gen. 2. p. 87*; *Torr. in Nicolle, Rep. p. 145*. *P. Beyrichii*, *Torr. & Gray, Fl. 1. p. 670*. *P. bicolor*, *H.B.K.! Nov. Gen. & Sp. 5. p. 394. t. 507 (1821)*. *P. scoparia*, *Benth. Pl.! Hartw. no. 30*, non *H.B.K.* Valleys in the mountains beyond the Limpia; Aug. — No. 371 of Gregg's collection, from San Antonio de las Alanzanes, with rather larger flowers that turn orange or reddish, is exactly Kunth's *P. bicolor*, according to his figure, &c., and is different from the more slender forms, gathered in Northern Mexico by Hartweg (No. 30), Coulter (No. 275), Seemann, and Gregg, which in all respects agree with Nuttall's prior *P. alba*.

100. *P. SCOPARIA*, *H.B.K. Nov. Gen. & Sp. 5. p. 399*: var. *MULTICAULIS*: caulibus e basi abbreviata vel e radice lignescente per plurimis fasciculatis; foliis lineari-subulatis. — Mountains near El Paso, New Mexico; also farther east; Aug., Sept. — This well agrees with an original specimen in the Paris Museum, with which I have compared it, as well as with Kunth's detailed description, except that the fasciculated slender stems, a span or more in height, divide at once next the ground from very short persistent bases, springing from the thickish, perpendicular root; and the stigma, which is the same as in the plant of Humboldt, is

of small height. Leaves half an inch long, many of them fascicled. Petals probably purplish. Fructiferous pedicels drooping. Wings of the fruit three lines wide, the dorsal one even rather larger than the lateral. (*Hiræa sericea*, *A. Juss. in St. Hil.* is *Tetrapteryx sericea*, *A. Juss. Mém. Malpigh.*)

* *URVILLÆA MEXICANA* (sp. nov.): tomentulosa, trifoliolata; foliolis ovatis acutis duplicato-serratis subincisis subtus molliter tomentosis; petiolulis marginatis; racemis elongatis; squamulis petalorum longissime barbato-ciliatis apice cucullato-appendiculatis. — Near Monterey, *Dr. Edwards* and *Major Eaton*, *Dr. Gregg*. — A climbing vine, with larger flowers than *U. ulmacea*, as large as those of *Cardiospermum Halicacabum*. Squamulæ of the petals furnished with an apical appendage behind the inflexed tip, which in two of them is longer and acute. Fruit much as in the figure of *U. ulmacea*, very thin and membranaceous.

not in all respects well described by Kunth. The stigma is open and cucullate in the centre; the porrect lower lip terete, short, and with a capituliform papillose apex: the upper is very short and dentiform, and barbate with a penicillate tuft of hairs, which Kunth everlooked. The wings in our plant are a little more obovate. Flowers about as large as those of *P. Austriaca*, in equally lax spikes or racemes, greenish-white. Crest of four 2-parted thickish filiform processes, of which the lateral adhere to the galea, the divisions simple, or sometimes two-lobed at the apex. Stamens 8. Capsule oblong, slightly emarginate, glabrous, membranaceous, little longer than the persistent wings. Seed cylindrical, hairy, with a smooth and prominent papilliform chalaza. Caruncle unilateral, half the length of the seed, narrow, two-lobed, the lobes linear. The slender stems and branches are much angled: the leaves from 3 to 5 lines long, seldom half a line broad, thickish, rigid, pointed.

101. *P. MACRADENIA* (sp. nov.): fruticosa, humilis, pube velutina cinerea; ramis fasciculatis adscendentibus e caule crasso procumbente usque ad apicem conferte foliosis flexuosis; foliis alternis parvis oblongis vel oblongo-lanceolatis obtusis muticis subsessilibus enerviis glandulis magnis (more *Tagetis*) pellucido-punctatis; floribus solitariis extra-axillaribus breviter pedunculatis; pedunculo ebracteolato; carina imberbi nuda; semine sericeo-villosissimo caruncula mitriformi pubescente instructo. — Hills at the head of the San Felipe; July. Also on the Rio Grande, in Southern Texas. — This well-marked species is manifestly related to the *P. glandulosa*, *H.B.K.*, which has obovate, mucronate, and minutely pubescent leaves, dotted with much smaller pellucid glands than ours. The whole structure of the flower and fruit accords almost exactly with the figures of Kunth, except that the narrow lateral petals are not contracted below, the minute upper lobe of the stigma is emarginate, the seed is more villous, and its short caruncle pubescent. As in *P. glandulosa*, the calyx is deciduous. The capsule is ovate, emarginate, cinereous, and often dotted with glands. The branches are about a span long, from a woody procumbent stem, thickly beset with leaves which are but two or three lines in length: the glands are conspicuous on the lower surface, and appear blackish by reflected light. — It belongs to the same section as the following species.

102. *P. LINDHEIMERI* (*Gray, Pl. Lindh. 2. p. 150*): pubescens; caulibus e radice incrassata lignosa rubra plurimis foliosis diffusis; foliis alternis subsessilibus coriaceis reticulatis nitidulis cuspidatis, imis obovatis, cæteris gradatim ovatis oblongis et lanceolatis; racemis terminalibus demumve lateralibus laxifloris; rhachi geniculato-flexuosa bracteis 3 parvis ad nodos persistentibus squamosa; pedicellis brevissimis; sepalo superiore bracteiformi a flore subdistante alis spathulatis vix dimidio brevior; carina imberbi crista calcariformi aucta; capsula elliptica utrinque emarginata puberula sepalo superiore persistente (cæteris deciduis) stipata; caruncula bicalcarata semine sericeo dimidio brevior. — Rocky hills and cliffs, Western Texas to the San Felipe, and south to the Rio Grande. — I have completed the specific character from Mr. Wright's specimens, which have mature fruit.

103. *P. OVATIFOLIA* (sp. nov.): caulibus e basi suffrutescente diffusis velutino-pubescentibus; foliis late ovatis ovato-oblongisve plerisque obtusis 3–5-plinerviis mar-

gine revolutis breviter petiolatis molliter pubescentibus; racemis brevibus laxifloris; carina nuda ampla dilatata integra alis oblongis pubescentibus multo majore petalis lateralibus spathulato-cuneiformibus duplo longiore; capsula fere orbiculari emarginata tenui villosa-ciliata facie glabra. — Hills of the Rio Grande and Rio Frio, Texas, westward to the San Felipe. (Also Monterey, *Edwards & Eaton*.) — Stems 3 to 9 inches long, leafy to the raceme. Leaves 5 to 10 lines long, thickish, very obtuse, or the upper acutish; the petioles half a line long. Flowers greenish-yellow, about as large as those of *P. grandiflora*, *Walt.* The wings are small, and the lateral petals unusually short, compared with the carina, which forms the most conspicuous part of the flower. This is very broad and rounded above, not at all lobed or plicate at the sides, scarcely unguiculate, entirely naked. The whole calyx and corolla are deciduous, leaving the capsule naked, as in the allied *P. Americana*, *Mill.*, *P. Caracasana* and *rivinæfolia*, *H. B. K.*, *P. ovalifolia*, *DC.*, &c., and the stamens, stigma, and seeds are the same as in those species and the succeeding one: the caruncle short and bonnet-shaped. Capsules drooping, membranaceous, flat, 5 lines long, and nearly as broad, the sides perfectly glabrous, but the margins conspicuously ciliate. — I had (in *Pl. Lindh.* 2. p. 151) taken this plant for *P. ovalifolia*, *DC.*, which, judging from a recent inspection of the incomplete original specimen in the Delessertian herbarium, is the same as No. 732 of Coulter's Mexican collection. It has more oblong leaves, the upper ones acute, larger and broader wings, and especially a smaller and much narrower carina, which the linear lateral petals almost equal in length, and the whole surface of the deeply emarginate pod is pubescent, as stated by De Candolle. Still the two plants look very much alike. — *P. buxifolia*, *H. B. K.*, is allied to this and to *P. Lindheimeri*.

104. *P. PUBERULA* (sp. nov.): pube brevissima subcinerea; caulibus e radice suffrutescente erectis; foliis linearibus lanceolatisve (imis nunc oblongis) mucronatis brevissime petiolatis; racemis laxis elongatis; floribus pendulis; carina omnino nuda integra alis late obovatis ciliolatis æquilongi petala lateralia ovali-oblonga paulo superante; capsula ovali emarginata glabra marginibus tenuiter ciliata. — *P. pubescens*, *Schlecht. in Linnæa*, 14. p. 160. — Valley of the Limpia; Aug.: also in the collection of 1851. — This species so much resembles *P. grandiflora*, *Walt.*, in its foliage, pubescence, and whole habit, that it might readily be confounded with it, were it not for the deciduous floral envelopes, and the much larger and flat, naked pods. These are a quarter of an inch in length, when young sometimes minutely pubescent on the face, but when mature quite glabrous, except the thickish margin, which is much less ciliate than in the preceding species. The "purple" flowers are rather smaller than in *P. grandiflora*, and larger than in *P. obscura*, *Benth.*; the carina deep violet-purple. From *P. obscura* (also gathered at Misteca Alta by Galeotti, No. 883) our plant is abundantly distinguished by its more simple herbaceous stems, longer and narrower leaves, entirely crestless carina, and elongated fruiting racemes, the pods and the fertilized flowers all drooping. The floral envelopes fall almost as soon as the pod begins to grow. The seed, as in most species of this group, is retrorsely hairy, and capped at the summit with a short, bonnet-shaped, somewhat lacerate or lobed, scarious caruncle. The two lobes of the stigma

are similar, closely approximate, and papilliform. The flowers are as if intermediate between those of *P. ovatifolia* and *P. ovalifolia*. *P. monticola*, *H. B. K.*, has smaller flowers, narrower wings, &c.*

KRAMERIACEÆ.

† *KRAMERIA PARVIFOLIA* (*Benth. Bot. Voy. Sulph. p. 6. t. 1.*): fruticosa, pube appressa canescens; caule erecto 1–2-pedali ramosissimo; ramis divaricatis; foliis linearibus sessilibus junioribus mucronatis; pedunculis sparsis sæpe bis bibractea-

* *Polygala flabellata*, *Shuttleworth, Pl. Rugel, exsicc. No. 37*, from Key West, appears like a smoother and very narrow-leaved, small-flowered variety of *P. grandiflora* (the var. β . *Torr. & Gray, Fl. 1. p. 671*), the opposite extreme from his variety *canescens*, No. 39.

P. leptostachys, *Shuttleworth*, from Aspalaga, Florida, is a good species, which I have from Dr. Torrey (*E. Florida, Leavenworth*) under the name of *P. tenuis*, *n. sp.*; and a less slender form is also sent by Dr. Chapman, who distinguished it as an undescribed species. It is well distinguished from *P. verticillata* and *P. ambigua*, by its glabrous, more slender and lageniform, somewhat curved seed. The calycine wings are oval and subsessile, and the slender spikes are long-peduncled, as in *P. ambigua*, but the narrowly linear leaves are nearly all verticillate. Mr. Shuttleworth's name, under which the plant has been distributed, should be preferred.

P. Rugelii, *Shuttleworth*, No. 26 of Rugel's Southern Florida collection, is only a form of *P. lutea* the flowers of which have turned green, as in *P. nana*, probably in drying. Besides the characters given in the *Flora of North America*, *P. nana* differs from *P. lutea* in having a prolonged cylindraceous rostellum at the hilar end of the seed: in *P. lutea* the rostellum is very small and incurved.

The corrections to the synonymy of *Polygala cymosa* and its allies in the *Flora of North America*, as made in the Supplement, p. 670, are stated in a manner that is liable to mislead, and several of the names are wrongly referred. It is true that to the *P. cymosa* of Walter must be referred the *P. corymbosa* of Michaux, the *P. graminifolia* of Poiret, and the *P. acutifolia* of *Torr. & Gray, Fl. 1. p. 128*: *P. ramosa* of Elliott, however, belongs not to this species, but to the *P. corymbosa*, *Torr. & Gray l. c.*, as is manifest from Elliott's whole description, and especially from the hairy seeds which he attributes to it; and this name of Elliott's must be adopted for the species, since the *P. attenuata* of Nuttall surely belongs to the other species, as also does the *P. corymbosa* of Elliott. The character and the synonymy should stand as follows:—

POLYGALA CYMOSA (Walt.): caule simplici elato superne attenuato subnudo; foliis radicalibus lanceolatis linearibusve acutis sæpius elongatis gramineis, caulinis sensim abbreviatis subulatis; cyma corymbosa simpliciusecula (e racemis simplicibus nunc parce ramosis); rhachi post lapsum florum squarrosa; alis calycinis ellipticis mucronatis; seminibus subglobosis glaberrimis ecarunculatis.—*P. cymosa*, *Walt. Car. p. 179*; *Torr. & Gray, Fl. 1. p. 128*, & *p. 670* (excl. syn. *P. ramosa*, *Ell.*). *P. corymbosa*, *Michx. Fl. 2. p. 54* (in partem); *Ell. Sk. 2. p. 187*, non *Nutt.*, nec *Torr. & Gray, Fl. 1. p. 128*; *P. graminifolia*, *Poir. Dict. 5. p. 500*; *DC. Prodr. 1. p. 329*. *P. attenuata*, *Nutt. Gen. 2. p. 90*. *P. acutifolia*, *Torr. & Gray, Fl. 1. p. 128* (*P. cymosa* β . *graminifolia*, *Torr. & Gray, l. c. p. 670*); forma cyma composita.

POLYGALA RAMOSA (Ell.): caulibus e basi plurimis (8–10-uncialibus) usque ad apicem foliosis; foliis obtusis, radicalibus spathulato-obovatis, caulinis oblongo-linearibus; cyma decomposita fastigiata e racemis brevibus confertis; alis calycinis oblongis acuminato-cuspidatis; seminibus ovoideis hispidulis carunculo duplo longioribus. (Flores et semina iis *P. cymosæ* subdimidio minores.)—*P. ramosa*, *Ell. Sk. 2. p. 186*. *P. cymosa*, *Poir. Dict. 5. p. 500*, non *Walt.* *P. corymbosa*, *Nutt. Gen. 2. p. 89*; *Torr. & Gray, Fl. 1. p. 128*, non *Michx.*, nec *Ell.*

Walter's name must be kept for the first of these species, to which it certainly belongs, as the specimen in his herbarium, as well as the character, shows. Michaux's *P. corymbosa* consists principally of *P. cymosa*, *Walt.*, with which in his herbarium some *P. Baldwinii*, I believe, is intermixed. The two species are distinguished, and for the first time well characterized, by Elliott, whose name for the last should be retained. I am much indebted to Mr. Carey for the elucidation of these species.

tis; alabastro gibboso; petalis posticis æquilongis unguibus coalitis, lamina laterali dilatata obliqua rhomboidei-ovata intermedia anguste oblonga multo majore; staminibus discretis ungui adnatis; fructu ovoideo-acuminato nunc subcordato. — Gathered in the western borders of Texas, 1851; in flower and with young fruit. — Stems rather stout, rigid; the divaricate branches more slender, and inclined to become spinescent. Leaves about 4 lines long, often subfalcate, obtuse, or the younger ones tipped with a slender mucro, canescent, like the branchlets, &c., with a fine but somewhat hirsute appressed pubescence. Peduncles mostly solitary, terminating short lateral branchlets, which more commonly bear two rather distant pairs of bracts, or opposite leaves like the ordinary alternate ones of the branches, but occasionally only a single such pair, from 3 to 6 lines below the flower, sparsely beset with small glandular setæ intermixed in the canescent pubescence. Flower-bud remarkably gibbous, a quarter of an inch long, about the length of the peduncle above the bract. Sepals petaloid (purple), but silky-pubescent externally, moderately unequal, ovate and oblong; the two exterior acutish; the others more or less obtuse. Claws of the three posterior petals short, united nearly to the tip; the lamina of the two lateral very obliquely dilated-ovate; the middle one very much narrower, narrowly oblong. Stamens 4, nearly equal, separate, inserted on the middle of the claw of the three united petals. The unripe fruit is ovate and pointed, marked with a medial ridge, especially on the lower side, canescently hairy, and beset with slender barbed prickles. It agrees with the ripe fruit of Bentham's Californian plant, except that it is not yet at all cordiform. (In one specimen I found an additional middle petal, and five stamens.) — This is the same as the South Californian species described by Mr. Bentham, from very imperfect specimens (though with good fruit); an original specimen of which, as well as another from Coulter's Californian collection (No. 71), I have examined in the Hookerian herbarium. The figure in the Botany of the Voyage of the Sulphur, is not a good one; for the plant has none of the spreading bristly hairs there delineated, but is canescent with appressed pubescence, as described in the text.

105. *K. PARVIFOLIA*, var. *RAMOSISSIMA*: minus canescens; foliis brevioribus sæpe in axillis fasciculatis; floribus minoribus magis coloratis ad apicem ramulorum solitariis vel subracemosis. — Prairies of Live Oak Creek, June; and banks of the Rio Grande, on the southern border of Texas. Dr. Gregg also gathered it on the Mexican side of the river, at Camargo. — Shrub 1 to 3 feet high, erect, excessively branched, the divaricate branches and branchlets slender; the leaves of the flowering ones gradually reduced to one or two lines in length. Peduncles short, destitute of glandular bristles. The structure of the flowers is just as in the foregoing, of which I think it can be no more than a variety. The ripe fruit not seen: but the young pod has shorter prickles.

106. *K. CANESCENS* (sp. nov.): fruticosa, pube brevi densa sericeo-incana; caulis erectis ramosis; foliis brevibus oblongo-linearibus seu lanceolatis mucronatis sessilibus; pedunculis folio pluries longioribus medio bibracteatis demum recurvis; sepalis lanceolatis acuminatis; petalis posticis exiguis distinctis staminibus 4 discretis liberis brevioribus lamina fere destitutis; fructu ovoidei-globoso. — Prairies near

the Pecos; Aug. Also in the collection of 1851. — Shrub from one to three feet high, erect, much branched. Leaves simple, 3 to 4 or 5 lines long, silvery-canescenscent, like the branchlets, peduncles, and outside of the calyx, with a very fine matted pubescence. Sepals 5, purple inside; four of them nearly equal, lanceolate from a broad base, acuminate, about 3 lines long, the fifth smaller and linear. The three upper petals very small, linear-spatulate, appearing like sterile filaments. Stamens wholly distinct, the two intermediate rather shorter. Fruit beset with small and slender prickles, which are glochidiate at the apex only. — Except that the leaves are not villous, this species is scarcely at variance with the imperfect character of *K. pauciflora*, *DC.*; but the drawing upon which that species was founded represents a low or procumbent plant, much like the *K. secundiflora*. Specimens just received in Mr. Wright's collection of 1851 appear to show that *K. secundiflora* and *K. lanceolata* are hardly specifically distinct. — *K. cinerea*, *Schauer*, with trifoliate leaves, is also in Coulter's Mexican collection (No. 735), from Zimapan.

LEGUMINOSÆ.

107. *PHASEOLUS RETUSUS*, *Benth. Pl. Hartw. p. 11*; *Gray, Pl. Lindh. 2. p. 170*. *P. maculatus*, *Scheele in Linnæa, 21. p. 465*. On the Rio Grande, Texas; and in the bed of the Limpia; Aug. — "Stems trailing, 6 – 8 feet long: flowers purple."

108. *P. WRIGHTII* (sp. nov.): volubilis, puberulus; ramis gracilibus; foliolis hastato-trilobis, lobis obtusissimis, lateralibus nunc repando-angulatis terminali oblongo sæpius dimidio brevioribus; pedunculis folio longioribus perpaucifloris; bracteis bracteolisque lanceolatis minimis deciduis; pedicellis calyce brevi duplo longioribus; calycis labio superiore truncato emarginato, dentibus lateralibus triangulatis acutis infimo brevioribus; legumine pendulo compresso falcato (ultrapollicari) stylo gracili cuspidato tenuiter pubescente, valvis membranaceis; seminibus compressis rotundatis subquadratisve rugosis. — Declivity of a mountain, near El Paso; Sept. — This is nearly allied to the S. Californian *Phaseolus* (*Drepanospron*) filiformis, *Benth., Voy. Sulph.*, and is perhaps a variety of it; but the foliage is coarser, the flowers are little smaller than those of *P. paniculatus*, and the legumes (over an inch long, 6 – 8-seeded) and seeds are fully twice as large. From *P. pedicellatus*, *Benth.*, a Mexican species (which Walpers wrongly says is from Brazil), it differs in its pubescence, in the form of the leaflets, in the minute and deciduous bracts, and in the shorter pedicels. The seeds are either suborbiculate with a truncate or excised base, or sometimes nearly quadrate, coarsely rugose.*

† *P. ACUTIFOLIUS* (sp. nov.): volubilis; ramis gracillimis puberulis; foliolis sub-

* *P. sinuatus*, *Nutt.*, of which I have fine specimens from Rugel's Florida collection, No. 132, is widely different from *P. perennis*; but is apparently closely allied to *P. pedicellatus*, *Benth.* The leaflets of some of the lower leaves are rounded, retuse, and entire.

Phaseolus bilobatus, *Engelm. in Wislitz. Mem. N. Mex. p. 109*, is evidently the same as *P. heterophyllus*, *Benth. Pl. Hartw. No. 50*, and apparently also of Willdenow, who describes the leaflets as linear-oblong, and the root as perennial (not annual, as De Candolle states): in Hartweg's specimens it is tuberous.

ovato-lanceolatis e basi ad apicem usque attenuatis acutis integerrimis scabrido-puberulis; pedunculis paucifloris folio brevioribus; bracteis bracteolisque subulatis minimis deciduis; pedicellis flore æquilongis; calyce profunde bilabiato, labio superiore vix emarginato, dentibus lateralibus et infimo ovato-oblongis subæqualibus tubo paulo brevioribus; legumine compresso lato-lineari falcato pubescente; seminibus complanatis leviter rugosis. — Mountain valley, thirty miles east of El Paso; Sept. — Plant in general aspect and foliage much resembling a slender narrow-leaved variety of *P. helvolus*: but the leaves are more tapering and pointed; the 2-3-flowered peduncles are shorter than the leaf, and seldom longer than the common petiole; and the pedicellate flowers are smaller than those of *P. perennis*. It belongs to the section *Drepanospron*, having a flat and falcate legume, not much curved, two inches long, a quarter of an inch wide, 8-9-seeded. Seeds oval, compressed, somewhat shining, lightly rugose. The leaflets are from one to two inches long, varying from ovate-lanceolate to lanceolate from a broad base.

† *P. PAUCIFLORUS*, *Benth. Comm. Legum. Gen. p. 76.* *P. leiospermus*, *Torr. & Gray, Fl. 1. p. 280; Gray, Pl. Fendl. p. 30.* Western Texas. — Without doubt the *P. leiospermus* is the same as the earlier *P. pauciflorus* of Bentham, which was overlooked in the *Flora of North America*. *P. diversifolius* and *P. helvolus* have not woolly nor pubescent seeds, but they are furfuraceous with a mealiness that rubs off, leaving a smooth and shining testa.

‡ *RHYNCHOSIA TEXANA*, *Torr. & Gray, Fl. 1. p. 687; Gray, Pl. Lindh. 2. p. 171.* Between Texas and New Mexico; coll. of 1851. — The small flowers are either solitary, in pairs, or in fascicles of three or four in the axils of the leaves. The subulate teeth of the calyx are considerably shorter than the corolla, in well-developed flowers.

109. *R. TEXANA*, var. *ANGUSTIFOLIA*: ramis elongatis subvolubilibus; foliis plerisque vel superioribus lanceolatis seu oblongo-linearibus; floribus sæpius majoribus 2-4-natis nunc subracemosis. — *R. angustifolia*, *Engelm. in litt.* Prairies of the Sabinal and Turkey Creek, Western Texas, June; climbing over low bushes, &c. (Prairies near New Braunfels; climbing over herbaceous plants and shrubs of from 5 to 7 feet in height, *Lindheimer*, July, 1850.) — Mr. Wright's collection of 1851 contains numerous intermediate specimens between this and the described *R. Texana*, showing that it is only a more luxuriant form. The leaflets of the lower leaves are mostly oval, rounded, or rhombic-ovate, varying from half an inch to more than an inch in length; while those of the branches, especially the voluble ones, become lanceolate, linear-oblong, or even linear-lanceolate, of about the same length, or some of them, in *Lindheimer's* specimens, even two inches long.

110. *GALACTIA MARGINALIS*, *Benth. Comm. Legum. Gen. p. 62; Torr. & Gray, Fl. 1. p. 288.* Western Texas.

111. *G. WRIGHTII* (sp. nov.): herbacea, suberecta, pube tenui appressissima cinerea; ramis subvolubilibus; foliis trifoliolatis; foliolis oblongis utrinque obtusis mucronulatis supra glabellis subtus argenteo-cinereis, lateralibus breviter petiolulatis; racemis folium superantibus multifloris; calycibus bracteisque canescentibus. — Hills near the Limpia; Aug. — Stems branched from the base, slender. Leaflets

an inch and a half long, 8 or 9 lines wide, green above, beneath veiny and silvery, with a very fine and close whitish pubescence. Racemes strict, not interrupted, many-flowered; the "purple" flowers smaller than in *G. glabella*, 5 to 6 lines long. Pedicels a line long, shorter than the lanceolate deciduous bracts. Calyx-teeth triangular-lanceolate, nearly twice the length of the tube. Fruit not seen.

112. *GALACTIA TEXANA*, Gray, *Pl. Lindh.* 2. p. 170. Lablab Texanus, Scheele in *Linnæa*, 21. p. 467. Banks of the Leona River, June; in fruit.

‡ *COLOGANIA ANGUSTIFOLIA* (Kunth, *Mimos.* p. 209. t. 58): "volubilis; foliis linearibus obtusis subconcoloribus utrinque strigulosis; calycibus hispido-pilosis" (Kunth ex DC.); legumine falcati-gladiato hirta. — New Mexico, near El Paso? coll. of 1851. — This appears to be Kunth's *C. angustifolia*; but I have not the work in which it is described and figured to refer to. Our plant has a strong and deep perennial root; from which proceed slender, branching, striate-angled, herbaceous stems, cinereous-hirsute, as is the foliage, &c., with copious short strigulose hairs. Petioles 6 to 9 lines long. Leaflets from one to nearly two inches in length, about two lines wide, of rather firm texture, exactly linear, very obtuse at both ends, mucronate. Flowers in pairs, or sometimes solitary in the axils, on peduncles half an inch long, which are bibracteate at the base and minutely bibracteolate next to the villose-hirsute calyx: bracts and bractlets subulate. Corolla apparently violet-purple. Vexillum biappendiculate at the base with narrow inflexed margins. Legume narrowly linear, an inch to an inch and a half long, compressed, sabre-shaped, 7-9-seeded. Seeds oval, with a small hilum, not strophiolate.

‡ *C. PULCHELLA*, H.B.K. *Nov. Gen. & Sp.* 6. p. 414; DC. l. c.; Schlecht. in *Linnæa*, 12. p. 287. New Mexico, near El Paso? coll. of 1851; in flower only. — The specimens are more pubescent and cinereous, the leaflets thicker and more veiny, the flowers rather smaller and the calyx more hairy than in No. 603 of Coulter's Mexican collection, which is named *C. pulchella* by Bentham, and they belong perhaps to a different species, but they accord well with Kunth's character.

113. *INDIGOFERA LINDHEIMERIANA*, Scheele in *Linnæa*, 21. p. 464. On the Honda and San Felipe; June. "Flowers red." — This is more cinereous than *I. Anil* (to which I had referred it in *Pl. Lindh.* 2. p. 172), and the pods are longer and somewhat flatter, not tetragonal, but rather compressed (as De Candolle characterizes *I. Anil*): I see no other essential difference.

‡ *I. LEPTOSEPALA*, Nutt., var. *undique cinereo-argentata*. — Between Texas and El Paso; coll. of 1851.

114. *PSORALEA CYPHOCALYX*, Gray, *Pl. Lindh.* 2. p. 172. Banks of the Honda River, Western Texas; June.

115. *P. HYPOGÆA*, Nutt., var. *SCAPOSA*, Gray, *Pl. Lindh.* 2. p. 173. Southern and Western Texas.*

115 (bis). *EYSENHARDTIA AMORPHOIDES*, H.B.K. *Nov. Gen. & Spec.* 6. p. 491, t. 592; Gray, *Pl. Lindh.* 2. p. 173. E. Texana, Scheele in *Linnæa*, 21. p. 462. Rocky hills, Austin, Texas.

* *Psoralea Floridana*, Shuttleworth, *Pl. Rugel.*, No. 163, appears to be just the same as *P. Lupinellus*; the legume of which should not have been called "small" in the *Flora of N. America*.

116. *E. AMORPHOIDES*, var. *foliolis majoribus*, fere *semipollicaribus*. — Margins of a creek, between the Pecos and the Limpia; Aug.

117. *PETALOSTEMON VIOLACEUM*, *Michx.*, var. *PUBESCENS* (*Gray, Pl. Fendl. p. 33*). *P. virgatum*, *Scheele in Linnæa*, 21. p. 461. Prairies, Austin, Texas. — From the Snake Country, in the interior of Oregon, Mr. Burke sent to Sir Wm. Hooker dwarf specimens of this variety, and from the Black Hills of the Platte both Burke and Gordon have sent others, with densely pubescent leaves and even tomentose stems, which I cannot otherwise distinguish from this species. Some specimens, having long acuminate bracts, approach too near to *P. decumbens*, which is further distinguished chiefly by its broader leaflets.

118. *P. MULTIFLORUM*, *Nutt. in Jour. Acad. Philad. 7. p. 92; Torr. & Gray, Fl. 1. p. 309*. Banks of the Medina River, Western Texas; June.

119. *DALEA FRUTESCENS*, *Gray, Pl. Lindh. 2. p. 175*; forma *spicis brevibus capituliformibus*. — Hill-sides in the Pass of the Limpia; Aug. Also near Austin, Texas.

120. *D. FRUTESCENS*; forma *spicis pl. m. elongatis laxifloris*. — Hills west of the Limpia; Aug. Also on the Rio Grande, Texas.

‡ *D. FRUTESCENS*; forma *spicis mox elongatis densifloris*. — Between Western Texas and New Mexico, coll. of 1851.

121. *D. FORMOSA*, *Torr. in Ann. Lyc. N. Y. 2. p. 178, & Emory, Rep. t. 1; Gray, Pl. Fendl. p. 32*. Hills along the San Pedro and Pecos; July. Shrub one or two feet high.

122. *D. AUREA*, *Nutt. Gen. 2. p. 101; Gray, Pl. Fendl. p. 31*. Prairies of the Nueces; June.

123. *D. NANA*, *Torr. in Pl. Fendl. p. 31; Gray, Pl. Lindh. 2. p. 175*. Dry soil, from Austin, Texas, to the mountains east of the Rio Grande, New Mexico. — Leaflets varying from oval to linear-oblong.

124. *D. NANA*, var. *elator (pedalis)*, *foliolis sublinearibus*. — Pass of the Limpia; Aug. — Plant nearly as tall as some states of *D. aurea*, but more slender.

125. *D. LACHNOSTACHYS* (sp. nov.); herbacea; caulibus ramosis petiolis pedunculisque glandulis conicis brunneis tuberculatis pubescentibus; foliolis 9–11 ovalibus obovatisve utrinque villosis juxta margines præcipue grosse glandulosi; spicis cylindræis densissimis; bracteis ovatis scariosis pubescentibus in acumen longum viride florem subæquans productis caducis; calyce undique barbato-villosissimo, dentibus aristatis tubo corollæque purpurea æquilongis; carina petalis vix longiore; legumine villosissimo. — Hills about 80 miles west of the Pecos; Aug. — A species remarkable for its copious tuberculate (mostly conical) glands, and especially for the thick and densely barbato-woolly spikes. These are two inches or less in length, fully three fourths of an inch thick, on short peduncles; and the calyces are sessile, much crowded, 3 to 4 lines long, the campanulate tube sparsely glandular, the limb of 5 subulate-aristate teeth, which are as long as the expanded corolla, the whole exterior very thickly clothed with long and straight beard-like hairs, which nearly conceal the corolla. The ovary is similarly bearded. The root is perhaps perennial; the suberect and thickish stems much branched, rather diffuse, a foot or

more in height. Leaflets half an inch long, obtuse, beset underneath, close to the repand or subcrenulate margins, with a row of very large and flat glands, and often with a few others near the midrib, petiolulate.

127. *D. MOLLIS*, *Benth. Pl. Hartw. p.* 306; var.? *NEO-MEXICANA*: humilis, pubescente-villosa canescens; caulibus e radice perenni diffusis herbaceis parce glandulosis; foliolis 7-11 obovatis cuneatisve subretusis grosse glandulosis; spicis oblongis densifloris; rhachi squarrosa; bracteis lanceolatis subulato-acuminatis calycibusque sericeo-villosissimis, dentibus e basi lata aristatis tubum et corollam subsuperantibus; carina purpurea petalis vix longiore; legumine sericeo. — Hills beyond the Pecos and the Pass of the Limpia; Aug. — Stems much branched and diffuse, a span high, often decumbent, leafy, clothed like both surfaces of the leaves with a short and soft villous-silky cinereous pubescence. Leaflets an eighth of an inch long, approximate, petiolulate. Spikes on short peduncles, half an inch or more in length, thick and dense, very woolly with the silky-villous calyces. These and the rest of the flowers are much as in *D. lachnostachys*, except that they are only half the size or less, and the silky-villous covering is shorter in proportion and less abundant. Mr. Wright notes that the flowers are yellow, at least in one set of specimens; but the carina in the specimens is tinged with purple. — Coulter's Californian plant, to which I have joined the above, is smaller in all its parts, but, as the whole structure is essentially the same, I think it may be no more than a starved state of the same species. With more hesitation, on account of the larger size of all the parts, I am constrained to append to it No. 126 also.

126. *D. MOLLIS*, var.? villosior, minus canescens; foliolis spicisque majoribus; calycibus magis plumosis. — On a mound near the San Felipe; July. "Flowers purple." — The larger leaflets are a quarter of an inch long, and the spikes over half an inch in diameter, with perhaps a more copious villous-silky down; I notice no further difference between it and No. 127.

128. *D. LANATA*, *Spreng. Syst. 3. p.* 327; *Gray, Pl. Fendl. p.* 31. *D. lanuginosa*, *Nutt.* Bottoms of the Rio Grande, New Mexico, 60 miles below El Paso; Sept.

129. *D. ALOPECUROIDES*, *Willd.; DC. Prodr. 2. p.* 244; *Gray, Pl. Fendl. p.* 31. Valley of the Rio Grande, near Presidio de San Elisario, New Mexico; Sept.

130. *D. SCOPARIA*, *Gray, Pl. Fendl. p.* 32. Sandy bottom of the Rio Grande below El Paso; Sept. — The excessively branched stems of this remarkable species are woody at the base. The lower leaves are trifoliolate, with linear leaflets, the lateral ones shorter than the terminal; the uppermost are all unifoliolate as in the specimens of *Wislizenus*.

131. *D. ARGYRÆA* (sp. nov.): fruticosa, erecta; ramis canescentibus glanduloso-tuberculatis foliosis; foliolis 7-13 obovato-oblongis argenteo-sericeis supra nitentibus subtus glandulis nigris punctatis; spicis brevibus densifloris; bracteis ex ovato acuminatis calycibusque subæquilongis cinereo-pubescentibus; dentibus calycis subulatis tubo unguibusque petalorum brevioribus; vexillo flavo alis carinaque purpureis subduplo brevioribus; legumine cum stylo hirsuto. — High hills near the San Pedro River, abundant; July. (San Antonio de las Alanzanes, Mexico, *Gregg*, No. 357. Southern frontiers of Texas, *Dr. Bigelow*.) — Stems 1 to 2 feet high, stout, wholly

woody, corymbosely branched above; the branches leafy to the top. Petioles short: rhachis sparingly glandular, and usually with a pair of larger glands at the insertion of the leaflets. Leaflets commonly 11 or 13, thickish, 3 lines long, remarkably silvery and shining, especially above, with a close and fine silky pubescence. Peduncles short. Spikes 12–20-flowered, at first capitate. Calyx rather longer than the bract. Corolla showy, and large in proportion to the calyx; the wings and keel bright reddish-purple, on slender exserted claws, the lamina of the keel-petals a quarter of an inch long; the wings rather smaller: vexillum shorter, orbiculate, cucullate and infundibular at the base, yellow, becoming tinged with purple in fading. — A handsome species, very different from any other North American one, but apparently allied to the Mexican *D. argentea* of Martius.

132. *D. POGONATHERA* (Gray, *Pl. Fendl. p.* 31): pusilla, herbacea, glaberrima; caulibus e radice perenni plurimis adscendentibus; foliolis 5–7 oblongo-linearibus subtus rhachique grosse nigro-glandulosis; spicis oblongis densifloris; bracteis ovatis cymbiformibus acuminato-cuspidatis glabris dorso parce glanduliferis marginibus late scariosis tubo calycis sericeo-villosi æquilongis persistentibus; dentibus calycis setaceis plumosissimis tubo longioribus; petalis dilute purpureis; staminibus 10. — Pass of the Limpia; also along the Rio Grande, in Southern Texas; Aug. — The stems are slender, seldom more than a span high; the full developed spikes only an inch long, and densely flowered. The setaceous teeth of the calyx are always longer than the tube, and in fruit about twice its length (a quarter of an inch long). Wings longer than the vexillum, shorter than the keel. Legume and lower part of the style villous. — *D. laxiflora* (to which belongs *D. penicillata*, *Moricand*, as the inspection of Berlandieran specimens reassures me) is perfectly distinguished by its taller and upright growth and bushy habit, its elongated and lax spikes, its coriaceous, orbiculate-dilated, thickly black-glandular bracts with narrower scarious margins and a shorter mucro, its smaller and yellow corolla, and its uniformly nine stamens.

133. *D. LASIATHERA* (sp. nov.): humilis, glaberrima; caulibus e radice perenni assurgentibus herbaceis; foliolis 7–13 (sæpius 11) oblongo-linearibus retusis subtus rhachique grosse glandulosis; spicis cylindricis densifloris; bracteis orbiculari-ovatis cuspidato-acuminatis cymbæformibus glabris dorso grosse glanduliferis marginibus scariosis calyce sericeo-pubescente paulo brevioribus persistentibus; dentibus calycis subulatis tubo brevioribus confertim villosis; petalis puniceis; staminibus 10. — Prairies, west of San Antonio, Texas, and valley of the Limpia; Aug. Also in the coll. of 1851. (On the Liano, Western Texas, *Lindheimer, Pl. Lindh.* 2. p. 174, where the specimen was wrongly referred to *D. pogonathera*.) — This species in the smaller states resembles the foregoing; but it is stouter and larger in all its parts; the stems from a span to a foot high; the leaflets somewhat more numerous; the dense spikes become two or three inches long in fruit; the calyx-teeth are subulate, much shorter, and thickly villous with shorter and rather appressed hairs, so that they do not appear plumose; and the showy, purple-red corolla is considerably larger. The petals are nearly of the same relative proportion in these two species and *D. laxiflora*; and the ovary and lower part of the style are villous in all

three. The tube of the calyx, in all of them, is beset with 10 rows of glands, alternating with the 10 ribs.

134. *D. WRIGHTII* (sp. nov.): humilis, cano-sericea, eglandulosa; caulibus e radice lignescente perpendiculari plurimis (2–6-pollicaribus); stipulis setiformibus persistentibus; foliis pinnato-5-foliolatis; foliolis lanceolatis acutis; spicis sessilibus oblongis; bracteis tenuiter membranaceis lanceolatis acuminatis villosociliatis flores æquantibus; calyce villosissimo, laciniis aristæformibus longe plumosissimis tubo plusduplo longioribus corollam flavam æquantibus. — Dry hills 80 miles west of the Pecos, and on mountains near El Paso; Aug., Sept. — This interesting plant so much resembles *D. Jamesii* that there is scarcely any thing besides the *pinnately* 5-foliolate and narrower leaflets to distinguish them. The leaflets are from 5 to 8 lines long; the setiform stipules are shorter, and the pappus-like calyx-segments perhaps longer, than in *D. Jamesii*. These exceed the short and rounded lamina of the vexillum, are fully as long as the wings, but scarcely equal the keel. The specimens are all far advanced; and are entirely destitute of glands.

‡ *D. JAMESII* (Torr. & Gray, *Fl.* 1. p. 308): nana, cano-sericea, eglandulosa; caulibus cæspitosis e caudice lignescente; stipulis setiformibus elongatis persistentibus; foliis palmato-trifoliolatis argenteo-nitentibus; foliolis obovatis vel oblongis obtusis vel acutis; spicis cylindraceis sessilibus; bracteis oblongis aristato-acuminatis villosis flores subæquantibus; calyce villosissimo, laciniis aristæformibus longe plumosissimis tubo duplo longioribus corollam flavam nunc purpuream subæquantibus. — Coll. of 1851, in fruit and flower. There is no appearance of glands.*

† *AMORPHA CANESCENS*, Nutt., var. *GLABRATA*: foliolis parce pubescentibus mox glabratis! spicis incanis prælongis. — Eastern Texas, in an early collection made by Mr. Wright. — This shows that even *A. canescens* greatly varies, like the other species, as to pubescence. The leading spike is nearly a foot in length, much longer than in Engelmann's var. *leptostachya*, *Pl. Fendl.* No. 125. †

† *A. PANICULATA*, Torr. & Gray, *Fl.* 1. p. 306; *Engelm. & Gray, Pl. Lindh.* p. 7. Eastern Texas, in an early collection, made by Mr. Wright. — Remarkable for its very dense and long canescent spikes of small flowers, as well as for its large leaflets, which are prominently pinnately-veined underneath.

† *A. LÆVIGATA*, Nutt. in Torr. & Gray, *l. c.*; var. *PUBESCENS*: foliolis retusis (9–15 lin. longis) supra glabellis subtus cum petiolulis ramulis spicisque majusculis molliter cinereo-pubescentibus. — Eastern Texas. — The leaflets are as softly pubes-

* No. 7013 of Galeotti's Mexican collection is *Dalea leucostachys*, Gray, *Pl. Fendl.* p. 32, or near it.

† No. 126 of Rugel's Florida collection, wrongly named "*A. canescens*, Nutt.," is *A. herbacea*, Walt., and *A. pumila*, Michx., the more pubescent form (*A. pubescens*, Willd.); and of this, the *A. glabra*, Desf., and *A. Caroliniana*, Croom, are merely the glabrous variety, as Mr. Curtis and Dr. Chapman have well ascertained. *A. Tennesseensis*, Shuttleworth, *Pl. Rugel.*, is either a form of this or of *A. fruticosa*, I am uncertain which. *A. pumila* and *A. herbacea* of Schlecht. *Hort. Halensis*, 1848, *Linnaea*, 24. p. 185, of which Prof. Schlechtendal has kindly sent me fine specimens, must belong to one species, notwithstanding a small difference in the fruit; and they agree with *A. Lewisii*, Loddiges, and *A. nana*, Bot. Mag. t. 2112; also with No. 595, *Pl. Lindh.* 2. p. 174. The fruit of all these is shorter, straighter, and usually thicker, and the leaflets are mostly attenuate at the base and firmer in texture, than in the true *A. fruticosa*: but whether they form a distinct species is not so clear.

cent, and many of them as large, as those of the *A. paniculata*; but they have not the prominent veins underneath, and the flowers are three times larger. It is plainly a pubescent variety of the "glabrous and very smooth" *A. paniculata*, *Nutt.*, excellent specimens of which have just come to hand in Lindheimer's collection of 1850. In these the leaflets are all deeply retuse, or almost obcordate, from 12 to 18 lines long; in one specimen they are elliptical or narrowly oblong; in another they are broad and rounded, the larger ones over an inch in width. The spikes and dark-purple flowers are much larger than in *A. fruticosa*: the fruit not seen. — To this species must belong the "† *A. fruticosa*, var. *subglabra*," from Fredericksburg, *Pl. Lindh.* 2. p. 174.

‡ GLYCIRRHIZA LEPIDOTA, *Nutt. Gen.* 2. p. 106; *Torr. & Gray, Fl.* 1. p. 298; *Gray, Pl. Fendl.* p. 31. *G. glutinosa*, *Nutt. in Torr. & Gray, Fl. l. c.* New Mexico, coll. of 1851. — All the specimens I have seen, from whatever locality, have the spikes considerably shorter than the leaves, and accord with the character of *G. glutinosa*, *Nutt.*, which I suppose is not different from *G. lepidota*.

135. *MEDICAGO SATIVA*, *Linn.* Old fields near El Paso: introduced.

136. *TRIFOLIUM BEJARIENSE*, *Moricand, Pl. Nouv. Amer. p.* 2. t. 2. *T. macrocalyx*, *Hook. Ic. Pl. t.* 275; *Torr. & Gray, Fl.* 1. p. 691. Western Texas, near Austin, &c.

137. *HOSACKIA PUBERULA*, *Benth. Pl. Hartw. p.* 305. — Valley of the Limpia; Aug. — The specimens accord with Coulter's, from Zacatecas.

PETERIA, *Nov. Gen.*

Calyx ebracteolatus, tubulosus, quinquelobus, lobis subulatis, duobus superioribus altius coalitis. Vexillum obovatum, emarginatum, recurvum, alis oblongis obtusis longe unguiculatis æquilongum: carina cuculliformis, obtusissima, alis brevior. Stamina 10, filamentis vexillari libero diadelphe. Ovarium lineare, stipitatum, multiovulatum. Stylus filiformis, adscendens, apice dense aspergillo-barbatus: stigma terminale, barbatum. Legumen lineare, plano-compressum, breviter stipitatum, immarginatum, continuum, sæpius abortu oligospermum; valvis coriaceis. Semina ovalia, compressa. — Herba glabrata; caulibus e basi suffrutescente ramosissimis, ramis scopariis teretibus gracillimis; stipulis spinosis; petiolis filiformibus persistentibus, aliis aphyllis, aliis foliolis plurimis parvis oblongis gerentibus; racemis virgatis dissitifloris erectis ramulos terminantibus; floribus pendulis flavidis.

138. *PETERIA SCOPARIA*. — Mountain valleys beyond the pass of the Limpia, Aug.; in fruit. Also in the collection of 1851; in flower. Also near Lake Encinillas, north of Chihuahua, *Wislizenus*, No. 126. — Stems 2 or 3 feet high, terete, glaucescent, much branched and bushy. Stipules a pair of divaricate prickles, 2 or 3 lines long. The persistent petioles are from 2 to 4 inches long, filiform, slender, not indurated nor spinescent, all the upper ones on many specimens aphyllous; the others usually bearing from 9 to 15 small leaflets. These are elliptical or lanceolate, petiolulate, mucronate, from one to three lines long, when young more or less canescently pubescent, as are the young branches and calyces. Racemes terminal, slender, 8 to 12 inches long, very sparsely flowered. Pedicels 3 to 5 lines long,

spreading or drooping, each subtended by a small subulate bract. Bractlets none. Calyx 5 lines long, gibbous at the base; the lobes about half the length of the 5-nerved tube, triangular-subulate, the two upper united nearly to the middle. Vexillum with a broad claw: the wings and keel-petals with longer and slender claws, their lamina obliquely truncate at the base. Anthers uniform, oblong. Ovary slender, smooth, as well as the filiform style, up to the apex, where it is surrounded with a conspicuous, dense, and somewhat unequal, aspergilliform tuft of hairs; and the depressed terminal stigma is bearded with similar, but rather shorter hairs. The pendulous pods are two inches or more in length, a quarter of an inch wide, often narrowed where the seeds are abortive, but continuous, flat, usually ripening only 3 or 4 round and flat seeds. — Unable to refer this striking plant to any known genus of Galegeæ, I venture to characterize it as a new one, which I dedicate to the memory of the late Dr. Robert Peter, who was the worthy associate of Dr. Short in botanical researches, and in publications on the Botany of Kentucky. Very few specimens were obtained by Mr. Wright in 1849, and those only in fruit; but an abundance of complete and beautiful specimens occur in that portion of his collection of 1851 which has come to hand. The genus is nearest allied, perhaps, to *Caragana*. The aspergilliform style is something as in *Lessertia*.*

139. *ASTRAGALUS WRIGHTII*, Gray, *Pl. Lindh.* 2. p. 176: annuus, pumilus, hirsuto-canescens; caule subsimplici; stipulis subulatis liberis; foliolis 3–5-jugis oblongis acutiusculis; pedunculis folio longioribus paucifloris; floribus capitatis parvis; calyce hirsutissimo, lobis lineari-subulatis attenuatis corollam violaceam superantibus legumine oblongo hirsuto subtereti fere biloculari 6–4-spermo dimidio brevioribus. — Dry soil, near Austin, Texas. Also found in Western Texas, by Lindheimer. An inconspicuous, well-marked species.†

* In Dr. Wislizenus's collection is a *Chætocalyx* which shows none of the setose glands from which the name of the genus was taken: —

CHÆTOCALYX WISLIZENI (sp. nov.): prostratus, puberulus; foliolis 5 rotundatis venulosis concoloribus; calycibus non glanduloso-setosis, dentibus parvis; vexillo extus puberulo; carina alis subduplo brevioribus; staminibus diadelphis. — Battle-ground of Sacramento, near Chihuahua, Mexico. — Herbaceous, slender: leaflets half an inch long, stipules short. Corolla golden-yellow. Fruit not seen.

† I avail myself of the ample materials accumulated in Sir William Hooker's herbarium to arrive at a better understanding of *Astragalus caryocarpus*, and the species nearly allied to it, viz.: —

A. CARYOCARPUS, Ker. *Bot. Reg. t.* 176; Hook. *Fl. Bor.-Am.* 1. p. 150; Torr. & Gray, *Fl.* 1. p. 331; Engelm. & Gray, *Pl. Lindh.* p. 34 (no. 230) & 2. p. 176 (no. 596). *A. carnosus*, Nutt. *Gen.* 2. p. 100 (non Pursh, nisi fructu). *A. succulentus*, Richard. in *Frankl. Jour.*; Lindl. *Bot. Reg. t.* 1324. — This has a violet-purple corolla, and ovate, pointed legumes, about two thirds of an inch in diameter. The two cells are quite small in proportion to the thickness of the walls. — The calyx is as figured in *Bot. Reg. t.* 176. & t. 1324. The pubescence of the foliage, &c., is fine and close, and the whole hue in the living plant (from Missouri) glaucescent, as in the original figure of *A. caryocarpus* (t. 176); but the more northern form of the plant is smoother and greener, as in the figure of *A. succulentus*, *Bot. Reg. t.* 1324, which accords very well with Richardson's, Douglas's, and Drummond's specimens. No fruit of this northern form is yet known. The hairiness of the calyx, as in the others, may be either white, gray, or blackish.

A. MEXICANUS, Alph. DC. *Pl. H. Genev. not.* 5. p. 17. t. 3 (excl. fig. 6, 7), which is *A. trichocalyx*, Nutt. in Torr. & Gray, l. c. (though the villosity of the calyx is very variable, and furnishes no reliable

Missolin Wislizeni Gr.
too near *M. platycarpa*
Gr. 1. 1848

‡ *A. NUTTALLIANUS*, *DC.*; *Torr. & Gray, Fl. 1. p. 334*; var. *pumilus*, *canescenti-strigosus*, et *leguminibus breviusculis* ut in *β. trichocarpo* sed *glaberrimis*. — New Mexico; coll. of 1851. — Plant 2 to 5 inches high, slender; the peduncles 2–3-flowered; the legumes varying from a quarter to half an inch long. No. 156, *Pl. Fendl.*, is nearly the same plant. Although the pods are smooth, it is nearer related to the var. *trichocarpus* than to the original *A. Nuttallianus*. — Allied to this species and to *A. distortus*, but with larger flowers than either, is an *Astragalus*, which I have formerly received from Mr. Wright, and recently from Lindheimer, under the name of

† *A. LINDHEIMERI* (*Engelm. ined.*): *glabriusculus*; *caulibus e radice annua plurimis adsurgentibus*; *foliolis 7–8-jugis anguste oblongis emarginatis*; *stipulis e basi lata scariosa subulato-acuminatis*; *pedunculis folium paulo superantibus 6–12-floris*; *floribus approximatis*; *bracteis subulatis pedicello longioribus*; *calycis dentibus setaceis tubo campanulato longioribus*; *vexillo amplo (violaceo) subemarginato*; *leguminibus immaturis oblongo-linearibus subfalcatis glabris 10-spermis*. — Sandbar in the Colorado near Austin, Texas; April. (On rich, Muskit soil, near water, along the Santa Clara, 10 miles south of New Braunfels, April, 1850, *Lindheimer*. Vexillum beautifully purple-blue, as is the tip of the carina; the wings with sulphur-yellow tips.) — A span to a foot high, with the leaves much as in the American *A. Hypoglottis*. Flowers half an inch long: the very slender calyx half the length of the corolla. Mature fruit not seen.

† *A. DISTORTUS* (*Torr. & Gray, Fl. 1. p. 333*): *glabriusculus*; *caulibus e radice perenni plurimis adsurgentibus*; *foliolis 5–12-jugis oblongis obovatisve sæpe retusis*; *stipulis triangulari-subulatis*; *pedunculis folium superantibus*; *spica brevi 10–20-flora*; *floribus mox decurvis*; *calycis campanulati dentibus subulatis tubo subduplo brevioribus*; *vexillo apice emarginato-bilobo*; *leguminibus oblongis turgidis*

character), is a larger plant, with more numerous and usually rounder leaflets, pale flowers (white or ochroleucous, tinged above with rose-color and violet), and very turgid, globose-ovoid, wholly obtuse and pointless legumes, which are over an inch in diameter. These, like the ovary, are perfectly glabrous. (I know not what is represented by fig. 6 and 7 in De Candolle's plate cited above, nor do I find any reference to them in the text.) No. 597, *Pl. Lindh. 2. p. 176*, I must now refer (at least as to the specimen before in the Hookerian herbarium) to

A. PLATTENSIS, *Nutt. in Torr. & Gray, Fl. 1. c.* This is a more hirsute plant than either of the preceding (the young leaves, &c., quite villous), from which it is well distinguished by its larger flowers (an inch long), the *longer subulate teeth of the calyx*, and the *pubescent* (ovate, acuminate) *legume*. To this species belongs Geyer's No. 128, from the Kansas River, referred by Hooker (in *Lond. Jour. Bot. 6. p. 210*) to *A. caryocarpus*: also what I had referred to *A. Mexicanus* (No. 597) in *Pl. Lindheimerianæ*, as just mentioned. The specimens are not in fruit, but the ovary is pubescent (while in the preceding it is perfectly glabrous), and the large flowers, long and narrow calyx-teeth, hairy foliage, &c., exactly accord with Nuttall's original specimens.

A. DIPHYsus, *Gray, Pl. Fendl.*, is a nearly glabrous plant, with adnate stipules, obovate and mostly retuse leaflets, and thin-walled pods.

A. HUMILIS, *Geyer in Hook. Lond. Jour. Bot. 6. p. 211* (non *Bieb.*), of which the fruit only is known, does not belong to this group, although it has a thick-walled pod. The pod is not two-celled, the dorsal suture being only moderately inflexed. It is an acaulescent species, allied to *A. cyaneus*, if it really belongs to this genus, and not to *Oxytropis*.

acutis arcuato-incurvis lunatisve coriaceis glabris (nunc lævibus nunc reticulatis) suturis utroque introflexis subbilocellatis. — Near Austin, Texas, in Mr. Wright's earlier collection. (Near Houston and Brazos, *Lindheimer*. Mason County, Illinois, *Dr. Mead*.) — Flowers 4 or 5 lines long, bluish or purplish: the keel tipped with violet; the vexillum conspicuously notched at the apex. Pod 7 to 9 lines long, following the curvature, not usually abruptly bent or twisted, but strongly arcuate or lunate-incurved, at least when fully ripe, broader transversely than through the sutures. — *A. obcordatus* has obcordate leaflets, an entire or barely re-tuse vexillum, and much broader and larger legumes, which are chartaceous, laterally compressed, straighter, slightly lunate, with the upper suture salient and acute, the lower introflexed, but so little that Mr. Shuttleworth referred the plant to *Phaca*.

‡ *A. MOLLISSIMUS*, *Torr. in Ann. Lyc. N. Y.* 2. p. 178; *Gray, Pl. Fendl.* p. 35. New Mexico; coll. of 1851, in fruit.

140. *OXYTROPIS LAMBERTI*, *Pursh; Bot. Mag. t.* 2147; *Bot. Reg. t.* 1054 (var.). Hills east of Austin, Texas, April; in flower. A remarkably large-flowered, loosely-racemed form of the species.

141. *DESMODIUM NEO-MEXICANUM* (sp. nov.): annuum, pubescens; caule gracili subpedali erecto ramoso; foliis omnibus trifoliolatis; foliolis linearibus reticulatis mucronulatis subtus præcipue ad margines pilosis; stipulis subulatis aristatis; lomento substipitato, articulis parvis puberulis rotundatis medio adnexis. — Mountain valley 30 miles east of El Paso; Oct. Specimens in fruit only. — Leaflets from half an inch to an inch and a quarter long, one to two lines wide, acutish, strongly and coarsely reticulated beneath. Flowers small. Fructiferous pedicels half an inch long or more. Joints of the loment little over a line in diameter.*

142. *DESMODIUM WRIGHTII* (*Gray, Pl. Lindh.* 2. p. 177): caulibus e radice perenni gracilibus ramosis puberulis; foliis omnibus unifoliolatis breviter petiolatis; foliolo membranaceo oblongi-ovato basi subcordato fere glabro subtus pallido; stipulis stipellis subulatis minimis; racemis laxis; lomento 3-4-articulato breviter stipitato, articulis inæquilateris ovalibus. — Thickets near Austin, Texas. (In deep rocky ravines of the Guadalupe above New Braunfels, *Lindheimer*, 1850.) — Stems one or two feet high. Leaves veiny, pale and minutely pubescent underneath, mucronulate; the larger two inches long, on petioles half an inch long; the upper sometimes acute. Legume less than an inch long; the stipe as long as the staminal tube.

143. *CROTALARIA LUPULINA*, *DC. Prodr.* 2. p. 133. Fields, near Presidio de San Elisario and El Paso; introduced. Called "Frijolillo."

* Allied to this and to the succeeding is the subjoined from Northern Mexico: —

DESMODIUM WISLIZENI (*Engelm. ined.*): tenellum, puberulum; caulibus e radice perenni pluribus diffusis; foliis inferioribus unifoliolatis, summis sæpius trifoliolatis; foliolo terminali ovato vel oblongo obtuso sæpe subcordato reticulato scabrido, lateralibus dum adsunt minoribus oblongis; stipulis bracteisque subulato-setaceis conspicuis; racemo elongato; lomento breviter stipitato 3-6-articulato, articulis ovali-rhomboideis glaberrimis medio adnexis. — *Cosiquiriachi, Northern Mexico, Wislizenus*. — Stems a span or more in length. Leaflets thicker than those of *D. Wrightii*, conspicuously reticulated underneath, 6 to 10 lines long. Flowers very small. Loment 5 to 8 lines long when of 4 or 5 joints.

† LUPINUS SUBCARNOSUS, *Hook. Bot. Mag. t. 3467; Engelm. & Gray, Pl. Lindh. p. 34.* Near Austin, Texas. — *L. Texensis, Hook. Bot. Mag. t. 3492, Pl. Lindh. 2. p. 177,* is no more than a variety, and scarcely a permanent one, of *L. subcarnosus*; as an inspection of the original specimens shows. The leaflets of both forms are equally succulent, those of the upper leaves often acute, while the lower are obtuse or retuse.

144. SOPHORA (DERMATOPHYLLUM) SPECIOSA, *Benth. in Pl. Lindh. 2. p. 178.* *Dermatophyllum speciosum, Scheele in Linnæa, 21. p. 459.* Western Texas; common. — The specimens gathered by Dr. Gregg, near Monterey, Saltillo, and Parras, with the foliage densely silky-canescens when young, but glabrate or glabrous when old, belong, I suspect, to a mere variety of the Texan plant, and both are probably to be referred to *S. secundiflora*.

‡ S. (PSEUDOSOPHORA) SERICEA, *Nutt. Gen. 1. p. 280; Torr. & Gray, Fl. 1. p. 390; Gray, Pl. Fendl. p. 38.* New Mexico; coll. of 1851. — The specimens are in fruit, and are the first which have been obtained in this condition. The canescent pods ripen only one seed, either at the base or in the middle, forming an ovate and pointed articulation from 3 to 5 lines long.

145. HOFFMANSEGGIA JAMESII, *Torr. & Gray, Fl. 1. p. 393; Gray, Pl. Fendl. p. 38, & Pl. Lindh. 2. p. 178.* Prairies, east of El Paso, Oct.; in fruit. Also in the collection of 1851. — Some of the stipules show one or two setaceous teeth on each side. The vexillum is often dotted with black glands.*

146. H. CAUDATA (*Gray, Pl. Lindh. 2. p. 179*): frutescens, glaberrima; stipulis bracteisque cordato-ovatis integris scariosis brevibus deciduis; petiolis ramulisque glandulis parvis stipitatis rariter muricatis; pinnis 2–3-jugis 8–10-foliolatis cum impari elongata 24–30-foliolata; foliolis omnino eglandulosis glaberrimis crassiusculis rotundatis oblique subcordatis venosis; racemo sparsifloro; calycibus sparse glandulosis; legumine acinaciformi dilatato glabrato glandulis subsessilibus asperato. — Sandy soil, between the Rio Grande and Nueces, Texas, Sept.; principally in fruit. — A foot or more in height. This species is remarkable for its smoothness (some small tack-shaped glands only occurring on the calyx, or a few still minuter ones scattered on the upper part of the branches and the petioles), and for the elongation of the terminal pinna, which is two or three inches in length, and bears many pairs of leaflets; while the lateral ones are scarcely an inch long. The leaflets are about two lines in length, crowded, thickish, obscurely mucronulate, subsessile, oblique. Raceme sparsely 6–9-flowered. Legume not stipitate, nearly two inches long and two thirds of an inch wide, flat, reticulated, furfuraceous-glandular, and roughened with subsessile, blackish glands; the upper suture straight, except the incurved apex. There are no expanded flowers; the raceme of one specimen bears unopened flower-buds.

* *Hoffmanseggia melanosticta* (*Pomaria melanosticta, Schauer in Linnæa, 20. p. 748*) was gathered by Gregg at Buena Vista (No. 292), and in a valley near Azufrora (No. 497), Northern Mexico. Although allied to *H. Jamesii*, it is readily distinguished by its larger and fewer leaflets (only 6 or 8 to each pinna), and larger, more muricate, and straighter pods. In one specimen the pod is over an inch and a half long. There are a few sessile black glands on the petioles and branches (as is also the case in *H. Jamesii*); in all other respects it perfectly accords with Schauer's description.

‡ *H. BRACHYCARPA* (sp. nov.): glabriuscula, herbacea; stipulis obovatis sæpe dentatis caducis; petiolis ramisque glandulis minimis rariter conspersis; pinnis bijugis cum impari æquilongis; foliolis 4–5-jugis ellipticis nunc retusis enervibus subtus glandulis depressis nigro-punctatis; racemo paucifloro; calycis laciniis lanceolatis nigro-glandulosis; petalis subconformibus, unguibus eglandulosis; legumine ovali fere æquilatere stylo recto cuspidato glabrato ad suturas parce glanduloso et hispidomuricato dispermo. — New Mexico, coll. of 1851; the specimens nearly all in fruit. — A species remarkable for its short and broad, nearly equilateral pods, in this respect apparently much like Bentham's *H. platycarpa* (a species which is not before me); but that has from 4 to 6 pairs of pinnæ and no glands. Our species has many ascending stems from a lignescent root, slender, leafy to the top, angled, minutely pubescent or nearly glabrous, either glandless, or, like the petioles, with a few scattered and sessile black glands. Leaflets minutely pubescent or glabrate, 3–5-lines long, the lower surface sprinkled with rather large, flat, and sessile black glands. Flowers no larger than those of *H. Drummondii*. Petals yellow, with rather long (reddish) slightly pubescent inappendiculate and glandless claws, the vexillum with a few dark glands on the back. Legume 8 or 9 lines long and 4 or 5 broad, rounded at the base, not in the least stipitate, the flat sides puberulent or glabrate, sometimes with a few scattered glands like those of the leaves, the sutures beset with scattered stipitate black glands and with rigid setose-muricate projections.

† *H. DRUMMONDII*, Torr. & Gray, *Fl.* 1. p. 393. Between Austin and the Rio Grande, Texas. — Stems woody at the base. Stipules scarious, ovate, often denticulate. Legumes strongly lunate-incurved, minutely muricate when young.

147. “*H. OXYCARPA* (sp. nov.): stipulis ovato-acutis integris; pinnis 3–5-jugis cum impari; foliolis oblongis enervibus eglandulosis; calycis laciniis obtusiusculis parce glandulosis; petalis elliptico-oblongis subnudis brevissime stipitatis; legumine falcato acutissimo stipitato-glanduloso.” *Benth. Mss.* — Calcareous hills and high prairies of the San Felipe and Live Oak Creeks; July. Also in the collection of 1851. (Near Monterey, Northern Mexico, *Gregg, Edwards, and Eaton.*) — “Foliage nearly that of *H. falcaria*; flowers of *H. Drummondii*, but with rather narrower petals. Pod an inch or more in length, and not above three lines broad.” *Benth.* Stems and petioles villous-pubescent, often with some stipitate glands intermixed; low, slender, from a suffrutescent base. Ovules 7–9. Legume 4–6-seeded, in some specimens of Wright's recent collection larger (4 lines wide) and less acute, the young ones densely glandular-hispid.

148. “*H. DENSIFLORA* (sp. nov.): stipulis late ovatis; caule foliisque pubescentibus vix glandulosis; pinnis 3–6-jugis cum impari; racemo pedunculato per anthesin denso subcapitato calycibusque dense pubescentibus et parce glandulosis; vexillo dense stipitato-glanduloso ungue dilatato; legumine — Caulis e basi perenni nunc humilis, nunc fere pedalis, simplex vel parce ramosus. Folia et stipulæ *H. falcariæ*. Pedunculus folio ultimo paullo brevior, floribus confertis magnitudine *H. falcariæ*. Stamina 10 omnia antherifera. Ovula circa 8.” *Benth. Mss.* — Valley of the Pecos; Aug. — The fruiting specimens and all the loosely-flow-

ered ones, distributed under this number, belong to the next species, from which I am not sure if *H. densiflora* is sufficiently distinct.

148 (partim). *H. STRICTA*, *Benth.*, β . *DEMISSA*: humilis; racemo laxo breviter pedunculato; pedicellis floriferis patentibus fructiferis recurvis; legumine parum falcato. — Mountain valleys west of the pass of the Limpia; Aug. Also in the collection of 1851. Near Saltillo and Parras, Northern Mexico, *Gregg* (No. 268, &c.). — Mr. Bentham has distinguished this, under the name of *H. demissa*: but the copious flowering specimens since gathered by Mr. Wright, some of them dwarf, with the raceme much longer than the rest of the plant, others nearly a foot high, with stricter racemes, lead me to refer it to *H. stricta*, *Benth.* My Coulterian specimen is destitute of fruit, indeed; but the very obtuse legumes both of Wright's and Gregg's plants are minutely glandular, and often falcate, though more commonly straightish. They are from an inch to an inch and a half long, scarcely 3 lines wide, 6 – 12-seeded (ovules about 12). The stems and pedicels are more or less stipitate-glandular, as well as the calyx.

‡ “*H. STRICTA* (sp. nov.): stipulis late ovatis; ramis parce glandulosis foliisque puberulis glabratissve; pinnis 4 – 6-jugis cum impari; racemo stricto; pedicellis disitis suberectis calycibusque pubescentibus et stipitato-glandulosis; vexillo dense stipitato-glanduloso ungue dilatato; legumine falcato glanduloso polyspermo.” *Benth. Mss.* — Zacatecas, Mexico, *Coulter*. With this, specimens in Wright's collection of 1851 well accord, except that the flowers are perhaps rather larger and the pedicels more spreading. They are not in fruit. The tallest specimens are over a foot high. — Mr. Bentham contributes the following remarks. “The above species (*H. stricta*, *demissa*, and *densiflora*) agree with *H. falcaria* in their most important characters. The stipules are broadly ovate, membranaceous, blunt or scarcely pointed; the petioles long and slender, with usually 3 or 4, sometimes 5 or 6 pairs of pinnæ, each bearing from 6 to 10 pairs of obliquely oval-oblong blunt and nerveless crowded leaflets, without any odd one: the common petiole, however, is always terminated, in my specimens, by an odd pinna, usually rather longer than the lateral ones. In all these species, the divisions of the calyx are linear-oblong, rather blunt, equal, or the lower one rather shorter and broader, generally persistent, but sometimes falling off before the fruit is ripe. The four lower and outer petals are nearly equal, scarcely oblique, obovate, and narrowed into long claws, which bear copious stipitate glands on their inwardly turned edges. The upper and inner petal, or vexillum, is equal in length, but very differently shaped: it is concave or folded, the lamina rather smaller than in the others, the claw expanded in the middle, and the copious stipitate glands are on the back instead of the front, covering the claw and the lower part of the lamina. Stamens straight, nearly equal (the lower ones rather longer), the filaments more or less beset with rigid hairs and stipitate glands (the latter sometimes wanting), the five inner always less hairy than the five outer, and all ten antheriferous in all the flowers I have examined. Ovary glandular; the style smooth, clubshaped at the apex, with a contracted opening more or less ciliate; but these cilia and the thickening of the apex appear to vary according to the age of the flower. The pod is flat, the margins slight-

ly thickened, and the apex remains blunt after the falling of the style. — These species, with *H. trifoliata*, *Cav.* (Port Desire, *Middleton*!), differing in its foliage, also *H. gracilis*, *Hook. & Arn.* (Chili, *Cuming*, No. 880!) and *H. prostrata*, *Lag.* (Lima, *Cuming*, No. 1069!), in both of which the petals are scarcely glandular, and the claw of the vexillum long and narrow, would form the section *Hoffmanseggia* proper. *H. viscosa*, *Hook. & Arn.* (W. Colombia, *Cuming*, No. 1175! and Peyta, *Gaudichaud*), may also be referred to the same section, although the claws of the petals are shorter and the pod less marginate and more readily dehiscent. The *H. glandulosa*, *Vog.*, from South America, which I have not seen, must be very near *H. viscosa*, but with a very long glandular raceme. If we consider the section *Pomaria* as characterized by the nearly sessile petals, only differing from each other in the vexillum being rather broader, all with few or no stipitate glands (where they exist they are generally dorsal on the vexillum), we may subdivide it into three or four distinct groups. The first (§ *Gladiatæ*), including *H. gladiata** and *H. platycarpa*,† *Herb. Coll. Trin. Dubl.*, with the habit and foliage of *H. stricta*, without black dots on the leaves, has the flowers nearly as in *H. Drummondii*, and a straight or slightly curved pod, blunt at the apex, with the upper or seminal suture more or less convex, and usually broadest below the middle. The second group (§ *Lunatæ*) would include *H. oxycarpa*, *Drummondii*, and *caudata*, with a variable habit, the leaflets without black dots, and the pod broadly falcate, very sharp by the persistent base of the style, more readily dehiscent than in any of the preceding, with the seminal suture straight or concave. The third group (§ *Melanostictæ*), with the under side of the leaves sprinkled with black glandular dots, and the pod nearly that of the *Lunatæ*, is less known to me, as I have not myself examined any flowers. It would comprehend the *H. melanosticta* and *H. Jamesii*, if the two are not one species. *Pomaria humilis*, *Mart. & Gal.*, is probably allied to *H. platycarpa*, and *P. glandulosa*, *Cav.*, to *H. melanosticta*; but both are unknown to me. Of De Candolle's genus *Melanosticta* I have seen but a very imperfect specimen of *M. Burchellii*, with a pod shaped like that of a *Cæsalpinia*, and still worse specimens without flower or fruit of what appears to be a second African species. Until they can be examined from better specimens, it cannot be determined whether they are or are not generically distinct from *Hoffmanseggia*." *Benth. in litt.* — My *H. brachycarpa*, which, having just reached me from the discoverer, has not yet been seen by Mr. Bentham, would seem to be ambiguous between the sections *Gladiatæ* and *Melanostictæ*, approaching the former in the shape of the pod, but belonging rather to the latter on account of the persistent style and the black glands on the under surface of the leaves. I have still to add another species, entirely glandless, which, with the sessile petals of a *Pomaria*, has the thin, tardily dehiscent and many-seeded legume of *Hoffmanseggia* proper, viz.: —

* "H. GLADIATA: stipulis ovato-acutis; pinnis 3-6-jugis cum impari; foliolis oblongis enervibus eglandulosis; calycibus acutis hirsutis glandulosisque; petalis oblongis brevissime stipitatis; legumine lanceolato subincurvo hirtello et parce glanduloso. (Zimapan, Mexico, *Coulter*.)" *Benth. in litt.*

† "H. PLATYCARPA: stipulis ovato-acutis; pinnis 4-6-jugis cum impari; foliolis oblongis enervibus eglandulosis; calycibus acutis hirtis glandulosisque; petalis ovatis vix stipitatis; legumine late oblongo pubescente vix glanduloso. (Mexico, *Coulter*.)" *Benth. in litt.*

‡ *H. DREPANOCARPA* (sp. nov.): humilis, glabella, undique eglandulosa; stipulis bracteisque ovato-acutis; pinnis 3–5-jugis cum impari; foliolis 9–10-jugis oblongis subfalcatis enervibus; racemo elongato laxifloro; calycis laciniis oblongo-lanceolatis obtusiusculis; petalis subconformibus obovatis exunguiculatis; ovario glaberrimo; legumine lato-lineari utrinque obtusissimo eximie falcato 9–10-spermo, valvulis chartaceis reticulatis. — New Mexico, or between Texas and El Paso; coll. of 1851; in flower and fruit. — Root thick and ligneous, perpendicular, 6 or 8 inches deep; the crown bearing many abbreviated, slender stems, seldom more than an inch or two long before they terminate in the slender (often subradical) peduncle of the elongated and loosely-flowered raceme (the latter with the peduncle 6 inches in length). The stems, foliage, calyx, &c., are minutely cinereous-puberulent, but almost glabrous to the naked eye, especially the leaflets, and all are entirely destitute of any kind of glands. Leaflets about 3 lines long, crowded. Bracts and usually the stipules caducous. Calyx 3 lines long, persistent. Petals yellow, a little longer than the calyx, broadly obovate, very obtuse, nearly alike, except that the vexillum is broader at the base and truly exunguiculate, the other petals being contracted into a narrow insertion; all naked and glabrous. Filaments equal, all ten antheriferous and similarly villous-barbate below the middle. The filiform style and the stigma as described above by Mr. Benth in *Hoffmanseggia* proper. Legume flat, an inch and a half long, following the strong curvature, 3 lines wide, of exactly the same width throughout from the rounded base (subtended by the persistent calyx) to the very blunt and naked apex, glabrous, or minutely puberulent under a lens, not in the least glandular, tardily dehiscent; the thin valves finely reticulated, and transversely impressed between the seeds.

149. *CERCIDIUM TEXANUM* (sp. nov.): pinnis unijugis bifoliolatis; foliolis oblongo-obovatis retusis; petalis late obovatis subrhombeis calyce duplo longioribus; ovario villosissimo; legumine pubero immarginato. — Prairies of Elm Creek and on the Rio Grande, Texas; July, in flower. Also in the collection of 1851; in flower and with some young fruit. — Shrub 2 to 5 feet high, much branched; the branches very rigid, divaricate, flexuose, and usually armed throughout with short and spreading axillary spines, green, when young cinereous, as are the leaves, with a fine close pubescence. Leaves sparse and soon deciduous. Leaflets one or rarely two pairs on each pinna, 2 to 3 lines long, about as long as the partial and general petiole together. Flowers solitary in the axil of a spine, or subracemose at the extremity of some of the branches. Lobes of the calyx oblong-lanceolate. Corolla golden-yellow; the dilated petals 4 or 5 lines long; the vexillar one with a longer claw and a little smaller and rounder lamina than the others, its margins auriculate-inflexed at the base. Immature legume about an inch long, pubescent, flat, about 2-seeded; the valves minutely reticulated, the reticulations narrow and longitudinal; both sutures entirely destitute of a winged margin. The pod is probably dehiscent in this species, as it certainly is in the nearly allied *C. floridum*.*

* *CERCIDIUM FLORIDUM* (*Benth. in Herb. Trin. Coll. Dubl.*): glabellum; pinnis 1–2-jugis; foliolis trijugis obovato-oblongis; petalis obovatis calyce subduplo longioribus; ovario glabro; legumine falcato

150. *CASSIA LINDHEIMERIANA*, *Scheele in Linnæa*, 21. p. 457; *Gray, Pl. Lindh.* 2. p. 179. Western Texas, common. Also Monterey, N. Leon, *Berlandier*. It is allied to *C. apiculata*, *Mart. & Galeotti*; but it is more silky-tomentose, larger in all its parts, with broader and caducous stipules, more numerous leaflets; the mature pods glabrate.

151. *C. RÆMERIANA*, *Scheele, l. c.* Hills, from Austin, Texas, west to the San Pedro River. — Stems 8 to 15 inches high, herbaceous nearly or quite to the base, from a very thick ligneous root.

152. *C. BAUHINIOIDES* (*Gray, Pl. Lindh.* 2. p. 180, *adnot.*): *humilis, suffruticosa, sericeo-canescens*; foliolis unijugis rariusve bijugis, oblongis vel subovatis utrinque rotundatis inæquilateris; glandula interposita; stipulis setaceis persistentibus; pedunculis 2 – 3-floris folium æquantibus; legumine membranaceo turgido rectiusculo vel subfalcato hirsuto. — On the Rio Grande, Texas, and west to New Mexico: also in the collection of 1851. — Stems from a span to nearly a foot high, numerous from a thick and lignescent perpendicular root. Legume oblong or linear-oblong, 8 – 15-seeded.

153. *C. PUMILIO* (*Gray, Pl. Lindh.* 2. p. 180): *nana, subcaulescens e radice longa perpendiculari lignosa, strigulosa*; foliolis unijugis linearibus lanceolatisve cuspidatis subnervatis, glandula subulata interposita; petiolo in appendicem subulatam producto; stipulis setaceis elongatis basi petioli adnatis rigidis persistentibus; pedunculis unifloris folium superantibus infra apicem unibracteatis; sepalis scarioso-marginatis obtusissimis; staminibus 3 superioribus difformibus castratis; legumine inflato ovoideo vel oblongo obtusissimo membranaceo puberulo dehiscente calyce persistente subduplo longiore; seminibus plurimis (6 – 12) horizontalibus septis hyalinis incompletis parallelis. — Bottoms of the San Pedro River, in sandy soil; and on the Rio Grande in Southern Texas. Also in the collection of 1851, with ripe fruit. — This singular dwarf species, with a pod like that of a *Crotalaria* (inflated, and with the sides slightly compressed, half an inch or a little more in length, sometimes globose-ovoid), is scarcely referrible to any one of Vogel's sections, although it has the flowers of a *Chamæsenna*. The deep, often nodose-thickened, ligneous root is six or seven inches long. The caudex or stem, usually very short, sometimes rises two or three inches out of the ground, and is clothed with the subulate persistent stipules. Peduncle two or three inches long, articulated at the insertion of the subulate bractlet. Leaflets subcoriaceous, in some specimens nearly glabrous; the earlier ones lanceolate, or sometimes oblong.

154. *C. NICTITANS*, *Linn.*; *Torr. & Gray, Fl.* 1. p. 396. Mountain valley, thirty miles east of El Paso.*

vel rectiusculo sutura ventrali angustissime marginato. — Northern Mexico, *Coulter, Gregg* (who gathered it between Monterey and Matamoras). *Cerralvo, Wislizenus*. Also found by Col. Emory and Mr. Fremont on the Gila, where it is said to be abundant in an arid region. The flowers are rather smaller than in *C. Texanum*. The legumes two inches long, four or five lines wide, perfectly glabrous, as is the ovary, tardily dehiscent, the ventral suture narrowly, but distinctly and acutely margined.

* I have the following new *Cassias* from Northern Mexico: —

CASSIA (*CHAMÆCRISTA*) *GREGGII* (sp. nov.): *fruticosa, ramosissima; ramis puberulis; stipulis subulatis*

155. *ALGAROBIA GLANDULOSA*, Torr. & Gray, *Fl.* 1. p. 399. Plains of Western Texas. "A tree, from 20 to 30 feet high; the trunk 12 or 18 inches in diameter." — In foliage at least our plant seems unlike *Prosopis dulcis*; but quite like *P. siliquastrum* (or *P. juliflora*), which is thought to be a mere variety of *P. dulcis*. The structure of the pod is the same in all three, and all may be varieties of one widely distributed and polymorphous species, for which the name of *juliflora* should be adopted. What I had once examined as an *Algarobo* pod (*Pl. Lindh.* p. 35) was doubtless the legume of a *Ceratonia*. *P. Limensis* has the seeds inclosed in separate coriaceous investments, as in *P. juliflora*; so has *P. fruticosa*. It is the same in *P. sericantha* and *P. humilis*, only the *pips* are quadrate from mutual pressure. In the former they are very thick and cartilaginous: and the pod in both is liable to break up transversely into one-seeded articles. In *P. torquata* the seeds are inclosed in similar, well-defined pips: so also in *P. abbreviata*, except that they are thin, pointed at both ends, and elongated, so as to become spirally twisted with the pod. These *torquate* species are therefore inseparable from *Algarobia*, except as a mere section, while *P. strombulifera*, *P. reptans*, and the following species, having continuous, even, and closely spiral legumes, are true *Strombocarpæ*.

2013 & 3143 156. *STROMBOCARPA PUBESCENS*. *S. brevifolia*, Nutt. in *Herb. Hook.* *Prosopis* (*Strombocarpa*) *pubescens*, Benth. in *Lond. Jour. Bot.* 5. p. 82. — High pebbly prairies west of Zacate Creek, July; in flower. Valley of the Rio Grande 40 or 50 miles below El Paso, Sept.; in fruit. Also gathered, in flower, in the collection of 1851. North of the Jornada del Muerto, N. Mexico, Dr. Wislizenus. — Shrub 6–12 feet high; the erect spikes an inch or an inch and a half long, on rather long peduncles; the rhachis nearly glabrous, but the flowers silky-pubescent, and the ovary very villous. The closely spiral cylindrical pods are from one to two inches long, and cinereous-pubescent when young. — The specific name of *pubescens* is not well chosen, as the leaflets scarcely appear pubescent to the naked eye. But it may prove to be only a small-leaved variety of Dr. Torrey's earlier-published *Prosopis odorata*. The oblong leaflets, however, are barely half as long, about three lines, and the pinnæ only an inch long.*

persistentibus; foliolis 3–4-jugis elliptico-oblongis glabellis nitidis coriaceis eximie reticulatis (3–4 lin. longis); glandula petiolaris turbinata; pedunculo axillari vel supra-axillari pluribracteato 1–2-floris folio æquilongis; sepalis membranaceis (aurantiacis) obtusis glabellis petalis obovatis aureis dimidio brevioribus; legumine ignoto. — Northern Mexico, near Rinconada, Cerralvo, and Monterey, Dr. Gregg; North of Monterey, Dr. Wislizenus. — A shrub, one or two feet high, with small leaves, and proportionally large, deep-yellow flowers.

C. (*CHAMÆFISTULA*?) *WISLIZENI* (sp. nov.): fruticosa, subglabra; foliis plerumque fasciculatis; foliolis bijugis obovatis retusis mucronatis recte-venosis (3 lin. longis); petiolo eglanduloso in appendicem setaceam producto; stipulis subulato-setaceis; pedunculis 3–5-floris ad apicem ramorum confertis corymboso-paniculatis; sepalis late ovalibus obtusissimis margine subscariosis undulatis petalis (flavis) obovato-rotundis ter quaterve brevioribus; legumine ignoto. — Carizal and Ojo Caliente, south of El Paso, Dr. Wislizenus; Aug. — Shrub 4 to 6 feet high; the branches puberulent, very leafy to the top, and bearing a corymb or panicle of copious and large flowers; the petals almost an inch long.

* Berlandier's No. 2013, mentioned under *Prosopis reptans*, in *Hook. Jour. Bot.* 4. p. 352, was most probably gathered in Northern Mexico, not in Texas. It is doubtless the same as No. 492 of Gregg's Mexican collection, which, I think, may be characterized as follows: —

157. *NEPTUNIA LUTEA*, *Benth. in Hook. Jour. Bot.* 4. p. 356. Low and moist prairies, Zacate Creek; and on the Rio Grande, Texas. — From New Braunfels, Lindheimer has sent a variety with brighter yellow flowers, and with the ovary and young pod pubescent.

158. *DESMANTHUS VELUTINUS*, *Scheele in Linnæa*, 21. p. 456; *Gray, Pl. Lindh.* 2. p. 183. Hills of the Rio Seco, Western Texas; June.

† *D. RETICULATUS*, *Benth. in Hook. Jour. Bot.* 4. p. 357. Near Austin, Texas.

‡ *MIMOSA FRAGRANS*, *Gray, Pl. Lindh.* 2. p. 182. Between Texas and New Mexico; coll. of 1851; with ripe fruit. — The leaflets are rather shorter than in Lindheimer's Texan plant. The ripe pods, of a thin, chartaceous texture, are mostly much constricted between the seeds, perfectly smooth, and unarmed, or very rarely with one or two minute and weak prickles on the margin; which, as well as the more numerous and usually narrower leaflets, distinguishes it from

‡ *M. BOREALIS*, *Gray, Pl. Fendl.* p. 39. Between the frontiers of Texas and El Paso; coll. of 1851; with ripe fruit. — The specimens are exactly like those of Fendler; the branches armed with very strong prickles, and the leaves very small; the margins of the pod also armed with a few large, hooked prickles.*

159. *M. BOREALIS*, var. ? *TEXANA*: foliolis 5–6-jugis oblongis. — Hills near Austin, May, in flower; and on the western borders of Texas, in fruit. Also in the coll. of 1851. — In foliage this is between *M. borealis* and *M. fragrans*; but with the pods of the former. I believe the same plant was gathered by Gregg, near Buena Vista and Cadena; and it is the plant referred to under *M. fragrans* in *Pl. Lindh. l. c.* as formerly gathered by Mr. Wright in Texas.

160. *M. BIUNCIFERA*, *Benth. Pl. Hartw.* p. 12. & in *Hook. Jour. Bot.* 4. p. 409. Mountain valleys, 30 or 40 miles east of the Rio Grande, in Southern New Mexico, Sept.; in fruit. Dr. Gregg also found it near Ojito. — The legumes, which were before unknown, are narrowly linear, falcate-incurved or sickle-shaped, glabrous or nearly so, an inch to an inch and a half long, less than two lines wide, the margin beset with one or two hooked prickles, or more commonly naked. — Mr. Bentham

STROMBOCARPA CINERASCENS (sp. nov.): erecta, humilis; ramulis foliisque cinereo-pubescentibus; pinnis unijugis; foliolis oblongis 8–12-jugis; pedunculo folium æquante; spicis globosis; calyce superne tomentoso dimidium corollæ adæquante. — Valley near Azufrora, New Leon, *Dr. Gregg*. — “Shrub 6–12 inches high.” The slender thorns longer than the leaves. Leaflets twice as large as those of *S. reptans*. Fruit not seen.

* A closely allied North Mexican species, but well distinguished by having the leaflets as well as the pinnæ reduced to a single pair, is characterized by Mr. Bentham as follows:—

“*MIMOSA ZYGOPHYLLA* (sp. nov.): glabra; aculeis infrafoliaceis solitariis recurvis; pinnis foliolisque unijugis, his parvis oblique orbiculatis crassiusculis; pedunculis folio sublongioribus; capitulo globoso; floribus pentameris; legumine glabro subfalcato acutissimo margine nudo vel parce aculeato. — La Vaqueria towards San Juan, 30 miles from Saltillo, *Wislizenus*. Near Saltillo and Monterey, *Gregg*. — Allied to *M. depauperata*; but perfectly glabrous; the leaflets rather larger and thicker (from one to one and a quarter of a line long), never more than one pair on each pinna, of which also each leaf has but one pair. The pod, from an inch to an inch and a half long, is reddish and rather glaucous in the dry state, very smooth, ending in a very sharp point. The shrub is said to be two or three feet high. I have seen the flowers only in a withered state.” *Benth. in litt.*

remarks that this species is perhaps too near *M. acanthocarpa*. *M. Lindheimeri* is also too like it.

161. "*M. FLEXUOSA* (sp. nov. *Ameria Acanthocarpæ*):* fruticosa, minute pruinoso-puberula; aculeis infrastipularibus geminis conicis rectis; pinnis 5–7-jugis; foliolis 7–10-jugis minimis oblongis obtusis crassiusculis puberulis; capitulis globosis; legumine lineari rectiusculo minute cano-puberulo margine tenui aculeato. — Ramuli rigidi, flexuosi, albidi. Aculei caulini cæsiae, 2 lin. longi; petiolares minutissimi. Stipulae minutæ, setaceæ. Petiolus communis vix semipollicaris. Pinnæ confertæ, 2–3 lin. longæ. Foliola fere imbricata, semilineam longa, rigidula, læte virentia, utrinque puberula, obtusa, vel rarius mucronulata. Pedunculi fructiferi 2–3 lin. longi. Legumen pollice paullo longius, vix 2 lin. latum, rectum vel leviter falcatum, crassiusculum, aculeis marginalibus irregularibus rectis. Aff. *M. Lindheimeri*." *Benth. in litt.* — Mountain valleys beyond the Limpia; Aug. "A much-branched shrub, 2 or 3 feet high."

162. = No. 180. q. v.

163. "*M. DYSOCARPA* (sp. nov. *Habbasia*): fruticosa; ramis petiolisque ferrugineo-villosis; aculeis sparsis validis subrecurvis; pinnis 6–10-jugis; foliolis 8–10-jugis oblongis acutis sericeo-villosis; spicis cylindricis; floribus pentameris sericeo-villosis; calyce corollæ dimidium æquante; legumine lineari-falcato dense tomentoso inermi aut margine aculeis validis sparsis armato. — Aculei ramulorum sæpius solitarii, rarius infrastipulares, petiolorum pauci parvi. Stipulae subulatæ, rigidæ, villosæ, 2–3 lin. longæ. Petioli communes sesquipollicares, tomentosi. Foliola conferta, vix 2 lin. longa. Spica densa pollicaris. Calyx fere lineam longus, membranaceus, breviter 5-dentatus. Stamina 10: filamenta sursum complanata. Ovarium villosissimum. Legumen sesqui–bipollicare, 3 lin. latum, apice rigide acuminatum, fere pungens, tomento rufescente dense vestitum, valvulis ab margine crasso in articulos demum secedentibus." *Benth. in litt.* — Mountain valleys in the Pass of the Limpia and beyond, August; in fruit. Also in the collection of 1851, in flower. This species seems in some respects to connect the *Ameria Acanthocarpæ* with *Habbasia Batocaulon*, having the habit and small leaflets of the former; but the pods, although at first appearing continuous, at length separate into from five to seven articles.

164. *M. MALACOPHYLLA* (*Gray, Pl. Lindh. 2. p. 182, adn.*): suffrutescens, molli-ter sericeo-tomentulosa; caulibus procumbentibus angulatis petiolisque copiose aculeatis, aculeis brevibus uncinato-recurvis; pinnis 4–7-jugis; foliolis 5–8-jugis ovatis vel ovali-oblongis mucronatis venosis; panicula racemosa laxa; floribus 5-meris 10-andris; legumine lato-lineari longiuscule stipitato membranaceo glabro nitido inermi 6–8-spermo. — On the Rio Grande, in Southern Texas, August, September; in flower and fruit. Also gathered near Monterey, Northern Mexico, by *Dr. Gregg* and *Dr. Edwards*, without fruit; and east of Rinconada by *Dr. Gregg* in 1848. — Plant with the habit of a *Schrankia*, canescent with a fine and very soft down; the partial and general petioles, as well as the stem, beset with

* The characters of this and several other new Mimoseæ were obligingly communicated by Mr. Bentham.

numerous short, uncinatè prickles. Leaflets 3 to 5 lines long. Flower swhite, according to Mr. Wright, yellowish, according to Dr. Gregg. Legume two inches or more in length, with a stipe-like base half an inch long, very smooth. — A well-marked species of the section *Habbasia Rubicaules*.

165. *CALLIANDRA CHAMÆDRYS*, *Engelm. in Pl. Fendl. p. 39*; var. *foliolis oblongis* (1–2 lin. longis). — Hills on the Rio Grande, Texas, in great abundance, July; in flower. — “Plant a foot high.” The leaflets are pilose when young, with longer and looser hairs than those of *C. Californica*, soon glabrate, and they are coarsely reticulate-veined from a prominent midrib. The pinnæ are commonly two pairs, sometimes three. — *C. Chamædrys* must be critically compared with *C. eriophylla* of Benth, who, I perceive, has referred one of Dr. Gregg’s Chihuahuan specimens to that species. The leaflets are soon glabrate, and the pinnæ frequently unijugate.

166, 167. “*C. CONFERTA* (sp. nov.): *humilis*; *ramulis petiolisque pubescentibus*; *pinnis unijugis*; *foliolis 8–12-jugis parvis oblique oblongis subcoriaceis nitidulis subtus sericeo-villosis*; *pedunculis petiolo brevissimo longioribus subcorymbosis*; *floribus paucis sessilibus pilosis*; *calyce corollæ dimidium æquante*; *legumine adpresse villosa, valvulis medio membranaceo-coriaceis crasse marginatis*. — *Fruticulus semipedalis*. *Stipulæ lanceolato-subulatæ, lineam longæ*. *Petiolus communis stipulis fere brevior*. *Pinnæ semipollicares*; *foliolis vix 2 lin. longis, confertis, villis longis paginæ inferioris obtectis, supra glabriusculis*. *Pedunculi subfasciculati, 2–4 lin. longi*. *Flores in capitulo 5–9, (staminibus neglectis) vix 2 lin. longi*. *Calyces breviter 5-dentati*. *Stamina (ex sicco) pallida, vix semipollicaria*. *Legumen sessile, basi longe angustatum, sesquipollicare, 3 lin. latum*. — This species ranks with the *Nitidæ Unijugæ*, near *C. brevipes*, and is readily distinguished by its small stature, few leaflets and flowers, and very hairy leaves. In these respects it is nearer *C. eriophylla*; but it appears never to have more than one pair of pinnæ, and the form and proportion of the flowers are different.” *Benth in litt.* — Hills at the head of the San Felipe, in flower; and on Zacate Creek, July, in fruit: also on the Rio Grande, Texas.

168. *C. HERBACEA*, *Engelm. in Pl. Fendl. p. 39*. Mountain valleys in the Pass of the Limpia, Aug.; in fruit. Also in the collection of 1851, from the same region, both in flower and fruit. — Stems numerous from a thick and lignescent caudex, three or four inches long, slender, spreading. Leaflets from one to two and a half lines long, subcoriaceous, when young villous beneath and on the margins with loose silky hairs, at length glabrate. Flowers apparently pale purple; the calyx and corolla pubescent, becoming glabrate; the stamens exerted for a quarter of an inch. Legumes 2 or 2½ inches long, 3 lines wide, minutely puberulent under a lens, the valves chartaceo-coriaceous, with very tumid narrow margins, bursting elastically in the manner of the genus. Seeds oval, mottled. — I suspect it is not specifically distinct from *Calliandra humilis*, *Benth. in Lond. Jour. Bot. 5. p. 103*, from Zacatecas, No. 511 of Coulter’s Mexican collection.

169. *DESMANTHUS JAMESII*, *Torr. & Gray. Fl. 1. p. 402? Gray, Pl. Fendl. p. 38*; var. *legumine breviori acutato*. — Mountain valleys in the Pass of the Limpia; Aug. — This is the same as the plant of Fendler’s collection, above cited, only the

legume is sharp-pointed. The leaflets are ciliolate, otherwise glabrous. The very rigid and thick pod is like that of *D. velutinus* (which is in Wright's collection of 1851 from the same region), of which it is most likely only a smooth variety.

170, 171. "*LEUCÆNA RETUSA* (sp. nov.): subglabra; pinnis 2–5-jugis; foliolis 6–8-jugis oblique obovatis vel late oblongis obtusis retusisve membranaceis venosis; pedunculis capitulo longioribus; legumine subcoriaceo, marginibus incrassatis. — Gemmæ et folia novella pube tenui flavescunt; ramuli et folia adulta glabra sunt. Stipulæ membranaceæ, puberulæ, basi obliquæ et latæ, in acumen subulatum 2–3 lin. longum desinentes. Petioli tenues, communis 3–4 poll. longi, partiales vix breviores. Glandulæ parvæ, elevatæ, fere stipitatæ. Foliola pleræque 8–10 lin. longa, 4–6 lin. lata, nonnulla fere dimidio minora, basi valde obliqua, læte-virentia, 3–5-nervia et reticulato-venosa. Pedunculi floriferi pollicares, fructiferi bipollicares. Capitulum fere *L. glaucæ*. Bractæ stipitatæ; lamina peltata, ovata, subulato-acuminata, supra villosa. Calyx $1\frac{1}{4}$ lin. longus, tubulosus, membranaceus, apice breviter 5-dentatus. Petala anguste oblonga, calycem paulo superantia. Stamina 10; antheris glabris. Legumen 6–9 poll. longum, 6 lin. latum, rigidius et crassius marginatum quam in *L. glauca*. — The general appearance of the foliage of this species is that of some *Albizzia* allied to *A. Milleti*." *Benth. in litt.* — Bottom of the Rio Nueces, June, in flower; and Pass of the Limpia, Aug., in fruit. Also in the collection of 1851.

172. "*ACACIA MALACOPHYLLA* (sp. nov. *Vulgares Pennatæ*): subscandens? molliter pubescens; aculeis subrecurvis sparsis raris; pinnis 2–3-jugis obliquis obovatis oblongisve obtusis utrinque molliter pubescentibus; capitulis globosis; legumine lato-lineari glabro. — Ramuli et folia pube molli undique canescentia. Petioli communes tenues, 2–3-pollicares; partiales breviores. Foliola 3–6 lin. longa, obscure venosa. Pedunculus fructifer sæpius pollicaris. Legumen 4 poll. longum, 9 lin. latum, falcatum, basi acutum et breviter stipitatum, planum, tenuiter subcoriaceum, margine leviter incrassato." *Benth in litt.* — Uplands of the Leona, Western Texas, June; in fruit. Near Cerralvo, Northern Mexico, May (in fruit), *Wislizenus* (No. 363), whose specimen is more aculeate, some of the rameal aculei geminate. Notwithstanding the specimens are in fruit only, Mr. Benthham remarks, that the remains of the flower at the base of the pod leave no doubt as to the genus and affinities of the plant, although it is so very distinct a species in the group to which it belongs.

173. "*A. WRIGHTII* (sp. nov. *Vulgares Nudifloræ*): glabra, inermis; stipulis minutis obsoletisve; pinnis 1–2-jugis; foliolis 2–4-jugis oblique obovatis oblongisve obtusis vel retusis; spicis elongatis laxis; floribus breviter pedicellatis; legumine lato-lineari obtuso plano membranaceo marginato glabro. — Ramuli albidi. Folia subfasciculati: petiolo communi 2–6 lin. longo, partialibus 4–6 lin. Glandulæ parvæ convexæ. Stipellæ minimæ ad basin pinnarum. Foliola rigidula, 2–3-nervia; ultima 3–5 lin. longa, 2–3 lin. lata, fere dimidiata; inferiora sæpius minora. Pedunculi sesqui–bipollicares, jam infra medium interrupte floriferi. Bractæ minutæ. Pedicelli calyce breviores. Flores cum staminibus fere 3 lin. longi, absque staminibus linea vix breviores, pentameri. Calyx semi-5-fidus, membrana-

ceus, glaber. Petala spathulata, ima basi subconnata, margine tenuissime lanato-ciliolata, calyce duplo longiora. Legumen stipitatum, subfalcatum, 2-3 poll. longum, 8-9 lin. latum." *Benth. in litt.* — Prairies west of St. Antonio, and on the Rio Grande, Texas, June; in flower and fruit. Also in the collection of 1851, from Western Texas. (Near Ojito, Northern Mexico, *Gregg.*) — A small, much-branched tree; the flowering branches loaded with slender and graceful spikes. According to Mr. Bentham, the species much resembles *A. hamulosa* and other African species among the *Ataxacanthæ*, as well as *A. rigidula* and *A. amentacea* among the *Gummiferae*; but there is no vestige of any thorns or prickles.

‡ *A. GREGGII* (sp. nov. Vulgares *Ataxacanthæ*): glabella; ramis virgatis; aculeis paucis sparsis recurvis; stipulis minutis obsoletisve; pinnis 1-3-(sæpius 2-) jugis; foliolis parvis 3-7-jugis obovato-oblongis subobliquis crassiusculis subtrinervatis petiolisque minute pubescentibus mox glabratis; spicis cylindricis elongatis folia duplo superantibus; floribus subsessilibus; legumine lato-lineari subfalcato acuminato plano membranaceo glabro. — Western Texas; coll. of 1851; in flower and with young fruit. (Dry valley west of Patos, Northern Mexico, April, *Gregg.*) — A small tree, 10 or 20 feet high, with white [cream-colored?] flowers, according to Dr. Gregg. It much resembles *A. Wrightii*, and has the same inflorescence; but the branches are sparingly armed with solitary and rather stout recurved prickles, the leaves are not half as large, and are minutely pubescent, at least in Wright's specimens, the spikes (12-18 lines long) are denser, and the young pods (2 or 3 inches long and 5 or 6 lines wide) taper to an acute point. Common petiole 3-5 lines long; pinnæ 3-6 lines long; a petiolar gland below the lower pair. Leaflets not more than a line and a half in length, pale, rather crowded.

174. *A. RIGIDULA*, *Benth. in Lond. Jour. Bot.* 1. p. 504. Rocky hills near Turkey Creek, Western Texas, June; in flower only. — "Shrub 4 to 6 feet high." *

‡ *A. RÖMERIANA*, *Scheele in Linnæa*, 21. p. 456; *Gray, Pl. Lindh.* 2. p. 185. Western Texas; coll. of 1851, in fruit.

175, 176. *A. TEPHROLOBA* (sp. nov. Vulgares *Pennatæ*): aculeis sparsis raris vel nullis; ramis petiolis pedunculisque cinereo-puberulis; pinnis 5-9-jugis, glandula depressa; foliolis 25-45-jugis oblongo-linearibus inæquilateris acutiusculis vel mucronulatis glabellis viridibus venulosis; stipulis semicordatis acuminatis; pedunculis axillaribus et subpaniculatis; capitulis dense multifloris; calyce corolla breviora; legumine plano lato-lineari rectiusculo obtuso basi in stipitem angustato pube brevissima mollissima velutino-canesciente. — Hills of the San Pedro River, Nov., in flower; and on the Rio Seco, Western Texas, June, in fruit. Also in the collection of 1851. Mier, on the Mexican side of the Rio Grande, *Wislizenus*, No.

* *Acacia flexicaulis*, *Benth.*, occurs with full-grown pods in the collection of Dr. Wislizenus from Cerralvo and Monterey; and in Dr. Gregg's from Camargo and Monterey, both in flower and fruit. The pods are 3 or 4 inches long, an inch wide, falcate, exceedingly thick and convex, almost woody, and divided between the seeds by false partitions of thick dry pulp, as in *A. Farnesiana*. The seeds are globular-ovoid, and over half an inch in their longer diameter. When green they are cooked and eaten, and when dry they are used as a substitute for coffee, according to Dr. Gregg. It forms a tree, from 20 to 30 feet high.

365; and west of Patos, &c., *Gregg*. — A shrub, from 3 to 15 feet high. Pinnæ $1\frac{1}{2}$ to 3 inches long: leaflets commonly 2 or 3 lines long. Stipules foliaceous, obliquely triangular-semicordate, or the upper subulate from a broad base, caducous. Heads half an inch in diameter. Legumes 4–6 inches long, three quarters of an inch broad, remarkably velvety-canescens; the valves perfectly flat, coriaceous, with somewhat thickened margins. Unripe seeds flat. — Allied to *A. Berlandieri*, *Benth.*, for which it was at first mistaken; but distinguished by its sparingly aculeate branches, glabrate foliage, and long, flat, stipitate pods.* — Between Monterey and Cerralvo, Wislizenus gathered a fruiting specimen (No. 343), with mature dehiscent pods, which is most likely a variety of *A. tephroloba*. These pods are broader and proportionally shorter (oblong, an inch wide, and 3 or 4 inches long), somewhat curved, the valves more indurated, and the large seeds flat.

177. *A. CUSPIDATA*, *Schlecht. in Linnæa*, 12. p. 573; *Benth. in Lond. Jour. Bot.* 5. p. 99. Hills of Turkey Creek, Western Texas, June; in flower and fruit. "Plant one to three feet high." — This is the same as Coulter's Mexican plant, referred by Benth. to *A. cuspidata*, except that the pods are mostly longer. But I fear it is much too near *A. Texensis* (of which I have no authentic specimen), and I am confident that it passes into *A. hirta*.

178. *A. HIRTA*, *Nutt. in Torr. & Gray, Fl.* 1. p. 404; *Benth. in Lond. Jour. Bot.* 1. p. 525. Low prairies of the Guadalupe, Texas; May.

179. "*A. COULTERI* (sp. nov. *Vulgares Nudifloræ*): glabra vel minute puberula, inermis; stipulis minutis obsoletisve; petioli glandulis parvis oblongis; pinnis 3–5-jugis; foliolis 10–25-jugis oblongo-linearibus valde obliquis acutiusculis obtusisve; spicis elongatis axillaribus laxifloris; floribus subsessilibus puberulis; calyce corollæ dimidium æquante; ovario stipitato glabro; legumine lato-lineari plano marginato puberulo, valvulis rigidulis. — (Zimapan, Mexico, *Coulter*; without any number.) Uplands of the Leona River, Western Texas; June. — Allied to *A. Acatlensis* and *A. Wrightii*, but perfectly distinct from both. The leaflets are about three lines long, and scarcely a line broad. The spikes from 2 to $2\frac{1}{2}$ inches long, on a very short peduncle; the flowers not crowded, and often distant from each other. They are, including the stamens, about $2\frac{1}{2}$ inches long; the corolla itself about one line. Pod at least three inches long and nearly one inch broad, covered with a minute down, obscurely veined: it is of a much thicker and firmer consistence than that of *A. Wrightii*." *Benth. in litt.*

180. "*A. CONSTRICTA* (sp. nov. *Gumiferæ Medibracteatae*): subglabra; spinis stipularibus subulatis divaricatis rectis vel subrecurvis; pinnis 2–7-jugis; foliolis parvis 6–10-jugis oblongis obtusis crassis enervibus, glandula parva scutelliformi; pedunculis medio bracteatis; legumine anguste lineari complanato toruloso glabro,

* *A. BERLANDIERI* (*Benth. in Lond. Jour. Bot.* 1. p. 522): adde char. legumine oblongo falcato ($2\frac{1}{2}$ -pollicari) utrinque obtuso estipitato velutino-puberulo, valvulis coriaceis convexis; seminibus turgidis. — The character of the fruit is drawn from a pod which accompanies a flowering specimen in the collection of Wislizenus (No. 276), gathered about Cadena, half way between Chihuahua and Monterey, New Leon, where (not in Texas) Berlandier's plant, with the character of which this well accords, was collected. The pod, unfortunately, is not attached.

valvulis coriaceis. — Ramuli tenues rigidi, novelli vix minute puberuli, nunc visciduli. Folia ramorum sterilium vegetiora, petioli communi sæpe 1 – 1½-pollicari puberulo, pinnis 4 – 6-jugis; ramorum florentium glabra, petiolo communi raro 4 lineas excedente, pinnis plerisque bijugis. Pinnæ 4 – 6 lin. longæ; foliola raro lineam excedunt. Pedunculi solitarii vel cum foliis fasciculati, 6 – 9 lin. longum. Capitulum parvum, florens cum staminibus 4 lin. diametro. Bracteæ alabastro breviores. Flores 5-meri, rarius 4-meri. Calyx membranaceus, truncatus, breviter dentatus. Petala calyce triplo longiora, alte connata. Legumen stipitatum, rectiusculum vel falcatum, 2 – 5 poll. longum, 1½ – 2 lin. latum, inter semina constrictum, suturis leviter incrassatis. — This is the only American *Medibracteate* species known to me.” *Benth. in litt.* — Prairies, near the source of the San Felipe, July; in flower and fruit. Pass of the Limpia, Aug.; in fruit (No. 162). Abundant in the collection of 1851. Sand-hills 50 miles below El Paso; Jornada del Muerto, and thence to Chihuahua, common, *Wislizenus* (flowers exhaling the fragrance of orange-blossoms). Near Mier, Castanuela, and Buena Vista, *Gregg.* — Shrub 5 to 8 feet high. Stipular spines on the flowering branches from 3 to 6 lines long. Most of the numerous flowering specimens gathered by Mr. Wright during the past year have not only the branchlets but the foliage glutinous, so that they adhere to the paper in which they were dried.

† *A. FARNESIANA*, *Willd.* Common in Western Texas and Northern Mexico. One of Gregg’s specimens is referred by Mr. Bentham to the nearly allied *A. Cavenia*, and Lindheimer has a flowering specimen, with very small leaflets, which might also be so referred.*

ROSACEÆ.

181. *PRUNUS RIVULARIS*, *Scheele in Linnæa*, 21. p. 594; verging to *P. Americana*. Along the Leona River, June; in fruit. — Lindheimer remarks, that it more commonly grows on declivities than along the banks of streams.

* *Leucæna glauca* is in Gregg’s North-Mexican collection, from near Rinconada, where, as well as in other localities, he also gathered the following remarkable *Pithecolobium*: —

“*PITHECOLOBIUM BREVIFOLIUM* (sp. nov. *Samanea stipulis spinescentibus*!): ramulis inflorescentia foliisque junioribus puberulis; stipulis subulatis plerisque spinescentibus; pinnis 3 – 5-jugis; foliolis 10 – 20-jugis oblongo-linearibus subtus pallidis; panicula foliosa; floribus cano-puberulis; corolla calyce plus triplo longiore; ovario stipitato glabriusculo; legumine recto glabro, valvulis haud coalitis.” *Benth in litt.* — Between Cerralvo and Monterey, more common in the low country, May, *Wislizenus* (No. 362, 355). East of Rinconada and Papagallo; also between Cerralvo and Maria, *Gregg.* — “This species in its straight pod, not curled or twisted as in most *Pithecolobia*, and general character, is allied to *P. fragrans* and *P. Berterianum*; but it appears to be a shrub, not a tree; the pinnæ and leaflets are very much fewer; the pod is thinner and drier, although the valves are of a reddish hue inside, and show signs of a dried-up thin pulp, as in all species of *Pithecolobium*; and, above all, the stipules are generally persistent in the form of straight spines from 2 to 4 [and even 6] lines long, which is not known to be the case in any other species of the section *Samanea*. The leaflets are from 2 to 3 lines long, very much like those of *P. fragrans*. The inflorescence is but imperfectly developed in the specimens gathered, but appears to be the same as that of *P. fragrans*.” *Benth. in litt.*

Schrankia platycarpa, *Gray, Pl. Lindh.* 2. p. 183, in Lindheimer’s collection of 1849, has the broadly linear and flat pods aculeate on the thickened margins, and along the middle of the valves, the rest of the face naked.

‡ CERASUS (MICROCERASUS) MINUTIFLORA, *Engelm. in Pl. Lindh.* 2. p. 185, sub Pruno. Western borders of Texas; coll. of 1851, in fruit. A few fruiting specimens were gathered on the former journey, along the prairies of Turkey Creek, June; but they were not distributed. The plant is a close congener of *Amygdalus microphylla*, *H. B. K.*; but the glaucescent leaves are entire, or nearly so, and very obtuse, or retuse: the larger ones are three quarters of an inch long, not including the slender petiole. The globular fruit is tomentulose, nearly half an inch in diameter, the thin flesh dry, narrowly grooved down the ventral suture, down which it inclines to split, as in the Almond, in dried specimens, and to separate from the globose, smooth and even putamen, the sutures of which are slightly and obtusely ridged and grooved, not carinate, and the sides not at all compressed.

182. SPIRÆA (PETROPHYTUM) CÆSPITOSA, *Nutt. in Torr. & Gray, Fl.* 1. p. 418; *Gray, Pl. Fendl.* p. 40. Crevices of rocks on the mountains east of El Paso; forming dense flat tufts, from one to three feet in diameter; Oct.*

183. CERCOCARPUS PARVIFOLIUS, *Nutt. in Torr. & Gray, Fl.* 1. p. 427; *Hook. Ic. Pl. t.* 323: var. foliis plerisque vix dentatis. Mountains of New Mexico, 40–60 miles east of the Rio Grande; Aug. (in fruit). The leaves are narrower and much less toothed than in No. 194 of Fendler's collection.†

184. FALLUGIA PARADOXA, *Torr. in Emory, Rep. t.* 2; *Gray, Pl. Fendl.* p. 41. *Sieversia paradoxa*, *Don.* Geum? cercocarpoides, *DC. Prodr.* 2. p. 554. (ex Icon.!) Banks of the Rio Grande and Nueces, Texas, and westward. — Geum dryadoides may be the *Cowania plicata*, *Don.*, the *C. purpurea*, *Zucc.* (*Greggia rupestris*, *Engelm. in Wisliz. N. Mex.*), abundantly met with by Gregg and others in Northern Mexico; but its flowers are not white.

‡ POTENTILLA PARADOXA, *Nutt. in Torr. & Gray, Fl.* 1. p. 437. Between Western Texas and New Mexico; coll. of 1851. — The root is annual or biennial.

185. ROSA BLANDA, *Ait., β. Torr. & Gray, Fl.* 1. p. 460. Along the Limpia, Aug.; in fruit.

LYTHRACEÆ.

186. NESÆA LONGIPES (sp. nov.): herbacea, ramosissima; ramis elongatis gracilibus; foliis linearibus oppositis basi auriculata subsessilibus margine revolutis; pedunculis filiformibus in axillis solitariis unifloris sub flore bibracteolatis; petalis 6 purpureis; staminibus 12 subæquilongis. — Low grounds, along the Rio Grande and Medina, Texas, and west to Zacate Creek; July. (Near Parras, *Gregg.*) — Stems slender, from one to three feet long, diffuse or ascending, glabrous, as is the whole plant, slightly angled. Leaves one to two inches long, one to two lines wide, acute. Peduncles about as long as the leaves; with a pair of small bractlets very near the flower; from the axils of which there is rarely seen the pedicel of an

* *Lindleya mespiloides*, *H. B. K.*, or a species which I have not the means of clearly distinguishing from it, was abundantly gathered by Dr. Gregg, near Saltillo and Buena Vista. It is a "shrub, eight or ten feet high, growing on rocky cliffs."

† *Cercocarpus fothergilloides*, *H. B. K.*, was likewise gathered by Dr. Gregg, near Saltillo; where it forms "a large, evergreen shrub."

additional flower. Petals three lines long. Stamens almost equally inserted in the bottom of the calyx, scarcely unequal in length, not exceeding the petals. Style filiform, much exserted. — From the section *Heimia* this plant differs only in its purple flowers, elongated peduncles, and herbaceous habit; from *Decodon*, in its solitary hexamerous flowers, and its equal and equally inserted stamens; and from *Nesæa* proper, in the one-flowered peduncle with small bracts, in which respect, however, as in its foliage and tendency to bear three flowers on the peduncle, it agrees with *N. Candollei*, *Guill. & Perrotet*.*

187. *LYTHRUM ALATUM*, var. *LINEARIFOLIUM*, *Gray, Pl. Lindh. 2. p. 188*. Low grounds, Western Texas; May. — The petals are smaller than in Lindheimer's plant (which occurs again in the collection of 1850). *L. flexuosum*, *Lagasca* (*L. Græferi*, *Tenore*), perhaps belongs to the same species.

188. *L. ALATUM*, var. *PUMILUM*, *Gray, Pl. Lindh. l. c.* Rio Nueces, in shallow water. — *L. flagellare*, *Shuttleworth, Pl. Rugel, No. 232*, from Florida, is intermediate between this and the var. *ovalifolium*, *Pl. Lindh. l. c.*

ONAGRACEÆ.

† *EPILOBIUM COLORATUM*, *Muhl. in Willd. Enum. 1. p. 411*. Along the Limpia; August.

189. *ŒNOTHERA JAMESII*, *Torr. & Gray, Fl. 1. p. 693; Gray, Pl. Lindh. 2. p. 189*. Along the San Pedro River; also found eastward as far as to Austin. The wild plant is from four to six feet high, and with flowers as large as the cultivated, viz. five inches in diameter.

190. *Œ. BIENNIS*, *Linn., var.* Along the Limpia. — This is the same strigose-hirsute variety as No. 218, *Pl. Fendl.*, a form which is common in Oregon and along the Rocky Mountains.

† *Œ. BIFRONS*, *Don, in Sweet, Brit. Fl. Gard. 4. t. 386; Hook. Bot. Mag. t. 3764*. *Œ. heterophylla*, *Spach, Onagr. p. 28*. Plains of Western Texas. — To this must needs belong No. 56, *Pl. Lindh.*, referred to *Œ. rhombipetala*, from which it differs in the broad and somewhat cordate bracteal leaves and more or less obtuse petals. It accords with No. 74 of Drummond's third Texan collection; but the lower leaves incline to be pinnatifid, as they strikingly are in No. 53 of Drummond's second collection, which is the *Œ. heterophylla* of Spach.

191. *Œ. ALBICAULIS*, *Nutt. in Fras. Cat., & Gen. 1. p. 245*. Var. *subcinerea*; foliis sinuato- seu pinnatifido-dentatis; caule lignescente ramosissimo. — Valley of the Rio Grande, 60 or 70 miles below El Paso, in sandy soil; Oct. — I employ the oldest name of a very polymorphous species, which also varies exceedingly in size and duration; flowering sometimes as a low annual, and again, becoming lignescent at the base and branching copiously, it apparently endures for a longer period. The same species, but with less toothed leaves, is *Œ. pinnatifida*, *Gray, Pl. Fendl. p. 44* (No. 224), where some remarks are made upon the extent of the species, which

* *Nesæa* (*Heimia*) *salicifolia* was gathered by Dr. Gregg in Northern Mexico, from Camargo to Monterey and Queretaro.

the Hookerian herbarium fully confirms. No. 176 of Geyer's Oregon collection, referred by Hooker to *Æ. pallida* (in *Lond. Jour. Bot.* 6. p. 222), is exactly the same as No. 224 of Fendler. These forms run insensibly into those with longer, lanceolate or linear leaves, either repand-dentate or nearly entire, very minutely pubescent, and with very smooth and white stems, — the *Æ. albicaulis*, *Nutt.*, *Hook. Fl. Bor.-Am.*, &c. Sometimes the plant attains the height of four feet, according to Geyer, and is very bushy. *Æ. pallida*, *Dougl.*, judging from Douglas's own specimens, and the figure in the Botanical Register (t. 1142), differs from the narrow-leaved, true *Æ. albicaulis*, *Nutt.* only in its smoothness, losing nearly all trace of the fine pubescence; while Nuttall, Tolmie, and others, have under this name a bushy form of the plant, with broader and shorter leaves, the very smooth surface often beset with a few hairs. *Æ. leptophylla*, *Nutt.*, is the same as the last, very bushy, and with crowded, small leaves on the branches; in Burke's Oregon collection we have the same thing, but almost as cinereous-pubescent as the specimens of Wright with which this account began, and the leaves, though narrower, are as strongly toothed. This brings us round to the *Æ. pinnatifida*, *Nutt.*, the *Æ. albicaulis*, *Pursh* (of which the original specimens of Bradbury are the same as Nuttall's, and also Geyer's No. 37); which begins to flower when only three or four inches high, but usually continues through the season; sometimes bearing pinnatifid leaves, such as Fendler's No. 223, and sometimes with barely toothed or nearly entire leaves, as in Fendler's No. 224. Between these two, Wright's No. 191, characterized above, is exactly intermediate.

192. *Æ. SPECIOSA*, *Nutt.*; var. *foliis lanceolatis subintegerrimis*; flore minore. — Hills along the Leona; June. This species is exceedingly variable in foliage.

193. *Æ. SPACHIANA*, *Torr. & Gray, Fl.* 1. p. 498. *Blennoderma Drummondii*, *Spach, Monogr. Onagr. addend.* p. 87. *Oenothera Drummondii*, *Walp. Rep.* 2. p. 85, non *Hook.* Near Austin, Texas: also gathered on the Rio Brazos by Lindheimer.

194. *Æ. (MEGAPTERIUM) MISSOURIENSIS*, *Sims, Bot. Mag.* t. 1592; *Gray, Pl. Lindh.* 2. p. 188 (var. *a*, the narrow-leaved form). Gravelly banks of the Nueces; June.*

† *Æ. (LAVAUXIA) TRILOBA*, *Nutt.*; *Hook. Bot. Mag.* t. 2566; *Gray, Pl. Lindh.* 2. p. 189. Near Austin, Texas. — Biennial. The dehiscence is loculicidal, and I think never also septicidal, as I stated in the Flora of North America. — Although with a more crustaceous or lignescent pod, with small and even wings, and a truly perennial caudex, I consider the following to form a second species of this section.

† *Æ. (LAVAUXIA) BRACHYCARPA* (sp. nov.): *acaulescens, pube brevi cinerea*;

* Here belongs No. 268 of Geyer's Oregon collection, referred to *Æ. Drummondii* in *Lond. Jour. Bot.* 6. p. 221. The latter is only found in the low country of Texas. — *Æ. guttulata*, *Geyer, l. c.*, is the same as *Æ. canescens*, *Torr. in Fremont's 2d Rep.*, as referred in *Pl. Fendl.* p. 44. It was also gathered by Wislizenus, at Rock Creek, New Mexico. — The specimens of *Æ. heterantha*, *Nutt.*, collected in Oregon by Geyer (No. 406), and especially those of Burke, have many of the leaves *lyrate-pinnatifid*, so that it is not surprising that they should have been referred by Hooker to *Æ. triloba*. One of Burke's specimens in the Hookerian herbarium has ripe capsules: these are ovoid-oblong, barely acute, bearing the persistent remains of the whole calyx, smooth and even, the valves with a slightly prominent smooth medial rib. Seeds ovoid, reticulate-pitted under a lens, with a slender and inappendiculate raphe.

caudice incrassato; foliis primariis ovatis oblongisve subintegerrimis, sequentibus ly-rato-pinnatifidis lobo terminali oblongo-lanceolato vel lineari-lanceolato; tubo calycis prælongo; capsulis sessilibus ovatis tetragono-alatis lignescentibus lævibus; seminibus angulatis testa suberosa incrassata. — Between Western Texas and El Paso; in fruit. Also in the collection of 1851, in flower, and with a few capsules of the preceding year. — The branching, creeping caudex is from one third to half an inch in diameter. Leaves crowded, cinereous or canescent with a fine and close pubescence, glabrate above with age, petioled; the earlier ones (as seen in the coll. of 1851) mostly entire or repand, with the lamina two inches or less in length and sometimes an inch wide; the succeeding ones narrower and mostly pinnatifid; the entire or toothed terminal lobe prolonged, 2–4 inches in length. Tube of the calyx 5 or 6 inches long, rather stout, much as in the section *Pachylophis*, as likewise, apparently, is the flower; except that the petals (18 lines long) seem to have been pale yellow, changing to rose-color in fading. Capsules closely sessile on the caudex, from half to three quarters of an inch in length, and nearly half an inch in diameter, of a thick, crustaceous texture, acute, but blunt at the apex, scarcely if at all reticulated, the sides broad and not at all ridged, the narrow wings or wing-like angles perfectly smooth and even, thickish, loculicidally 4-valved at the apex, the valves not pointed. Seeds numerous, large, closely packed in two rows in each cell, which they entirely fill, strongly angled by mutual pressure; the testa very thick and corky, especially toward the chalaza; where in the young seeds is seen a sort of thick double crest with a denticulate edge, which is nearly obliterated when mature.

195. *Æ. (MERIOLIX) SERRULATA*, *δ. SPINULOSA*, *Torr. & Gray, Fl. 1. p. 502*: — the same large-flowered form as No. 393, *Pl. Lindheimer*. Woods and prairies, Austin; May.

197. *Æ. (MERIOLIX v. SALPINGIA) TUBICULA* (sp. nov.): minutissime glanduloso-puberula, humilis; caulibus suffruticosis ramosis diffusis; foliis lanceolatis lineari-oblongisve planis glabellis sessilibus integerrimis; calycis tubo infundibulari laciniis ovarioque vix duplo longioribus; petalis orbiculato-obovatis; capsulis clavato-cylindraceutis inferioribus subpedunculatis. — Prairies beyond the Pecos; Aug. Also gathered in larger and much better specimens in the collection of 1851. — Stems a span to a foot high, bushy, at first erect, at length diffuse, puberulent, as is the foliage, &c., with a very minute viscous glandulosity, nearly glabrous to the naked eye. Leaves from half an inch to an inch long, and one to three lines wide, bright green, thin. Tube of the calyx from one third to half an inch long, little longer than the broadly triangular-lanceolate lobes, which are not carinate nor marked with a salient midnerve. Petals 4 to 6 lines long, much dilated and roundish, yellow. Capsules half an inch long, not thicker than packthread. Seeds ovoid-oblong, with a thin and smooth inappendiculate testa. — This species may as well be referred to the section *Meriolix* as to *Salpingia*, and indicates the propriety, in a revision of the genus, of admitting the latter as a subdivision only of *Meriolix*.

197 (partim). *Æ. TUBICULA*, var. *DEMISSA*: magis puberula, omnino minor; petalis (2–3 lin. longis) tubum calycis æquantibus. — On the Guadalupe Mountains;

Oct. — Stems 3 or 4 inches high. Leaves only 4 to 6 lines long; the flowers also proportionally small. Evidently, however, only a reduced form of the foregoing.

† *Æ.* (SALPINGIA) HARTWEGI, *Benth. Pl. Hartw. p. 1.* On the Rio Grande, Texas, and in mountain valleys east of El Paso; Aug. Abundant in the collection of 1851. — Flowers as large as those of Hartweg's plant (the petals from three fourths of an inch to an inch long; calyx-tube about an inch and a half long); the stems more elongated and suffruticose, from a span to a foot high, erect. The specimens pass into

198. *Æ.* HARTWEGI, var. *caulibus elongatis diffusis; foliis lanceolato-linearibus, 1–3 lin. latis.* (Prairies on the Sabinal; June.) And this in turn apparently passes into *Æ. Fendleri*, with oblong-lanceolate leaves, abundantly gathered in the collection of 1851, indicating a species of as diverse forms as *Æ. serrulata*.

‡ *Æ.* (SALPINGIA) LAVANDULÆFOLIA, *Torr. & Gray, Fl. 1. p. 501; Hook. Lond. Jour. Bot. 6. p. 223.* Between Western Texas and El Paso; coll. of 1851; in beautiful flowering specimens. — The fasciculate-clustered erect stems are from two or three inches to a span high; and the hoary leaves (of the hue of those of lavender) are much crowded, often fascicled, and with revolute margins. The petals are smaller than in *Æ. Hartwegi*, from 6 to 8 lines in length.

196. *Æ.* LAVANDULÆFOLIA, var. *caulibus spithamæis et ultra; foliis glabratis.* — Prairies of Live Oak Creek, Western Texas; June. "Plant from 6 to 12 inches high." Tends to connect *Æ. lavandulæfolia* with *Æ. Hartwegi*.

199. *Æ.* (SALPINGIA) GREGGII, *Gray, Pl. Fendl. p. 46, adnot.; var. PUBESCENS: pilis mollibus patentibus villosa.* — Dry hills beyond the Pecos; Aug. — Stems woody, rather stout, a span to a foot high. Leaves oblong, 2–4 lines long. Calyx-tube 9–15 lines long. Petals 4–6 lines long. Capsules hairy, 4–6 lines long, cylindraceous, thickish.

200. *LUDWIGIA NATANS*, *Ell. Sk. 1. p. 581; Gray, Pl. Lindh. 2. p. 190.* In the Leona and San Felipe; July, Aug.

201. *PROSERPINACA PALUSTRIS*, *Linn.* In the Rio Nueces; June.

202. *MYRIOPHYLLUM HETEROPHYLLUM*, *Michx.*; var. *foliis emersis parvulis.* — Turkey Creek, Texas; June.

203. *GAURA SINUATA*, *Nutt. in DC. Prodr. 3. p. 44.* Prairies of Live Oak Creek and the San Pedro River; June, July.

204. *G. SUFFULTA*, *Engelm. in Pl. Lindh. 2. p. 190.* Hills along the Rio Frio, Texas; June. — The fruit, as in Lindheimer's specimens, is either acute or obtuse, usually the latter when fully ripe, and the sides are mostly even. No. 82 of Drummond's third Texan collection (from San Felipe) is the same species. The flowers are tetramerous and the fruit tetraquetrous, in the specimens of the Hookerian herbarium; but in those of Mr. Webb's herbarium I observed both tetraquetrous and triquetrous fruit, even on the same specimen, and it is, as I suspected, the plant referred to *G. tripetala* by Spach; of which our plant is, I suppose, only a pretty constantly tetramerous variety. It has been raised in the Jardin des Plantes, from seeds gathered by M. Trécul.

205. *G. TRIPETALA*, *Cav. Ic. 4. p. 66. t. 396.* Prairies along the Rio Brazos;

May, June. — From Mr. Wright alone have I received specimens of this trimerous *Gaura*, gathered in successive years. They all look like depauperate specimens of the foregoing, with the fruit (being triquetrous) perhaps a little narrower and more pointed, and its sides more distinctly corrugated. It agrees very well with the *G. tripetala* of Mr. Webb's herbarium, both with indigenous specimens from Pavon, and with cultivated ones by Desfontaines from the Jardin des Plantes.

‡ *G. villosa*, Torr.; Gray, *Pl. Fendl.* p. 46. Coll. of 1851. Stems somewhat woody at the base, from a thick and truly perennial root.

206. *G. coccinea*, Nutt.; var. *caule villosa-pubescente, foliis subsericeis*. — Valley of the Limpia; Aug. There is no ripe fruit. That of the ordinary *G. coccinea* is canescent-puberulent, pyramidal above, acute, or when ripe quite obtuse, contracted abruptly below into a narrow neck, which is shorter than that of *G. Drummondii*.

207. *G. coccinea*, Nutt.; Torr. & Gray, *Fl.* 1. p. 518, fere var. γ . Prairies of Zacate Creek, and near the valley of the Rio Grande, New Mexico. Also in the coll. of 1851. — The ripe fruit is remarkably broad and obtuse, with a very short narrowed base; but it is much the same in specimens from Saskatchewan; and the younger fruit on the same individuals is acute. Similar forms in Fendler's collection were referred to *G. epilobioides*, H. B. K., and apparently with good reason, for I see no available characters to distinguish the two species.

208. *G. coccinea*, var. Same as the last, but with the stems hairy below. — Valleys between the Pecos and the Limpia; Aug. There are also some specimens with very small and narrowly linear leaves.

209. *G. Drummondii*, Spach; Torr. & Gray, *Fl.* 1. p. 519. Prairies on the Sabinal, Texas; June.*

LOASACEÆ.

210. *Mentzelia oligosperma*, Nutt.; Torr. & Gray, *Fl.* 1. p. 533. *M. aurea*, Nutt. Gen. 1. p. 300. *M. rhombifolia*, Nutt. in Torr. and Gray, l. c. Dry hills and plains from Turkey Creek to the San Pedro River. "Flowers opening in the morning," as in other species with yellow blossoms. To this common and widely diffused species we may safely join the *M. rhombifolia* of Nuttall.

211. *M. (Bartonia) Wrightii*, Gray, *Pl. Fendl.* p. 48. On sand-bars in the Colorado at Austin, and opposite Bastrop, Texas. — Flowers smaller than those of *M. pumila*, Nutt., and ochroleucous.

212. *M. (Bartonia) nuda*, Torr. & Gray, *Fl.* 1. p. 535; Gray, *Pl. Fendl.* p. 47, & *Pl. Lindh.* 2. p. 191. Gravelly banks of the Rio Seco, Western Texas; June. A smaller-flowered state than usual; the petals only three fourths of an inch long. — No. 212^a, from the Guadalupe Mountains, is apparently a depauperate form of the same species, and not *M. pumila*, Nutt., which has yellow, according to Geyer "bright golden-yellow," flowers of lesser size.†

* In 1848, Mr. Wright collected, on the Rio Grande, a *Gaura* with extremely silky-canescens ovate-lanceolate leaves and pedicellate flowers; but without fruit it cannot properly be characterized.

† *Mentzelia (Bartonia) lævicaulis*, raised during the last season in the Cambridge Botanic Garden, from Oregon seeds brought by Fremont, has bright, pure yellow blossoms, opening in the afternoon, at four or five o'clock, in bright sunshine. (See notes in *Pl. Fendl.* p. 47.)

† *M. (BARTONIA) MULTIFLORA*, *Nutt. Pl. Gamb. p. 180*; *Gray, Pl. Fendl. p. 48*. Valley of the Rio Grande near El Paso; Sept. Also collected by Wislizenus. — Plant (with stems scarcely a foot high) wholly like Nuttall's specimens in the Hookerian herbarium; the petals in some specimens three fourths of an inch long, as Nuttall describes them (in one from Wislizenus even larger), in others barely half an inch long. The larger pods are from three fourths to half an inch in length, cylindraceous-clavate (as in Nuttall's specimens), while the smaller, even on the very same plant, are "urceolate" or turbinate, and only three or four lines long, like those of No. 214. Mr. Wright has both states in his collection of 1851; and Gregg gathered it at Buena Vista. The mere size of the flowers affords no good characters in this genus.

213. *M. (BARTONIA) MULTIFLORA*, var. *foliis angustis*; *floribus minoribus*; *capsulis plerisque cylindraneo-clavatis*. — Mountain valleys, 30 or 40 miles east of the Rio Grande, New Mexico; Aug. "Flowers light yellow." The specimens are mostly in fruit.

214. *M. (BARTONIA) MULTIFLORA*, var. *humilis*; *foliis angustissimis (lobis rachique lineam latis)*; *capsulis brevibus urceolatis*. — With the preceding? The specimens wholly in fruit.*

215. *CEVALLIA SINUATA*, *Lagasca, Nov. Gen. & Sp. p. 11. t. 1*; *Torr. & Gray, Fl. 1. p. 536, & 696*; *Hook. Ic. Pl. t. 252*; *Fenzl, in Denkschr. Regensb. 3. p. 188. t. 4*. Hills near the head of the San Felipe, July, and along the Rio Grande, Texas. Also abundantly found by Gregg and Wislizenus in New Mexico and Northern Mexico.

PASSIFLORACEÆ.

216. *PASSIFLORA TENUILOBA*, *Engelm. in Pl. Lindh. 2. p. 192*. Calcareous hills between Zacate Creek and the San Felipe; also towards the Rio Grande in Texas; July. Abundant in the coll. of 1851. "Fruit dark purple, the size of a rifle-bullet." — The leaves are various in different individuals of this remarkable species, or on different parts of the same plant; but the lateral lobes are always long, narrow, and divaricate, and the middle one very short.

* No. 663 of Geyer's Oregon collection, which was inadvertently referred by Hooker (*Lond. Jour. Bot. 6. p. 227*) to *Bartonia micrantha*, *Hook. & Arn.*, and said exactly to accord with an original Californian plant, is not that species, but is only a more leafy form of *Mentzelia albicaulis*. The filaments are all filiform, the pods elongated-cylindrical and many-seeded. It is likewise in Spalding's Oregon collection, from the same part of the country. I notice that most of the flowers in Geyer's specimens have only ten stamens, while Spalding's has 20 or 30, as in the species generally. The same thing occurs in the nearly-related *M. Hænkii* (*Acerolasia bartonioides*, *Presl*) of Chili; at least Presl characterizes and figures his plant as decandrous, while I find 15 or 20 in specimens collected by C. Gay (though not so described in the *Flora Chilena*). The pods of my specimens of the Chilian plant have as many as twelve or fourteen seeds; and I find in *M. albicaulis* also distinct traces of the few small bristles at the apex of the petals from which Presl derived his generic name; — so that *Acerolasia* is not to be distinguished, even as a section. Still *A. bartonioides* is not the same species as *M. albicaulis*, its pods being oblong-turbinate and only 3 or 4 lines long; while those of the latter are slender, half or three quarters of an inch long, and 30 – 40-seeded.

217. *P. AFFINIS*, *Engelm. in Pl. Lindh. 2. p. 233.* Banks of the Leona, June; in flower. — Flower nearly twice the size of that of *P. lutea*, an inch and a half in diameter. Bractlets minute.

218. *P. AFFINIS*, *Engelm.*; in fruit. Hills of the San Pedro River; July.*

CUCURBITACEÆ.

219. *CYCLANTHERA DISSECTA*, *Arn. in Hook. Jour. Bot. 3. p. 280; Gray, Pl. Lindh. 2. p. 193.* *Echinocystis pedata*, *Scheele.* Low prairies, near San Antonio, Texas; May.

† *MELOTHRIA PENDULA*, *Linn.; Torr. & Gray, Fl. 1. p. 540.* Bottom of the Leona; June. — Although the leaves are thinner and with sharper lobes, this is probably the same as *M. chlorocarpa*, *Engelm. in Lindh. Tex. Coll. 1850*, which “differs from *M. pendula* by the habitat (dry sterile places), by the firmer and more hispid leaves, with blunter lobes and a narrower sinus, and by the larger and greenish fruit with smaller seeds. Root branching, annual: flowers monœcious, yellow: fruit green and whitish, striped, elliptical, 5 or 6 lines long, 3 lines or more in diameter.” *Engelm.* But from the dried specimens I should not be able to characterize this on the one hand, or Mr. Shuttleworth’s *M. microcarpa* on the other.

220. *SICYDIUM LINDHEIMERI*, *Gray, Pl. Lindh. 2. p. 194.* Thickets near Austin and San Antonio, Texas. Abundant also in the coll. of 1851. Dr. Wislizenus gathered it at Cerralvo, and Mr. Hinds obtained what appears to be the same species in Lower California. The pods are fully an inch in diameter, and ripen 10 or 12 seeds. These are rounded, nearly orbicular in outline, $2\frac{1}{2}$ to 3 lines in diameter, very turgid, and surrounded by a very narrow margin, which is a little produced each side of the hilum. The foliage varies exceedingly, some leaves being scarcely lobed, and others so much dissected as to effect a transition to

221. *S. LINDHEIMERI*, β . *TENUISECTUM*: foliis 5-partitis, segmentis laciniatolobatis lobisque linearibus; bacca minore. — Dry sandy soil, near the Rio Grande, Texas, and New Mexico. (North of El Paso, *Wislizenus*, with almost filiformly dissected leaves.) Berry from half to three fourths of an inch in diameter. There are fine fruiting specimens in Mr. Wright’s collection of 1851, in all of which the seeds are narrower than in the foregoing, obovate, and obliquely or obscurely bidentate at the base; so that I should regard this as a good species, were it not that Wright’s No. 221 has seeds just like those of No. 220.

222. *CUCURBITA PERENNIS*, *Gray, Pl. Lindh. 2. p. 193.* *Cucumis? perennis*, *James.* Along the Rio Frio, Texas; June.

† *C. TEXANA*, *Gray, Pl. Lindh. 2. p. 193.* Banks of the San Pedro River; native.

. CACTACÆ, No. 223–227. The determinations of these, and of the living plants of the family gathered by Mr. Wright, have not yet been received from Dr. Engelmann.

† *Passiflora gossypifolia*, *Lam. (P. foetida, Cav.)* was gathered in Eastern Texas by M. Trécul: also *P. suberosa*, *Linn.*, in Southern Florida, by Rugel.

FOUQUIERIACEÆ.

228. *FOUQUIERA SPLENDENS*, *Engelm. in Wisliz. Mem. N. Mex. p. 98.* *F. spinosa*, *Torr. in Emory, Rep. p. 147. t. 8. excl. syn.* "A shrub with very long branches from near the root, growing on hills, beyond the San Pedro River, without flower or fruit." — Dr. Engelmann and Dr. Torrey have well shown, by their observations on the ovary and fruit of this species, that *Bronnia* is not distinct from *Fouquiera*. The structure of the flowers of *F. splendens* is the same as in *F. formosa*, but they are more slender and on slender pedicels, while those of the latter are closely sessile. The (corymbose) flowers and fruit of *F. (Bronnia) spinosa* are in Coulter's Mexican collection (No. 919, from Sonora Alta). The former are as described by Bentham (in *Bot. Voy. Sulph.*), except that the expanded corollas are straight and nearly an inch in length: the capsules, seeds, &c. are as described and figured by Kunth. The broad wing of the seed is composed of long, spirally-marked cells, just as remarked by Torrey in *Fouquiera splendens*; and the filaments are glabrous throughout. — There are fruiting specimens in the collection of 1851.

CRASSULACEÆ.

228^a. *Echeveria strictiflora* (sp. nov.): foliis radicalibus spathulato-lanceolatis, caulinis lanceolatis parvis, floralibus similibus flore dimidio brevioribus; floribus breviter pedicellatis arcte secundis appresso-erectis in spicam simplicem strictam confertis; petalis longe attenuato-acuminatis sepala oblonga duplo superantibus. — Mountains west of the pass of the Limpia; Aug. "Flowers scarlet," in a very strict and close secund raceme or spike, of six or eight inches in length: the flowers two thirds of an inch long; pedicels two or three lines long. — There is an allied species in the collection of Dr. Wislizenus, which I cannot identify with any described.*

229. *SEDUM WRIGHTII* (sp. nov.): glabra, caulibus decumbentibus; foliis sparsis crasso-carnosis obovatis, ramorum floriferorum oblongis basi solutis; floribus brevissime pedicellatis in cymam densam 2-3-fidam digestis secundis; petalis 5 spathulatis obtusis mucrone apiculatis (albis roseo tinctis) sepalis oblongis obtusis duplo longioribus. — Hills near the San Pedro River, in crevices of rocks, and summit of mountains near El Paso, New Mexico; Aug. — Oct. — Perennial, with fibrous roots; the stems diffusely spreading, or at first erect, a span or more in length. Leaves 3 or 4 lines long. Cyme very compact. Flowers larger than in *S. Moranense*; the petals 3 or 4 lines long, and broadly spathulate or obovate. Carpels abruptly apiculate with a slender style.

* *Echeveria paniculata* (sp. nov.): foliis radicalibus obovato-lingulatis, caulinis sparsis parvis lanceolatis canaliculatis, omnibus mucronato-acutis; floribus laxè paniculatis undequaque versis; petalis apice breviter recurvis sepala duplo superantibus. — Cosiquiriachi, Northern Mexico, *Wislizenus*. — Flowering stems a foot long above the rosulate and apparently radical tuft of leaves; the latter 2 or 3 inches long, the scattered or subopposite stem-leaves from half an inch to an inch in length. Flowers half an inch long, disposed in a loose, elongated panicle: the proper terminal flowers are on very short peduncles, the lateral ones mostly with rather long, bracteate peduncles. Bracts small, linear.

SAXIFRAGACEÆ.

229^a. *LEPUROPETALON SPATHULATUM*, *Ell. Sk.* 1. p. 370; *Torr. & Gray, Fl.* 1. p. 590. In wet places, Western Texas; Feb., March.

‡ *PHILADELPHUS SERPYLLIFOLIUS* (sp. nov.): ramosissimus, ramis confertis rigidis; foliis in ramulos breves confertis vel fasciculatis parvis ovalibus vel ovato-oblongis subpetiolatis trinervatis supra puberulis subtus cano-sericeis; floribus subsessilibus ochroleucis; stylo brevissimo; stigmatibus crasso 4-lobis; capsula globosa. — Between Western Texas and El Paso, New Mexico; coll. of 1851. — A most remarkable species, apparently forming a low, rigid, subspinescent bush; the leaves not half as large as those of *P. microphyllus* itself, three to five lines long and from one to two and a half wide, much crowded, obtuse, entire, green and pubescent or puberulent above, the under surface white with a dense covering of appressed villous hairs. Flowers much smaller than in any other species, very numerous, mostly solitary and subsessile at the apex of the spurs or short leafy branchlets. Calyx silky-pubescent; the lobes ovate, half as long as the corolla. Petals only three lines long, oval, inserted by a broad base, apparently cream-color. Capsule a line and a half in diameter, 4-celled. — The hairs which clothe the lower surface of the leaves, under the microscope, are studded all over with tubercles, as also in *P. hirsutus*, and, more or less evidently, in other species.

FENDLERA, *Engelm. & Gray, Nov. Gen.*

Calyx tubo turbinato 8-costato, cum ovarii basi connato; limbo 4-partito, lobis triangulatis æstivatione valvatis. Petala 4, ovato-deltoidæ, unguiculata, erosa, decidua. Stamina 8 cum petalis inserta: filamenta linearia, plana, apice bifurcata, lobis lineari-attenuatis ultra antheram longe productis: antheræ introrsæ, mucronatæ, biloculares, longitudinaliter dehiscentes. Ovarium semisuperum, 4-loculare (loculis sepalis alternantibus): styli pilosuli conniventes, pl. m. coaliti: stigmata terminalia simplicia. Ovula in loculis plurima, e placentis centralibus imbricato-pendula, anatropa. Capsula crustacea, ovoideo-conica, stylis persistentibus acuminata, basi calyce accreta, 4-locularis, ex apice septicida. Semina in loculis pauca pendula, imbricata, oblonga, testa membranacea laxa reticulata deorsum alata. Embryo in albumine parco rectus, ejusdem fere longitudine; cotyledonibus oblongis radícula superius duplo longioribus. — Frutex 2–4-pedalis; foliis oppositis lanceolatis subsessilibus trinervatis integerrimis; floribus ramulos breves terminantibus solitariis vel ternis breviter pedunculatis, petalis albis.

† *FENDLERA RUPICOLA*. (TAB. V.) — Var. *α*. *LINDHEIMERI*: glabriuscula; foliis planis (pollicem longis 3 lin. latis) subtus parce strigosis; ramis sterilibus gracillimis. On perpendicular rocks of the Guadalupe, above New Braunfels, Texas, *Lindheimer*; coll. of 1850, flowering in April. — Var. *β*. *WRIGHTII*: foliis minoribus plerisque lineari-lanceolatis subcoriaceis margine revolutis subtus strigoso-canescens. Crevices of rocks on the San Pedro River, July, with old fruit; and a few flowering specimens were gathered on the return in November. (Sparingly distributed as No. 228^a.) Fine fruiting specimens have also come to hand since our

figure was made, in the collection of 1851. — This very remarkable new genus, which is more nearly related to *Deutzia* than to any other, fully confirms the view I took, in the *Flora of North America*, in uniting *Philadelphus* to the Saxifragaceæ. The few flowers I have seen being open, I know not whether the petals are convolute, but their form forbids their being valvate, in æstivation. The pods dehisce septocidally, splitting at the apex, first usually into two lobes, each of which soon divides in the same way. The surface of the hairs of the leaves is scabrous with minute tubercles, just as in *Philadelphus*. From the want of sufficient flowers I was obliged to use both Wright's and Lindheimer's specimens in the plate. I suppose the two are only varieties, but they may belong to distinct species; for the fruiting specimens in Mr. Wright's recent collection agree with his former ones in their more rigid habit, and in the smaller, more crowded, revolute leaves, canescent underneath; — a difference which may be owing to a more arid station. In the flower furnished by Lindheimer, the anthers are tipped with a longer cusp than in our figure. Be this as it may, Dr. Engelmann and myself rejoice in the opportunity of dedicating such an interesting and well-marked genus of our Texano-New-Mexican region to Mr. Augustus Fendler, who, next to Wislizenus, was the earliest botanical explorer in New Mexico, where he made with much hardship the excellent collection now so well known to botanists.

UMBELLIFERÆ.

230. *ERYNGIUM WRIGHTII* (sp. nov.): glauco-pallidum; caule erecto apice cymoso-polycephalo; foliis rigidis, radicalibus oblanceolatis pectinato-dentatis vel pinnatifidis dentibus triangulatis apice setiferis, caulinis sessilibus pinnatipartitis segmentis lineari-lanceolatis cuspidatis, superioribus sensim abbreviatis fere palmatiforibus, nempe segmentis confertis infimis subulatis parvis cæteris elongatis trifidis, involucrelibus capitulo ovali duplo longioribus cuneato-lanceolatis trifidis cum 2–3 minoribus linearibus integerrimis; paleis subulatis corneis flores superantibus, summis 2–3 sæpius foliiformibus capitulum coronantibus; calycis lobis ovatis mucronulatis. — Bed of the Limpia or Wild Rose Creek; Aug. Also in the coll. of 1851. "Flowers light blue." Stem one or two feet high, from a long, apparently biennial root. Uppermost involucrifolm cauline leaves closely sessile, and almost palmately-parted. Heads 3 to 5 lines in diameter, shorter than the close and rigid involucre, pale, most of them inconspicuously coronate in the manner of *E. Hookeri*. It is more related to *E. heterophyllum*, *Engelm. in Wisl. Mem. N. Mex.*, from Cosiquiriachi.*

† *E. HOOKERI* (*Walp. Repert. 2. p. 389*): annuum; caule erecto paniculatim polycephalo; foliis inferioribus basi semivaginantibus subpetiolatis trisectis, segmentis lateralibus 3–5-partitis lobis lanceolatis pinnatifido-laciniatis spinulosis, terminali

* *Eryngium Beecheyanum*, *Hook. & Arn.*, is apparently a dwarf state of *E. comosum*, *Laroche*. *E. filiforme*, *Shuttleworth, Pl. Rugel*, must be a mere variety of *E. Baldwinii*, *Spreng.*: his *E. filiforme*, var. *latifolium* (*Rugel, No. 180, 181*) is just the *E. gracile*, *Baldw.*, according to the specimens in the Hookerian herbarium.

E. prostratum, *Nutt.* is most likely a distinct species, and the *E. Americanum* of Walter.

longe petiolulato multo majore lanceolato laciniati-dentato, foliis summis sessilibus palmatipartitis lobo medio sessili cæteris conformi, involucralibus lineari-lanceolatis spinuloso-laciniatis capitulum globosum duplo superantibus; paleis lanceolatis lateribus late membranaceis apice subulato-spinescentibus calycis lobos acuminato-aristatos vix superantibus, summis foliaceis capitulum coronantibus. — *E. coronatum*, Torr. & Gray, *Fl.* 1. p. 604; Engelm. & Gray, *Pl. Lindh.* p. 10, non Hook. & Arn. On the Brazos, Texas, Drummond, Lindheimer, Wright. — The new character here given is requisite now that the lower leaves are known. It is taken from Drummond's specimens in the Hookerian herbarium.

231. *E. LEAVENWORTHII*, Torr. & Gray, *Fl.* 1. p. 604; Gray, *Pl. Lindh.* 2. p. 209. On the San Pedro River.

232. *DAUCOSMA LACINIATUM*, Engelm. & Gray, *Pl. Lindh.* 2. p. 210. Pebbly bars of the Rio Nueces (in flower and in fruit). — It occurs with perfectly ripe fruit in Lindheimer's collection of 1850. The genus should stand next to *Cynosciadium*.*

233. *CYMOPTERUS MONTANUS*, Nutt. in Torr. & Gray, *Fl.* 1. p. 624; Gray, *Pl. Fendl.* p. 56. Hills near Austin, Texas; March (in fruit). Accords with Nuttall's and also with Geyer's specimens in the Hookerian herbarium, except that the fructiferous peduncle is longer than the leaves, and the fruit is not quite so large. The carpophore persists when the mericarps fall, as in Fremont's specimens. Like Nuttall's and Geyer's specimens, moreover, the silvery-scarious involucre and involucels are smaller and less conspicuous than in Fendler's plant (No. 275), which also has larger wings to the fruit. Like Fendler's, but still larger, are the silvery involucre of specimens gathered by Burke at "Portneuf River," which are just coming into flower. Can they belong to *C. albiflorus*, Nutt.?

† *TAUSCHIA (MUSENIOPSIS) TEXANA* (Gray, *Pl. Lindh.* 2. p. 211, *adnot.*): glaberrima; foliis omnibus radicalibus utrinque viridibus pinnato-decompositis, nempe pinnis 3–5 cum impari, inferioribus petiolulatis (petiolulis ac petiolo gracili apteris) pinnato-3–5-partitis, segmentis cuneiformibus 3–5-fidis, lobis oblongis obtusissimis; scapo simplicissimo nudo; involucro parvo 1–2-phyllo aut nullo; involucello dimidiato e phyllo unico palmati 3–5-fido; radiis umbellulæ fructu didymo brevioribus; mericarpiis lævigatis 18–20-vittatis, jugis obsoletis. — Western Texas, near Austin. Galveston Bay, Drummond (No. 109 of the third collection) in herb. Hook. — No. 2760 of Galeotti's Mexican collection is the same as No. 121 of Coulter's, viz. *Tauschia Coulteri* (*Pl. Lindh. l. c.*). †

* *Thaspium Walteri*, Shuttleworth, *Pl. Rugel, exsicc.* (*Apium bipinnatum*, Walt.?), from Macon County, North Carolina, is the same as *Zizia pinnatifida*, Buckley, in *Sill. Jour.* 45. p. 175 (1843), from the same region (also gathered in the barrens of Kentucky by Dr. Short). It is hard to say whether the plant should be referred to *Zizia* or *Thaspium*; — probably to the latter.

† *Musenium divaricatum*, Nutt. (which probably includes *M. trachyspermum* and *M. angustifolium*) has scabrous fruit, crowned with conspicuous and persistent calyx-teeth. Of *M. (Daucophyllum) tenuifolium*, Nutt., the fruit is unknown. To it however does not belong No. 220 of Geyer's Oregon collection (referred to it by Hooker), which is a *Peucedanum*, allied to *P. triternatum*.

RUBIACEÆ.

234. *GALIMUM* (*RELBUNIUM*) *MICROPHYLLUM* (sp. nov.): glaberrimum, humile; caule cæspitoso ramosissimo diffuso; foliis quaternis lineari-lanceolatis arcte sessilibus rigidulis mucronatis marginibus nervoque valido lævissimis pedunculos unifloros æquantibus; flore cum fructu glabro in involucre tetraphyllo sessili. — Mountains at the Pass of the Limpia, in crevices of rocks, and in the valley of the Limpia; Aug. — Root perennial, reddish. Stems a span long, herbaceous, slender, very leafy; the strong obtuse angles, like the whole plant, perfectly smooth. Leaves two or three lines long, their sessile bases almost connate, the lower lanceolate. Peduncles axillary, one-flowered, but the four-leaved involucre is sometimes proliferous. Involucre like the ordinary leaves, longer than the small, "yellow," tetramerous flower, and the glabrous, but minutely pruinose fruit. Lobes of the corolla ovate, obtuse. — This should be compared with *Rubia lævigata*, *DC.*, described from Hænke's collection, which has ovate-oblong or ovate-lanceolate leaves. — Younger specimens, barely in flower, are in the collection of 1851; their lower leaves oblong-lanceolate.*

‡ *G. (VIRGATUM, Nutt., var. DIFFUSUM:)* caulibus demum ramosis laxis; pedunculis vel ramis floriferis plerisque folia superantibus sæpe proliferis. — Western borders of Texas; coll. of 1851. — Each flower is subtended either by a pair of leaf-like bracts, as in the ordinary *G. virgatum*, or by a whorl of four leaves; from which the branch is sometimes proliferous.

235. *G. (TRICHO GALIUM) WRIGHTII* (sp. nov.): suffruticosum; caulibus ramosissimis diffusis ramisque hirsutis; foliis quaternis oblongis submembranaceis uninerviis utrinque pilis patentibus hirsutis; floribus pedicellatis in cymulis terminalibus laxis; corolla rubro-purpurea; fructu setis longis apice non uncinatis hispidissimo. — Crevices of rocks, on mountains, in the Pass of the Limpia; Aug. — Stems 6 to 12 inches high from a thick woody base; the branches slender. Leaves from two to four lines long, sessile, obtuse, often setose-apiculate. Corolla half a line in diameter, deep red-purple, the lobes acuminate. Bristles of the fruit white, straight, rather longer than its diameter.†

236. *BOUVARDIA HIRTELLA*, *H.B.K. Nov. Gen. & Sp. 3. p. 384.* Hill-sides in the Pass of the Limpia; Aug. (Northern Mexico, *Wislizenus, Gregg*; and near the city of Mexico, *Gregg.*) It appears to pass into the pubescent form of what is called *B. Jacquinii*. Some specimens in the collection of 1851 have more herbaceous and strict stems, larger leaves, the upper in whorls of from four to seven, and larger flowers.‡

* No. 186 of Coulter's Mexican collection (from Zimapan) is a nearly related species, perhaps a mere variety, with the margins of the leaves sparsely setose.

† *Galium suffruticosum*, *Nutt. in Torr. & Gray, Fl. 2. p. 21*, has a name which is preoccupied for a Chilean species by Hooker and Arnott. It may therefore be called *G. NUTTALLII*.

‡ *Bouvardia glaberrima*, *Engelm. in Wisl. N. Mex. p. 106*, is *B. splendens*, *Graham in Bot. Mag.*, and also apparently the *Houstonia coccinea*, *Andr. Bot. Repos. t. 106*, and the *Ixora coccinea*, *Cav. Ic. 4. t. 305*.

237. *HEDYOTIS* (*EREICOTIS*) *ACEROSA* (sp. nov.): fruticulosa; caulibus cæspitosis confertis foliosissimis; foliis acerosis scabro-hirtellis 3-4-natim verticillatis et in axillis fasciculatis persistentibus; floribus inter folia fasciculata sessilibus; corollæ tubo infundibulari calycis laciniis setaceis et limbo suo quadruplo longioribus. — High prairies, from Live Oak Creek to the Las Moras, Western Texas; June. Also near Buena Vista, &c., Northern Mexico, *Gregg*. — Stems about a span high, very many from the same thickened root, rigid, rather woody, erect or diffuse, leafy to the top, sparingly branched; the rigid setaceous leaves longer than the internodes. Flowers mostly solitary at the summit of the branches and in the axillary fascicles of leaves. Corolla five or six lines long, purplish or "bluish"; the lobes ovate, puberulent inside. Anthers linear. Stigmas linear-oblong. Capsule globose, crowned with the setaceous teeth of the calyx, coherent with its tube nearly to the summit, two-celled; the cells 12-20-seeded. — *Hedyotis* (*Anotis*, *DC.*) *Cervantesii*, *Kunth*, I have not seen, but from the character it can be neither the present species, so remarkable for its acicular leaves, nor *H. rubra* (*Houstonia*, *Cav.*). The latter, which I have seen also from Northern Mexico, and which was found by Fendler in New Mexico, is herbaceous, depressed, and I believe an annual, like *H. humifusa*.

238. *H.* (*AMPHIOTIS*) *STENOPHYLLA*, *Torr. & Gray, Fl. 2. p. 41*: var. *PARVIFLORA*: tubo corollæ limbo vix longiore; capsula etiam parva; caulibus humilibus rigidulis diffuse ramosis; cymis apertis. — Crevices of rocks on the San Pedro River; July. — This accords with *H. stenophylla*, as characterized, in the shortness of the pedicels, &c.: as to the size of the corolla and the length of its tube, No. 55 of Drummond's (first?) Texan collection is intermediate between this and No. 116 of Drummond's third collection.

239. *H. STENOPHYLLA*, var. *PARVIFLORA*: strictior; cymis densifloris contractis. — Mountain valleys east of the Rio Grande, New Mexico; Aug. "Flowers white." — This has the dense fastigate cymes and very short pedicels, especially those of the central flowers, of the typical *H. stenophylla*, namely, the plant common in Florida, and also in Arkansas and Texas (the *H. lasiantha*, *Nutt. in herb. Hook.*). That has, however, considerably larger flowers and a longer tube to the corolla: but there seems to be no more constancy in this than in other characters, apparently of equal or greater consequence, which prove so little reliable in this difficult group.*

240. *H. STENOPHYLLA*? passing into *H. longifolia* β . *tenuifolia*, *Torr. & Gray, l. c.* — Prairies of Turkey Creek, Western Texas, June. — Same as No. 620 of Lindheimer's collection, the fruiting specimens at least; wholly herbaceous, with the cymules paniculate and loosely flowered, and all the flowers distinctly pedicelled. But the pods are turbinate. The flowering specimen of Lindheimer's No. 620 (in

* At Buena Vista, Mexico, Dr. Gregg collected specimens of the variety of *Hedyotis purpurea* called by Nuttall *Houstonia macrosepala*. To this belongs *Hedyotis calycosa*, *Shuttleworth*, which he has determined to be *Spermacoce lanceolata* of Frank and *Diodia Frankii* of Hochstetter and Steudel.

No. 325 of Rugel's Florida collection, named *Oldenlandia corymbosa* by Shuttleworth (surely not of Linnæus), is *Hedyotis Halei*, *Torr. & Gray, Fl. 2. p. 42*.

herb. Hook.), with the flowering branches and the pedicels elongated and filiform, is surely the same as Nuttall's *Houstonia tenuifolia*.

241. *HEDYOTIS* (*HOUSTONIA*) *HUMIFUSA*, *Gray, Pl. Lindh.* 2. p. 216. Sandy soil near Austin, Texas; also west of the Pass of the Limpia; Aug. "Flowers white."

COMPOSITÆ.

242, 243. *VERNONIA JAMESII*, *Torr. & Gray, Fl.* 2. p. 58. Bottom of the San Pedro River; also beyond the Pecos, and on the Limpia; Aug. — Under these numbers are distributed several forms of one species, of which those with the larger and more turbinate heads agree well with *V. Jamesii* (although the leaves are often somewhat serrulate), while those with smaller heads approach *V. fasciculata*. The corymb is simple and small, and the stems only from ten to eighteen inches high. It is rightly placed between *V. fasciculata* and *V. angustifolia*.*

244. *PECTIS* (*PECTIDOPSIS*) *ANGUSTIFOLIA*, *Torr.; Gray, Pl. Fendl.* p. 61; var. *SUBARISTATA*: pappo in fl. exterioribus nonnullis sæpius 1-2-aristulato. — *Pectis fastigiata*, *Gray, Pl. Fendl.* p. 62. Valley between the Pecos and the Limpia; Aug. — The awns of the pappus, which are almost always single in these specimens, are found in only one or two of the exterior flowers of each capitulum, and in many they are altogether wanting; — showing not only that De Candolle's genus *Pectidopsis* is untenable, but that my *Pectis fastigiata* can be nothing else than a more or less aristate variety of *P. angustifolia*. — The whole of *Pectis* (meaning thereby the *Eupectideæ* of De Candolle) greatly needs a revision, from adequate materials, when it will be found that some of the characters used as specific are variable, especially the number of awns or paleæ, and the difference between the pappus of

* A synonym of this last is *Liatris umbellata*, *Bertoloni, Misc. Bot.* 5. p. 13. t. 4. fig. 1; from Alabama specimens.

Vernonia Rugeliana, *Shuttleworth* (N. Carolina, *Rugel*) appears to be only the ordinary form of *V. Noveboracensis*.

No. 238 of Coulter's Mexican collection appears to belong to a very distinct undescribed genus, remarkable among *Vernoniaceæ* for its paleaceous receptacle. The subjoined character is drawn from the specimen in the Hookerian herbarium: —

BOLANOSA, *Nov. Gen.*

Capitulum multiflorum, homogamum, æqualiflorum? Involucrum hemisphæricum, extus laxè lanatum; squamis oblongo-lanceolatis membranaceis appressis apice subcoloratis (purpureis) inappendiculatis, intimis disco subæqualibus. Receptaculum planiusculum paleaceum; paleis invol. squam. referentibus con- duplicatis, singulis florem involventibus. Corollæ purpureæ, marginales (ampliatae?) reflexæ. Styli etc. *Vernoniacearum*. Achenia turbinata, sericeo-hirsuta. Pappus duplex rigidus, exterior e paleolis squa- mellatis plurimis lineari-lanceolatis ovario æquilongis, interior e setis aristæformibus complanatis sursum in- crassatis pluriserialibus corolla paullo brevioribus, utrisque crebre denticulatis. — Herba floccoso- lanata; caule (seu ramo) erecto apice capitula plura ($\frac{1}{2}$ -poll. diametro) corymboso-congesta gerente; fo- liis alternis ovato-oblongis utrinque acutis subsessilibus penninerviis integris supra mox glabratibus? subtus dense cano-lanatis.

B. COULTERI. — Bolanos, Northern Mexico, *Coulter*. — Differt a *Vernonia* receptaculo paleaceo, pappi setis seu paleis rigidis incrassatis, ab *Heterocoma* squamis involucri haud nervatis, pappo externo squa- mellato, etc.

the ray and disk. Such species as *P. elongata* have the pappus as truly biserial as any *Lorentea*.*

245. *P. (EUPECTIS) PROSTRATA*, Cav. *Ic. 4. p. 12. t. 324*; DC. *Prodr. 5. p. 100*. Mountain valleys towards the Rio Grande; and at Presidio de San Elisario, New Mexico; Aug. – Sept. — The specimens belong to a depauperate state of the species, being only from one to three inches high. The involucral scales are not conduplicate, each embracing a flower, as in the foregoing and many other species. The paleæ of the pappus are broader than in the figure of Cavanilles.

246. *LIATRIS PUNCTATA*, Hook. *Fl. Bor.-Am. 1. p. 306. t. 55*; Torr. & Gray, *Fl. 2. p. 69*. Pass of the Limpia; Aug. — This is one of the slender, narrow-leaved forms, with the scales of the involucre very obtuse and abruptly mucronate. *L. mucronata*, DC. (founded on Berlandier's No. 1926) is a similar but more depauperate state of this same species: while *L. resinosa*, DC., was described from a cultivated specimen of the variety (var. β . Torr. & Gray, *l. c.*) with lanceolate-pointed scales.†

† *L. ACIDOTA*, Engelm. & Gray, *Pl. Lindh. p. 10*. *L. mucronata*, Torr. & Gray, *Fl. 2. p. 70*. Western Texas. — *L. mucronata*, Engelm. & Gray, *Pl. Lindh. l. c.*, is only a variety of this, with more abruptly mucronate-pointed involucral scales.

247. *KUHNTIA EUPATORIoidES*, Linn.; Torr. & Gray, *Fl. 2. p. 78*: between var. γ . *gracilis* and δ . *gracillima*, Gray, *Pl. Lindh. 2. p. 218* (*K. leptophylla*, Scheele). On the Las Moras and Zacate Creeks, Texas. Also on the Rio Grande. Some of the lower leaves are large and lanceolate; those of the branches very narrow and slender.

248. *K. EUPATORIoidES*, var.; nearly the same as the last, but depauperate; from six to eight inches high. Mountain valleys between the Limpia and the Rio Grande, New Mexico; Aug.

248^a. *BRICKELLIA RIDDELLII*. *Clavigera dentata*, DC.! *Prodr. 5. p. 128*. *C. Riddellii*, Torr. & Gray, *Fl. 2. p. 77*; Gray, *Pl. Lindh. 2. p. 218*. On the Rio Grande, Texas. I find from De Candolle's herbarium that this is indeed his *Clavigera dentata*; but the leaves are so little toothed, and often entire, that I have preferred a later specific name while referring the plant to another genus. The pappus affords no available distinction between *Brickellia* and *Clavigera*, and the latter

* The species have to be arranged under a considerable number of sections, somewhat as follows: —

Pappus coroniformis, vel in disco vel in radio, et sæpius 1 – 4-aristatis:

Aristis sursum scabris v. nullis. (*P. angustifolia*, filipes, uniaristata, et sp. nov. Am. Merid.) PECTIDOPSIS.

Aristis corneis retrorsum hispidis. (*P. Coulteri*, multiseta.) HETEROPECTIS.

Pappus uniformis, ex aristis paucis corneis lævissimis.

PECTIDIUM.

Pappus uniserialis, e paleis vel aristis basi paleaceo-dilatatis paucis.

EUPECTIS.

Pappus biserialis paleaceus, in radio nunc dimidiato-ariculæformis, nunc nullus.

LORENTEA.

Pappus setosus, 1 – 2-serialis, setis capillaribus basi vix aut ne vix dilatatis, in radio nunc dimidiato-ariculæformis.

PECTOTHRIX.

† *Liatris radians*, Bertoloni, *Misc. Bot. 5. p. 9. t. 1*, is *L. elegans*. *L. lanceolata*, Bertoloni, *l. c. p. 11. t. 3*, is *L. gracilis*, Pursh. *L. sessiliflora*, Bertoloni, *l. c. p. 10. t. 2*, is *L. spicata*. *L. umbellata* Bertoloni, *l. c. t. 4. f. 1*, is *Vernonia angustifolia*, as already stated; and the same author's *Eupatorium glastifolium* (*t. 4. f. 2*) is *Liatris odoratissima*!

name can only be retained for the section with linear leaves. (Vide *Kew Jour. Bot.* 3. p. 225.) *

249. *B. PARVULA* (sp. nov.): scabrella; caulibus spithamæis gracilibus e basi suffruticosa plurimis adscendentibus; foliis plerisque oppositis oblongo-ovatis basi

* *BRICKELLIA*, *Ell. Sk.* 2. p. 290. (*Clavigera* & *Bulbostylis*, *DC.*)

Capitulum pluri-multiflorum. Involucrum imbricatum, squamis striatis. Receptaculum nudum planum. Corollæ cylindricæ (albidæ vel ochroleucæ), limbo haud ampliato, dentibus brevissimis. Stylus basi bulbosus. Achenia cylindrica 10-striata. Pappus capillaris, setis subplumosis barbellatis vel serrulatis. — Genus ab *Eupatorio* acheniis multistriatis nec pentagonis, a *Kuhnia* pappo non plumoso, præsertim distinctum.

The following species are more or less known to me: —

§ 1. *CLAVIGERA*, *DC.* — Involucrum 4 – 12-florum. Caules virgati foliosissimi, foliis linearibus alternis.

* *Folia integerrima, marginibus revolutis: involucris squamæ obtusæ.*

1. *B. CORYMBOSA*. — *Clavigera corymbosa*, *DC.* *C. scabra*, *Benth. Pl. Hartw.* p. 19. Mexico.

2. *B. SCOPARIA*. — *Clavigera scoparia*, *DC. Prodr.* 5. p. 128; *Deless. Ic. Sel.* 4. t. 12. Mexico.

* * *Folia acerosa, supra canaliculata, integerrima: involucris squamæ obtusæ, minus striatæ.*

3. *B. PINIFOLIA*. — *Clavigera pinifolia*, *Gardn. in Lond. Jour. Bot.* 5. p. 461. Brazil, *Gardner*.

* * * *Folia pungentia spinuloso-dentata: involucris squamæ acutæ.*

4. *B. SPINULOSA*. — *Clavigera spinulosa*, *Gray, Pl. Fendl.* p. 63, adnot. Mexico (Chihuahua), *Gregg*.

§ 2. *BULBOSTYLIS*, *DC.* — Involucrum pluri-multiflorum. Folia præsertim inferiora sæpius opposita.

* *Folia arcte sessilia vel amplexicaulia: capitula 10 – 20-flora, subracemosa: involucrum pauciseriale.*

5. *B. WISLIZENI*, *Gray, Pl. Fendl.* p. 64. Northern Mexico, *Wislizenus*. A variety apparently of this species was gathered by *Seemann*, at Cerro de Pinal, Western Mexico.

* * *Folia subsessilia seu brevissime petiolata, haud cordata.*

+ *Folia rigido-coriacea, valde reticulata, fere omnia opposita: pedunculi axillares et terminales nudi.*

6. *B. LANATA*, *DC. Prodr.* 7. p. 268. *B. rigida*, *Hook. & Arn. Bot. Beech.* p. 297. — Capitula magna, plusquam 30-flora: involucrum multiseriale. Mexico, *Mendez! Beechey! Coulter!* (No. 237, Bolanos.) — *Coulter's* plant agrees with the specimens described by *De Candolle*, having subpetioled leaves; but the plant gathered in *Beechey's* voyage has the leaves sessile by a subcordate base. There is no further difference. In all of them the white wool disappears from the upper surface.

7. *B. RETICULATA*, *DC.* Mexico, *Hænke*. — This I have barely seen in the herbarium of *De Candolle*. It is possibly the same as the next, which, however, has narrow serrated leaves, and naked inflorescence.

8. *B. OLIGANTHES*: cinereo-pubescens; caulibus gracilibus erectis; foliis ellipticis seu lineari-oblongis utrinque obtusis valde reticulatis brevissime petiolatis supra glabris scabris a medio ad apicem rariter serratis; capitulis pauciusculis in ramos graciles subnudos virgato-paniculatis sæpius remotis; involucro turbinato 10 – 12-floro; squamis extimis ovatis lanoso-ciliatis, intimis linearibus acutis; acheniis sericeis; pappo scabro. — *Eupatorium oliganthes*, *Less. in Linnæa*, 4. p. 137. *Bulbostylis oliganthes*, *DC. Prodr.* 5. p. 139. — Mexico, *Scheide* (v. sp. in herb. Par.), *Seemann*: and if I rightly recollect, No. 2306 and No. 1152 of *Galeotti's* collection also belong here. Heads 5 or 6 lines long.

+ + *Folia haud coriacea, alterna.*

9. *B. OBLONGIFOLIA*, *Nutt.* Oregon.

10. *B. RIDDELLII*. Vide supra, p. 83. Texas.

11. *B. BRACHYPHYLLA*. — *Clavigera brachyphylla*, *Gray, Pl. Fendl.* p. 63. New Mexico.

+ + + *Folia haud coriacea, plerumque opposita.*

12. *B. PARVULA*. Vide supra. New Mexico.

13. *B. CYLINDRACEA*, *Gray, Pl. Lindh.* 2. p. 218. Texas.

* * * *Folia petiolata: rami foliosi: capitula 9 – 30-flora, axillaria seu paniculato-vel racemoso-thyrsoidea: involucrum pluriseriale.*

+ *Folia argute dentata seu laciniata, haud cordata.*

14. *B. LACINIATA*. Vide p. 87. Northern and New Mexico.

truncatis grosse dentatis venosis ($\frac{1}{2}$ poll. longis) breviter petiolatis; pedunculis gracilibus subcorymbosis monocephalis; involucro sub-12-floro pubescente, squamis interioribus linearibus subobtusis, extimis brevibus ovatis mucronatis; acheniis hirsutis; pappo tantum barbellato. — Mountains beyond the Pass of the Limpia;

15. *B. BACCHARIDEA*. Vide p. 87. New Mexico.

+ + Folia sæpe cordata, crenato-serrata vel subintegerrima.

16. *B. RENIFORMIS*. Vide p. 86. New Mexico.

17. *B. VERONICÆFOLIA*. *Eupatorium veronicæfolium*, *H. B. K. ! Nov. Gen. & Sp. 4. p. 112. t. 441.* *Bulbostylis veronicæfolia*, *DC. l. c.* Mexico. — Var. α . caule pulverulento-puberulo; foliis incanis vel canescentibus. Mexico, *Galeotti* (No. 2105), *Shepherd, Bates, Gregg* (89 ? 353, 613, 440), &c. — Var. β . ramis foliisque vix canescentibus subhirtellis. Real del Monte to Zacatecas, *Coulter* (No. 243). Guanaxuato, *Berlandier*. — The plant is unlike *Bulbostylis pedunculosa*, *DC.*, with which De Candolle compares it.

18. *B. GALEOTTII* (sp. nov.): suffruticosa? cinereo-puberula; caule erecto superne paniculato; foliis plerisque alternis petiolatis 3 – 5-nerviis supra glabratiss subtus cinereis, caulinis rotundato-cordatis crenatis, ramealibus subcordato-ovatis subintegerrimis; capitulis longiuscule pedunculatis sæpius ternis terminalibus corymboso-paniculatis; involucro circiter 20-floro turbinato pluriseriali, squamis exterioribus orbiculatis, intimis lanceolato-linearibus acutiusculis. — Mexico, *Galeotti* (No. 2104). — Cauline leaves an inch long. Heads half an inch long, on erect peduncles of half an inch or an inch in length.

19. *B. MICROPHYLLA*. *Bulbostylis microphylla*, *Nutt. in Torr. & Gray, Fl. 2. p. 79.* Oregon.

20. *B. CALIFORNICA*, *Gray, Pl. Fendl. p. 64.* *Bulbostylis Californica*, *Torr. & Gray, Fl. l. c.* California, New Mexico.

21. *B. TOMENTELLA* (sp. nov.): foliis suboppositis omnibus cordatis petiolatis crenulatis reticulatis supra scabrido-puberulis subtus caule ramisque mollissime cinereo-tomentosis; capitulis pedicellatis secus ramos floridos paniculatos racemosos; involucro 30-floro campanulato pluriseriali, squamis omnibus obtusis margine scariosis, extimis rotundatis tomentosis, interioribus latiuscule linearibus glaberrimis. — Mexico, *Mr. Tate* (in herb. Hook.). — Plant fully as large as *B. Cavanillesii*, which it resembles, from which it is at once distinguished by the obtuse and scarious scales of the many-flowered involucre.

22. *B. CAVANILLESII*. *Coleosanthus Cavanillesii*, *Cass.* *Eupatorium squarrosum*, *Cav. ? E. nepetæfolium*, *H. B. K. ! Nov. Gen. & Sp. 4. p. 112.* *Bulbostylis Cavanillesii* (& *B. nepetæfolia*), *DC. ! l. c.* Mexico. — The figure by Cavanilles does not well accord; but De Candolle states that he has the plant from his herbarium. The leaves are sometimes cinereous-tomentose beneath, sometimes glabrate. The exterior involucreal scales are glandular, the inner often glabrous; all attenuate-acuminate. The stem of the Humboldtian specimen of *Eupatorium nepetæfolium*, in the Paris herbarium, is not "hispid-hairy," but villous-velvety, as in *B. Cavanillesii*, to which it certainly belongs.

23. *B. SECUNDIFLORA*. *Bulbostylis secundiflora*, *DC. ! l. c.* Mexico.

24. *B. PENDULA*. *Bulbostylis pendula*, *DC. ! l. c.* Mexico. — What appears to be this species has been collected in Mexico by Mr. Bates and Mr. Seemann.

25. *B. HEBECARPA*. *Bulbostylis hebecarpa*, *DC. ! l. c.*; *Hook. & Arn. ! Bot. Beech. p. 296.* Western Mexico.

26. *B. HARTWEGI*. *Eupatorium rigidum*, *Benth. ! Pl. Hartw. no. 598. p. 88.* Guatemala, *Hartweg, Skinner, Ersted.*

* * * * *Folia petiolata, cordato-deltoidæ seu hastata, opposita: capitula 10 – 50-flora, corymbosa: involucre pluriserialæ.*

+ Capitula multiflora.

27. *B. CORDIFOLIA*, *Ell. Sk. 2. p. 290*; *Torr. & Gray, Fl. 2. p. 80.* Georgia, Alabama, and Florida.

28. *B. GRANDIFLORA*, *Nutt.*; *Torr. & Gray, l. c.* East and west sides of the Rocky Mountains.

29. *B. FENDLERI*, *Gray, Pl. Fendl. p. 63.* New Mexico.

+ + Capitula pluriflora.

30. *B. HASTATA*, *Benth. ! Bot. Voy. Sulph. p. 21.* South California, *Hinds, Barclay.*

Aug. "In dense bunches; flowers yellow." — This so much resembles *B. brachyphylla* (*Clavigera brachyphylla*, Gray, *Pl. Fendl.* p. 63) that it might well be taken for a variety of it with toothed and mostly opposite leaves, except that its pappus is barely barbellate under a lens (not as strongly as in *B. Riddellii*, but rather more so than in *B. cylindracea*), while in *B. brachyphylla* it is even plumose. The heads are more corymbose, and on longer, simple, and naked peduncles.

250. *B. CYLINDRACEA*, Gray, *Pl. Lindh.* 2. p. 218. Frontiers of Western Texas. A small state, scarcely a foot high; also collected in 1851. It was gathered in Eastern Texas by Berlandier, whose specimen is placed by De Candolle with *B. Cavanillesii*.

251. *B. RENIFORMIS* (sp. nov.): subpuberula; ramis ad apicem usque foliosis; foliis plerisque alternis reniformibus vel ramealibus dilatato-deltaideis grosse crenatis membranaceis longiuscule petiolatis; capitulis parvulis in axillis pl. m. fasciculatis brevissime pedicellatis folio brevioribus; involucri 10-floro glaberrimo, squamis omnibus obtusis, exterioribus ovalibus, intimis linearibus; acheniis pubescentibus;

31. *B. COULTERI* (sp. nov.): suffruticosa? ramis divaricatis pedunculisque pube brevi glandulosa scabro-hirtellis; foliis oppositis petiolatis hastato-triangularibus acuminatis marginibus utrinque laciniato-2-4-dentatis (dentibus triangulari-subulatis) glanduloso-hirtellis mox glabratis; pedunculis paucis corymbosis gracilibus monocephalis; involucri circiter 12-floro; squamis subtriserialibus laxis, extimis lanceolatis acuminatis; achenio puberulo. — California, Coulter (No. 293), in herb. Hook. — A branch only. Leaves with the petiole scarcely an inch long. Heads five lines long, on peduncles of half an inch or more in length.

There is an allied species in Gregg's Mexican collection (No. 479); but my specimen is too poor for characterizing it properly.

* * * * * *Folia longe petiolata subcordata: capitula 7-12-flora in corymbis paniculatis ramosissimis effusis disposita: involucri tantum biseriale.*

32. *B. DIFFUSA*. *Eupatorium diffusum*, Vahl; *DC. Prodr.* 5. p. 174. *E. capillare*, Desv. *E. leptopodum*, Gardner! in *Lond. Jour. Bot.* 5. p. 478. *Bulbostylis diffusa*, *DC. Prodr.* 7. p. 268. West Indies, Mexico, Central America, Brazil.

Bulbostylis scorodoniaefolia, Kunth, *Ind. Sem. Hort. Berol.* 1846, p. 12, would appear from the character to be only *B. Cavanillesii*.

Bulbostylis subuligera, Schauer in *Linnaea*, 19. p. 718 (Zimapan, Mexico, *Aschenborn.*), appears to be, as is stated, very closely allied to *B. pedunculosa*, DC., and if so it is a *Eupatorium*.

Bulbostylis pedunculosa, *DC. Prodr.* 5. p. 138; *Deless. Ic. Sel.* 4. t. 17, (as well De Candolle's own specimens as those of Coulter's Mexican collection, No. 251,) has the achenia merely 5-costate and at length pentagonal; besides, the corolla is considerably ampliate above and rather deeply cleft. It must therefore be removed to *Eupatorium*, many genuine species of which have a bulbous base to the style.

Bulbostylis glabra, *DC. l. c.* (which came from Brazil), and the nine additional species described by Gardner, in *Lond. Jour. Bot.* 5. p. 467-472, are all true *Eupatoria*, having pentagonal (not striate) achenia; while his *Eupatorium leptopodum* is *Brickellia diffusa*.

Bulbostylis spinaciaefolia, *DC. l. c.*, is likewise described with the achenia of *Eupatorium*. Except in the larger leaves, it would seem to accord with *Eupatorium hastile*, Schauer in *Linnaea*, 19. p. 719, to which probably belongs No. 244 of Coulter's Mexican collection, from Zimapan.

Bulbostylis triangularis, *DC. Prodr.* 7. p. 268, may be a *Carphephorus*.

Bulbostylis? *pauciflora*, *DC. Prodr.* 5. p. 139, should probably be restored to *Eupatorium*.

Bulbostylis annua, Nutt. *Pl. Gambel.*, is an obscure plant of uncertain genus, either of *Asteroideæ* or *Senecionideæ*.

pappo serrulato-scabro. — Mountain valley 35 miles east of El Paso; Oct. — Apparently herbaceous, and two feet or more in height, paniculately much branched. Cauline leaves an inch or an inch and a half in length, and mostly wider than long, thin, veiny. Heads only three lines long. Achenia somewhat angled, but 10-striate.

252. *B. BACCHARIDEA* (sp. nov.): minutim glanduloso-puberula, glabrata; caulibus suffruticosis ramosissimis usque ad apicem foliosis; foliis plerisque alternis coriaceis ovato-rhomboideis vel cuneato-oblongis grosse inæqualiter dentatis valde reticulatis basi in petiolum angustatis; corymbulis axillaribus breviter pedunculatis vel ramulos breves terminantibus oligocephalis folia vix superantibus; involucri cylindraceo 15–18-floro, squamis omnibus obtusis, exterioribus ovalibus oblongisve, interioribus linearibus; pappo scabro. — Mountains near El Paso; Oct. — A bushy plant, apparently two or three feet high; the flowering branches virgate, loaded with heads. Leaves crowded, an inch or less in length, dentate with several salient teeth, thickish, rather scabrous, somewhat resinous, punctate as are all the species. Heads narrow, four or five lines long. Pappus very minutely scabrous.

253. *B. LACINIATA* (sp. nov.): scabro-puberula; caulibus fruticosis ramosissimis; ramis virgatis ad apicem usque conferte foliosis; foliis plerisque alternis membranaceis ovato-cuneatis oblongisve inciso-lobatis seu laciniato-dentatis petiolatis; capitulis breviter pedicellatis in ramos floridos subspicato-paniculatis confertis; involucri cylindraceo 9-floro, squamis obtusis submucronatis, extimis ovato-oblongis, intimis linearibus; acheniis puberulis; pappo scabro. — Mountain valley, 40 miles east of El Paso; Oct. (Also Saltillo, *Berlandier*, *Gregg* (No. 336), and in Western Mexico, *Seemann*.) — A much-branched shrubby plant, 3–5 feet high. Leaves variable, 5 to 12 lines long, the larger sometimes deltoid-ovate and deeply lacinate-lobed, most of them narrowed at the base. Heads narrow, 5 lines long; the involucre glabrous. Pappus minutely scabrous.

254. *EUPATORIUM WRIGHTII* (sp. nov.): fruticosum, cinereo-puberulum; caule ramoso (1–2-pedali) usque ad apicem folioso; foliis plerisque oppositis ovatis obtusis triplinerviis subintegerrimis in petiolum marginatum contractis; capitulis corymbosis circa 12-floris; involucri subbiserialis squamis lineari-oblongis obtusis. — Sides of the Guadalupe Mountains, 40 miles east of El Paso; Oct. — Leaves half or three quarters of an inch, or on the branches of the dense corymb two or three lines, long, with a margined petiole about half that length, somewhat like those of *E. cuneifolium*, *Willd.*, but commonly broader near the base. Heads three lines long.

255. *E. AGERATIFOLIUM*, *DC. β. TEXENSE*, *Torr. & Gray, Fl. 2. p. 90; Gray, Pl. Lindh. 2. p. 219. E. Lindheimerianum, Scheele in Linnæa, 21. p. 599.* Mountain valleys beyond the Limpia.

256. *E. SOLIDAGINIFOLIUM* (sp. nov.): glabellum, suffruticosum; caule ramosissimo ramisque floridis virgatis foliosis; foliis oppositis lanceolatis et ovato-lanceolatis acutis subintegerrimis membranaceis e basi obtusa triplinerviis petiolatis; capitulis parvis 3–5-floris in cymulas axillares breviter pedunculatas congestis paniculam thyrsodeam foliosam efficientibus; involucri squamis circiter 8 lanceolatis trinerviis acutatis, externis brevioribus; stylis apice crasso-clavatis; acheniis hirtis-puberulis. — Mountains between the Limpia and the Rio Grande, New Mexico; Aug. — Stems

apparently two or three feet high. Leaves approximate, an inch and a half and on the flowering branches an inch long, the largest half an inch wide near the base, thence tapering gradually to the apex, entire, or the cauline obscurely denticulate; petiole one or two lines long. Heads barely two lines in length, in dense and more or less pedunculate axillary clusters, the lower ones shorter than the leaves, the upper confluent into a thyrsoid panicle. I am not acquainted with any species with which this may be particularly compared.*

257. *CONOCLINIUM BETONICUM*, DC., var. ? *INTEGRIFOLIUM*: foliis lanceolato-oblongis basi cuneato-contractis rarius subhastatis subintegerrimis utrinque cauleque mollioribus pubescentibus. — Wet places on the Rio Grande, Texas; Aug. — This could scarcely be taken for the same species as De Candolle's *C. betonicum*, which has sagittiform-cordate leaves; but specimens gathered near Monterey by Major Eaton, although they have barely subhastate leaves, tend to connect them. Dr. Gregg's collection has the same plant, from Ojo Caliente, near Saltillo. The scales of the involucre are about 25, hirsute on the back. Achenia glabrous. Receptacle strongly conical.

258. *C. DISSECTUM* (sp. nov.): herbaceum, puberulum vel glabellum; caulibus erectis; foliis subsessilibus profunde 3-5-fidis partitisve, segmentis laciniato-pinnatifidis; involucri squamis circa 25 subbiseriatis subulato-lanceolatis dorso striatis pubescentibus; acheniis glabellis. — Damp places, Rio Seco, and on the Rio Grande, Texas. — Stems one or two feet high from a perennial root, herbaceous, or somewhat lignescent at the base, slender, simple or branched, very leafy to near the summit. Leaves two inches or less in length, ovate in circumscription, all remarkably lacinate-dissected, the lower less deeply than the upper; the lobes lanceolate or linear. Corymb nearly simple. Heads twice as large as in *C. coelestinum*; the flowers of the same color. Receptacle convex-conical.

259. *C. DISSECTUM*, var. *caule graciliore*, foliis minoribus. — Valley beyond the Pecos; Aug. Also at San Antonio de las Alanzanes, near Saltillo, Mexico, Gregg.

260. *TRICHOCORONIS RIVULARIS*, Gray, *Pl. Fendl.* p. 66, *adnot.* "In the outlet of a spring tributary to the San Felipe; blooming profusely both above and beneath the surface of the water. Flowers white." Also on the Rio Grande, Texas. In the Hookerian herbarium are specimens gathered by Berlandier near Monterey.

* A singular species of *Eupatorium*, on account of the foliaceous squarrose tips of the scales of its involucre (which may be compared to that of *Sericocarpus*), is in Coulter's collection, both the Californian and the Mexican. This and *E. liatrideum*, DC., which has the same peculiarity, should form a separate section of the series *Imbricata*: —

EUPATORIUM SAGITTATUM (sp. nov. *Imbricata*, *Phyllacrocephala*): puberulum; caule gracili paniculato; foliis oppositis petiolatis hastato-sagittatis integris subtus crebre punctatis; pedunculis solitariis ternisve terminalibus monocephalis; involucro cylindraco 30-40-floro; squamis 20-30 coriaceis vix striatis albidis appressis appendice deltoidea foliacea squarrosis; acheniis glabris angulis acutissimis hispidulis. — California, No. 294; and Sonora Alta, Mexico, No. 252, Coulter. Between Mexico and Mazatlan, Gregg. — Stems herbaceous, apparently erect, the base unknown. Leaves about an inch long, lanceolate-triangular, either sagittate or hastate, the lobes two or three lines long, rather obtuse. Heads five or six lines long; the involucral scales imbricated in four or five series, all but the innermost abruptly foliaceous-appendiculate. Flowers probably rose-color.

261. *T. WRIGHTII*, Gray, *Pl. Fendl.* p. 65. Low or wet places, near Austin and San Marcos, Texas; July. — There is a third species in Gregg's last Mexican collection.*

262. *MACHÆRANTHERA* (*DIETERIA*) *CANESCENS*, var. *GLABRA*: foliis lanceolatis viridibus cauleque scabridis fere glabris; ramulis puberulis; capitulis laxè corymbosis; involucri campanulato-turbinati squamis pluriserialibus apicibus viridibus parvis vix squarrosis. — Sand-bars of the Rio Grande below El Paso, and at Presidio de San Elisario, New Mexico; Sept. — This is better marked in its characters than some of the species described by Nuttall and adopted in the *Flora of North America*; but I am confident that *Dieteria canescens*, *pulverulenta*, *incana*, *divaricata*, *viscosa*, and *sessiliflora*, Nutt., Torr. & Gray, *Fl.* 2. p. 100, are all forms of one widely spread and very polymorphous species, which varies according to situation, &c. *D. asteroides*, Torr. in Emory, *Rep.* p. 142 (which has lanceolate leaves), accords with one of Wright's specimens, except that the involucre scales are looser and with rather longer tips.

* *TRICHOCORONIS GREGGII* (sp. nov.): pusilla; caule procumbente vel fluitante; foliis oblongis integerrimis subamplexicaulibus; pedunculo solitario monocephalo; tubo corollæ fauce campanulata æquilongo; involucri squamis linearibus; pappo plurisquamellato-subcoroniformi et 2-3-aristellato. — Between Mexico and Mazatlan, Gregg. — Leaves thickish, 2-3 lines long. Peduncle simple, one or two inches long. Head twice as large as that of *T. Wrightii*; the involucre, &c. similar.

Stevia trichopoda, *Pl. Fendl.* p. 64, is the same as *S. podoccephala*, DC. The pappus of some of the exterior flowers is occasionally awnless.

The genus *Carphochæte* is confirmed by two additional species. The character must be somewhat extended as to the pappus:—

CARPHOCHÆTE, Gray, *Pl. Fendl.* p. 65.

Capitulum 4-6-florum, homogamum. Involucrum cylindricum; squamis lanceolatis substriatis imbricatis, exterioribus brevioribus. Receptaculum nudum. Corollæ tubulosæ, hypocraterimorphæ, involucrum superantes, lobis lanceolatis glabris. Styli rami filiformes. Achenia gracilia 10-striata, costis alternis fortioribus subpentagona. Pappus paleaceus; paleis 5-14 elongatis lineari-lanceolatis denticulatis uninerviis, nervo crasso in aristam barbellato-scabram corolla subæquilongam sensim exserente, atque paucis (1-5) parvis exterioribus muticis. — Herbæ basi suffruticosa, vel suffrutices, Mexicanæ; foliis oppositis sessilibus angustis uninerviis punctatis integerrimis; capitulis terminalibus sæpius laxè corymbosis; floribus roseis vel albidis circiter unciam longis.

1. *C. WISLIZENI* (Gray, *Pl. Fendl.* l. c.): glaberrima; caulibus spithamæis; foliis anguste linearibus elongatis; squamis involucri vix ciliatis impunctatis subulato-acuminatis; pappo e paleis 5 aristatis et 5 exterioribus parvis ovalibus cuneatisve enerviis. — Mountains near Cosiquiriachi, Northern Mexico, Wislizenus. — Leaves two inches or more in length, scarcely a line wide.

2. *C. GRAHAMI* (sp. nov.): caulibus gracilibus pedalibus et ultra puberulis; foliis linearibus seu lineari-oblongis obtusissimis, superioribus parvis dissitis; squamis involucri arachnoides-ciliatis mucronatis impunctatis; pappo paleis 7-9 aristatis cum 1-3 exterioribus parvis oblongis enerviis. — Mexico, Graham (in herb. Benth.), Seemann. — Cauline leaves an inch or an inch and a half long, two or three lines wide, the uppermost much smaller, conspicuously dotted. Heads corymbose. Branches of the style very long.

3. *C. BIGELOVII* (sp. nov.): puberula, fruticosa; foliis oblongis confertis; squamis involucri subacuminatis resinoso-punctatis; paleis pappi 12-14 aristatis cum 1-3 parvis lanceolatis muticis uninerviis. — On the boundary between Mexico and New Mexico, Dr. I. H. Bigelow. Communicated in a letter to Dr. Torrey. — The leaves barely half an inch long. Heads larger than in the two preceding. Achenia half an inch long. Corolla two thirds of an inch long.

263. *MACHÆRANTHERA TANACETIFOLIA*, Nees, *Ast. p.* 224; *DC. Prodr.* 5. *p.* 262; *Hook. Bot. Mag. t.* 4624. *Aster tanacetifolius*, *H. B. K. ! Nov. Gen. & Sp.* 4. *p.* 95. *A. chrysanthemoides*, *Willd. in Spreng. Syst.* 3. *p.* 538. *Chrysopsis* (*Pappochroma*) *coronopifolia*, *Nutt. in Jour. Acad. Philad.* 4. *p.* 34. *Dieteria coronopifolia*, *Nutt. in Trans. Amer. Phil. Soc.* 7. *p.* 300; *Torr. & Gray, Fl. l. c.* Valley of the Rio Grande, New Mexico, and on the Pecos; Sept. (San Antonio de las Alamos, Mexico, *Gregg.*) — Humboldt found the plant growing in the Botanic Garden at Mexico; and Nees founded on it his genus *Machæranthera* (so named from the lanciform tips of the anthers, which are just the same, however, in most *Asters*): but it has not been identified until the present year, when Sir William Hooker has figured under this name specimens raised in the Royal Botanic Gardens at Kew, from Mr. Wright's seeds. He did not observe, however, that it is the same as the well-known *Dieteria coronopifolia*, *Nutt.* (as I had determined from the specimen in the herbarium of the Paris Museum), probably because the specimen figured has all the upper leaves simply pinnatifid: but similar wild ones have all the lower leaves bipinnately parted. Kunth described the rays as white: Nees had remarked that they were purplish in the dried specimen preserved in the herbarium of Willdenow; and Gregg notes that they were pale purple in his Mexican specimens. In Texas, and in the cultivated plant, they are usually deep violet, and are quite showy. It is not "suffruticose," although the stems become somewhat indurated; but the root is biennial or annual. — The older name must replace Nuttall's *Dieteria*.

271. *M. PARVIFLORA* (sp. nov.): glabra, subviscosa; caule ramosissimo; foliis parvis pinnatilobatis lobisque utrinque 3–5 sublinearibus; involucri squamis 2–3-serialibus lineari-oblongis acutiusculis disco brevioribus; acheniis sericeis; pappo corolla disci brevior. — Along the Rio Grande, New Mexico; Sept. — Stems a foot or so in height, from an annual root. Cauline leaves half an inch long, those of the branches smaller; the lobes a line or less in length. Heads three lines in diameter. Rays three lines long, purple. Pappus soft, not very copious; that of the ray rather shorter than that of the disk. — Very much resembles *Psilactis Coulteri*; but the leaves are pinnatifid, the achenia are silky-villous, and the pappus always present in the ray.

264. *ASTER MULTIFLORUS*, *Ait. ; Torr. & Gray, Fl.* 2. *p.* 125. Valley of the Rio Grande, New Mexico, and plains at the base of the Guadalupe Mountains; Sept. Dr. Gregg collected it in Mexico, below Saltillo. — To this species belongs *A. hebecladus*, *DC.*, and *A. scoparius*, *DC.*, established on specimens from Berlandier's collection.

† *A. SPINOSUS*, *Benth. Pl. Hartw. p.* 20. Banks of the Rio Grande below El Paso. Dr. Gregg gathered it at Saltillo.

265. *A. DIVARICATUS*, *Torr. & Gray, l. c.* Along the Rio Grande, New Mexico.

266. *ERIGERON MODESTUM*, *Gray, Pl. Fendl. p.* 68, & *Pl. Lindh. p.* 220, excl. syn. *Distasis modestæ*, *DC.* On the San Felipe; July. Also in the coll. of 1851.*

* De Candolle's *Erigeron*? (*Pterigeron*) *decurrens* belongs to the tribe *Cynareæ*, in which, with a second and larger-flowered species from tropical New Holland, it forms a new genus.

267. *E. DIVERGENS*, Torr. & Gray, *Fl.* 2. p. 175; *Hook. in Lond. Jour. Bot.* 6. p. 242. *E. flagellare*, Gray, *Pl. Fendl.* p. 68. Valley of the Limpia; Aug. Also in the coll. of 1851. — Fendler's and Wright's specimen, I find, accord with Nuttall's, and especially with Geyer's, which has flagelliform branches. The root sometimes appears as if perennial.

268. *E. DIVERGENS*, var. *CINEREUM*. *E. cinereum*, Gray, *Pl. Fendl.* p. 68. New Mexico; the locality not recorded.

269. *DIPLOPAPPUS ERICOIDES*, β . *HIRTELLA*, Gray, *Pl. Fendl.* p. 69. Valley of the Pecos and of the Limpia; Aug. — Oct.*

270. *PSILACTIS ASTEROIDES*, Gray, *Pl. Fendl.* p. 72. Along the Pecos, Limpia, and Rio Grande, New Mexico; Aug. — The lower cauline leaves, in specimens from the coll. of 1851, are spatulate and toothed. — This genus should probably be reduced to a section of *Machæranthera* (*Dieteria*, Nutt.), which shows a tendency to a reduction of the pappus in the ray.

271. Vide p. 90.

272. *DISTASIS MODESTA*, DC.! *Prodr.* 5. p. 279. *Diplostelma bellioides*, Gray, *Pl. Fendl.* p. 72. — Hills on the Rio Frio and Turkey Creek, Western Texas; June. — Berlandier's plant, on which *Distasis* was founded, proves on inspection to be a slender state of the plant on which my *Diplostelma* was established, much like some of the specimens in Wright's collection. The outer, paleaceous pappus is larger, however, in all my specimens. The heads vary considerably in size and in the number of the flowers. The anthers are not caudate. In some dried specimens the rays are violet-purple.

273. *KEERLIA BELLIDIFOLIA*, Gray & Engelm. in *Proceed. Amer. Acad.* 1. p. 47, & *Pl. Lindh.* 2. p. 220. Hills of the Rio Frio, Texas; June; a very slender form. — De Candolle characterized his genus *Keerlia* by its *flat receptacle and subterete achenia* (in these respects distinguished from the Australian genus *Brachycome*), its pluriserial involucre of lanceolate acuminate scales with submembranaceous margins, and its pappus of very short paleæ more or less united in a minute crown. The first of the three species differs from the others, as well as from the subtribe the genus is placed in, by its yellow rays: the achenia likewise are not striate, the corollas have a slender tube, and the scales of the involucre are coriaceous. The plant, moreover, has so entirely the aspect and the involucre of *Xanthocoma*, that De Candolle was probably thence led to adduce the *Brachycome xanthocomoides*, Less., as a synonym. In fact, the *K. linearifolia* would be a true *Xanthocoma*, were it not for a minute paleaceo-coroniform pappus and the lanceolate-linear appendages to the style, which refer it rather to *Gutierrezia* § *Hemiachyris*.† It is not the same as

* *Arctogeron*, DC. is congeneric with this and *Diplopappus alpinus*, Nutt. Of the latter, Burke collected in the Rocky Mountains a taller and more developed, probably less alpine state, if not a new species; with stems six inches high, and linear leaves six to ten lines long, and the narrowly linear scales of the involucre only biserial.

† *GUTIERREZIA* (*HEMIACHYRIS*; pappo brevissimo pl. m. coroniformi, radii conformi vel obsoleto) ALAMANI: caule spithamæo e basi suffruticuloso repente parce ramoso, ramis monocephalis; foliis linearibus vel lanceolatis; ligulis 12–15 involucre late campanulato duplo longioribus; acheniis glabellis;

Lessing's *Brachycome xanthocomoides*, of which I have seen an original specimen, barely in flower, communicated by Schlechtendal to the herbarium of the Paris Museum. This is a diffusely spreading plant; the rays, I think, are not yellow; the receptacle is conical, and the involucre, ovaries, corolla, &c. are the same as in *Aphanostephus*, to which I should refer the plant, were it not that the appendages of the style in the perfect flowers are oblong-lanceolate. *Keerlia ramosa*, De Candolle's second species, founded on a plant collected by Keerl himself, has a *strongly conical* receptacle (which is abundantly manifest in De Candolle's own specimen, as well as in those retained by Martius), and plainly belongs to De Candolle's next genus; indeed, it is difficult to distinguish it from *Aphanostephus ramosissimus* itself. (The coroniform pappus of the latter is minutely setulose-fringed; of the former, more setulose and less coroniform.) *Keerlia skirrobasis*, De Candolle's third species, which is figured in Delessert's *Icones*, also has a well-marked conical receptacle, and is the same species as his own *Leucopsidium Arkansanum*, and is a strict congener of his earlier-published *Aphanostephus ramosissimus*, as I have already remarked, in *Pl. Fendl. p.* 71. *Keerlia*, DC., must therefore be divided between *Gutierrezia* and *Aphanostephus*. Singularly enough, however, while none of De Candolle's species really accord with his character, I some years ago received a Texan plant that does, in the essential points of a flat receptacle, a minute coroniform pappus, and acuminate membranaceously-margined involucreal scales; and this was described under the name of *Keerlia bellidifolia*. To this a second and in some respects different species of Lindheimer's later collection (*K. effusa*) was added recently, but before I had obtained the information above recorded. And for these, as the case now stands, since they are already published under this name, I propose to continue the name *Keerlia*, with a new character, as subjoined.*

pappo in radio et disco conformi brevissimo paleaceo-coroniformi. — *Keelia linearifolia*, DC. ! *Prodr.* 5. p. 310. — Mexico, *Alaman* (v. sp. in herb. DC.), *Ghiesbrecht* (v. sp. in herb. Mus. Par.), *Mackenzie* (v. sp. in herb. Hook.). Although large for the genus, the heads are smaller than those of *Gutierrezia* (*Odontocarpa*, DC. !) Gayana, in which they are also solitary; and the pappus is nearly the same as that of *G. Texana*. — In *Xanthocoma humilis*, which Dr. Halstead gathered in Mexico, the achenia, or at least the ovaries, are short and compressed, glabrous, and the appendages of the style are short and obtuse. The stems are somewhat floccose-woolly when young.

* *KEERLIA*, Gray, *Pl. Lindh.* 2. p. 221, non DC. !

Capitulum pluriflorum radiatum; ligulis 5–15 uniserialibus fœmineis; fl. disci hermaphroditis aut abortu masculis, 5-dentatis. Involucrum turbinatum, imbricatum, pauciseriale; squamis oblongis cuspidato-mucronatis nitidis membranaceis, marginibus scariosis, extimis brevibus. Receptaculum planum nudum. Styli rami fl. disci breves, appendice aut brevissima obtusa aut gracili lanceolata superati. Achenia obovata, pl. m. compressa, disci vel centralia inania gracilia, disco epigyno parvo, pappo minimo coroniformi superata. — *Herbæ Texanæ*, annuæ vel perennes? caulibus gracilibus effuse ramosis; foliis alternis spathulatis oblongisve subsessilibus integerrimis; capitulis parvulis pedunculatis solitariis vel paniculatis; ligulis albis vel cæruleis.

1. *K. BELLIDIFOLIA*: annua, hirsutulo-pubescens; caule humili e basi diffuse ramoso; foliis membranaceis, infimis obovatis, ramealibus lineari-spathulatis, omnibus deorsum attenuatis; ligulis (cyaneis) 7–15 lineari-oblongis; fl. disci 15–25 plerisque fertilibus; appendicibus styli brevibus obtusissimis; acheniis clavato-fusiformibus hirtellis 7–9-nerviis leviter (exterioribus præsertim) compressis coronula parva inte-

274. *APHANOSTEPHUS RAMOSISSIMUS*, DC.! *Prodr.* 5. p. 310. *A. Riddellii*, Torr. & Gray, *Fl.* 2. p. 189. *Egletes ramosissima*, Gray, *Pl. Fendl.* p. 71, & *Pl. Lindh.* 2. p. 220. Prairies near Austin, Texas; May. The form with strict and sub-simple upright stems. It flowers during the whole summer, and often becomes very much branched and diffuse later in the season. It is a pretty plant in cultivation. The copious heads droop before anthesis, and are usually tinged with pink or purple underneath. The ripe achenia are prismatic, as in *A. Arkansanus*, but not strongly ribbed and sulcate. The base of the corolla is at length frequently indurated.

275. *A. RAMOSISSIMUS*; a diffusely branched, more softly pubescent variety, with smaller heads. Prairies along the Rio Grande, Texas; July.

276. *A. HUMILIS*. *Leucopsidium humile*, Benth. *Pl. Hartw.* p. 18. *Egletes humilis*, Gray, *Pl. Fendl.* p. 71. Valley of the Rio Grande, 60 or 70 miles below El Paso; Sept. "Rays purple." Perhaps a dwarf variety of *A. Arkansanus*; but the pappus is entire and equably setulose-ciliate.

† *A. ARKANSANUS*. *Leucopsidium Arkansanum*, DC.! *Prodr.* 6. p. 43. *Keerlia skirrobasis*, DC.! *Prodr.* 5. p. 310; *Hook. Ic. Pl. t.* 240. *Egletes Arkansana*, Nutt. in *Trans. Amer. Phil. Soc. n. ser.* 7. p. 394; Torr. & Gray, *Fl.* 2. p. 411. Eastern Texas; common.—Having followed Nuttall in referring this plant to *Egletes*, I subsequently did the same with its strict congeners, the preceding species. But the recent examination of *Egletes bellidiflora*, *Domingensis*, and *viscosa* (*Platystephium*, Gardner) leads to a different conclusion. *Egletes* has compressed achenia (becoming somewhat turbinate by the great thickening of the pappus), with only marginal, thickened ribs, and very short rays. The styles, moreover, as well as the odor and aspect of the plants, show that they are genuine Anthemideæ. The achenia of *Aphanostephus* are prismatic or terete, strongly striate or ribbed on all sides; the rays are elongated; the herbage is destitute of aromatic odor; and the style (well figured in *Deless. Ic. Sel. t.* 18) is the same as in many other Bellideæ.

‡ *BELLIS INTEGRIFOLIA*, Michx. *Fl.* 2. p. 131. Western frontiers of Texas; coll. of 1851. There is a congener of this in Gregg's last collection, made between the city of Mexico and Mazatlan.*

gra superatis. — Gray & Engelm. *Proceed. Amer. Acad.* 1. p. 47; *Pl. Lindh. l. c.* — Western Texas, Lindheimer, Wright.

2. *K. EFFUSA*: perennis? caule virgato ultrapedali ad apicem usque folioso hirsuto; foliis utrinque hispidis coriaceo-membranaceis, infimis spathulatis, cæteris oblongis e basi lata arcte sessilibus, costa subtus prominula, ramis floridis in paniculam decompositam effusam diliquescentibus; pedunculis filiformibus divaricatis minutim bracteolatis; ligulis 5–7 oblongis; fl. disci 7–10 fere omnibus sterilibus; appendicibus styli lineari-lanceolatis acutis; acheniis radii plano-compressis obovatis calloso-marginatis parce hirtellis (ad margines præsertim) faciebus fere enerviis apice acutatis, disci abortivis gracilibus; pappo minimo setuloso-coroniformi. — Gray, *Pl. Lindh.* 2. p. 222. — Upper Guadalupe, near Camanche Spring, on shady declivities, Lindheimer. "Camancheries," Texas, Berlandier, No. 1878 (v. in herb. DC.).

Keerlia linearifolia, DC. = *Gutierrezia Alamani*: vide supra, p. 91.

K. ramosa, DC. = *Aphanostephus* sp. *A. ramosissimo* valde affinis.

K. skirrobasis, DC. = *Aphanostephus Arkansanus* (*Leucopsidium Arkansanum*, DC.).

* *BELLIS MEXICANA* (sp. nov.): annua? pilis patentibus hirsuta; caule erecto folioso; ramis monocephalis; foliis radicalibus caulisque inferioribus spathulatis dentatis in petiolum longe attenuatis superi-

277. *GYMNOSPERMA CORYMBOSUM*, *DC. Prodr.* 5. p. 312; *Torr. & Gray, Fl.* 2. p. 192; *Gray, Pl. Lindh.* 2. p. 222. Hills along the Pecos and Limpia, also on the Rio Grande, in Texas. — *G. multiflorum* and *G. scoparium*, *DC.*, are scarcely distinct from this. As to De Candolle's opposite-leaved species, *G. nudatum* is *Flaveria linearis*, *Lag.*, as already referred in the *Flora of North America*, and I may now add that his *G. oppositifolium* is *Flaveria longifolia*, *Gray, Pl. Fendl.* p. 88.

278. *GUTIERREZIA EUTHAMIÆ*, *Torr. & Gray, Fl.* 2. p. 193; var. *caule altiore*. Side of mountains near El Paso; Sept. A smaller form was gathered on the Limpia.

279. *G. MICROCEPHALA*, *Gray, Pl. Fendl.* p. 74, *adnot.* *Brachyris microcephala*, *DC.!* *Prodr.* 5. p. 313, non *Hook.* Along the Rio Grande, 60 or 70 miles below El Paso; Sept.

280. *G. ERIOCARPA* (sp. nov.): *diffuso-ramosissima*; *ramulis divergentibus subcorymbosis capitula solitaria gerentibus*; *foliis angustissime linearibus*; *involucro hemisphærico disco convexo brevioribus, squamis lineari-oblongis acutis*; *ligulis 10–12*; *fl. disci circiter 30*; *pappo conformi e paleis circa 12 lineari-lanceolatis subulatisve integris haud raro inter se subconcretis achenio turbinato villosissimo dimidio brevioribus*; *receptaculo alte conico*. — Prairies along the Rio Grande, Texas. (Also between Laredo and Bexar, Feb., 1828, *Berlandier*; v. sp. in herb. *Hook.*) — Stems 1–3 feet high, very leafy. Leaves an inch or less in length, half a line wide, those of the branches almost setaceous. Heads barely two lines in diameter; the rays linear-oblong. Achenia turbinate, 10-ribbed, very strongly silky-villous. Pappus of more numerous, longer, narrower and acute paleæ than in the allied *G. sphærocephala* (*Pl. Fendl.*), sometimes all distinct, often irregularly concreted more or less, similar in the ray and disk. *G. sphærocephala* has the receptacle equally conical.*

281. *SOLIDAGO PETIOLARIS*, *Ait.*; *Torr. & Gray, Fl.* 2. p. 203; var. Mountains between the Limpia and the Rio Grande; Aug. A bad name for the species, since the leaves are nearly or quite sessile. This state is nearly allied to *S. velutina*, *DC.*

282. *S. NEMORALIS*, *Ait.*; *Torr. & Gray, Fl.* 2. p. 220; var. β . & γ ., verging to *S. incana*, *Torr. & Gray*, which is probably not distinct.† Valley of the Limpia, and base of the Gaudalupe Mountains; Sept. Some of the specimens have narrowly lanceolate leaves, and are *S. decemflora*, *DC.!* *Prodr.* 5. p. 332, except that *Berlandier's* are very starved and late specimens, having been gathered in December.‡ *De Candolle's S. puberula* is also *S. nemoralis*, the ordinary form.

oribus lanceolatis sessilibus integerrimis mucronatis; *involucris squamis lineari-lanceolatis acutis hirsutis*; *ligulis albis*. — Mexico, *Gregg*.

* No. 538 of *Gregg's* Mexican collection (from near Saltillo) accords rather better than *Coulter's* No. 315 (from Zimapan) with the character of *Hemiachyris glutinosa*, *Schauer in Linnæa*, 19. p. 724; but both differ from it in having a pappus in the ray as well as disk, and of more numerous small paleæ.

† *Solidago mollis*, *Bart. Ind. Sem. Hort. Gætt.*, as I learn from specimens of the plant cultivated in the Botanic Garden of Halle, 1849, is exactly *S. incana* (var. *a.*), *Torr. & Gray, Fl.*, which name should give place to *Bartling's*, if the species be distinct.

‡ *Solidago puncticulata*, *DC.!* *l. c.*, which is compared with this, is *S. odora*.

† *S. RADULA*, *Nutt.* var. *ROTUNDIFOLIA*. *S. rotundifolia*, *DC.!* *Prodr.* 5. p. 339. *S. scaberrima*, *Torr. & Gray*, *Fl.* 2. p. 221. Near Austin, Texas. (Near New Braunfels, *Lindheimer*, 1850.) — By numerous intermediate states this is plainly connected with *S. Radula*. Probably what I referred to *S. decemflora*, in *Pl. Lindh.* 2. p. 222, likewise belongs here.

283. *LINOSYRIS HETEROPHYLLA* (sp. nov.): suffruticosa, glabra; caulibus simplicibus vel apice fastigiato-corymbosis; foliis anguste linearibus mucronatis uninerviis, superioribus integerrimis, inferioribus parce laciniato-dentatis; capitulis plurimis confertim fasciculato-corymbosis 12-floris; involucre subcylindraceo floribus dimidio brevior, squamis glabellis ecarinatis lineari-oblongis obtusis apice ciliolatis. — Valley of the Pecos; Aug. — Stems a foot high, very leafy, as well as the slender and somewhat angled branches. Leaves thickish, punctate, tapering to the base; the lower, two or three inches long and one or two lines wide, usually beset with one or two sharp and salient teeth or lobes on each side; the upper, an inch long and half a line wide, obscurely one-nerved. Heads more or less peduncled, crowded, four lines long. Involucre cylindraceous-campanulate; the scales about 15, slightly glutinous-glandular, as are the flowering branches and peduncles, rather concave, appressed, with a very narrow scarious margin, which is fimbriate-ciliate at the obtuse apex, the exterior successively shorter, their tips obscurely greenish. Appendages of the style triangular-lanceolate, acutish. Alveoli of the receptacle lacerate-toothed. Achenia short, turbinate but compressed, silky-canescant. — The allied *L. pluriflora*, of which I have only some capituli, has a more campanulate 15 – 18-flowered involucre, with lanceolate, moderately acute scales.

284. *L. WRIGHTII* (sp. nov.): suffruticosa, glabra; caulibus simplicibus; foliis oblanceolatis mucronato-acuminatis uninerviis integerrimis marginibus hirtello-scabris; capitulis plurimis in corymbum compositum fasciculato-confertis 9 – 10-floris; involucre campanulato floribus subdimidio brevior, squamis ovato-oblongis obtusissimis subcarinatis glabris marginibus subciliatis. — Valley of the Rio Grande, 60 or 70 miles below El Paso; Sept. — Stems a foot or more in height from a woody base. Leaves dull green, a little scabrous, thickish, all tapering to the base; the lower, two inches long and nearly three lines wide above the middle; the upper, similar but smaller. Heads crowded, three lines long. Scales of the involucre all appressed, obscurely greenish at the tips. Appendages of the style triangular-lanceolate, acute. Achenia short, silky-canescant. — Allied to *L. lanceolata*, but not puberulent, the leaves only one-nerved, the involucre shorter, &c. Both, with the preceding and *L. hirtella*, are strict congeners.

285. *L. HIRTELLA* (sp. nov.): cinereo-hispidula; caulibus e basi suffruticosa simplicibus virgatis; foliis spathulato-linearibus mucronato-apiculatis uninerviis integerrimis vel inferioribus dentibus 1 – 3 instructis; capitulis in corymbum simplicem confertis 14-floris; involucre campanulato floribus subdimidio brevior, squamis oblongis obtusiusculis fere ecarinatis glabris. — Valley of the Limpia, "growing in dense bunches"; Aug. — Stems slender, 12 to 18 inches high, clothed, as are the leaves, with a short cinereous-hispid pubescence. Leaves about an inch long, and the larger a line wide towards the apex. Heads rather crowded in a small and

nearly simple terminal corymb, solitary or in pairs on the more or less recurved peduncles, four lines long. Scales of the involucre obscurely herbaceous near the tip. Appendages of the style short, triangular-lanceolate, acute. Achenia short, silky-villous.

286. *L. (CHRYSOTHAMNUS) GRAVEOLENS*, Torr. & Gray, *Fl. 2. p. 234*. Base of the Guadalupe Mountains, New Mexico; Sept. — Here belongs No. 102 of Geyer's collection, which in the published account is wrongly referred to *L. viscidiflora*. The latter, abundantly gathered by Fremont, Geyer, and Burke, has the involucre viscid only when young, and not always then, whence Nuttall's later specific name of *pumila* is preferable. Burke also gathered *L. albicaulis*, in the Rocky Mountains, confirming the character of that species.

287. *L. (CHRYSOTHAMNUS) PULCHELLA* (sp. nov.): fruticosa, ramosissima, glabra; ramis gracilibus apice corymbosis; foliis anguste linearibus uninerviis, ramealibus subulatis; capitulis subfasciculatis 5-floris; involucre angusto pentagono floribus subdimidio brevior, squamis plurimis oblongo-lanceolatis cuspidatis valde carinatis albis dorso ad apicem viridibus arcte quinquefarium imbricatis; acheniis acute 5-6-angulatis fere glabris; pappo copioso, setis rigidulis omnibus æquilongis. — A shrubby plant, apparently one or two feet high; the slender branchlets whitish. Leaves coriaceous, 8 or 9 lines long. Involucre 4 lines long; the chartaceous appressed scales imbricated in five vertical ranks, about six scales in each, the exterior successively shorter, all very much carinate, herbaceous on the back next the apex which is acuminate-cuspidate. Corolla, style, &c., as in the other species of the section *Chrysothamnus*. Receptacle small, alveolate-toothed, as in the others. Achenia fully two lines long, glabrous to the naked eye; but sparingly and minutely pubescent under a lens. Pappus half an inch long, of slender, but rather rigid bristles, all of the same length and strength. — This curious species is allied to *Chrysothamnus depressus*, Nutt. *Pl. Gamb.*, which is a smaller plant, with more slender and tapering involucral scales. These are more or less evidently quinquefarious in all the proper *Chrysothamni*, but in none do they appear so strictly so as in these two species, on account of their greater number and of their strong carination.

289. *L. CORONOPIFOLIA* (sp. nov.): glabra, subglutinosa; caulibus e basi suffrutescente simplicibus; foliis pinnatipartitis, lobis utrinque 2-4 rhachique lineari-filiformibus; capitulis ad apicem caulis capitato-congestis 9-11-floris; involucre cylindraceo-campanulato floribus subdimidio brevior, squamis lineari-oblongis appressis ecarinatis obtusis. — Along the Rio Grande, Texas; Sept. — Stems 12-18 inches high, leafy to the top. Leaves an inch or more in length; the slender lobes 5 to 8 lines long, punctate. Heads 4 lines long, sessile or nearly so, crowded in a terminal subglobose glomerule. Scales of the involucre thickish, nearly flat, a little greenish towards the tip. Appendages of the style triangular-lanceolate. Achenia short, silky-canescens. — An undoubted congener of No. 283, 284, and 285, which, with *L. pluriflora* and *L. lanceolata*, I cannot generically distinguish from *Linosyris punctata*, *villosa*, and *Tartarica* of the Old World; and *L. lanceolata* too closely resembles *L. viscidiflora* well to allow Nuttall's genus *Chrysothamnus* to stand for the 4-5-flowered species, notwithstanding the slender appendages of the style. On

the other hand, I am unable to draw a marked line of distinction between this *L. coronopifolia* and a small group of plants with 15 – 25-flowered heads and more herbaceous tips to the scales of the involucre, on one of which De Candolle founded his *Aplodiscus*, as a section of *Aplopappus*. Indeed, the *A. (Aplodiscus) discoideus*, DC. ! is the same species as the *Linosyris Mexicana*, Schlecht. Hort. Hal. p. 7. t. 4 (as well as *Baccharis? veneta*, H. B. K. !). Gregg's No. 580, gathered between San Luis Potosi and Mexico, is a variety of this with pinnatifid leaves. No. 114 of Hartweg's Mexican collection is an allied species, with much smaller heads; and here likewise belongs *Aplopappus (Aplodiscus) Menziesii*, Torr. & Gray, of California. *A. (Aplodiscus) ramulosus*, DC. !, which is Gregg's No. 625 (from Real del Monte, and 790 of his last collection), appears also to be of this group, although of a different habit, and with nearly subulate appendages to the style. *Linosyris Drummondii*, Torr. & Gray, of which better flowering specimens were recently gathered at Port Lavaca, Texas, by M. Trécul, has the many-flowered heads and the involucre of this group, with the foliage of *L. heterophylla*.*

288. *APLOPAPPUS (BLEPHARODON) BLEPHARIPHYLLUS* (sp. nov.): scabro-puberulus, subcinereus; caulibus erectis herbaceis usque ad apicem foliosis; ramis subcorymbosis monocephalis; foliis spathulato-oblongis (ramealibus lineari-oblongis) coriaceis crebre serratis et pectinato-setigeris; involucro nudo hemisphærico, squamis pluriserialibus lanceolato-subulatis glabellis apicibus brevibus subsquarrosis; pappo biseriali rigido achenio brevi sericeo-pubescente subduplo longiore. — Plains at the eastern base of the Guadalupe Mountains; Oct. — Plant a foot or less in height from a suffrutescent? base, rigid, with much the aspect of a *Grindelia*. Leaves about an inch long, thick, scabrous, serrate all round with closely set teeth, which are tipped with rigid rather short bristles. Involucre half an inch in diameter. Rays 15 – 18. Pappus not copious.

290. *A. SPINULOSUS*, DC., var. *GLABER*, Gray, *Pl. Fendl.* p. 75. On the Rio Grande, Texas. — Whole plant a little glandular, but entirely destitute of pubescence.

291. *A. SPINULOSUS*, DC. *Sideranthus spinulosus*, Fraser, ex Steud.; Nees in *Neu-Wied. Riese, Appx.* p. 14. Hills and prairies, from the Rio Frio to the San Felipe. Various forms, principally those with canescent and very spinulose leaves.

† *A. RUBIGINOSUS*, Torr. & Gray, *Fl.* 2. p. 240. On the Rio Grande, Texas. — *A. phyllocephalus*, DC. appears to be an abnormal state of this species.†

292. *A. GRACILIS*, Gray, *Pl. Fendl.* p. 76. *Dieteria (Sideranthus) gracilis*, Nutt. *Pl. Gamb., in Jour. Acad. Philad. (n. ser.)* 1. p. 177. Between the Pecos and the Limpia; Aug. The canescent form; erect, a span to a foot high, with long and slender, divergent branches. Leaves small, rather appressed.

* *Crinitaria? humilis*, Hook. ! *Fl. Bor. Am.*, is *Aster (Oxytripolium) angustus*, the *Tripolium angustum*, Lindl.

† *Aplopappus (Blepharodon) gymnocephalus*, DC., collected in Mexico by Alaman, Berlandier, Tate, Bates, and Coulter, has the rays to all appearance yellow in some specimens, while in others they have assumed a reddish hue underneath (as noticed by De Candolle), as if they had been pale purple or rose-color, in which case the plant would be a *Machæranthera*. Perhaps it is *M. setigera*, Nees in *Linnæa*, 19. p. 722. The receptacle is strongly fimbriiferous.

293. *A. GRACILIS*; a less hairy form, like Gambell's plant. Valley of the Rio Grande, below El Paso; Oct.

294. *A. GRACILIS*; a more glabrate and less setigerous variety. Valley of the Rio Grande, 60 or 70 miles below El Paso; Sept.

295. *APLOPAPPUS* (*PRIONOPSIS*) *CILIATUS*, *DC. Prodr.* 5. p. 346. *Donia ciliata*, *Nutt. in Jour. Acad. Philad.* 2. p. 118; *Hook. Exot. Fl. t.* 45. *Prionopsis ciliata*, *Nutt. in Trans. Amer. Phil. Soc.*; *Torr. & Gray, Fl.* 2. p. 245. Prairies of the Pecos; Aug. — In these specimens the pappus is scarcely at all deciduous. *Prionopsis* and *Pyrrocoma* can be received only as sections of *Aplopappus*.*

† *XANTHISMA TEXANUM*, *DC. ! Prodr.* 5. p. 94. Var. *a. BERLANDIERI*: involucri squamis obtusissimis, extimis tantum apiculatis vel mucronato-acuminatis. Southern Texas, *Berlandier !* On the Nueces, *Trécul*. — Var. *β. DRUMMONDII*: involucri squamis fere omnibus cuspidato-acuminatis. *Centaureidium Drummondii*, *Torr. & Gray, Fl.* 2. p. 246; *Gray, Pl. Lindh.* 2. p. 223. Middle and Western Texas, *Drummond, Riddell, Wright, Lindheimer*. — I believe the two are only varieties of the same species; indeed, my cultivated specimens serve to connect them. I noticed at the time that *Drummond's* plant, on which *Centaureidium* was founded, agreed in many respects with *De Candolle's* character of *Xanthisma*: but in that the involucreal scales were said to be very obtuse; in ours they are remarkably cuspidate-pointed. Moreover, the appendages of the style, although long and slender, are flat, and entirely Asteroid in character. *De Candolle's* prior name should replace ours, but the genus must occupy the position I had assigned to it. — I have elsewhere remarked that the cauline leaves are often toothed, and that the radical ones are laciniate-pinnatifid, or even bipinnatifid.

† *BRADBURIA HIRTELLA*, *Torr. & Gray, Fl.* 2. p. 250. Western Texas. Also gathered by *Trécul*. — The obpyramidal ray-achenia are strongly three-angled. The truly filiform appendages of the style are quite Vernoniaceous in character. The root is annual.

296. *GRINDELLIA SQUARROSA*, *Dunal*, var. *GRANDIFLORA*: capitulis fere duplo majoribus. — *G. Texana*, *Scheele in Linnæa*, 21. p. 60. *G. grandiflora*, *Hook. Bot. Mag. t.* 4628. On the San Pedro River; July. Achenia quadrangular-compressed, somewhat margined, smooth and even. — The same as *Lindheimer's* No. 418. I think No. 363 of *Coulter's* Californian collection, and one of *Fremont's* from the same region, are not distinct from it.

297. *G. INULOIDES*, *Willd.*; *Torr. & Gray, l. c.* Prairies of the Rio Seco; June. —

* From the genus is to be excluded *De Candolle's* sect. ? *Leucopsis*, the species of which belong to *Noticastrum* and to *Chrysopsis*; and also the sect. ? *Pyrochæta*. For *A. ? Hænkei*, *DC. ! l. c. p.* 349, is, if I mistake not, a glabrate state of *Corethrogyne filaginifolia*, to which also belongs *Corethrogyne virgata*, *Benth. !* The species is not very well characterized in the *Flora of North America*. The synonym of *Diplopappus leucophyllus*, *Lindl.* is to be transferred from this species to *C. tomentella* (as appears from the original specimens in the Hookerian herbarium), to which also belong both No. 267 and No. 268 of *Coulter's* Californian collection, and *C. obovata*, *Benth. !* And I suspect that No. 1772 of *Hartweg's* Mexican collection is a glabrate state of the same species.

Aplopappus florifer, *Hook. & Arn. Bot. Beech. Suppl. p.* 351 (*Erigeron ? florifer*, *Hook. Fl. Bor.-Am.*, and *Stenotus florifer*, *Torr. & Gray, Fl.*) is *Townsendia grandiflora* !

The form with rather large heads. The ripe achenia are turgid, with two sharp narrow margins, transversely rugose, the crustaceous walls very thick. If *G. microcephala*, *DC.* has smooth achenia, it is probably a distinct species. Otherwise it is to No. 297 what the small-flowered *G. squarrosa* is to No. 296. — *G. inuloides* β . *Torr. & Gray*, belongs to *G. integrifolia*. *G. stricta*, *DC.!* *Prodr.* 7. p. 278, is apparently a slender and small form of *G. integrifolia*, β . *virgata*, *Torr. & Gray*. *G. discoidea*, *Hook. & Arn.* (non *Nutt.*) is, I believe, *G. anomala*, *DC.*, so that Nuttall's name may be retained for the Oregon species.

298. *CHRYSOPSIS CANESCENS*, *Torr. & Gray, Fl. 2. p. 256.* Valley of the San Pedro and of the Limpia; July.

299. *C. FOLIOSA*, *Nutt. in Trans. Amer. Phil. Soc.; Torr. & Gray, Fl. 2. p. 256;* var. *minus canescens*; foliis parvulis sæpius setoso-ciliatis. — Mountains east of El Paso; Sept.

LAPHAMIA, *Nov. Gen.*

Capitulum pluri-multiflorum, nunc homogamum discoideum, nunc radiatum homochromum; ligulis paucis, ovalibus oblongisve, 2-3-dentatis, discum haud superantibus. Involucrum uni-biseriale; squamis æqualibus, oblongis vel lanceolatis, membranaceis, uninerviis, carinatis, apice ciliatis. Receptaculum planum, scrobiculatum, nudum. Flores disci hermaphroditi. Corollæ (extus viscoso-glandulosæ) tubulosæ, fauce pl. m. ampliata, dentibus 5 ovatis patentibus. Antheræ basi sagittatæ vel bidentatæ. Styli rami fl. disci angusti sed complanati, in appendicem subulatam hispidam producti. Achenia conformia, lineari-oblonga, compressa, præsertim ad nervos marginales hirtella. Pappus aut plane nullus, aut unisetosus, aut (in specie forte aliena) plurisetosus, setis hirtellis. — Herbæ vel potius suffrutices rupicolæ, humiles vel nanæ, puberulæ; caudice crasso lignoso caules plures foliosos proferente; foliis alternis et oppositis, ovatis, cordatis, oblongisve, sæpius dentatis petiolatis, atomis resinosis conspersis vel minute punctatis; capitulis solitariis vel corymbosis terminalibus; floribus flavis.

I dedicate this genus to I. A. Lapham, Esq., of Milwaukee, Wisconsin, author of a catalogue of the plants of that State, and a zealous explorer of its botany. In order to their proper arrangement, I give the five known species in the text, although the two with unisetose pappus have not been received from Mr. Wright. The position of the genus is uncertain, "neither the form of the style nor the habit being very decidedly that of any of the great tribes of Compositæ," as Mr. Bentham remarks of his genus *Perityle*; to which genus this is manifestly allied, through the unisetose species. It has a similar habit, and exactly the same kind of style, involucre, &c.; but the pappus wants the crown of squamellæ, and in two species there is no pappus at all. I think that both genera belong rather to the *Asteroideæ*, notwithstanding the tendency to have opposite leaves. — The first section might be taken for a separate genus.

§ 1.? *PAPPOTHRIX*. Involucrum 5-8-phyllum, 12-15-florum, cylindræum, disco æquale. Ligulæ nullæ. Corollæ disci fauce infundibulari-cylindræa elongata e tubo brevi. Pappus e setis circiter 20 conformibus, sed inæquilongis, capillaribus,

rigidis, hirtellis, corolla dimidio brevioribus, majoribus achenio quadrangulari-compresso æquilongis.

300. *LAPHAMIA RUPESTRIS* (sp. nov.): subviscoso-pubescens, nana; caulibus diffusis ramosis usque ad apicem foliosis; foliis sæpissime oppositis rotundatis, nunc reniformi-subcordatis grosse dentatis incisive longe petiolatis; capitulis subcorymbosis breviter pedunculatis folia floralia subæquantibus. (TAB. IX.) — Crevices of rocks, on mountains, in the Pass of the Limpia; Aug. Also in the collection of 1851. — Stems slender, 3 to 5 inches long, very numerous from a branching woody caudex, as thick as a man's thumb. Leaves not rarely alternate, especially the lower ones, rather thin, pubescent when young, sprinkled with some very minute resinous particles (as in *Eupatorium*), veiny, variable in shape and in the degree of toothing, sometimes deeply laciniate-incised, sometimes barely crenate-toothed, from half an inch to an inch in breadth: petioles 3 to 5 lines long. Heads cylindraceous, 3 lines long, on peduncles of nearly the same length. Scales of the involucre oblong-lanceolate, ciliate. Branches of the style narrowly subulate. Achenia narrowly oblong, hirsute, compressed, but more or less quadrangular. Pappus of about 20 rather rigid, but capillary, unequal, barbellate-hispid bristles.

§ 2. *LAPHAMIA vera*. Involucrum campanulatum, 10 – 15-phyllum, 18 – 30-florum, disco paullo brevius. Ligulæ 4 – 6, in unica specie nullæ. Corollæ disci fauce ampliata cylindracea tubo gracili valde glanduloso vix longiore. Achenia compressa, binervia, exteriora nunc trinervia. Pappus unisetosus aut nullus.

* *Capitula parvula corymbosa: pappus nullus.*

301. *L. HALIMIFOLIA* (sp. nov.): glabella, nana; caulibus rigidis usque ad apicem foliosis; foliis plerumque alternis ovatis basi cuneatis vel rhomboideis grosse et irregulariter dentatis nitidulis resinoso-punctulatis; capitulis confertim corymbosis; ligulis late ovalibus. (TAB. IX.) — Crevices of rocks, on the summit of hills, near the San Pedro River; July. Also (much better specimens) in the collection of 1851. — Caudex woody, nearly an inch thick, branching, bearing numerous somewhat upright and slender stems, from 3 to 6 inches high. Leaves rather firm in texture, an inch or less in length, 5 to 8 lines wide, three-nerved from the base, veiny, beset with from 2 to 4 usually strong salient teeth on each side: petiole 3 lines long. Heads numerous, in the specimens of the later collection very numerous, in a naked and compound fastigate corymb, scarcely more than 2 lines long, 18 – 20-flowered. Scales of the involucre about 10, linear-lanceolate, glabrous, villous-ciliate at the tip. Ligule short and broad, 3-toothed at the apex. Branches of the style in the disk-flowers setaceous-subulate. Achenia narrow, margined with two strong nerves, which are minutely hispid, the sides nearly glabrous.

‡ *L. ANGUSTIFOLIA* (sp. nov.): glabella, nana; caulibus simplicibus confertis e caudice crassissimo; foliis oppositis vel alternis lanceolatis resinoso-punctatis utrinque grosse 1 – 2-dentatis; capitulis laxè corymbosis; ligulis nullis. — Between Texas and El Paso; coll. of 1851; the locality not yet given. — Nearly related to *L. halimifolia*, and with a similar very thick and woody caudex, which sends up a close tuft of stems, in these specimens all simple and barely three inches high, fastigate; the leaves less veiny, much narrower (one or two lines wide), and more com-

monly opposite. The heads also are fewer, and rather larger (nearly 3 lines long), but have about the same number of flowers, which are very similar, except that there are no rays. I notice that one or two of the exterior corollas occasionally become somewhat ampliate and irregular.

* * *Capitula solitaria vel corymbosa: pappus e seta unica.* (Monothrix, Torr.)

L. LINDHEIMERI (sp. nov.): caulibus e basi lignea assurgentibus puberulis ad apicem usque foliosis; foliis plerumque alternis ovatis oblongisve subintegerrimis glabris; capitulis circ. 25-floris laxè corymbosis; ligulis obovatis apice tridentatis; seta pappi tubum corollæ disci tantum æquante. — "Perpendicular rocks on the banks of the Guadalupe River, near New Braunfels, Texas, exposed to the full glare of the sun," *Lindheimer*: flowering in May, 1850. — Stems 6 or 8 inches high. Leaves rather thin, 6 to 10 lines long, on petioles of 3 lines long. Peduncles slender, an inch or less in length, bearing one or two setaceous bracts, loosely corymbose. Heads 3 lines in length; the involucre scales lanceolate, 12 or 14. Branches of the style as in the preceding species. Young achenia minutely hispid on the acute margins, otherwise glabrous.

L. STANSBURI (sp. nov.): puberula; caulibus e basi suffruticosa erectis parce ramosis, ramis apice nudis monocephalis; foliis plerisque alternis rotundatis subdentatis; capitulis plusquam 30-floris; ligulis oblongis apice bidentatis disco sublongioribus; seta pappi corolla disci paullo brevior. — Near the Great Salt Lake, Utah, *Capt. Stansbury*; communicated by Dr. Torrey. Stems nearly a foot high. Head three lines long and as broad. Scales of the involucre about 15, lanceolate-oblong. Branches of the style filiform-subulate.

302, 303. BACCHARIS ANGUSTIFOLIA, *Michx.*, *Fl.* 2. p. 125; *Gray*, *Pl. Lindh.* 2. p. 224. On the Rio Grande and Nueces, Texas. The same as Lindheimer's plant so named.

304. B. SALICINA, *Torr. & Gray*, *Fl.* 2. p. 258. B. salicifolia, *Nutt.*, non *Pers.* — Banks of the Pecos and its tributaries; Oct. I have no authentic specimen of B. salicina for comparison. Ours belong to a plant of three or four feet in height, with mostly linear leaves, two inches long and two or three lines wide, sparingly toothed, or the uppermost entire. Involucre in the fertile plant three lines long; the exterior scales ovate, the others oblong-lanceolate, acute; scales of the sterile heads ovate. — Good specimens of the plant, with oblong-lanceolate leaves, as briefly characterized by Nuttall, occur in the collection of 1851.

305. B. CÆRULESCENS, *DC. Prodr.* 5. p. 402. On the Rio Grande and Nueces; common.

306. B. TEXANA, *Gray*, *Pl. Fendl.* p. 75, & *Pl. Lindh.* 2. p. 224. Western Texas; common. — A shrubby variety of this was gathered in the prairies on the San Felipe.

307. B. WRIGHTII (sp. nov.): herbacea, glabra; caulibus ramosissimis gracilibus ramisque flexuosis acute angulatis, ramulis apice monocephalis; foliis sparsis parvis linearibus et lineari-subulatis integerrimis uninerviis; involucre pl. masc. hemisphærico, squamis pauciserialibus lanceolatis acutis. — Valley of the Limpia; Aug. — Plant two feet or more in height, with much the aspect of Aster (*Oxytripolium*)

spinosa; the stems herbaceous from a suffrutescent base? very much branched, not rigid. Cauline leaves seven or eight lines long and scarcely a line wide, those of the branches successively smaller and more subulate. Involucre of the sterile heads three lines long; of the fertile, unknown.

308. *TESSARIA* (*PHALACROCLINE*; recept. nudum, pappi setæ fl. hermaph. clavel-latæ) *BOREALIS*: fruticosa, argenteo-incana; ramis conferte foliosissimis; foliis lanceolatis mucronato-acutatis integerrimis sessilibus; capitulis subsessilibus paucis corymboso-confertis; involucreo campanulato, squamis exterioribus ovatis tomentosis, interioribus linearibus apice scarioso-fimbriatis; floribus hermaphroditis 6–8. — *Tessaria borealis*, Torr. & Gray, in Emory, Rep. p. 143; Gray, Pl. Fendl. p. 75, adnot. Polypappus sericeus, Nutt. ! Pl. Gamb. in Jour. Acad. Philad. (n. ser.) 1. p. 178. — Sand-banks on the Rio Grande at Presidio de San Elisario, New Mexico; Oct. (Called *Cachimilla*.) — This remarkable plant accords sufficiently well with De Candolle's second section of *Tessaria*, Ruiz & Pav., except that the receptacle is naked, showing scarcely a trace of the villous hairs, and the bristles of the pappus of the hermaphrodite flowers are conspicuously clavellate at the apex. These central flowers are apparently fertile, although the style is undivided, as it likewise is in the genuine *Tessariæ*. The anthers are manifestly caudate at the base, rather more so than in the South American species. The pappus occupies only a single series. The involucre, receptacle, and the habit of the plant are much as in *Berthelotia lanceolata*, DC., which, moreover, has the anthers nearly as much caudate as those of *Tessaria*. Moreover, in at least one species of the first section of *Tessaria*, the pappus of the single hermaphrodite-sterile flower is more or less paleaceous-concreted at the base; so that these two genera are nearly related, and must stand side by side.

309. *CONYZA SUBDECURRENS*, DC. Prodr. 5. p. 379? Gray, Pl. Fendl. p. 78. Borders of a pond, in a valley between the Pecos and the Limpia; Aug. — Perhaps this is an undescribed species; but the specimens perfectly accord with De Candolle's description, except that the "adnate-sessile" base of the leaf is very little decurrent, some of the leaves are even pinnatifid-toothed, the stems are hirsute, and the heads, which in Fendler's specimen are barely two lines in diameter, are still smaller (but much more numerous and crowded) in Wright's plant.*

‡ *BORRICHIA FRUTESCENS*, DC. Prodr. 5. p. 489. Between Western Texas and El Paso; coll. of 1851. A form with broad and toothed leaves, the lower becoming green and glabrate.

† *ECLIPTA ERECTA*, β. *BRACHYPODA*, Torr. & Gray, Fl. 2. p. 269. Along the Rio Grande, below El Paso; Oct.

310. *EUPHROSYPNE AMBROSIAEFOLIA* (sp. nov.): villosa-hispida; foliis 2–3-pinnatifidis; paniculis subfoliosis; involucri squamis exterioribus 5 ovatis acuminatis margine vix scariosis; acheniis sub turgidis immarginatis. — Mountains near El Paso; Sept. — A coarse cinereous-hirsute plant, two or three feet high, with the aspect of an *Ambrosia*. The root is annual, as I suppose is that of *E. parthenifolia* also.

* *Conyza Altaica*, DC., ex spec. Karel. & Kiril. 771, is the same as *Aster* (*Oxytripolium*, *Conyzopsis*) *angustum*, Torr. & Gray, the *Tripolium angustum*, Lindl. !

The leaves are more compoundly dissected than in that species, which shows traces of similar hispid hairs. But this is more decidedly distinguished by its ovate and acuminate outer involucreal scales, with scarcely any margin (those of *E. parthenifolia* being rounded and with broad hyaline margins), and by the marginless achenia. The achenia of *E. parthenifolia* I do not find so much flattened, nor with such thickened margins, as it is delineated in Delessert's figure. Dr. Gregg collected it in Cohahuila.

311. *MELAMPODIUM CINEREUM*, *DC.!* *Prodr.* 5. p. 518; *Gray, Pl. Fendl.* p. 78, & *Pl. Lindh.* 2. p. 225. *M. leucanthum*, *Torr. & Gray, Fl.* 2. p. 271. Hills, near Austin, Texas; May.

311^a. *M. CINEREUM*, var. *ramosissimum*, caulibus gracillimis; foliis linearibus, aliis integerrimis, aliis sinuato-dentatis vel subpinnatifidis; capitulis minoribus. — *M. ramosissimum*, *DC.!* *l. c.*; *Torr. & Gray, l. c.* Prairies from Austin to the Limpia. Also New Mexico, Wislizenus, &c. A summer state of the species.

312. *SILPHIUM LACINIATUM*, *Linn.*; *Torr. & Gray, Fl.* 2. p. 275. Prairies near San Marcos, Texas.*

313. *BERLANDIERA LYRATA*, *Benth. Pl. Hartw.*; *Gray, Pl. Fendl.* p. 78. Valley of the Limpia; Aug. "Rays marked with purple veins underneath." A green, scarcely at all canescent variety. The canescent form occurs in the collection of 1851, mostly with more pinnatifid leaves, passing into

314. *B. LYRATA*, var. *foliis plerisque subbipinnatifidis laciniatis*. — Hills along a tributary of the Pecos; Aug.

315. *PARTHENIUM INCANUM*, *H. B. K.!* *Nov. Gen. & Sp.* 4. p. 260. t. 391; *DC.!* *Prodr.* 5. p. 532. *P. ramosissimum*, *DC.!* *l. c.* Declivities on the San Pedro River, and in prairies between the Pecos and the Limpia; Aug. Dry valley between Mapimi and Guajaquilla, and near Parras. Also at Cerros Bravos (No. 490); Northern Mexico, *Gregg*. Our plant is decidedly shrubby, two or three feet high, with variously sinuate-pinnatifid or lobed canescent leaves; the flowering branches more or less herbaceous. It is the same as *Berlandier's* No. 1342, on which *P. ramosissimum* was founded. But I find no essential difference between it and *Berlandier's* No. 632, from mountains near the city of Mexico, which is the same as *Humboldt's* plant, and which I suspect is not an annual, but is more or less woody at the base. The flowers, achenia, and pappus are the same in both: the achenia, at least in *Berlandier's* No. 632, are not broadly margined, as represented in *Kunth's* figure, but the slender marginal nerves separate from below upwards, as in the other species. The awns of the pappus are subulate-setaceous, at first erect or a little spreading, at length divergent or even recurved.

316. *P. HYSTEROPHORUS*, *Linn.*; *DC. l. c.*, var. *hirto-canescens*; foliis lyrato-pinnatifidis nunc subbipinnatifidis, segmentis brevibus obtusissimis. — On the Rio Grande, Texas and New Mexico. Near Parras and Buena Vista (No. 86), *Gregg*. — Only a variety of *P. Hysterophorus*, I believe, but a remarkable one. The root is that of an annual; but the stems are occasionally lignescent towards the base.

* *Silphium doricifolium*, *Kunze, Ind. Sem. Hort. Lips.* 1846, is only *S. terebinthinaceum*.

317. *IVA DEALBATA* (sp. nov.): herbacea, cano-tomentosa; foliis alternis cuneato-oblongis 3-5-fidis vel laciniato-pinnatifidis venosis, segmentis lanceolatis subintegris acutis; capitulis glabellis parvis in thyrsum terminalem angustum nudiusculum congestis; involucri 5-phyllo, squamis orbiculatis mucronatis margine lato scarioso villosi-ciliato cinctis; floribus fœmineis 5; acheniis subglobosis. — In a mountain valley, between the Limpia and the Rio Grande, New Mexico; Sept. — Root annual? Stems nearly simple, one or two feet high, clothed with a somewhat deciduous implexed white wool, terete, leafy to the contracted and dense panicle. Leaves two to four inches long, clothed with a fine and matted white wool, which is more or less deciduous from the upper surface, very veiny, the older ones often venulose-bullate, contracted into a short margined petiole, or sessile; some of the lower, undivided and sparingly toothed; the upper, more triangular in outline and pinnately parted, the lower lobes half an inch to an inch long, lanceolate or linear-lanceolate. Heads sessile, crowded, not canescent, in fruit barely a line wide. Involucre uniserial. Corolla of the fertile flowers a very short truncate tube. Achenia somewhat glandular, pyriform-globose. — The foliage and inflorescence bring this plant near to *Euphrosyne*; but there is no inner series of hyaline involucral scales, as in that genus and *Cyclachæna*, and the achenia are globular.

318. *AMBROSIA CORONOPIFOLIA*, Torr. & Gray, *Fl. 2. p. 291*. Fields at Presidio de San Elisario; Sept. — Fruit, as described in the *Flora of North America*, pretty large, turgid, and entirely destitute of projecting points or tubercles.*

† *FRANSERIA TENUIFOLIA*, var. *TRIPINNATIFIDA*, Gray, *Pl. Lindh. 2. p. 227*. *Ambrosia fruticosa* (excl. β .) & *A. confertiflora*, DC. ! l. c. *A. longistylis*? Gray, *Pl. Fendl. p. 80*. Western frontiers of Texas; coll. of 1851. — The specimens are young, and less than a foot high, from an apparently perennial, thickish, but hardly woody root. I think the stem is not really woody in Berlandier's specimens, on which De Candolle's *Ambrosia fruticosa* is founded. Lindheimer has a taller form of the species in his collection of 1851, from New Braunfels, with the stems four or five feet high. The foliage varies much. The species is well distinguished by the small fruit being armed all over with short and stout incurved and uncinat spines.

319. *F. TENUIFOLIA*, var. *lobis foliorum latioribus sæpius brevioribus*. On the Leona and Nueces; June. — A coarser form, of which very few specimens were gathered.

320. *F. HOOKERIANA*, Nutt.; Torr. & Gray, *Fl. 2. p. 294*. Road-sides, valley of the Rio Grande, New Mexico; Oct.

321. *HYMENOCLEA MONOGYRA*, Torr. & Gray, *Pl. Fendl. p. 79, adnot.* Banks of a tributary of the Pecos; Oct. — The stems of this curious plant are three or four

* *Ambrosia psilostachya*, DC. *Prodr. 5. p. 526*, is the same as No. 429 and 430 of Lindheimer's Texan collection (*A. Lindheimeriana* and *A. glandulosa*, Scheele), which, as the tubercles of the fruit were sometimes wanting or very obscure, I took for mere varieties of *A. coronopifolia*. They are perhaps sufficiently distinct.

De Candolle's specimen of *A. integrifolia*, from the Paris Garden, is *A. bidentata*. *A. hispida*, Pursh, which I have seen in the Sherardian herbarium, is a plant which has not been detected since the time of Catesby.

feet high, much branched and leafy; the filiform leaves two inches long. The sterile and fertile capitula are intermixed in the ample panicles, which are loaded with the silvery-scarious fruit.

† *HALEA TEXANA*, Gray, *Pl. Fendl.* p. 83, & *Pl. Lindh.* 2. p. 227. Rocky prairies, Austin, Texas; May. — The pappus is often obsolete. — *H. Ludoviciana* was collected by Berlandier.

† *HELIOPSIS LÆVIS*, γ. *SCABRA*, Torr. & Gray, *Fl.* 2. p. 303. Eastern Texas.*

322. *ZINNIA* (*DIPLOTHRIX* †) *GRANDIFLORA*, Nutt. in *Trans. Amer. Phil. Soc.* (n. ser.) 7. p. 348; Torr. & Gray, *Fl.* 2. p. 298; Torr. in *Emory, Rep.* t. 4; Gray, *Pl. Fendl.* t. 81. Hills between the Pecos and the Limpia; Aug. Also in the coll. of 1851. — Ray-achenia with a pappus of two teeth or short awns; those of the disk with one, two, or sometimes three setiform awns, or some of them awnless. Rays usually five.

323. *Z.* (*DIPLOTHRIX*) *PUMILA*, Gray, *Pl. Fendl.* p. 81, *adnot.* Hills near El Paso; Oct. “Rays white. Stems 6–12 inches high,” woody. Also from Buena Vista, in the second collection of Gregg; “flowers yellowish-white.” — The woody, depressed stems are a quarter of an inch in diameter at the base. Heads larger

* *Andrieuxia Mexicana*, DC. (as is noted by Reuter in the Candolle herbarium) is described and figured from a specimen of *Heliopsis bupthalmoides*, or *canescens*, the same as Galeotti's No. 2109, and Linden's No. 345. Hooker's specimen of Andrieux's No. 303 is the same thing.

† *ZINNIA*, Linn.

§ 1. *ZINNIA*, DC. *Herbæ annuæ*, foliis ovatis seu lanceolatis. Ligulæ plures. Achenia radii calva. *Z. species omnes DC. Prodr.* (*Z. intermedia*, Engelm. = *Z. tenuiflora*, Jacq.)

§ 2. *DIPLOTHRIX*. Suffrutices multicaules ramosissimi, humiles vel depressi; foliis anguste lanceolatis vel acerosis. Capitula parvula pluriflora. Ligulæ 4–5, ovales seu rotundatæ. Achenia radii apice sæpius bidentata seu biaristellata (raro tridentata, nempe dente ex angulo interno instructa); disci 1–2- (raro 3-) aristata. — *Diplothrix*, DC. *Prodr.* 5. p. 611.

* *Herba diffusa, basi tantum suffruticosa, ligulis intense croceis.*

Z. LINEARIS, Benth. *Pl. Hartw. no.* 117. p. 17. Mexico, Hartweg.

* * *Suffrutices vel suffruticuli, caulibus fastigiatis confertisve foliosissimis; foliis impresso-punctatis rigidis; ligulis ratione capituli magnis flavis mox sulphureis vel ochroleucis; involucro sæpius angustato; receptaculo parvo.*

Z. GRANDIFLORA (Nutt., Torr. & Gray, l. c.): scabro-hispidula, spithamæa; foliis linearibus trinerviis; ligulis maximis. — Vide supra.

Z. PUMILA (Gray, *Pl. Fendl.* l. c.): puberula, mox glabrata; foliis angustissime linearibus obtusis uninerviis; ligulis parvulis (2–4 lin. longis). — Vide supra.

Z. JUNIPERIFOLIA: foliis glabellis subulato-acerosis acutis trinerviis nervo medio marginibusque crassioribus; pedunculis capitulo foliisque longioribus nunc subelongatis. — *Diplothrix juniperifolia*, DC. ! l. c. — San Luis Potosi, Berlandier. (Very imperfect specimens.) Near Buena Vista, New Leon, Gregg (No. 68). Heads twice the size of those of *Z. pumila* and *Z. acerosa*; but the ligules in the specimens smaller proportionally. They are “bright orange” in Gregg's specimen, but have not yet become chartaceous. Leaves rigid, six to twelve lines long.

Z. ACEROSA: foliis glabellis filiformi-acerosis vel setaceis obscure uninerviis, supremis pedunculo æqualibus. — *Diplothrix acerosa*, DC. ! l. c. Vide p. 106.

§ 3. *HETEROGYNE*. *Herbæ suffrutescentes multicaules, foliis linearibus. Ligulæ paucæ, parvæ, persistentes, seu 2–3 vel omnes plane deficientes, atque acheniis apice biaristellatis stylo tantum superatis.*

Z. ANOMALA. Vide p. 106.

than in Gregg's former specimens, on which the species was founded. Ray-achenia with two very small teeth, or sometimes none.

324. *Z. (DIPLOTHRIX) ACEROSA*. *Diplothrix acerosa*, DC. ! *Prodr.* 5. p. 611. Hills beyond the Pecos; Aug. — Stems woody, fastigiately much branched and tufted, a span high, the branches crowded with the setaceous leaves, which are mostly six or eight lines long (in Berlandier's as well as in Wright's specimens). Heads much as in *Z. grandiflora*, but smaller, and only half, or less than half, their size. Involucre three lines long, narrow, on a peduncle of about the same length; the scales ciliate. Rays four or five, at first apparently light yellow, becoming papery and ochroleucous or sulphur-color, as in the two foregoing species. Ray-achenia often biaristulate; and sometimes the inner angle is likewise produced into a tooth or short awn. Pappus in the disk-flowers of one, two, or rarely three slender awns, more or less unequal, or in some of the exterior achenia reduced to squamellate teeth.

325. *Z. (HETEROGYNE) ANOMALA* (sp. nov.): hispidulo-scabra; caulibus e basi frutescente pluribus adscendentibus spithamæis foliosis apice monocephalis; foliis anguste linearibus acutis rigidulis trinerviis hispidulo-ciliatis, summis pedunculo longioribus; floribus fœmineis 5 – 6 in ambitu corolla omnino destitutis, seu 1 – 3 ligula brevissima ovata persistente instructis; acheniis radii et disci sæpissime biaristellatis. (TAB. X.) — Prairies beyond the Pecos; Aug. (Also gathered by Berlandier, January, 1828, in Northern Mexico.) — Plant with nearly the foliage and mode of growth of *Zinnia grandiflora*, Nutt., but with larger heads and inconspicuous ligules, when these are present at all. Involucre nearly half an inch long, cylindraceous-oblong, many-flowered; the scales rather thin, marked with a greenish line below the sphacelate-scarious margin. The yellow ligules, when present, one or two lines long, usually shorter than the achenium and the style. Receptacle, disk-flowers (orange-colored), &c., as in *Zinnia*; the chaff entire, obtuse. Achenia of the ray triangular-obcompressed, with the margins produced into two paleaceous teeth or subulate short awns; of the disk compressed, commonly two-awned; but in some flowers the awns are nearly obsolete; in others there are three or four (when the achenium is quadrangular-compressed), one from each angle, or rarely five or six.

‡ *Z. ANOMALA*, var. *magis hirtella*; floribus radii omnibus ligulatis; ligulis aut brevissimis ovatis aut anguste oblongis disco æquilongis. — Between Texas and El Paso; coll. of 1851.

326. *LEPACHYS COLUMNARIS*, & var. *PULCHERRIMA*, Torr. & Gray, *Fl.* 2. p. 315. Prairies, Western Texas; May.

327. *L. COLUMNARIS*, var. *TAGETES*. *Rudbeckia Tagetes*, James in Long, *Exped.* 2. p. 68. *Obeliscaria Tagetes*, DC. Valley of the Rio Grande below El Paso; Sept. Also in the coll. of 1851. — This is the same as Fendler's No. 424; and it was also gathered by Wislizenus between Santa Fé and El Paso. It holds its characters very well, and has not yet occurred with large rays, nor with an elongated disk; so that it is perhaps a distinct species.

† *L. (LOPHOCHÆNA) PEDUNCULARIS*, Torr. & Gray, *Fl.* 2. p. 315. Near Austin, Texas.

333. *V. LAXA*, DC. ! *Prodr.* 5. p. 580 (*V. Texana*, Torr. & Gray, *Fl.* 2. p. 318); & var. *BREVIPIES*. *V. brevipes*, DC. ! l. c.; Gray, *Pl. Lindh.* 2. p. 228. Hills of the San Pedro River to the mountains east of El Paso. — The specimens mostly belong to the *V. brevipes*, DC.; but this is a mere variety of his *V. laxa*, which name is much preferable.

334. *HELIOMERIS MULTIFLORA*, Nutt. (vide No. 328); a depauperate and narrow-leaved variety. Valley of the Limpia, and near El Paso; Sept.

335. *HELIANTHUS PETIOLARIS*, Nutt. l. c.; Torr. & Gray, *Fl.* 2. p. 319, var. *CANESCENS*: caulibus foliisque junioribus strigoso-canescens; petiolis haud elongatis. — Valley of the Rio Grande sixty or seventy miles below El Paso; Sept. — The same plant has been gathered by Fremont. Much more silvery-canescens specimens occur in Mr. Wright's collection of 1851, with ovate and often subcordate leaves. They are very young, however: but they not improbably belong to an undescribed species.

336. *H. MAXIMILIANI*, Schrad.; Torr. & Gray, *Fl.* 2. p. 325. On the San Pedro River; Nov.

337. *H. GROSSE-SERRATUS*, Martens, var. γ . Torr. & Gray, l. c. Plains at the base of the Guadalupe Mountains; Oct. A form with the upper leaves nearly entire and sessile.

338. *H. CILIARIS*, DC. *Prodr.* 5. p. 587. Saline prairies on the Leona, June; also on the Rio Frio and Rio Grande, Texas. Dr. Gregg gathered it near Matamoras; and Mr. Wright has it abundantly in his collection of 1851. Some specimens have linear-lanceolate leaves, as De Candolle describes them; others have them broadly lanceolate, strongly sinuate-undulate, and triplinerved, or the upper ones, which are closely sessile and not attenuate below, three-nerved from the base. It belongs to the section *Atrorubentes*, as characterized in the *Flora of North America*.

† *ACTINOMERIS (ACHÆTA) WRIGHTII*, Gray, *Pl. Fendl.* p. 85, adnot., & *Pl. Lindh.* 2. p. 229. Near Austin, Texas.*

339. *COREOPSIS TINCTORIA*, Nutt. Bed of the Limpia; Aug.

340. *C. CARDAMINEFOLIA*, Torr. & Gray, *Fl.* 2. p. 346. *Calliopsis cardaminefolia*, DC. *Prodr.* 5. p. 568. Bed of the Rio Nueces; June. This is the same as No. 441 of Fendler's collection, which in *Pl. Fendl.* I inadvertently referred to *C. tinctoria*.

341. = No. 339. Near Austin, Texas.

† *COREOPSIS CORONATA*, Hook. *Bot. Mag. t.* 3460; Torr. & Gray, *Fl.* 2. p. 345. Western Texas. This has been cultivated in the Cambridge Botanic Garden for several years past. It is much handsomer than *C. Drummondii*; the larger bright-yellow rays being neatly marked with purple lines or spots at the base. The achenia are rather broadly winged.

* *Actinomeris pauciflora*, Nutt. has been received from Dr. Chapman (Middle Florida) with stems not at all winged, the peduncles monocephalous, the upper leaves occasionally alternate, and the head destitute of rays. Wings of the achenia narrow, but variable.

De Candolle's specimen of *A. oppositifolia* belongs to *A. helianthoides*, a state with larger leaves than usual.

‡ *C. DRUMMONDII*, *Torr. & Gray, l. c.*, var. foliis caulinis 5–7-sectis, segmentis (inf. sæpe trisectis) fere omnibus anguste lanceolatis seu linearibus; capitulis paullo minoribus; acheniis maturis dorso tuberculatis marginibus valde incurvis incrassatis. — Western Texas.

342. *THELESPERMA* (*COSMIDIUM*) *FILIFOLIA*, *Gray, in Kew Jour. Bot.* 1. p. 252. *Coreopsis filifolia*, *Hook. Bot. Mag. t.* 3505. *Cosmidium filifolium*, *Torr. & Gray, Fl.* 2. p. 350. Hills of the Rio Frio, Texas; June. — The root is truly perennial. — Specimens of *T. (Cosmidium) simplicifolia* from Saltillo (No. 114 of Gregg's collection) show a few trisected leaves; so that it may pass into *T. filifolia*; but the fruit is not yet known.

343. *T. GRACILIS*, *Gray, l. c.* *Cosmidium gracile*, *Torr. & Gray, Fl.* 2. p. 350. Margins of a creek between the Pecos and the Limpia; Aug. — Pappus a pair of persistent diverging horns.

344. *T. (ABUCEROS, pappus nullus) LONGIPES* (sp. nov.): suffruticosa, e basi ramosissima; ramis abbreviatis congestis conferte foliosis in pedunculum longissimum simplicem nudum monocephalum desinentibus; foliis 3–5-sectis, segmentis integerimis vel 2–3-sectis lineari-filiformibus; ligulis nullis; acheniis subclavato-linearibus incurvis rugosis calvis. — Hills and dry banks of the San Pedro or Devil's River; July. Also abundant in the collection of 1851. — Stems six or eight inches high, woody or lignescent, very numerous and crowded, and extremely leafy, each terminated by a filiform naked peduncle of from six to ten inches in length. Leaves glabrous; the segments twelve to eighteen lines long, more slender than *T. gracilis*. Involucre nearly as in the last-named species, but smaller, two or three lines long, in fruit three or four lines broad, shorter than the flowers. Paleæ of the receptacle one-nerved, carinate, deciduous with the achenia, but not adhering to them as in the other species. Achenia slender, almost terete, tuberculate-rugose when mature, especially on the back, the summit terminated with an obscurely coroniform epigynous disk, but destitute of a pappus. In every other respect it is truly a *Thelesperma*; plainly showing that in this subtribe, as well as in the *HeleNieæ*, in which numerous similar cases occur, the absence of a pappus is not of generic importance, when there is a complete accordance in other characters.

345. *BIDENS BIPINNATA*, *Linn.; Torr. & Gray, Fl.* 2. p. 354. Fields at Isletta, New Mexico; Oct.*

346. *B. TENUISECTA*, *Gray, Pl. Fendl. p.* 86. Hill-sides near the Pass of the Limpia; Aug.

347. *B. CHRYSANTHEMOIDES*, *Michx.; Torr. & Gray, l. c.* In the San Felipe Creek, Western Texas; Nov.

348. *HETEROSPERMUM DICRANOCARPUM* (sp. nov.): subglabrum; caule erecto. apice corymboso-paniculato; foliis 3–5-sectis, segmentis filiformibus; pedicellis gra-

*Dicranocarpus
paniculatus
Gray = B.*

* *Bidens Beckii*, *Torr.*, belongs to the section *Psilocarpæa*. The only mature fruit which I have seen was communicated by Dr. Engelmann, from St. Louis. The teretish linear achenia are about half an inch long, obtusely angled, smooth, bearing from four to six rigid and divergent awns, which are about an inch long, pungent, retrorsely barbed only near the apex.

cilibus; acheniis extimis lineari-oblongis teretiusculis intus verrucoso-tuberculatis breviter biaristatis, interioribus lineari-subulatis lævibus sensim longioribus et longius aristatis, centrali persistente majore; aristis subulatis persistentibus lævissimis divergentibus vel recurvis. — Plains between the Guadalupe Mountains and the Pecos; Oct. — The specimens are wholly in fruit, the involucre, paleæ, &c. fallen, and for the most part only single achenia remaining, persistent at the extremity of the slender pedicels. Of the loose achenia those which were doubtless exterior, or belonging to the ray-flowers, are scarcely two lines long, linear-oblong, rather thicker at the truncate apex, slightly obcompressed, smooth on the back (minutely striate and scabrous), wingless, but the thickened edges incurved against a thick ridge of the inner face, both the edges and ridge tuberculate-verrucose: they are terminated by two very short divaricate and uncinat recurved rigid awns, which are not at all barbed, and are perfectly persistent. The disk achenia are successively more narrow and slender, three to five lines long, smooth, not margined, the longer ones rostrately subulate, bearing a pair of rigid and subulate awns which are divergent, but not uncinat, rigid and subulate, smooth, not at all barbed or hispid. — Flowering specimens are needed; but I am confident that the plant is a *Heterospermum*.

349. *H. TAGETINUM*, Gray, *Pl. Fendl.* p. 87. Valley in the mountains 35 miles east of El Paso; Oct. — I fear that this may not be sufficiently distinct from *H. pinnatum*. It includes Gregg's No. 395, from Cohahuila, and Coulter's No. 377. A specimen from New Granada has the achenia, all but the central sterile ones, equally awnless. — The awns are articulated and deciduous, as they are also in *H. pinnatum* itself.*

* *Electra*, DC. is to *Coreopsis* what *Delucia*, DC. is to *Bidens*. The central achenia are more or less infertile, and in one instance I detected on them, in an authentic specimen of *E. Mexicana*, a pair of small subulate awns, showing an affinity to *Heterospermum*. It is still more allied to a genus which has hitherto been very obscure, namely, *Guardiola*, *Humb. & Bonpl.*; from which the exterior bracteal involucre, the yellow flowers with large rays, those of the disk more hermaphrodite, and especially the glabrous filaments, serve to distinguish it. We appear to have two species, which, however, are not as well marked as could be desired, viz.:—

1. *ELECTRA MEXICANA* (DC.! *Prodr.* 5. p. 630): glaberrima; foliis lato-lanceolatis utrinque acuminatis acute serratis; tubulo ligularum gracili glabro.

2. *E. GALEOTTII* (sp. nov.): pubescens, nunc glabrata; foliis oblongo-lanceolatis vel ovato-lanceolatis grosse parceque serratis inferioribus interdum trisectis; ligulis magnis tubulo pl. m. hirto. — Cordilleras of Mexico, *Galeotti*, No. 2086, 2087. Mexico, *Mr. Bates*, *Mr. Parkinson* (in herb. Hook.).

In both, the achenia are more or less emarginate at the apex; the exterior oval or elliptical; the interior successively longer and narrower, very flat, and apparently not maturing the seed. — *Guardiola* is the same genus as *Tulocarpus* of Hooker and Arnott. I append a revised character:—

GUARDIOLA, *Humb. & Bonpl.*

Capitulum pluriflorum heterogamum; ligulis 1–5 fœmineis parvis; fl. disci 5–20 hermaphroditis abortu sterilibus. Involucrum nudum (ecalyculatum), tubulosum vel campanulatum, duplex; exterius triphyllum subherbaceum; interius e squamis 3–5 scariosis paleis receptaculi referentibus. Receptaculum planum, paleis oblongo-linearibus inter flores onustum. Flores radii et præsertim disci tubo prælongo filiformi; ligula oblonga 2–3-dentata discum paullo superante; disci limbo campanulato profunde 5-fido, lobis linearibus. Filamenta villosissima! Styli rami fl. disci elongati, subulato-filiformes, hispidi. Achenia radii oblonga leviter obcompressa basi dorso squamulæ brevi carnosulæ accreta! Ovaria disci inania.

350. OLIGOGYNE TAMPICANA, DC. *Prodr.* 5. p. 629, & *Deless. Ic. Sel.* 4. t. 38; *Gray, Pl. Fendl.* p. 87, *adnot.* On the Rio Grande, Texas. — Besides the two strong awns, as figured in the work above cited, there are commonly two or three shorter intermediate ones. Many of the heads are subsessile. The genus appears to be scarcely distinct from *Blainvillea*, on the one hand; while, on the other, the want of laciniate wings to the ray-achenia and the shorter appendages to the style alone distinguish it from *Synedrella*.

351. SANVITALIA ABERTI, *Gray, Pl. Fendl.* p. 87. Damp valleys near the Rio Grande below El Paso; Sept. "Flowers white. Plant two or three feet high." The specimens are less than a foot high, from an annual root. Leaves sometimes linear. The fruit as described in *Pl. Fendl.*, from Lieut. Abert's specimens. The disk is greenish; the paleæ lanceolate, cuspidate, rather rigid, and longer than the flowers. Ligules at most two lines long. The species is remarkable for the extremely short and conical awns to the ray-achenia.*

Pappus nullus. — Herbæ glabræ ramosæ (basi suffrutescentes?); foliis oppositis petiolatis ovato-lanceolatis subtripplinerviis dentibus callosis serrulatis; capitulis terminalibus corymbosis; floribus albis.

1. G. MEXICANA: foliis lanceolato-ovatis basi subcuneatis truncatisve triplinerviis serratis, serraturis appressis; involucri oblongo-campanulato, squamis oblongis obtusis; ligulis 3-5, tubo inferne villosa, fl. disci 10-15. — G. Mexicana, *Humb. & Bonpl. ! Pl. Æq.* 1. p. 144. t. 41; *H. B. K. Nov. Gen. & Sp.* 4. p. 247. — Mexico; province of Michoacan, *Humboldt.* — The specimen in the herbarium of the Paris Museum is poor and young. Heads three or four lines long.

2. G. ATRIPLICIFOLIA (sp. nov.): foliis triangulato-lanceolatis hastatisve acuminatis basi 5-7-nerviis argute serratis, serratulis subulatis inferioribus paucis laciniato-elongatis patentibus; involucri breviter campanulato, squamis late ovalibus abrupte mucronato-acuminatis; ligulis 3 (-5?) tubo glabro; fl. disci 15-20. — Morelia, Mexico, *Galeotti*, No. 2418 (v. sp. in Mus. Par.); at an elevation of 7,000 feet. — The root is annual. The flowers are stated by the collector to be white. The tube of the ray-corolla is scarcely longer than the broadly oval nine-nerved ligule. Achenium as in the next species, but perfectly glabrous.

3. G. TULOCARPUS: foliis oblongo-lanceolatis basi obtusis vel acutiusculis calloso-serrulatis; capitulis fasciculato-confertis; involucri cylindrico angusto, squamis lineari-oblongis acutis; ligula solitaria tubo glaberrimo; fl. disci 4-5. — *Tulocarpus Mexicanus*, *Hook. & Arn. Bot. Voy. Beech.* p. 298, t. 63. — Tepic, Mexico, *Lay & Collie.* Between the city of Mexico and Mazatlan, *Gregg.* — Probably No. 2407 of *Galeotti's* collection from Zimapan, which I have seen in the Paris herbarium, belongs to this species. Involucre three lines long, less than a line wide, looking like that of a *Tagetes* or a *Stevia*. Achenia minutely hairy under a lens. The flowers are stated by *Hooker and Arnott* to be yellow, but *Dr. Gregg* noted that they are white. The styles I find to be deeply two-cleft.

* *Sanvitalia procumbens*, *Lam.* is inadvertently described by *De Candolle* as having the *exterior* (instead of the *inner*) disk-achenia winged and aristellate. The outer ones are wingless and exaristate, as stated in the generic character and as figured by *Cavanilles*, &c.

S. ocymoides, DC. requires to be again examined. An authentic (unless misplaced) specimen of *Berlandier's* plant, which I possess, has the ligules by no means "very small," but longer than the awns of the ray-achenia, the exterior disk-achenia roughened and awnless, the inner ones surrounded with a continuous ciliate wing and mostly biaristellate; — indeed, it is not to be distinguished from *S. procumbens*.

S. acinifolia, DC. was gathered by *Gregg* near San Luis Potosi (No. 577), but with the innermost achenia slightly, if at all, winged.

S. tragiaefolia, DC., which has more hispid and rough foliage than the others, and very short ligules, only half the length of the conspicuous awns, was gathered at Walnut Springs, near Monterey, by *Dr.*

352. *XIMENESIA ENCELIOIDES*, Cav. *δ. CANA*, DC. *Prodr.* 5. p. 627; Gray, *Pl. Fendl.* p. 87. On the Rio Grande, Texas; and from the Limpia to the Rio Grande, New Mexico. There is a very dwarf state in the collection of 1851.

† *VERBESINA VIRGINICA*, Linn. var. *β.* Torr. & Gray, *Fl.* 2. p. 359. *V. polycephala*, DC. ! *Prodr.* 5. p. 616. Western Texas. — *V. microptera*, DC. is, I believe, another form of *V. Virginica*.

353. *ZEXMENIA BREVIFOLIA* (sp. nov.): fruticosa, scabro-hispidula; ramis subherbaceis gracilibus pedunculo nudo monocephalo terminatis; foliis ovalibus ovatisve obtusis haud venosis subintegerrimis petiolatis; involucro subtriseriali, squamis exterioribus apice foliaceo ovato patulo instructis; acheniis (immaturis) exalatis angulis acutissimis dense ciliolatis; paleolis pappi inter aristas pl. m. coroniformi-concretis. — Rocky banks of a mountain stream between the Limpia and the Rio Grande, New Mexico, Sept. (Hills near Messilas, Northern Mexico, Gregg, No. 534.) — A shrubby or suffruticose, branching plant, two or three feet high; the branches slender. Leaves opposite, from half to three quarters of an inch long; the petioles two or three lines long. Heads three or four lines long. Exterior scales of the involucre more or less foliaceous and lax; the others appressed, inapp pendiculate, oblong, the innermost lanceolate and acute, a little shorter than the disk. Rays 5 to 8, small. Paleæ of the receptacle lanceolate, attenuate-acuminate, conduplicate, a little shorter than the disk-flowers. Achenia (immature) glabrous except the ciliolate very acute angles; those of the ray triquetrous and 1–3-awned, of the disk compressed and unequally 2-awned. Between the awns are several lanceolate or oblong and pectinate-incised squamellæ or paleæ, which are irregularly more or less united into a crown, or sometimes almost distinct. The ripe achenia are probably more or less winged. — A manifest congener of the next, and of *Lipochæta strigosa*, DC.

354. *Z. TEXANA*: strigoso-hispida; caulibus e basi suffrutescente erectis gracilibus; foliis rhombeo-lanceolatis seu ovato-lanceolatis basi acuta sessilibus parce dentatis nunc subhastato-lobatis, ramealibus lanceolatis integriusculis; pedunculis elongatis nudis monocephalis; involucro biseriali, squamis exterioribus lanceolatis subfoliaceis interiores oblongas æquantibus; acheniis pl. m. obcordato-alatis, radialibus glabris, disci appresse hirsutis; aristis basi cum coronula paleacea calyciformi concretis. — *Lipochæta* (*Catomenia*) *Texana*, Torr. & Gray, *Fl.* 2. p. 357; Gray, *Pl. Lindh.* 2. p. 229. Prairies near New Braunfels, Texas. — The achenia vary greatly as to the wing, even in the same capitulum, just as is the case in species of *Verbesina* and *Actinomeris*. Those of the ray are obcompressed-triangular,

Gregg (No. 163). Many of the disk-achenia are more or less two-toothed at the apex, or aristulate, as indeed they are, though obscurely, in De Candolle's plant from Berlandier. Of all the species, this is the one to which the phrase "*ligulæ minimæ*" is most applicable. These are ovate, obtuse, 2–3-denticulate at the apex. — Allied to this species is

SANVITALIA ANGUSTIFOLIA (Engelm. in coll. Gregg.): caulibus diffusis; foliis lanceolatis strigoso-hispidis; ligulis parvis aristis brevioribus acutiusculis setulis 3–5barbato-apiculatis; acheniis disci exterioribus fere exalatis subcalvis, interioribus anguste alatis biaristellatis. — Highlands near Buena Vista, Mexico, Gregg (No. 274).

sometimes three-winged, but often only two-winged, the wings sometimes half as wide as the body of the achenium. The disk-achenia are sometimes almost as broadly winged, sometimes with the wings very narrow or obsolete, except at the apex, where they project in an obcordate form: they are separated from the pappus by a narrow neck or sinus. The awns vary greatly in length, and are occasionally little longer than the firm, calyculate, lacerate crown with which their bases are confluent, but they are commonly elongated, at least one of them. Except for the awns and the wings of the achenium (which appear also in *W. helianthoides*, *H. B. K.*), the plant would evidently fall into *Wedelia*; indeed, its whole aspect is that of *Wedelia hispida*, *H. B. K.* — This species and the preceding, with *Lipochæta strigosa*, *DC.*, so perfectly accord with the generic characters of *Zexmenia* of Llave and Lexarza (doubtfully referred by De Candolle to his *Lipochæta*) that I feel obliged to restore that genus; the more so, as they are apparently not congeneric with the Sandwich Island species, for which in strictness the name should be retained, the oldest species being a *Lipotriche* of Lessing.* Moreover, *Lipochæta umbellata*, *DC.*, which might claim the generic name from its being the species figured in Delessert's *Icones*, is surely a congener of De Candolle's *Lasianthæa*, notwithstanding its smaller capitula. Again, there are some species closely allied to *Lasianthæa helianthoides*, but with a pauciserial involucre, which would also accord with the character of *Zexmenia*. Since the genus which is to comprise these plants must needs be remodelled and extended, it is best to revive at once the oldest name.†

* For these, however, Nuttall has established his genus *Microchæta* (which has priority over *Microchæte* of Bentham); and *Macræa*, *Hook. fil.* is probably not distinct. They are very closely related to *Wollastonia*, *DC.*, and perhaps not to be separated from that genus. At least Nuttall's *Microchæta procumbens* and *M. strigulosa* (*Wollastonia procumbens* and *W. strigulosa*) are genuine species of *Wollastonia*.

† *ZEXMENIA (LASIANTHÆA) HELIANTHOIDES*: foliis ovato-oblongis ovatisve basi nunc subcordatis breviter petiolatis subserratis reticulatis supra bullatis strigilloso-puberis subtus cauleque velutino-villosis; capitulis 5–7 in umbellam foliis fulcrantem congestis singulis breviter pedunculatis; involucre 4-seriali, squamis omnibus ovatis appressis inappendiculatis; ligulis aureis; lobis corollæ intus barbatis; filamentis villosulis; paleis intermediis pappi conspicuis inter se et cum aristis (deorsum alis confluentibus) coalitis. — *Lasianthus helianthoides*, *Zucc. in herb. Acad. Monac.* *Lasianthæa helianthoides*, *DC. Prodr.* 5. p. 608. — Mexico, *Karwinski*; and near Cuernavaca (Valladolid), &c., *Ghiesbrecht* (v. sp. in herb. Par. No. 379, 150). — Heads three quarters of an inch long, on stout peduncles; involucre over half an inch in diameter. Paleæ of the receptacle shorter than the involucre, much shorter than the long and slender disk-corollas.

Z. (LASIANTHÆA) GREGGII (sp. nov.): foliis ovato-lanceolatis acuminatis serrulatis reticulatis scabris basi cordata sessilibus, floralibus parvulis; capitulis 3 umbellatim dispositis pedunculis dimidio terve brevioribus; involucre late campanulato triseriali, squamis omnibus ovatis inappendiculatis appressis; ligulis aurantiacis brevissimis; corollæ disci lobis puberis; filamentis glabris; pappi paleis intermediis conspicuis inter se et cum aristis basi in alam ciliatam extensis coalitis. — Between the city of Mexico and Mazatlan, *Gregg*. — Heads half an inch in length and breadth; the involucre much like that of the preceding. Rays, in the specimen, not longer than the disk-flowers. Pappus as in *Z. helianthoides*.

Z. (LASIANTHÆA) GHIESBRECHTII (sp. nov.): foliis ovato-lanceolatis acuminatis serrulatis reticulatis submembranaceis hirtulo-scabris basi subcordatis breviter petiolatis; pedunculis solitariis ternisve foliis summembranaceis hirtulo-scabris basi subcordatis breviter petiolatis; pedunculis solitariis ternisve foliis sum-

355. *FLOURENSIA CERNUA*, *DC. Prodr.* 5. p. 593. Prairies, east of El Paso; Sept.: also in the coll. of 1851. (Near Saltillo, *Gregg*, No. 421.) — A much-branched, resiniferous shrub, from three to five feet high.

356. *FLAVERIA CONTRAYERBA*, *Pers.*; *DC. Prodr.* 5. p. 635. Rio Grande, Texas and New Mexico.

357. *F. CHLORÆFOLIA*, *Gray, Pl. Fendl.* p. 88, *adnot.* Saline marshes near Presidio de Rio Grande. — Plant two or three feet high.

358. *DYSODIA CHRYSANTHEMOIDES*, *Lagasca*; *DC. Prodr.* 5. p. 640; *Gray, Pl. Fendl.* p. 88. *D. fastigiata*, *DC.!* *l. c.*, *excl. syn.* Mountain valleys, between the Limpia and El Paso; Sept. — The specimens belong to the form with the pappus shorter than the achenium, and not longer than the disk-corolla. De Candolle's *D. fastigiata*, described from Alaman's Mexican specimens, is only *D. chrysanthemoides* with a rather longer pappus. But the *Bœbera fastigiata*, *H. B. K.* (a name that De Candolle has inadvertently omitted to cite) is a different species, of which Humboldt and Bonpland's specimens accord so well with Lagasca's description of his *D. tagetiflora*, that I restore that name, completing the character from the specimens preserved in the herbarium of the Paris Museum.* — I should likewise refer

squamellis inter aristas graciles parvis. — Mexico, *Ghiesbrecht*, No. 385. Var. β . *foliis membranaceis vix scabris basi plerumque acutis longius petiolatis.* — Mexico, *Ghiesbrecht*, No. 387 (v. sp. in herb. Mus. Par.). — On the ticket the plant is said to grow in a warm region, and to be "arborescent." Peduncles stout, three or four inches long. Involucre two thirds of an inch in diameter. Flowers smaller than those of *Z. helianthoides*, but very similar. The awns of the pappus are more slender, and the crown of paleolæ minute.

Z. (LASIANTHÆA) CROCEA (sp. nov.): *foliis oblongo-ovatis acuminatis serrulatis reticulatis basi subcordatis brevissime petiolatis canescenti-villosis subtus mollissimis; pedunculis solitariis elongatis monocephalis hirsutis; involucre hemisphærico biseriali, squamis exterioribus lanceolato-oblongis apice foliaceo laxo interiores ovaes subsuperantibus; ligulis aurantiacis vel flammeis discum paullo excedentibus; aristis pappi basi dilatatis, squamellis intermediis minutis.* — Mexico, *Ghiesbrecht* (No. 387, in herb. Mus. Par.). — Head half an inch or more in length, on a peduncle of three or four inches long. Involucre strictly biserial, much as in *Z. Texana*; the short and narrow chaff of the receptacle, the slender disk-corollas with a very short limb, and the long exserted anthers, &c. as in the foregoing species, of which it is a true congener.

Z. (LASIANTHÆA) SEEMANNII (sp. nov.): *foliis oblongo-lanceolatis vel sublinearibus obtusis vel acutiusculis basi in petiolum brevem angustatis subintegerrimis coriaceis parallele triplinerviis ramis ramulisque angulatis scabris; capitulis axillaribus subsolitariis et terminalibus umbellatis pedunculis longioribus; involucre cylindræo pluriseriali, squamis oblongis chartaceis appressis appendice brevissima abrupta subherbacea obtusissima terminatis, exterioribus seriatim brevioribus; ligulis flavis elongatis; pappi paleolis parvulis aristis basi paleaceo-dilatatis confluentibus.* — Cerro de Pinal, N. W. Mexico, *Seemann* (herb. Hook.). — Stem paniculately branched; the branches slender, erect, scabrous with a minute and closely appressed strigulose pubescence. Leaves somewhat shining, two to four inches long, from three to seven lines wide, glabrate beneath, hispid-scabrous above. Heads four or five together in a sessile terminal umbel or fascicle, and subsolitary in the upper axils. Involucre cylindrical or subclavate-oblong, nearly half an inch long, but narrow; the slightly squarrose tips of the inner scales rounded and partly separated by a notch from the appressed body of the scale. Ligules six or eight, about five lines long. Disk-corollas, paleæ of the receptacle, &c., much as in the several preceding species. — Apparently related to the discoid *Lipochæta fasciculata*, *DC.*, but a remarkably distinct species.

* *DYSODIA TAGETIFLORA* (*Lag. Nov. Gen. & Sp.* p. 29): *caule erecto; ramis fastigiatis pedunculo nudo apice incrassato terminatis; foliis villosulis pinnatipartitis, segmentis linearibus argute serratis; involucre*

to *D. chrysanthemoides* No. 432 of Coulter's Mexican collection, Gregg's No. 540, from Saltillo, and a plant of Galeotti's collection, without a number, which, having coarser segments to the leaves, more dilated at their apex, are probably *D. pubescens*, *Lagasca, DC.*

359. *HYMENATHERUM* (*ACIPHYLLÆA*) *ACEROSUM*: fruticosum, glabrum; ramis ad apicem usque foliosis capitulo solitario subsessili terminatis; foliis oppositis (raro alternis) et in axillis fasciculatis acerosis integerrimis; involucri cylindræo; pappo e paleis 18–20 angustis in aristas setasve scabras inæquales 3–5-partitis. — *Dysodia?* (*Aciphyllæa*) *acerosa, DC.!* *Prodr.* 5. p. 641. *Aciphyllæa acerosa, Gray, Pl. Fendl. p. 91, adnot.* Calcareous hills of the San Felipe: also on the Rio Grande, Texas; July–Sept. — Two or three species of *Hymenatherum* now known to me having as many as eighteen or twenty paleæ to the pappus, and one having some of the paleæ cleft into from three to five setæ or setose teeth, I cannot avoid referring the present plant to this genus, with which it accords in habit much better than with *Dysodia*. A revision of the genus, as I should now receive it, is appended.*

octophyllo (squamis obovato-oblongis valde carinatis) bracteis 6–8 lineari-subulatis integerrimis cincto; ligulis obovatis (aurantiacis?) exsertis; pappi setis in phalanges 8–10 alternas dimidio breviores basi tantum paleaceo-concretis. — *Bæbera fastigiata, H. B. K.!* *Nov. Gen. & Sp.* 4. p. 198. *B. tagetiflora, Spreng.*

* *HYMENATHERUM, Cass.*

Capitulum multiflorum heterogamum; ligulis fœmineis. Involucrum turbinatum vel campanulatum, e squamis 10–15 fere ad apicem cupulato-concretis gamophyllum, basi bracteatum seu ebracteatum. Receptaculum planum, nudum vel subalveolatum. Styli rami fl. disci cono brevissimo obtuso capitellati. Achenia gracilia, striata, nunc subangulata. Pappus e paleis 10–20 nunc omnibus nunc alternis trifidis (raro 5-fidis), lobis setiformibus inæqualibus vel lateralibus dentiformibus. Herbæ humiles vel suffruticuli; ramis monocephalis; foliis angustis involucrisque grosse glandulosis; floribus flavis siccate nunc viridescens.

Hymenatherum, Cass. Bull. Philom. 1817, 1818, & *Dict. Sci. Nat.* 22. p. 313.

Hymenatherum (excl. § 2), *Aciphyllæa* §? *Dysodiæ*, & *Gnaphalopsis, DC. Prodr.*

Hymenatherum & *Aciphyllæa, Gray, Pl. Fendl. p. 88, 91, adnot.*

§ 1. *ACIPHYLLÆA*. Pappus e paleis 18–20 (conformibus vel alternis minoribus) profunde trifidis, lobis setiformibus, lateralibus sæpius 2–3-fidis. Achenia teretia multistriata. — Fruticulus ericoideus glaber; foliis acerosis integerrimis plerisque oppositis; capitulis ramulos foliosos terminantibus sessilibus.

1. *H. ACEROSUM*: vide supra. *Dysodia?* (*Aciphyllæa*) *acerosa, DC. Prodr.* 5. p. 641.

§ 2. *DYSODIOPSIS*. Pappus 10-paleaceus; paleis conformibus rigidis, aut submuticis aut triaristatis. Achenia 4–5-angulata. — Herbæ perennes? glabræ, *Dysodiæ* facie; foliis superioribus vel omnibus alternis linearibus integerrimis seu laciniatis haud pinnatipartitis; capitulis pedunculatis pl. m. bracteatis.

2. *H. TAGETOIDES, Gray, Pl. Fendl. l. c.* Vide p. 116.

3. *H. WRIGHTII, Gray, Pl. Fendl. l. c.* Vide p. 116.

§ 3. *HYMENATHERUM* verum. Pappus 10–20-paleaceus; paleis 1–3-aristatis vel alternis muticis. Achenia subteretia. — Herbæ annuæ seu perennes, nunc suffruticuli, humiles, glabræ vel pubescentes; foliis pinnatipartitis inferioribus tantum oppositis, lobis filiformibus subulatisve integerrimis; capitulis pedunculatis basi haud vel parce bracteatis.

* *Species annuæ; foliis muticis haud rigidis; pedunculis breviusculis bracteolis subulatis instructis.*

4. *H. BÆBEROIDES* (sp. nov.): glabrum, diffusum; foliis pinnati- (7-) partitis, lobis filiformi-linearibus breviusculis; pedunculis subcorymbosis breviusculis multibracteatis; involucri hemisphærico ebracteato;

† *H. (DYSODIOPSIS) TAGETOIDES*, *Gray, Pl. Fendl. p. 88.* *Dysodia tagetoides*, *Torr. & Gray, Fl. 2. p. 361.* Western Texas. — This and the next, with the characters of *Hymenatherum*, have the aspect of *Dysodia*.

† *H. (DYSODIOPSIS) WRIGHTII*, *Gray, Pl. Fendl. l. c., & Pl. Lindh. 2. p. 229.* Near Austin, Texas.

360, partim. *H. POLYCHÆTUM* (sp. nov.): annuum, glabrum; caule diffuse ramoso; foliis pinnatipartitis, lobis 9–13 filiformibus muticis grosse glandulosis; pedunculis subcorymbosis brevibus parce setaceo-bracteatis; involucrio turbinato ebracteato; pappo corolla disci paullo brevior e paleis 18–20 linearibus subconformibus bi-

pappo e paleis brevibus obovatis 10–16, quarum 5–8 obcordato-bifidis arista setiformi e sinu exserente corollam disci æquante lobis obtusis muticis, alternis paullo minoribus obtusissimis integerrimis. — Mexico, *Mr. Bates*. — This I possess from Sir William Hooker's duplicates. It much resembles the next, but is a coarser plant, with larger heads, and still more of the aspect of a *Dysodia*. The heads are a quarter of an inch in diameter, very many-flowered; the rays ten or twelve, obovate, nearly three lines long. The paleæ of the pappus are broader in proportion and the lobes of the aristate ones more rounded than in any other species.

5. *H. NEËI* (*DC. l. c.*): glabrum; caulibus diffusis apice ramosis; pedunculis brevibus parce bracteatis; foliis pinnatipartitis, lobis filiformibus; involucrio campanulato ebracteato; pappo e paleis 10 oblongis bifidis cum arista setiformi corollam adæquante e sinu exserente, lobis acutis muticis. — I have taken the character of the pappus, &c. from a fragment of a Mexican specimen (collected by *Mr. Tate*), intermixed with the following, which accords with *De Candolle's* character (except that there are sometimes one or two small additional paleæ, which are awnless and entire). My notes upon his specimen are not sufficient absolutely to identify it with this species. But I have little doubt that the plant of *Neé* came from Mexico, not from Chili.

7. *H. DIFFUSUM* (sp. nov.): glabrum; caulibus diffusis vel decumbentibus; foliis pinnatipartitis, lobis filiformibus; pedunculis subcorymbosis minutim parceque bracteatis; involucrio hemisphærico seu turbinato ebracteato; pappo e paleis anguste oblongis 10 apice breviter bisetosis et longe uniaristatis, atque 5–7 multo minoribus subulatis vel subulato-aristulatis integerrimis. — Mexico, *Mr. Tate* (in herb. Hook.). — Plant with the aspect, foliage, &c. of the preceding; the heads about the same size (two and a half lines in diameter), a little larger than in the following species. Awns about the length of the disk-corolla.

8. *H. POLYCHÆTUM*, sp. nov. Vide supra, No. 360.

* * *Species perennes vel suffruticulosæ; foliorum lobis rigidulis sæpius setoso-apiculatis; pedunculis elongatis fere nudis.*

+ Pappi paleæ 10, omnes subconformes pl. m. aristatæ.

9. *H. TENUIFOLIUM*, *Cass.* *H. tenuilobum*, *DC. l. c.* Vide p. 118.

10. *H. BELENIDIUM*, *DC. Prodr. 7. p. 292.* *H. Candolleanum*, *Hook. & Arn. Jour. Bot. 3. p. 320.*

+ + Pappi paleæ 5 uniaristatæ, et 5 alternæ breviores muticæ.

11. *H. HARTWEGI*. *H. Berlandieri*, *Benth. Pl. Hartw., non DC.* Vide p. 117.

12. *H. PENTACHÆTUM*, *DC.* *H. Berlandieri*, *DC.* Vide p. 117.

13. *H. n. sp.?* Texas, *Trécul*; a plant with nearly the pappus of *H. pentachætum*, but with different foliage and habit. My specimen is not sufficient for proper determination.

§ 4. *GNAPHALOPSIS*. Pappus, etc. ut in *Hymenatheris* veris subsect. * * + +. Herba annua vel subperennis, undique floccoso-lanosissima; foliis spathulatis plerumque alternis integerrimis; capitulis solitariis sessilibus.

14. *H. GNAPHALOPSIS*, *Gray, Pl. Fendl. p. 90* (*gnaphalodes*) & *p. 115, adnot.* *Gnaphalopsis micro-* *poides*, *DC. ! Prodr. 7. p. 258.*

H. Kunthii, *Less.* is *Lasthenia obtusifolia*, *Cassini*.

Tagetes Wislizeni, *Gray, Pl. Fendl. p. 92*, is the same as *T. multiseta*, *DC.*, with the lobes of the leaves scarcely setose.

setosis (raro 3 – 4-setosis) et uniaristatis. — Prairies at the Pass of the Limpia; Aug. — Stem much branched from the base, a span high, leafy, the branches somewhat fastigate. Leaves an inch or less in length, not rigid, perfectly glabrous; the lobes two to four lines long, not setigerous or pointed, filiform, as well as the rhachis. Peduncles about an inch long. Involucre two lines long. Rays about 10, oblong. Paleæ of the pappus all similar, except that about five of them are smaller, and one or two often reduced to a subulate or setaceous rudiment. The capillary awn of the larger ones is a little shorter than the disk-corolla; the lateral setiform lobes are as slender, but about one third the length of the awn, sometimes rather longer, when there are occasionally two minute teeth below them. This and *H. tenuifolium* induce me to refer *Aciphyllæa acerosa* to *Hymenatherum*. — Mixed with this in the distribution were some specimens of *Lowellia aurea*, q. v. p. 118.

361. *H. PENTACHÆTUM* (*DC. ! Prodr. 5. p. 642*): caulibus suffruticulosus cæspitosis depressis; ramis abbreviatis conferte foliosis pedunculos solitarios elongatos parce setaceo-bracteolatos gerentibus; foliis cinereo-puberulis glabratissime pinnatipartitis, lobis 5 – 9 acerosis rigidis; involucre campanulato fere ebracteato; pappo e paleis 5 brevibus obovato-oblongis obtusis truncatisve muticis, et 5 iis alternis majoribus oblongo-lanceolatis in aristam breve corollam disci adæquantem productis, lobis lateralibus brevissimis subulatis aut subnullis. — *Gray, Pl. Fendl. p. 90, adnot.* Hills of the San Pedro River; Aug. — De Candolle overlooked the five unawned paleæ of the pappus, which exist in all specimens, requiring therefore a modification of the character, if, as I prefer, we retain this name instead of *H. Berlandieri*, *DC.*, which is only a more glabrate and slender variety of the same species. Rarely I find one or two of the larger paleæ scarcely awned, or replaced by a truncate palea. The awn is usually about the length of the palea that bears it.

362. *H. PENTACHÆTUM*, *DC.*, var. foliis glabellis nitidulis; pedunculis gracilioribus. *H. Berlandieri*, *DC. ! l. c.* — On the Rio Frio and Rio Grande, Texas. — The involucre is rather more turbinate in this more slender variety. This is just the same as one of the specimens of De Candolle's *H. Berlandieri*: the other (of which the corresponding specimens in Hooker's herbarium are marked as gathered between Laredo and Bexar, therefore in Texas) is merely a still smoother and more slender state of the species, viz.: —

363. *H. PENTACHÆTUM*, *DC.*, var. graciliore, foliis nitidulis fere glabris. *H. Berlandieri*, *DC. l. c.* — Western borders of Texas.

364. *H. HARTWEGI*: caulibus vix suffruticulosus erectis laxè ramosis; pedunculis gracilibus nudis fastigiato-subcorymbosis; foliis glabellis pinnatipartitis, lobis 3 – 5 filiformi-acerosis rigidulis; involucre campanulato fere ebracteato; pappo e paleis 5 obovatis muticis et 5 alternis duplo longioribus oblongis in aristam corollam disci subæquantem productis, lobis lateralibus brevissimis acutis. — *H. Berlandieri, Benth. Pl. Hartw. p. 18, non DC.* Hills near El Paso, Sept. — The stems and branches are more sparsely leafy, the peduncles more numerous and clustered, and the lobes of the leaves fewer, and proportionally longer, than in *H. pentachætum*. In Hartweg's plant, the small heads are narrow, the involucre scarcely above a line in

diameter; in ours, the involucre is campanulate and twice as broad; but I notice no further difference.

365. *H. TENUIFOLIUM* (*Cass. l. c.*): caulibus herbaceis gracilibus duriusculis laxè ramosis; pedunculis elongatis nudis; foliis pinnatipartitis scabro-puberulis, lobis subulatis brevibus junioribus setigero-mucronatis; involucreo turbinato basi breviter parceque bracteato; pappo corollam disci æquante e paleis 10 conformibus oblongis seu lineari-oblongis setoso-triaristatis, aristulis lateralibus brevioribus, vel uniaristatis cum lobis lateralibus 2 (nunc 3-4) setaceis. — *H. tenuilobum*, *DC. Prodr.* 5. p. 642. Hills and bluffs of the San Felipe, and on the Rio Grande, Texas; July. — I have cultivated this from seeds sent by Mr. Wright from the Rio Grande; and it proved to be a diffusely branched perennial, or at least to continue two or three years, although the root in indigenous specimens seems to be that of an annual. Besides the pappus, which so well distinguishes it, the stems are more slender and elongated than in any of the foregoing, sometimes a foot long, the branches terminated by nearly naked peduncles of three or four inches in length; and the lobes of the leaves (cinereous-puberulent in the wild plant) are short and subulate, only one or two lines in length. Involucre three lines long, smooth, subtended by three or four small and subulate appressed bracts. Rays oblong. Paleæ of the pappus all alike, except that a few are rather smaller, cleft into one or sometimes two capillary awns and two short lateral setæ or setaceous teeth, and occasionally showing a pair of minute additional teeth. Sometimes the principal lateral lobes are merely setaceous or subulate teeth; often one or both of them are as slender as the proper awn, and of half or two thirds of its length. — I was enabled to inspect the original of Cassini's *Hymenatherum tenuifolium* in the Jussiean herbarium, where it is marked "Chili? Néé; donné par M. Thibaud in 1809." I have little doubt that it came from Northern Mexico, instead of Chili, and that it is identical with the species here described. At least its pappus accords very well with this species, and with no other known to me.

366. *H. GNAPHALOPSIS*, *Gray, Pl. Fendl. p.* 90 & 115. *Gnaphalopsis micropoides*, *DC. Prodr.* 7. p. 258. Calcareous hills of the San Felipe, and of the Rio Grande, Texas; July. — This singular plant, with the aspect of a *Micropus* or *Gnaphalium*, has all the characters of a genuine *Hymenatherum*. The thick woolly covering conceals the sparse Tagetaneous glands of the leaves and involucre. The specimens received by De Candolle from Berlandier were very imperfect.

360, partim. *LOWELLIA AUREA*, *Gray, Pl. Fendl. p.* 91. Prairies at the Pass of the Limpia; Aug. — This plant has so exactly the aspect and floral structure of *Hymenatherum polychætum* (except as to the pappus, which was not noticed), that the specimens were mingled in the distribution. The specimens are rather smaller than Fendler's, and the truncate paleæ of the pappus are nine or ten in number, two of them, however, being occasionally more or less united. The pappus ought sufficiently to distinguish it from *Hymenatherum*, although there is some approach to it in the latter genus. But, on the other hand, the discovery of rays and pinnate leaves in *Thymophylla*, and the confirmation of Lagasca's character as to the pappus of *T. setifolia*, invalidates the characters of *Lowellia*.

367. THYMOPHYLLA GREGGII, *Gray, Pl. Fendl. p. 91*, *adnot.*; var. *RADIATA*. (TAB. VII.) — Rocky banks of streams east of the Guadalupe Mountains, and on the Pecos, Oct.; growing in large bunches. — Excepting the rays, which are uniformly present in these specimens, I find nothing to distinguish this from Dr. Gregg's plant, in which no rays are to be detected. No. 284 in Dr. Gregg's collection of 1848, 1849, from Buena Vista, also rayless, is *T. setifolia*, *Lagasca*, as also is No. 445 of Coulter's collection, from Zimapan. A flower of this species is added to Plate VII., to show the pappus of five or six separate paleæ, as characterized by *Lagasca*. In *T. Greggii* these are united into an entire, or sometimes slightly lobed, crown or cup. The lower leaves in both are pinnately 3-7-parted.

368. CHRYSACTINIA MEXICANA, *Gray, Pl. Fendl. p. 93*, *adnot.* Rocky banks of streams east of the Guadalupe Mountains; Oct. "Only a few specimens seen." Also in the collection of 1851. — The distinction between the divisions *Tageteæ* and *Porophylleæ* is annihilated by this plant, which has the rays of the former and the pilose pappus of the latter; as it likewise is by the genus *Nicolletia*, which has both a pilose and a paleaceous pappus in the same flowers. I subjoin the characters of the latter genus, now confirmed by the discovery of a second species, as they have been published only in a volume which is not so well known to botanists as it should be.*

369. POROPHYLLUM SCOPARIUM (sp. nov.): ramis e basi fruticosa erectis rigidis superne nudiusculis; foliis involutis filiformibus glandulis parcis vel nullis apice calloso-mucronatis; involucris campanulatis brevi squamis 8 oblongo-linearibus concavis obtusis coriaceis viridibus parce glanduloso-lineatis; acheniis erostratis pube-

* NICOLLETIA, *Gray in Frem. Rep. Exped. 2. p. 315.*

Capitulum heterogamum multiflorum; ligulis fœmineis; corollis disci tubulosis æqualiter 5-dentatis. Involucrum campanulatum e squamis 8-12 membranaceis liberis. Receptaculum convexum favosum. Styli rami florum radii appendice angusta glabra, disci appendice elongata filiformi hispida, superati. Achenia lineari-elongata, subteretia, puberula. Pappus duplex; exterior e setis pluribus capillaribus denticulato-scabris; interior e paleis 5 lanceolatis hyalinis, nervo in aristam scabram producto. — Herbæ nanæ, annuæ, glabræ, odore haud ingrata; foliis pinnatipartitis plerisque alternis, lobis sæpius grosse uniglandulosis; capitulis majusculis terminalibus; floribus rubicundis?

1. *N. OCCIDENTALIS* (*Gray, l. c.*): caule crassiusculo; foliis subcarnosis, lobis brevibus; involucri multifloro basi folioso-bracteato, squamis 10-12 oblongis subbiseriatis; pappi paleis lanceolatis e basi sensim angustatis arista brevi superatis. — Sandy banks of the Mohave River in the interior of California, *Fremont*.

2. *N. EDWARDSII* (sp. nov.): caule exili; lobis foliorum filiformibus elongatis; involucri anguste campanulato 25-floro basi squamulis ovato-subulatis parce bracteato, squamis 8 lanceolatis uniseriatis: pappi paleis ovato-lanceolatis arista gracili superatis. (TAB. VIII.) — Near Guajuquilla, Chihuahua, Mexico, Aug., *Dr. Edwards*. Described and figured from a specimen in Dr. Torrey's herbarium. — The plant is an annual, three inches high, with the heads only half as large as those of *N. occidentalis*. The flowers are said to be pink-colored. Each lobe of the leaves bears, towards its tip, a single very large gland; and there are a few in the scales of the involucre. The inner paleæ of the pappus are not unlike those of *Adenophyllum*; but in place of the five cuneiform and truncate paleæ we have a series of 20 to 40 very slender capillary bristles, as long as the paleæ, and somewhat clustered alternate with and exterior to them, so that on tearing off a palea two small clusters of bristles, one on each side of its base externally, are detached with it.

rulis. — Rocky banks of the San Pedro River, and mountains east of El Paso; July – Sept. — Stems one or two feet high from a woody base, rigid, loosely corymbose at the summit. Leaves thickish, 12 to 18 lines long, those of the flowering branches small and sparse. Heads barely half an inch long. Involucre not glaucous, nor colored except with one or two purplish glandular lines or spots. Pappus yellowish, exserted to twice the length of the involucre. The corollas appear to be yellow.

370. *P. GREGGII* (sp. nov.): caulibus e basi suffruticosa adscendentibus rigidis; foliis coriaceis anguste linearibus mucronatis parce glandulosis; involucri campanulati squamis 5 – 7 oblongis obtusis vel acutiusculis planis viridulis glandulis oblongis notatis; acheniis erostratis pubescentibus. — Hills in the Pass of the Limpia; Aug. (Also Valley of Parras, Cohahuila, *Dr. Gregg.*) — Stems 8 to 12 inches high, simple or branched. Leaves one or two inches long, a line or less in width, often curved, rigid, more or less glandular. Heads two thirds of an inch long. Scales of the involucre five or six lines long, rather broad and flat, chartaceous, in Wright's specimens only five in number, while in Gregg's there are seven. The flowers in both are yellow. Achenia three lines long, rather shorter than the fulvous pappus.*

371. *AGASSIZIA SUAVIS*, *Gray & Engelm. Proceed. Amer. Acad.* 1. p. 50, & *Pl. Lindh.* 2. p. 229. *Gaillardia simplex*, *Scheele in Linnæa*, 22. p. 160. Rocky hills, Austin, Texas; May. — This is now in cultivation in the Cambridge Botanic Garden. The flowers exhale a fragrance much like that of the Heliotrope.

372. *GAILLARDIA PINNATIFIDA*, *Torr. in Ann. Lyc. N. Y.* 2. p. 214; *Gray, Pl. Fendl.* p. 95. Valley of the Pecos, Limpia, and Rio Grande, New Mexico; Aug.

373. *G. PULCHELLA*, *Foug.; Torr. & Gray, Fl.* 2. p. 366. Prairies, near Austin, Texas; May. — This is the same as Lindheimer's No. 103 of the second distribution, enumerated in *Pl. Lindh.* 2. p. 230, and there wrongly referred to *G. picta*.

374. *G. PULCHELLA*, var. *capitulis minoribus*. Hills of the Rio Frio; June. Dr. Gregg found this to extend as far into Mexico as Reynosa and Monterey; and he also gathered what I take to be *G. lanceolata* at Saltillo.

375. *PALAFOXIA HOOKERIANA*, β . *SUBRADIATA*, *Torr. & Gray, Fl.* 2. p. 368. Valley of the Rio Grande, 60 or 70 miles below El Paso; Sept.

† *P. TEXANA*, *DC. Prodr.* 5. p. 125; *Torr. & Gray, l. c.* From Austin to the Rio Grande, Texas; May – Aug. — The pappus varies much in size, and is either acute or obtuse.†

* The Mexican species greatly need revision. The subjoined is a well-marked new species, with the heads resembling those of *P. Greggii*.

POROPHYLLUM AMPLEXICAULE (*Engelm. ined.*): glaucum; caulibus basi fruticosis teretibus erectis; foliis ovato-lanceolatis acutis semiamplexicaulibus carnosissimis eglandulosis siccate nervulosis, caulinis plerisque oppositis; involucri campanulati squamis circiter 8 oblongis acutiusculis subplanis viridulis parce lineato-glandulosis; floribus flavis; acheniis minute hirtulis. — Near Messillas, Cohahuila, Mexico, *Gregg.* — Stems two feet high. Leaves an inch or more in length, four lines wide at the base, thence tapering to an acute point. Heads three quarters of an inch long; the pappus tawny.

† *PALAFOXIA LINDENII* (sp. nov.): tenuiter cinereo-puberula; ramis floriferis glandulosis; foliis oblongo-lanceolatis obtusis sæpe mucronulatis in petiolum attenuatis, inferioribus subtrinervatis; capitulis

376. FLORESTINA TRIPTERIS, *DC.*, var. pappi paleis brevioribus obtusissimis vel re-tusis basi callosa in nervum vix vel haud producta. — Prairies beyond the Pecos; Aug. "Flowers purple." — The pappus is composed of shorter and rounder scales than in Berlandier's plant; by no means "acute and with a thickish mid-nerve," as described by De Candolle. In comparing it with Berlandier's plant, I find that, while some flowers of the latter have oblong and acutish paleæ, with a strong mid-nerve, others have them obovate and obtuse, with the nerve vanishing above the middle; and there is no difference in other respects. The pappus doubtless varies as it does in *Palafoxia Texana* and *P. callosa*.

377. PALAFOXIA (FLORESTINARIA) CALLOSA, *Torr. & Gray, Fl. 2. 369.* Florestina callosa, *DC.* Cliffs of Turkey Creek, and on the Rio Grande, Texas.

† *P. callosa*, var. pappo aut minimo aut plane nullo. — Austin, Texas. — The achenia are pubescent in the plant with a very short pappus, as in the ordinary state of the species. They are glabrous in a variety which is destitute of pappus, at least in specimens raised in the Cambridge Botanic Garden.

378. HYMENOPAPPUS FLAVESCENS, *Gray, Pl. Fendl. p. 97.* Valley of the Rio Grande, fifty miles below El Paso; Sept. Also in the collection of 1851. — The lobes of the leaves are finer than in Fendler's No. 464, but much as in his No. 463; and even the rameal leaves are pinnately parted.

† *H. corymbosus*, *Nutt.; Torr. & Gray, Fl. 2. p. 370; Gray, Pl. Lindh. 2. p. 230.* Austin, Texas.

379. BAHIA ABSINTHIFOLIA, *Benth. Pl. Hartw. p. 18;* var. DEALBATA: pappi paleis paullo brevioribus et latioribus; foliis nunc integerrimis oblongis seu lanceolatis, nunc trilobatis lobis integris, nunc præsertim superioribus tripartitis lobis linearibus, terminali sæpe 2-3-lobato. — *B. dealbata*, *Gray, Pl. Fendl. p. 99, adnot.* — Calcareous hills of the San Felipe and the Pecos, and valley of the Rio Grande below El Paso. — The plant varies greatly in its foliage, and, although more canescent and with a rather shorter pappus, evidently passes into *B. absinthifolia*, *Benth.* It is a true congener of *B. ambrosioides*.

380. RIDDELLIA ARACHNOIDEA, *Gray, Pl. Fendl. p. 94, adnot.* *Psilostrophe gnaphalodes*, *DC.! Prodr. 7. p. 261.* Hills on the Rio Frio and Rio Grande, Texas; June, July. — De Candolle's genus *Psilostrophe*, placed among the "Compositæ incertæ sedis," is founded on an imperfect specimen of this plant, gathered by Berlandier at San Luis Potosi. The name has priority over Nuttall's *Riddellia*, and would in strictness supersede it, if, as I suppose, this plant is generically inseparable from *Riddellia tagetina*, notwithstanding the difference in the pappus.

381. AMBLYOLEPIS SETIGERA, *DC. Prodr. 5. p. 668.* Prairies from Seguin to the Rio Grande, Texas. (Muskit prairies, twelve miles southwest of New Braunfels, May, *Lindheimer*, 1850.) — I first received this striking plant from Mr. Wright in the

discoideis homogamis multi- (plus 20-) floris semipollicaribus subturbinatis; involucri squamis vix biserialibus linearibus apice obtuso sphacelatis pubescenti-viscosis; pappo (conformi?) e paleis 10 æquilongis oblongo-lanceolatis muticis corolla subdimidio brevioribus; achenio fere glabro. — "Vera Cruz, Antigua, June, 1838," *Linden*, in herb. Hook. "Vera Cruz, Mexico, on sand-hills near the sea, 1840," *Galeotti*, no. 2627. — Root annual. Lower leaves two inches long, including the petiole.

year 1848, and have had it in cultivation for three or four years in the Cambridge Botanic Garden; where it proves to be one of the handsomest annuals of the family, of very neat foliage, and producing a succession of large, bright golden-yellow, long-peduncled capitula during the whole summer. The pappus resembles that of a *Gaillardia*, except that it is nerveless and awnless.

382. *HELENium TENUIFOLIUM*, Nutt. in *Jour. Acad. Philad.* 7. p. 66; Torr. & Gray, *Fl.* 2. p. 385. Bed of the Limpia, Aug.

383. *ACTINELLA SCAPOSA*, Nutt.; Torr. & Gray, *Fl.* 2. p. 382. Hills of the Rio Frio; June. Also, the villous form, in the collection of 1851.

384. *A. LINEARIFOLIA*, Torr. & Gray, *l. c.*; Gray, *Pl. Lindh.* On the Leona; June. — A larger and more strict form, 18 inches high, with larger capitula, occurs in the collection of 1851.

385. *A. ODORATA*, Gray, *Pl. Fendl.* p. 101, *adnot.* *Hymenoxys odorata*, DC. ! *Prodr.* 5. p. 661; *Deless. Ic. Sel.* 4. t. 42. Low banks of the Rio Grande, below El Paso; Sept. — Berlandier's specimens were collected between Laredo and Bexar, Texas, according to the ticket in Hooker's herbarium, &c. — *A. chrysanthemoides*, H. B. K. ! is a close congener of this species; as is *A. integrifolia*, H. B. K. ! (*Oxylepis lanata*, Benth. !), which is omitted by De Candolle, of the entire-leaved species. *Hymenoxys anthemoides*, Cass. and *H. Hænkeana*, DC., although rayless, will form on this account only a section (*Hymenoxys*) of *Actinella*. *Cephalophora radiata*, Hook. & Arn. is, I believe, no more than a variety of *A. heterophylla*, Pers., which I think sometimes wants the rays. *C. fruticosa*, Hook. & Arn. (which is also *C. Doniana*, Hook. & Arn.) is a distinct species, and very likely the *C. radiata* of Lessing. These being removed, *Cephalophora* will be restricted to De Candolle's first section, with globose heads and a reflexed linear involucre.

SARTWELLIA, Nov. Gen.

Capitula pluriflora, conferte fastigiato-corymbosa, heterogama; fl. radii ligulatis fœmineis 3-5; disci 9-12 tubulosis hermaphroditis. Involucrum disco brevius, 5-6-phyllum, squamis ovalibus membranaceis æqualibus. Receptaculum subplanum nudum. Ligulæ ovales, corollas disci (limbo cyathiformi 5-fido) haud superantes. Styli rami fl. disci breves, complanati, revoluti, apice truncati. Achenia teretia, 10-costata, pappo calyculato integro margine multi-denticulato, tubum proprium corollæ disci adæquante, coronata. — Herba erecta, multicaulis, pedalis, glabra; radice annua? foliis oppositis filiformi-linearibus integerrimis impunctatis; capitulis parvulis breviter pedicellatis; floribus aureis.

386. *SARTWELLIA FLAVERIÆ*. (TAB. VI.) — Prairies of the Rio Seco, Texas, and mountain valleys and plains of the Pecos, and base of the Guadalupe Mountains; July - Oct. — The figure and generic character render a detailed description of this plant unnecessary. It is entirely different from any published genus known to me, and is chiefly remarkable from its invalidating the distinctions of the subtribe *Flaveriæ*, to which, on account of its whole habit and general characters, I am obliged to refer it, notwithstanding the pappus and the pedicellate (not glomerate nor strictly fascicled, though crowded) capitula. I take pleasure in dedicating the

genus to Dr. Henry P. Sartwell, of Penn Yan, New York, one of my earliest and most valued botanical correspondents, a zealous student and collector of the plants of Western New York, and author of the excellent *Carices Americae Septentrionalis Exsiccatae*, of which two volumes have already appeared.

387. *BAHIA PEDATA* (sp. nov.): annua, puberula; caule erecto apice nudiusculo corymbosi-oligocephalo; foliis alternis petiolatis pedatisectis, segmentis obovato-oblongis obtusis brevibus parce insico-dentatis lobatisve, fol. suprem. linearibus subintegerrimis; involucro laxo disco brevior, squamis oblongis obtusis; acheniis parce pilosis; pappi paleis 10–12 obovato-oblongis obtusis tubo corollæ disci brevioribus. — Between W. Texas and El Paso; the record of the locality lost. — Stems about a foot high. Leaves about an inch long and wide, trisected, with the lateral divisions two-parted or two-cleft, and the middle one 3–5-lobed or incised, all the divisions or lobes obtuse; the upper leaves smaller, with narrower divisions, gradually reduced to mere bracts. Peduncles one or two inches long. Heads about the size of those of *B. absinthifolia*, No. 379; the yellow rays, &c. similar. Involucre almost glabrous; the scales about 10, membranaceous, lax, two lines long, nearly uniserial. Pappus one third of the length of the achenium, shorter than the glandular proper tube of the disk corolla; the paleæ with an evident midnerve which is thickened at the base. — This is a manifest congener of *Bahia ambrosioides* and *B. absinthifolia*, although only minutely pubescent. Before observing the pappus I had taken it for the ambiguous plant which, in *Plantæ Fendlerianæ*, p. 104, I had called *Amauria?* dissecta. Indeed, the latter, although probably a distinct species (having more dissected foliage, &c.), is to the former just what *Monolopia lanceolata*, Nutt. ! *Pl. Gamb.* (= 323, California, Coulter), having discrete scales of the involucre, is to *Bahia* sect. *Eriophyllum*; or what *Lasthenia* (*Hologymne*) *glabrata* is to *Lasthenia glaberrima* and *obtusifolia*; what *Baeria*, Fish. & Meyer, is to *Burrielia* proper; *Burrielia* (*Ptilomeris*, Nutt.) *calva*, to the other species of that section; *Hecubæa*, DC., to *Helenium*; *Acarphæa*, *Pl. Fendl.*, to *Chænactis*; *Sabazia urticæfolia*, DC., to *Galinsoga parviflora*; *Oxyura*, DC., to *Layia* (*Gray, Pl. Fendl. p. 103*); *Coinogyne*, Less., to *Jaumea*; *Villanova*, Lag., to *Achyropappus*; * and *Thelesperma*, sect. *Abuceros*, p. 109, to the rest of that genus.

388. *BAILEYA MULTIRADIATA*, Harv. & Gray, *Pl. Fendl. p. 106, adnot.*; Torr. in *Emory, Rep. p. 144. t. 6*. Mountain valleys between the Limpia and the Rio Grande; Aug. The scarious persistent rays are very numerous, in several series.

389. *B. PLENIRADIATA*, Harv. & Gray, *l. c.* Valley of the Rio Grande, 25 miles below El Paso; Sept.

† *VARILLA TEXANA* (sp. nov.): suffrutescens, humilis; foliis plerisque alternis carnosius obtusis; pedunculis solitariis ramos terminantibus prælongis monocephalis; capitulo ovoideo; pappo nullo. — Saline plains, from the Nueces to the Rio Grande,

* *Amblyopappus*, Hook. & Arn., which I had thought was too near *Achyropappus*, is the same plant as *Infantea Chilensis*, Remy, in Gay, *Fl. Chil.*, and *Aromia tenuifolia*, Nutt.

Heliogenes, Benth. ! *Pl. Hartw. p. 42*, is certainly the same as *Aganippea*, DC. !; even the species appear to be the same.

Texas; Sept. Also gathered by M. Trécul in the same district. — “Plant growing in dense tufts, much branched from the base,” a span to a foot high. Leaves crowded, 8 to 12 lines long, linear or filiform, fleshy, apparently terete, very obtuse. Peduncle naked, three to five inches long. Head four lines in diameter, subglobose-ovoid, larger and rounder than in *V. Mexicana*, the short involucre less tubinate. Receptacle, paleæ, flowers, &c. nearly the same; but I find no traces of a pappus. The capitula have considerable resemblance to those of *Salmea*, the only genus with which I can compare this and the plant to which I gave the name of *Varilla Mexicana*, *Pl. Fendl. p. 106, adnot.* But the style is not asteroid in character, the achenia are not obcompressed nor two-awned, &c. The present plant is truly a congener of *V. Mexicana*, although destitute of a pappus.

390. *ARTEMISIA FILIFOLIA*, *Torr. in Ann. Lyc. N. Y. 2. p. 211; Torr. & Gray, Fl. 2. p. 417.* Valley of the Rio Grande below El Paso; Sept. “Stems three to five feet high, much branched.”

391. *A. DRACUNCULOIDES*, *Pursh; Torr. & Gray, Fl. 2. p. 416; Gray, Pl. Fendl. p. 106.* Hills near El Paso; Sept. Also on the Rio Grande, Texas.

392. *A. LUDOVICIANA*, *Nutt.; Torr. & Gray, Fl. 2. p. 420.* Mountains beyond the Pass of the Limpia; Aug.

393. *GNAPHALIUM POLYCEPHALUM*, *Michx.* Bed of a stream, between the Pecos and the Limpia; Aug.

394. *G. MICROCEPHALUM*, *Nutt. in Trans. Amer. Phil. Soc. (n. ser.) 7. p. 404, ex. char.* Valley between El Paso and the Guadalupe Mountains; Oct. — Plant two feet high, loosely paniculate-branched above; the small heads subcorymbose. It is the same species as a small unnamed specimen from California, *Douglas*, in the Hookerian herbarium. Perhaps it is also *G. ramosissimum*, *Nutt.*

395. *G. SPRENGELII*, *Hook. & Arn. Bot. Beech. p. 150; Torr. & Gray, Fl. 2. p. 427.* Mountain valleys, beyond the Pass of the Limpia; Aug. — Approaches *G. luteo-album* too nearly, and probably no more than a variety of it.

396. *G. LUTEO-ALBUM*, *Linn. G. Sprengelii, Gray, Pl. Fendl. p. 107 (no. 519).* Bed of a stream, between the Pecos and the Limpia; and valley of the Rio Grande below El Paso; Aug., Sept.*

397. *SENECIO LONGILOBUS*, *Benth. Pl. Hartw. p. 18; Gray, Pl. Fendl. p. 108: forma glabra.* Valley of the Rio Grande, thirty miles below El Paso; Sept.

398. *S. LONGILOBUS*, *Benth. = 397.* Between the Limpia and the Rio Grande. — The root seems plainly to be annual.

399. *S. LONGILOBUS*, var. *glabrescens, foliis majoribus.* Plains between the Pecos and the Limpia; Aug.

400. *S. LONGILOBUS*, var. *floccoso-incana.* With the foregoing. — It is the same as Fendler's No. 470, and Gregg's No. 572.

* I may here correct a transposition in the characters of *Angianthus* and *Phyllocalymma*, as printed in the *Conspectus of the Genera of the Angiantheæ*, contributed to Hooker's *Journal of Botany and Kew Garden Miscellany*, for April, 1851. It is *Angianthus*, and not *Phyllocalymma*, which has the bristles of the pappus subplumose. This character should read thus: —

ANGIANTHUS, *Wendl.* Pappi setæ superne subplumosæ.

PHYLLOCALYMMA, *Benth.* Pappi setæ nudæ.

401. *S. FILIFOLIUS*, *Nutt.*, var. *JAMESII*, *Torr. & Gray, Fl. 2. p. 444.* Sides of mountains, near El Paso; Sept. "Stems one or two feet high." — Differs from *S. longilobus* principally in the shorter lobes of the leaves, especially the terminal one, and in the suffrutescent base to the stem.

402. *S. SPARTIOIDES*, *Torr. & Gray, Fl. 2. p. 438.* Salt plains, at the Western base of the Guadalupe Mountains; Aug. — Heads larger than in *S. longilobus*; the leaves all entire.

‡ *S. TAMPICANUS*, *DC. Prodr. 6. p. 427.* Between W. Texas and El Paso; coll. of 1851. Stems a foot high from an annual or biennial root, branching above; the leaves and branches glabrous, but showing vestiges of floccose wool. Radical and lowest cauline leaves petioled; the petiole naked at the base. Lobes of the leaves oblong or cuneate, small, all coarsely incised. Heads numerous, corymbose, three lines long.

403. *S. AUREUS*, *Linn.*, var. *BOREALIS*, *Torr. & Gray, Fl. 2. p. 442?* Mountains beyond the Limpia; Aug. The flowers have all fallen from the involucre; they were probably those of the preceding year.*

404. *HAPLOESTHES GREGGII*, *Gray, Pl. Fendl. p. 109, adnot.* On the Rio Grande, Texas. "Leaves somewhat succulent."

405. *CENTAUREA AMERICANA*, *Nutt.; Torr. & Gray, Fl. 2. p. 453.* Prairies of Western Texas; May.

406. *CIRSIIUM ALTISSIMUM*, *Spreng.; DC. Prodr. 6. p. 640; Torr. & Gray, Fl. 2. p. 457;* var. *lanugine deciduo.* Banks of a stream between the Pecos and the Limpia; Aug.

407. *C. UNDULATUM*, *Spreng.; DC. Prodr. 6. p. 643; Torr. & Gray, l. c.* Prairies, near San Antonio, Texas; May. — Various forms of the species are in the collection of 1851. It is common and very widely spread throughout the Western region.

408. *C. UNDULATUM*, var. β . *Torr. & Gray, l. c.* *C. Hookerianum*, *Nutt. in Trans. Amer. Phil. Soc. 7. p. 418.* Cnicus discolor, *Hook. Fl. Bor.-Am. (parte).* Valley between the Pecos and the Limpia; Aug. Also in the coll. of 1851. — I fear this also passes into *C. ochrocentrum*, *Gray, Pl. Fendl. p. 110.* Perhaps it is likewise *C. canescens*, *Nutt.*; which can hardly be the next.

‡ *C. VIRGINIANUM*, *Michx.*, var. γ . *Torr. & Gray, l. c.* Between Western Texas and El Paso; coll. of 1851.

409. *PEREZIA RUNCINATA*, *Lagasca; Gray, Pl. Fendl. p. 110, adnot.* *Clarionea runcinata*, *Don; DC. Prodr. 7. p. 62.* Bluffs above Austin, and on the Rio Grande, Texas.

410. *P. NANA* (*Gray, Pl. Fendl. l. c.*): caulibus e caudice lanato repente foliosis monocephalis; foliis rotundatis vel cuneato-obovatis amplexicaulibus coriaceis reticulatis minute glanduloso-scabridis nitidis undique spinuloso-dentatis; capitulo 20–30-floro subsessili folium summum haud superante; involucro campanulato ebracteato triseriali, squamis ciliolatis mucronato-cuspidatis, extimis ovatis, intimis

* *Senecio ? flocciferus*, *DC.* is a *Malacothrix*, probably *M. saxatilis*.

lanceolatis; acheniis glanduloso-puberis; pappo albo, setis pluriserialibus conformibus. — Prairies beyond the Pecos; Aug. Valley near Messillas, Northern Mexico, *Gregg*; who states that the plant grows from six inches to a foot high. — Mr. Wright's specimens are from two to five inches in height. Leaves one to two inches in diameter. Head nine to twelve lines in length; the flowers light purple. Pappus of copious and rather soft uniform bristles, not in the least clavellate or thickened at the apex. Achenia (immature) apparently as in the preceding and following species.*

* *Perezia*, *Lagasca*, should without much doubt have the extension given to it by Lessing; that is, it should comprise *Clarionea* and *Homoianthus*, *DC.* But even *Perezia* of De Candolle must include *Acourtia*, *Don*, *DC.*! (*Perezia*, *Llave & Lex.*), *Dumerilia*, *Less.*, *DC.*, and *Proustia*, sect. *Thelecarpæa*, *DC.* (*P. reticulata*, *Don*). The achenia are similar in all, linear or somewhat fusiform, attenuate above, or with a more or less narrowed neck, and dilated at the apex into an epigynous disk which bears the pappus. There is no available distinction between what is called the biserial pappus of *Perezia*, *DC.*, &c., and the uniserial pappus of *Acourtia*. When the bristles are very copious, as in *P. runcinata*, *Lag.* (*Clarionea*, *DC.*, but a genuine Candollean *Perezia*) and *P. nana*, they of course occupy more than one series; but this is equally the case in *Don's Acourtia formosa*, and in *A. rigida*, *DC.*; while in *A. hebeclada* and my *Perezia Wrightii*, the bristles being finer and perhaps fewer, they apparently occupy only one series. In *A. formosa* and in several others, the bristles of the pappus are pretty rigid and more or less clavellate or thickened (but not penicillate) at the apex; but this character, which is of no more importance here than in the genus *Aster*, is scarcely evident in some closely allied species, and disappears entirely in *P. Wrightii*, *P. nana*, &c. There are a considerable number of Mexican species congeneric with De Candolle's species of *Acourtia*, but I do not possess sufficient materials for their complete elucidation. I should remark, however, that

PEREZIA TURBINATA, *Llave & Lex. Nov. Veg. Descr.* 1. p. 25, is doubtless the original *Acourtia formosa*, *Don*, but not of De Candolle. Seemann gathered the plant in question in the northwestern part of Mexico. The capitula are at least 25–30-flowered, and an inch in length, as *P. turbinata* is described: the multiseriate involucre may be justly likened to that of *Serratula coronata*, with which *Don* compares the head of his *Acourtia formosa*; and its form is strikingly turbinate, from the shorter exterior scales passing into the numerous similar bracts which are imbricated on the upper part of the short peduncle. The involucral scales are all lanceolate, attenuate-acuminate, of a dry and chartaceous texture, exactly as in *Perezia*, *DC.*, of which it is surely a true species. The copious and rigid bristles of the pappus certainly occupy more than one series; the longer ones are a little thickened or more strongly denticulate near the apex, but by no means "penicillate." The foliage apparently exhales the fragrance of lemon in drying, as is the case with some other species.

P. WISLIZENI, *Gray, Pl. Fendl.* p. 111, is an allied species, with a very many-flowered hemispherical involucre; the exterior scales broadly ovate and lax; the head more like that of *P. (Clarionea, DC.) carthamoides* than any other. The bristles of the rather copious pappus are rigid, and a little clavellate-thickened at the apex.

P. FRUTICOSA, *Llave & Lex. l. c.*, accords very well as to the description with *Acourtia formosa*, *DC.*! *Prodr.* 7. p. 66 (non *Don*), which I have seen from various parts of Mexico. It is in the Hookerian herbarium from Mackenzie, and also a specimen from a plant raised in Kew Garden. The corymbose heads are only about half an inch long; the scales of the somewhat campanulate involucre ovate and ovate-lanceolate, mucronate-acute, imbricated in about four series. The heads are not more than 15-flowered. The bristles of the rather rigid pappus are obscurely clavellate-thickened at the apex. Plainly this is not *Don's Acourtia formosa*; the heads of which are said to be as large as those of *Serratula coronata*! and the achenia to be half an inch long. — *Dumerilia Alamani*, *DC.*! *l. c.* p. 67, belongs, I believe, to the same species as his *Acourtia formosa*. It appears to be a state with the corymb imperfectly developed, the heads sessile and fascicled on a very short peduncle among the upper leaves. The capitulum which I examined was 11-flowered!

411. *P. WRIGHTII* (sp. nov.): glabella; caule bipedali folioso herbaceo e radice perenni? collo lanugine densa oblecto; foliis tenuiter membranaceis oblongi-ovatis crebre spinuloso-denticulatis majoribus duplicato-dentatis basi sæpissime auriculata sessilibus; corymbo composito polycephalo; capitulis subfasciculatis 8–11-floris; involucre viscoso-subpuberulo vix triseriali, squamis oblongis obtusiusculis; acheniis glandulosis; pappo albo molli e setis tenuibus. — On the Rio Seco and westward; also on the Rio Grande, Texas; June. — Stem rather slender, angled, glabrous, or the branches a little puberulent, leafy to the top. Leaves thin, membranaceous or

P. RIGIDA, *Acourtia rigida*, DC. ! *l. c.* A formosa, *Hook. & Arn. Bot. Beech. p. 437*; *Benth. ! Bot. Voy. Sulph. p. 122*, non DC., nec Don. *Trixis latifolia*, *Hook. & Arn.* This is closely related to the last, but has smaller, 9–15-flowered heads, with the inner scales of the involucre obtuse, at least in De Candolle's specimen.

P. PLATYPHYLLA, *Gray, Pl. Fendl. p. 111*, is probably only a variety of *P. rigida*; and so, possibly, is Coulter's No. 336, from Zimapan.

P. HEBECLADA, *Acourtia hebeclada*, DC. ! *l. c.*, is well figured in Delessert's *Icones*. The involucre accords well with that of *Perezia* proper, except that the exterior scales are looser and more herbaceous.

P. MICROCEPHALA, *Acourtia microcephala*, DC. *l. c.*, is allied to the last, but with smaller heads and softer pappus.

P. ? MOSCHATA, *Llave & Lex. l. c.*, I have not been able to identify. — Ghiesbrecht's Mexican collection has a species, which is said to exhale a strong odor of musk; but its corymbs are flat, the scales of the involucre not linear nor with reflexed points, and the leaves are adnate-decurrent. I add its characters.

P. ADNATA (sp. nov.): herbacea, glanduloso-puberula; caule elato ramisque ad apicem usque foliosissimis; foliis subglutinoso coriaceo-membranaceis ovato-oblongis crenato-denticulatis (dentibus mucronatis) basi cordato-amplexicaulibus sinubus decurrenti-adnatis; capitulis fasciculatis subsessilibus in corymbum amplum compositum confertis; involucre 11-floro cylindraco, squamis ovatis oblongisque appressis mucrone apiculatis viscoso-lanatis (mox subglabratis), extimis 2–3 bracteantibus lanceolatis vel subulatis. — Morelia, Mexico, *Ghiesbrecht*, No. 378, in pine forests, Sept. (v. sp. in herb. Mus. Par.). — The leaves are from three to five inches long; the narrow heads about half an inch in length. Bristles of the pappus not at all clavellate, nearly uniserial.

P. PATENS (sp. nov.): lævigata, glaucescens; ramis gracilibus divergentibus; foliis chartaceis oblongis ovatisve basi cordato-amplexicaulibus spinuloso-denticulatis mucronatis laxè reticulatis; pedunculis subcorymbosis subulato-bracteolatis monocephalis; involucre circiter 20-floro campanulato, squamis chartaceis 4–5-seriatis obtusis, interioribus lanceolatis oblongisve, extimis ovatis brevibus sæpius mucronatis. — Northwestern part of Mexico, *Seemann*. — Var. β . ramis flexuosis; foliis acutis vel acuminatis; pedunculis glanduloso-puberulis abbreviatis. Chiapas, *Linden*, No. 439. Mexico, *Parkinson* (in herb. Hook.). — Var. γ . foliis caulinis pl. m. runcinato-lobatis, cæt. var. β . Mexico, *Galeotti*, No. 2001. "Flowers rose-color, lemon-scented." — I believe this is likewise in Berlandier's collection.

P. SEEMANNII (sp. nov.): lævissima, glaucescens; caule erecto folioso; foliis coriaceis rigidis lanceolatis spinuloso-denticulatis deorsum angustatis sessilibus, ramulorum parvulis integerrimis cuspidatis; capitulis 8–10-floris in corymbum amplum compositum laxum dispositis; pedunculis subulato-bracteolatis; involucre turbinato 3–4-seriali, squamis lanceolatis sensim acuminatis minute glandulosis, extimis brevibus cuspidatis in bracteolas pedunculi transeuntibus. — Northwestern part of Mexico, *Seemann*. — Apparently herbaceous and two or three feet high, rigid, very smooth. Cauline leaves three or four inches long and six or eight lines wide, broadest above the middle; those of the flowering branches gradually reduced to bracts. The summit of the stem or principal branches divides into a large and open compound corymb. Peduncles six to twelve lines long, the upper part crowded with small appressed bracts. Heads narrow, six or seven lines long. Involucre nearly as in the species of De Candolle's genus *Perezia*. Achenia with a narrowed neck. Pappus of rather soft and fine strongly denticulate bristles, not at all clavellate, in a single series.

P. NUDICAULIS (sp. nov.): scapo e caudice lanato glabro gracili aphylo apice paniculato polycephalo;

chartaceo-membranaceous; the cauline, three to five inches long, and two or more in breadth, reticulated; the lowest, rather obovate and with a narrowed base; the principal cauline, either truncate, or usually auriculate, or sagittate-cordate at the closely sessile base; those of the flowering branches smaller and not auriculate. Heads numerous, in an ample compound corymb, on short pedicels; the peduncles and pedicels glandular-puberulent, subtended by small subulate bracts, five or six lines long, 8–11- (usually 10-) flowered. Involucre small, not longer than the mature achenia, of 12 to 15 scales; the exterior ones oblong-ovate, the innermost oblong-linear, greenish, not scarious. Corolla pale purple. Achenia 5-ribbed, linear-fusiform, attenuate at the summit and terminated by a somewhat enlarged disk, as in the whole genus. Pappus of rather copious soft and white capillary bristles, which are similar and nearly equal, scabrous, not at all thickened at the apex. — This species is well distinguished by its membranaceous leaves and small heads.

412. *P. WRIGHTII*, var. *subpuberula*; foliis rigidiusculis minute glanduloso-scabrellis. — Hills between the Pecos and the Limpia; Aug. — “Corolla light purple.” This is plainly only a variety of the last, from a dry and exposed locality. It is more allied to *Perezia* (*Acourtia*, *DC.*) *microcephala* than to any other species; but that species has the scales of the involucre slender and attenuate-acuminate, as in *P. hebeclada*.

413. *TRIXIS ANGUSTIFOLIA*, *DC. Prodr.* 7. p. 69. Hills near the Limpia; Aug. Dr. Gregg has it from near San Luis Potosi, where it was originally collected by Berlandier. — I should refer this to *T. corymbosa*, *Don*, except that the leaves are not petioled. — Berlandier found *T. frutescens* in Southern Texas, as well as in Mexico.

414. *LERIA NUTANS*, *DC. Prodr.* 7. p. 42; *Gray, Pl. Lindh.* 2. p. 232. Hills near Austin, Texas, and on the San Pedro River. Also on the Rio Grande, Texas.

415. *STEPHANOMERIA MINOR*, *Nutt.*; *Torr. & Gray, Fl.* 2. p. 472. Valley of the Pecos and of the Limpia; Aug. — This is the genus *Jamesia*, *Nees in Neu-Wied, Reise* (not of *Torr. & Gray*); his *Jamesia pauciflora* being *Stephanomeria runcinata*, *Nutt.*

foliis radicalibus runcinato-pinnatifidis glabris; involucre 12-floro 3–4-seriali, squamis lineari-oblongis, exterioribus gradatim brevioribus ovalibus; pappo tenui. — Guatemala, *Skinner* (herb. Hook.). Scape about a foot high. Heads five or six lines in length, on subulate-bracteate peduncles. Pappus fuscous, uniserial, rather fine and soft.

P. (DUMERILIA, Less.) HUMOLDTII, the *Proustia Mexicana*, *Don, fide Less.*, I have not seen. Notwithstanding its five-flowered heads it would appear to be, as Lessing suggests, a congener of *Acourtia formosa*, *Don*. The only five-flowered species I have seen is

P. (DUMERILIA) RETICULATA, the *Proustia reticulata*, *Lag., Don in Trans. Linn. Soc.; DC. ! Prodr.* 7. p. 27. Mexico, *Mendez* (in herb. *DC.*). Oaxaca, *Galeotti*, No. 2097. — The leaves are all narrowed at the base, not at all clasping; the branchlets are puberulent; the inflorescence is thyrsoïd; the flowers are “light yellow”; the scales of the involucre all oblong and very obtuse. The bristles of the copious pappus are somewhat thickened at the apex. The heads are sometimes only four-flowered, sometimes six-flowered!

416. *LYGODESMIA APHYLLA*, *DC. Prodr.* 7. p. 198; *Torr. & Gray, Fl.* 2. p. 485. Low prairies, Austin, Texas; May. — This form bears a number of cauline leaves, but they are all filiform.

417. *L. JUNCEA*, *Don; Hook. Fl. Bor.-Am.* 1. p. 295. t. 103; *Gray, Pl. Fendl.* p. 113. Prairies on the Pecos; Aug. The heads are larger than in Fendler's plant, an inch long.

418. *KRIGIA OCCIDENTALIS*, *Nutt.*, var. *MUTICA*, *Torr. & Gray, Fl.* 2. p. 468. Prairies near San Marcos, Texas. — The awned and the awnless states of this plant grow together: in the latter the paleaceous pappus is also somewhat reduced in size. Some specimens of this awnless variety of *Krigia occidentalis* are mixed with those of *Apogon gracilis*, *DC.* in Berlandier's collection (between Bexar and Austin, April, 1828), whence was doubtless derived De Candolle's character "acheniis brevissime papposis" of the last-named species. The larger specimens belong really to *Apogon*, are wholly destitute of pappus, and entirely accord with *Apogon humilis*, *Ell.*

† *CREPIS AMBIGUA*, *Gray, Pl. Fendl.* p. 114. Hills between the Limpia and the Rio Grande; Aug.

NYMPHÆA ELEGANS, *Hook.* — No. 3. p. 7, which I referred with doubt to *Nymphæa Mexicana*, *Zucc.*, has been figured as a new species by Hooker, in *Bot. Mag.* t. 4604, under the above name, from living plants raised from seeds taken from Wright's dried specimens. The flowers have a pale blue tint.

WISLIZENIA. — *Cleomella Coulteri*, *Harv. ined.*, mentioned on p. 12, is *Wislizenia refracta*, *Engelm.* p. 11. t. 2.

LAPHAMIA, p. 99. — The disk-corollas are wrongly said in the character to be five-toothed. They are commonly four-toothed in all the species, and they are so represented in the analyses of the two species figured on Plate IX.

L. (MONOTHRIX) STANSBURI, p. 101. — Dr. Torrey informs me that he has figured this plant in the notice of the plants collected by Captain Stansbury (appended to his report on the exploration of the Salt Lake region), under the name of *Monothrix Stansburii*, that name having been chosen, and the plate struck off, before he was aware that I thought it needful to join these two species with unisetose pappus to a genus of which two species have no pappus at all. Should it be preferred to retain them as a separate genus, they will of course bear Dr. Torrey's name of *Monothrix*. Otherwise that name would designate merely a subgenus of *Laphamia*.

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EXPLANATION OF THE PLATES.

PLATE I. GREGGIA CAMPORUM, p. 9.

- FIG. 1. A flower enlarged.
" 2. The pistil, with the lobed hypogynous disk, more magnified.
" 3. The silique, in dehiscence, showing the seeds, &c., magnified.
" 4. The same cut across.
" 5. A thin transverse section of the silique, more magnified, showing the compression contrary to the dissepiment.
" 6. A seed more magnified.
" 7. Transverse section of the same.
" 8. A portion of the tissue of the dissepiment, highly magnified.

PLATE II. WISLIZENIA REFRACTA, Engelm., p. 11.

- FIG. 1. Vertical section of a flower-bud, magnified.
" 2. An expanded flower, magnified.
" 3. Transverse section of the ovary, magnified, showing the four ovules in place.
" 4. The pistil, magnified, with the ovary vertically divided.
" 5. The fruit, with its stipe and pedicel, enlarged.
" 6. Magnified vertical section of the fruit, and of the single seed which fills each cell.
" 7. The persistent fenestrate dissepiment from which the valves have fallen, with a part of the style and stipe, magnified.
" 8. One of the valves from the same.
" 9. A seed detached, magnified.
" 10. A transverse section of the same.

PLATE III. A. TALINOPSIS FRUTESCENS, p. 15.

- FIG. 1. A small fructiferous branch of the plant, of the natural size.
" 2. An expanded flower.
" 3. A detached petal with its fascicle of stamens, magnified.
" 4. A stamen, more magnified.
" 5. Pistil, equally magnified.
" 6. Vertical section of the same, showing the placenta and ovules.
" 7. An ovule detached, more magnified.
" 8. Dehiscent pod, with the persistent calyx, enlarged.

- FIG. 9. Inside view of the same (without the calyx) laid open; showing the six-valved endocarp, with the three filiform sutural nerves, and the three recurved valves of the exocarp.
- " 10. Placenta, with some of the seeds still attached to their filiform funiculi, equally magnified with the preceding.
- " 11. A magnified seed.
- " 12. Vertical section of the same, and of the contained embryo.

PLATE III. *B. AMOREUXIA SCHEIDEANA*, Planch., p. 29.

- FIG. 1. A dehiscent capsule, of the natural size.
- " 2. Vertical section of the same.
- " 3. Transverse section of the same.
- " 4. A seed enlarged.
- " 5. The same, with the thin and loose arilliform testa removed.
- " 6. Magnified longitudinal section of the seed and its contained embryo.
- " 7. Magnified transverse section of the same.
- " 8. Embryo detached, and more magnified.

PLATE IV. *MORTONIA SEMPERVIRENS*, p. 35.

- FIG. 1. Diagram of the flower, with the bract and bractlets.
- " 2. A flower-bud, enlarged.
- " 3. An expanded flower, enlarged.
- " 4. Vertical section of the same, more enlarged.
- " 5. The detached calyx laid open, to show the perigynous disk, petals, and stamens.
- " 6. A stamen more magnified; inside view.
- " 7. The same, seen externally.
- " 8. The style, with the stigmas, magnified.
- " 9. Fruit, with the persistent calyx, enlarged.
- " 10. Transverse section of the same.
- " 11. Vertical section of the same.
- " 12. The seed detached entire, magnified.
- " 13. The embryo detached entire, magnified.

PLATE V. *FENDLERA RUPICOLA*, p. 77.

- FIG. 1. Flowering branchlet of the var. α . *LINDHEIMERI*.
- " 2. Branch of the var. β . *WRIGHTII*, with ripe capsules.
- " 3. Branch of the var. α ., in fruit.
- " 4. Diagram of the flower. (The æstivation of the petals not determined.)
- " 5. A petal of var. β . (to which all the following figures belong).
- " 6. Inside view of a stamen, magnified.
- " 7. The same seen externally.
- " 8. Pistil, with the calyx, enlarged.
- " 9. The same with the ovary vertically divided.
- " 10. Capsule, with the persistent calyx, enlarged.
- " 11. Vertical section of the same, and of one of the seeds, showing the embryo.
- " 12. A seed, more magnified.
- " 13. Transverse section of the same.
- " 14. Longitudinal section of the same.

PLATE VI. *SARTWELLIA FLAVERIÆ*, p. 122.

- FIG. 1. A head, with its bract, enlarged.
 " 2. A ray-flower, magnified.
 " 3. A disk-flower, magnified.
 " 4. Magnified disk-flower, laid open.
 " 5. Style of a disk-flower, more magnified.
 " 6. Style of a ray-flower, equally magnified.
 " 7. A stamen, magnified.
 " 8. Receptacle and involucre, magnified.
 " 9. A ripe achenium, with the pappus, magnified.
 " 10. Transverse section of an achenium, magnified.

PLATE VII. *THYMOPHYLLA GREGGII*, β . *RADIATA*, p. 119.

- FIG. 1, 2. Cauline leaves, enlarged.
 " 3. A head, enlarged.
 " 4. A ray-flower, with the achenium and pappus, magnified.
 " 5. A disk-flower, with achenium and pappus, magnified.
 " 6. A detached stamen, magnified.
 " 7. Summit of the style of a ray-flower, magnified.
 " 8. Style of a disk-flower, equally magnified.
 " 9. Involucre, laid open, and the receptacle, enlarged.
 " 10. Branch of *THYMOPHYLLA SETIFOLIA*, *Lag.*
 " 11. A flower, showing the pappus of discrete paleæ, magnified.
 " 12. A cauline leaf, enlarged.

PLATE VIII. *NICOLLETIA EDWARDSII*, p. 119.

- FIG. 1. Enlarged segment of a leaf, with a gland.
 " 2. A ray-flower, magnified.
 " 3. A disk-flower, magnified.
 " 4. Corolla of a disk-flower laid open, showing the stamens and style, magnified.
 " 5. A stamen detached and more magnified.
 " 6. Style of a disk-flower, much magnified.
 " 7. Style of a ray-flower, equally enlarged.
 " 8. Receptacle and involucre, enlarged.
 " 9. Achenium and pappus, magnified.
 " 10. A separate bristle of the exterior pappus, more magnified.
 " 11. An awned palea of the inner pappus, equally magnified.

PLATE IX. A. *LAPHAMIA (PAPPOTHRIX) RUPESTRIS*, p. 100.

- FIG. 1. A flower, enlarged.
 " 2. A bristle from the pappus, more magnified.
 " 3. A stamen, much magnified.
 " 4. The style, magnified.
 " 5. The receptacle and involucre, enlarged.
 " 6. A mature achenium, with the pappus, magnified.
 " 7. Transverse section of the achenium and embryo, magnified.

PLATE IX. *B. LAPHAMIA HALIMIFOLIA*, p. 100.

- FIG. 1. Vertical section of a head, enlarged.
" 2. A ray-flower, magnified.
" 3. A disk-flower, magnified.
" 4. Corolla of the latter laid open.
" 5. A detached stamen, more magnified.
" 6. Style of a disk-flower, highly magnified.
" 7. A ripe achenium, magnified.
" 8. Transverse section of the same.

PLATE X. *ZINNIA (HETEROGYNE) ANOMALA*, p. 106.

- FIG. 1. A plant with most of the ray-flowers destitute of ligules.
" 2. A branch of the variety with short ligules to all the ray-flowers.
" 3. Vertical section of a head of the plant represented in Fig. 1, magnified.
" 4. One of the ray-flowers wholly destitute of corolla, more magnified.
" 5. Another ray-flower from the same head, with a short ligule.
" 6. Transverse section of a ray-achenium.
" 7. Style of a ray-flower, more magnified.
" 8. A disk-flower, magnified, with
" 9. The accompanying palea of the receptacle.
" 10. A disk-corolla laid open, and more magnified.
" 11. A detached stamen, more magnified.
" 12. Style of a disk-flower, magnified.
" 13. An achenium of the disk, with its subtending palea, transversely divided, magnified.
" 14. Summit of a disk-achenium which exhibits a 4-awned pappus.

EXPLICIT. KAL. MART. MDCCCLII.

Sprague

WISLIZENIA REFRACTA.

A.

TALINOPSIS FRUTESCENS

B.

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AMOREUXIA SCHEIDEANA. Gr. H. Wright I. 29

Spraguei

MORTONIA SEMPERVIRENS.

FENDLERIA RUFICOLA

Fendlera ruficola

SARTWELLIA FLAVERIA.

THYMOPHYLLA GREGGII.

NICOLLETIA EDWARDSII

LAPHAMIA HALIMIFOLIA

LAPHAMIA (PAPPOTHRIX) RUPESTRIS.

PLANTÆ TEXANO--NEO-MEXICANÆ.

PART II. .
.

SMITHSONIAN CONTRIBUTIONS TO KNOWLEDGE.

PLANTÆ WRIGHTIANÆ

TEXANO-NEO-MEXICANÆ:

PART II.

AN ACCOUNT OF A COLLECTION OF PLANTS

MADE BY

CHARLES WRIGHT, A. M.,

IN

WESTERN TEXAS, NEW MEXICO, AND SONORA, IN THE YEARS 1851 AND 1852.

BY

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PROF. JOHN TORREY.

JOHN CAREY.

JOSEPH HENRY, *Secretary.*

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PLANTÆ WRIGHTIANÆ

TEXANO-NEO-MEXICANÆ.

PART II.

THE object of this memoir is to give a scientific account of the botanical collections made by Mr. Charles Wright, in New Mexico, or on the route thither from Eastern Texas, during the summer and autumn of 1851, and the spring and early part of the summer of the present year, 1852. In the former memoir, the publication of Mr. Wright's large collection made in 1849 was carried as far as to the end of the Order Compositæ. On the present occasion I propose to give a similar account of these more recent collections, up to the same point, and hereafter, as soon as other engagements will permit, to combine the account of the remaining portions of these several collections, along with those of Mr. Fendler and Mr. Lindheimer (the publication of which has likewise been arrested at the same point), into one general memoir.

Mr. Wright's collection in the year 1851 was made under the auspices of Colonel Graham, of the Topographical Engineers, while attached to the scientific corps of the U. S. Boundary Commission, then under Colonel Graham's charge. It is intended more particularly to illustrate the new genera and species it comprises in an appendix to Colonel Graham's Report, called for by the United States Senate: and a phytographical account of the regions traversed, and of the stations which particular plants occupy or affect, drawn up by Mr. Wright, at my request, will give the general features of the vegetation of the whole region. For the present I need only state, generally, where the collections were made. The first portion was gathered during the journey from San Antonio, Texas, to El Paso, in May and June, 1851, and therefore on ground that Mr. Wright had more leisurely traversed, two years previously, at a later season. This was forwarded to me in time for the incorporation of a part of its novelties in my former memoir (q. v. p. 17). The later portion was made from July to November, during a journey from El Paso to the copper mines of Santa Rita del Cobre, in the southwestern part of New Mexico, and thence into

the northern part of the Mexican state of Sonora, as far as to Santa Cruz, returning to the copper mines by way of Guadalupe Pass, and thence back to El Paso. This collection is one of exceeding interest; and, I think, comprises a larger proportion of new species than any other that has fallen into my hands.

In the spring of 1852, while performing his official duties in the Boundary Commission, under the orders of Major Emory, the successor of Colonel Graham, Mr. Wright made an interesting vernal collection, in the vicinity of El Paso and the rancho of Frontera, and down the Rio Grande for sixty or seventy miles; also up the valley as far as Camp Fillmore, and thence into the Organ Mountains which bound the valley on the east. A hasty excursion was also made to Lake Santa Maria and Lake Gusman in Chihuahua, the latter seventy or eighty miles southwest of El Paso. These vernal collections afford many novelties, no botanist having previously explored this region at that season of the year. The remainder of the collection for this year was gathered during a rapid journey, in June and July, from New Mexico back to Eastern Texas, by the route which Mr. Wright had already twice traversed. Still, it comprises a few plants not seen before, as well as specimens in a different state or better condition.

The numbers annexed, after the habitat, are those affixed to the distributed specimens; and, to avoid confusion, they follow from the end of Mr Wright's distributed collection of 1849. Specimens not thus numbered are ticketed with their names.

HARVARD UNIVERSITY, CAMBRIDGE, October, 1852.

RANUNCULACEÆ.

CLEMATIS PITCHERI, *Torr. & Gray, Fl. 1. p. 10*; a form with the tips of the sepals prolonged. Valley of the Limpia; June; in flower. (830.)

C. RETICULATA, *Walt.*, var.? foliis tenuioribus, junioribus membranaceis. — Bottom of the San Pedro; May. (831.) — No. 384 of Lindheimer's coll. of 1850, New Braunfels, is the same plant, and I think a form of *C. reticulata*, which is abundant in Texas. Perhaps it may prove to be a new species, but I see no character besides its thinner leaves to distinguish it. — C. Pitcheri
Sep 71

C. VIORNA, var. COCCINEA. *C. coccinea, Engelm. Mss.* This was collected formerly by Mr. Wright about Austin, and towards the Rio Grande. It is No. 383 of Lindheimer's collection of 1850, from rocky and shady banks, New Braunfels, named by Engelmann *C. coccinea*, n. sp. The leaves are more glaucous, and the thick sepals of a "pure carmine-red; very rarely purplish." But in the ordinary *C. Viorna* they are some shade of red-purple.

C. LIGUSTICIFOLIA, *Nutt.; Gray, Pl. Fendl. p. 3.* Hills along the Coppermine Creek, New Mexico; Aug., in flower. (832.)

THALICTRUM FENDLERI (*Engelm. in Pl. Fendl. p. 5*): dioicum, glabrum; foliis decompositis petiolatis summisve sessilibus; petiolulis patentissimis; foliolis rotundatis sæpius cordatis trilobis parvulis; sepalis late ovalibus obtusissimis; filamentis apice vix incrassatis; antheris mucronatis; carpellis oblique ovatis complanatis acute marginatis lateribus 4-5-nervato-costatis sessilibus vel in stipitem brevem contractis stigmatē styliformi gracili incurvo subulatis. — Hill-sides of Coppermine Creek, Aug.; male specimens in flower; the female with immature fruit. (833.) — This species is more nearly related to *T. dioicum* than to *T. Cornuti*, having nearly the foliage and the broad sepals of the former. It likewise varies, as does *T. dioicum*, with sessile and short-stipitate carpels. In Fendler's plant they are sessile; but in those of Wright they are raised on a manifest though short stipe.

THALICTRUM WRIGHTII (sp. nov.): dioicum, glabrum; foliis omnibus petiolatis 2-4-ternatisectis; foliolis cuneato-obovatis oblongisve trilobis, adultis reticulatis; floribus paniculatis sparsis; sepalis subulato-lanceolatis ovaria subæquantibus; carpellis ovatis subcompressis 8-costatis sessilibus stigmatē styliformi paullo longioribus. — Mountain ravine at Santa Cruz, Sonora, Mexico; Sept. (834.) — Stems 12 to 18 inches high, slender. Radical and lowest cauline leaves 3-4-ternately compound; the upper biternate, and in the loose paniculate inflorescence 3-foliolate or even simple. Leaflets 4 to 6 lines long, in form much like those of *T. Cornuti*, glaucescent beneath, at length prominently reticulated. Primary petioles 6 to 12 lines long. Panicle slender, simple or sparingly compound. Pedicels filiform, 6 to 12 lines long. Staminate flowers not seen. Sepals in the pistillate flowers a line or less in length, greenish, lanceolate or nearly subulate, caducous. Ovaries 8 to 12, flattish, scarcely nerved, rather shorter than the subulate stigma. Mature carpels a line and a half or two lines long, roundish-ovate, compressed, or turgid when fully

ripe, pretty strongly 4-ribbed, two of the ribs marginal and two lateral, and with four usually less conspicuous ribs alternate with these.*

ANEMONE CAROLINIANA, *Walt. ; Torr. & Gray, Fl. 1. p. 12.* Mountain ravine near El Paso, April, in fruit. (1304.)

MYOSURUS MINIMUS, *Linn.* Low bottoms of the Rio Grande, at San Elizario; March. (1305.) Also gathered on the Rio Santa Maria, Chihuahua, by Dr. Bigelow.

RANUNCULUS DIVARICATUS, *Schrank, Bairsche Fl. 2. p. 104.* *R. circinnatus, Sibth. Fl. Ox. p. 175 ; Coss. & Germ. Atlas Fl. Par. t. 1. f. 9.* *R. aquatilis, Auct. Amer.* Bed of the Limpia (June), and of the Mimbres, New Mexico, Aug. (835.) — This is the only species of the section *Batrachium* that I have seen in the United States.

R. CYMBALARIA, Pursh. ; Torr. & Gray, Fl. 1. p. 17. Sandy bottom of the Rio Grande, near El Paso; April, July. (836.) — This is quite like the plant of the coast of the Northern United States. I doubt if Hartweg's No. 1, and Fendler's No. 7, referred to *R. tridentatus, H. B. K.*, are distinct.

R. AFFINIS, R. Br. ; Hook. Fl. Bor.-Am. 1. p. 12. t. 6 (fig. sinistr.). Hills along the Coppermine Creek, New Mexico; Aug. (837.) — This is a slender form of the species, quite different from Fendler's No. 8, with the radical leaves deeply cleft or parted, and the cauline mostly 3-parted, into very narrow linear divisions. In these specimens the head of fruit is nearly as short as in *R. auricomus*; but the carpels are rounder and less margined.

R. REPENS, Linn. var. MACRANTHUS, Gray, Pl. Lindh. 2. p. 141, & Pl. Wright. p. 7. *R. macranthus, Scheele.* Margins of the Limpia; June. (838.) — These are taller and stouter plants than those of Lindheimer, on which Scheele founded his *R. macranthus*, and are particularly remarkable for the great number of densely packed carpels, the edges of which are thicker and the styles longer than in Scheele's plant. Had *R. macranthus* been founded on the present form, I should hardly have ventured to suppress it; but the fruit of the Texan plant is just that of *R. repens, var. Marilandicus*; some genuine specimens of which Mr. Wright collected on the Mimbres, New Mexico. (839.)

DELPHINIUM AZUREUM, *Michx.* Along the Limpia, near its head; June. (840.) — *D. vimineum, Don*, is only a coarser-leaved form of the present species, and *D. virescens, Nutt.*, is another.

D. SIMPLEX, Dougl. in Hook. Fl. Bor.-Am. 1. p. 25 ; Benth. Pl. Hartw. p. 295. Stony hills near the copper mines, Santa Rita del Cobre, New Mexico. (841.) — A pretty large form of the species. — *D. variegatum, Torr. & Gray (D. grandiflorum, Hook. & Arn. Bot. Beech.),* is *D. decorum, Benth. Pl. Hartw. No. 1631*, and doubtless also of Fischer and Meyer.

* *Thalictrum debile, Buckley in Sill. Jour. 45. p. 175*, or a plant which I can distinguish from it only by the stronger ribs to the fruit, was formerly sparingly gathered in Texas by Mr. Wright, and also at San Felipe by Drummond (Coll. III. No. 3, bis, in herb. Hook.)

T. clavatum, Hook. Fl. Bor.-Am. 1. p. 2, non DC. (T. Richardsonii, Gray, in Sill. Jour. 42. p. 17), is the same as *T. sparsiflorum, Turcz. ; Ledeb. Fl. Ross. 1. p. 5*, as is shown by original specimens in the Hookerian herbarium.

D. scopulorum (sp. nov.): puberulum vel glabrum; caule folioso simplici; petiolis basi dilatatis; foliis circumscriptione orbiculatis 3–5-partitis, divisionibus alte 2–3-fidis, segmentis multilobatis vel laciniatis; racemo stricto multifloro; floribus glabriusculis; calcare sepalis longiore; petalis inferioribus bifidis intus parce barbularis, ungue basi calcarato. — Mountain ravine, near the Mimbres, New Mexico; Oct. (842.) — I believe this is the *Delphinium exaltatum* of Hooker's *Flora Bor.-Amer.*, so far as relates to the plant of Drummond, from the Rocky Mountains; but it is not the *D. exaltatum* of the United States. The latter is a tall plant, four or five feet high, with a mostly compound raceme, and much less dissected lobes to the leaves; the segments or lobes of the upper ones are either 2–3-cleft or entire and lanceolate, so as to render very appropriate the name of *D. tridactylum*, under which it is well described by Michaux (foliis tripartito-palmatis, laciniis lanceolatis parceve divisis). Our present plant is only one or two feet high, including the strict raceme of pretty large indigo-blue flowers; the principal and secondary divisions of the leaves are cuneiform in outline, much lobed or cleft; the lobes of the radical leaves oblong; of the cauline, linear and short, making the leaf appear laciniately multifid. The calyx is minutely pubescent externally, and with the spur from half to three quarters of an inch in length, considerably longer than the sepals. Carpels 3, erect, nearly glabrous. — *D. Californicum*, which Hooker (*Bot. Beechey*, p. 317) also refers to *D. exaltatum*, has less lacinated leaves than the present species, and much smaller, dull-colored (greenish-ochroleucous) flowers, which are hairy outside, and with the spur not longer than the sepals.

AQUILEGIA LEPTOCERA, Nutt. in *Jour. Acad. Philad.* 7. p. 9.; *Hook. Bot. Mag. t.* 4407; var. *FLAVA*; floribus saturate flavis. — Wet places in a ravine, Organ Mountains, northeast of El Paso; April. (1306.) Also gathered by Mr. Thurber in Sonora, and on the Organ Mountains by Dr. Parry. — This appears to be only a decidedly yellow-flowered variety of the plant gathered in the Rocky Mountains by Nuttall, Burke, &c., and figured by Hooker in *Bot. Mag. t.* 4407, and previously in *Bot. Beech.* t. 72, under the name of *A. macrantha*; — which name should be adopted in case the *A. leptoceras* of Fischer and Meyer should prove to be of earlier date and a good species. With Hooker, we pass by the earlier *A. cærulea*, Torr.; the flowers being ochroleucous according to Nuttall, or greenish-white, with slight tinges of yellow and purplish, in the plant raised by Hooker from seeds sent by Mr. Burke. The clear yellow blossoms of the present plant should perhaps distinguish it specifically; but I find no other points of difference. From the extraordinary size of the flowers and their handsome color, this would be the most showy known *Aquilegia*, and it would probably be hardy in the Northern United States.

MENISPERMACEÆ.

COCCULUS CAROLINUS, DC.; *Gray, Gen. Ill.* 1. t. 28, & *Pl. Wright.* p. 7. Pebble banks of Howard's Creek, Western Texas; July. (1307.) — A variety with the leaves very downy underneath.

FUMARIACEÆ.

CORYDALIS AUREA, *Willd.* var. *siliquis breviusculis leviter curvatis adscendentibus*. — Sandy hills along the Rio Grande, near El Paso; Feb., March. (1309.) — This is intermediate between the ordinary form of the species and No. 433 of Lindheimer's collection in 1850, named *C. curvisiliqua*, n. sp. by Engelmann. That has still longer pods (an inch and a half long), on shorter pedicels.

PAPAVERACEÆ.

ESCHSCHOLTZIA DOUGLASII, *Hook. & Arn. Bot. Beech. p. 320; Torr. & Gray, Fl. 1. p. 664; var. PARVULA*. Among rocks, on mountains near El Paso, where it was first detected by *Dr. Bigelow*; April. (1310.) — Also on the Santa Maria, near Lake Gusman. — This is the first time that an *Eschscholtzia* has been found east of the Pacific border of Oregon and California. It appears to be only a rather depauperate form of the Oregon species. The petals are three fourths of an inch in length.

CRUCIFERÆ.

NASTURTIUM PALUSTRE, *DC.* Old bed of the Rio Grande, 50 miles below El Paso, June, and Cimieluque Spring, April. (843.) — These specimens have pods as long as those of the European plant. In most North American specimens they are much shorter. (*Vide Pl. Fendl. p. 6.*)

N. OBTUSUM, *Nutt. in Torr. & Gray, Fl.; Gray, Pl. Fendl. p. 6.* With the preceding.

TURRITIS PATULA, *Graham; Gray, Pl. Fendl. p. 7.* Mountains near Coppermine Creek, New Mexico. Also, in fruit, near Lake Santa Maria, Chihuahua. (1313.) — To this belongs the *Streptanthus virgatus*, *Nutt. in Torr. & Gray, Fl.* The ripe seeds occupy a single row; and the genus is not distinguishable from *Arabis*.

STREPTANTHUS LONGIFOLIUS, *Benth. Pl. Hartw. p. 10; Gray, Pl. Fendl. p. 6.* Mountains and stony hills near the copper mines; Aug. (in flower). (844.) — The leaves are only from $1\frac{1}{2}$ to 2 or 3 inches in length; the radical and lower cauline ones spatulate.

S. LINEARIFOLIUS, *Gray, Pl. Fendl. p. 7, & Pl. Wright. p. 7.* Valley of the Limpia, and pebbly beds of streams, from the Mimbres to the copper mines; also at Lake Santa Maria, Chihuahua. — Root often thickened and ligneous, certainly perennial.

S. PLATYCARPUS (sp. nov.): *glaberrimus, glaucescens; foliis caulinis cordato-oblongis amplexicaulibus sinu clauso integerrimis repandisve, infimis obovato-oblongis sæpe lyrato-pinnatifidis petiolatis; siliquis oblongo-linearibus planis erectis*. — Valley of the Pecos, on stony hills; June. (844 bis.) — Root annual. Stem rather stout, branched from the base, 1 to 2 feet high. Radical leaves 6 or 8 inches long, thickish, lyrate-pinnatifid; the lower cauline similar, or obovate and entire or nearly so; the upper cauline and rameal leaves from 3 to $1\frac{1}{2}$ inches long, usually quite entire, obtuse, or the upper acute, strongly cordate-clasping, with the rounded posterior lobes approximate or overlapping. Racemes loose, paniculate. Bracts none, or sometimes a minute one at the base of some of the pedicels, or with a foli-

aceous one subtending the lowest pedicel. Calyx violet-purple, open; the sepals 5 lines long, oblong-lanceolate, obtuse, not saccate at the base, nor carinate. Petals purple; the claw as long as the calyx; the ample and spreading lamina obovate-orbicular, 5 lines long. Anthers linear, elongated, sagittate at the base, the apex recurved. Siliques erect, straight or slightly falcate, 2 to 3 inches long, 2 or 3 lines wide, tipped with a very short style or a subsessile two-lobed stigma (the lobes alternate with the placentæ): valves flat. Seeds orbicular, broadly winged. — Allied to *S. bracteatus*, and especially to *S. obtusifolius*, *Hook.*, which is the same as *S. maculatus*, *Nutt.* (a prior name, though not a very good one); the leaves being either acute or obtuse, the uppermost more commonly acute. From both, the present species is at once distinguished by its broad and flat pods, which are fully $2\frac{1}{2}$ lines wide, even when less than two inches in length. Subjoined are the contrasted characters of the two allied species.*

S. CARINATUS (sp. nov. *Wright. in litt.*): glaberrimus, glaucus; foliis radicalibus caulisque inferioribus sæpissime runcinato-pinnatifidis, superioribus integerrimis oblongis seu lanceolatis basi profunde cordata amplexicaulibus sinu clauso; calyce purpureo urceolato 5-angulato, sepalis carinatis basi saccatis; petalis linearibus crispatis purpureo pictis paullo exsertis antheras vix superantibus; siliquis immaturis lato-linearibus erectis. — Stony hills, in a cañon, on the road to Texas, about 60 miles below El Paso; March. (1312.) — Root annual or biennial. Stems one or two feet high, simple or sparingly branched. Radical and lower leaves obovate or oblong, 2 or 3 inches long, narrowed into a short petiole, either toothed, lyrate, or runcinate-pinnatifid; the upper all strongly clasping by broad and rounded lobes. Raceme loosely flowered; pedicels ascending, 2 to 5 lines long, bractless, or the lowest occasionally with a foliaceous bract. Flowers half an inch long; the strongly saccate and carinately 5-angular calyx deep purple. Petals with the recurved limb scarcely dilated, obtuse, rose-color veined with purple. The forming pods are from one to two inches long, a line and a half broad, flattish, nearly straight. Stigma sessile, 2-lobed. — A striking new species of the section *Euclisia*.

DRYOPETALON, *Nov. Gen.*

Calyx basi inæqualis; sepalis oblongis, 2 majoribus basi subsaccatis. Petala obovato-spathulata, inciso-5 – 7-lobata, in unguem brevem attenuata. Filamenta subulata, edentula: antheræ oblongæ, sagittatæ. Stigma sessile, subglobosum, emarginatum. Siliqua filiformis, teres, haud stipitata, polysperma; septo enervi; valvis 3-nerviis nervo medio carinatis. Semina in loculis uniseriaria, e funiculo libero

* *STREPTANTHUS MACULATUS* (*Nutt. in Jour. Acad. Philad.* 5. p. 134. t. 7): glaberrimus, glaucus; foliis caulinis cordato-oblongis amplexicaulibus sinu clauso (obtusis v. superioribus acutis), infimis obovatis; siliquis erectis anguste linearibus subtetragonis elongatis. — *S. obtusifolius*, *Hook. Bot. Mag.* t. 3317; *Torr. & Gray, Fl.* 1. p. 76; *Gray, Gen. Ill.* 1. t. 60. f. 4 – 7. *Brassica Washitana*, *Muhl. Cat.*? *Stanleya Washitana*, *DC.*?

STREPTANTHUS BRACTEATUS (*Gray, Gen. Ill.* 1. t. 60, & *Pl. Lindh.* 2. p. 143): glaberrimus, vix glaucus; foliis caulinis cordato-amplexicaulibus, infimis obovatis nunc denticulatis sæpe lyratis lobis dentatis; pedicellis bracteatis; siliquis angustissime linearibus prælongis subfalcatis patentissimis.

pendula, subcompressa, immarginata. Cotyledones ovales, planæ, radiculae adscendenti subobliquæ accumbentes. — Herba annua vel biennis; foliis runcinato-pinnatifidis, radicalibus præsertim pube simplici molliter villosis subpetiolatis; racemis multifloris, pedicellis etiam fructiferis confertis; floribus albis.

DRYOPETALON RUNCINATUM. (TAB. XI.) — On mountains, near Lake Santa Maria, Chihuahua; April: mostly in fruit. (1314.) — Stem one to two feet high, branching, glabrous. Radical leaves 3 or 4 inches long, numerous, in a cluster, short-petioled, oblong or obovate, pubescent or villous, especially beneath, with soft and simple spreading hairs, deeply runcinate-pinnatifid; the lobes oval or oblong, coarsely toothed. Cauline leaves few, successively smaller and with narrower lobes, but otherwise similar, not auriculate or dilated at the base; the lower more or less petioled. Racemes one or two, or in fruit sometimes five or seven inches long. Pedicels closely approximate even at maturity, in flower ascending and 2 or 3 lines long; in fruit spreading and 5 or 6 lines long. Petals 3 lines in length, twice the length of the lax sepals, white, narrowly obovate; the limb incisely pinnatifid into 5 or usually 7 lobes, of which the upper are larger, and the lower very small, all directed forwards. Siliques about an inch and a half long, barely half a line in thickness, more or less arcuate-recurved, tipped with a small sessile stigma; the semi-cylindrical valves marked with a rather strong and prominent midnerve, and with a very slender lateral nerve (or at the base more than one) on each side, obscurely veiny. Seeds minute, numerous, about the width of the slender septum. Cotyledons plainly accumbent, but with the radicle slightly oblique. — With the foliage and pods of *Sisymbrium*, the crowded pedicels of *Thelypodium*, and the seeds of *Arabis*, but less compressed, this plant is one of the few *Cruciferae* with lobed petals. In habit, as well as in the accumbent cotyledons, it is widely different from *Perreymondia*, *Barn.* and *Schizopetalon*, *Hook.* Moreover, if we neglect the petals, the terete pods will still exclude it from *Arabis*. Hence I have considered it the type of a new genus, and have named it from the outline of the petals, which is like that of a common oak-leaf.

THELYPODIUM WRIGHTII, *Gray, Pl. Wright. p. 7*; var. foliis caulinis superioribus laciniato-dentatis, inferioribus pinnatifidis, segmentis majoribus dentatis. — On mountains at the copper mines, New Mexico; Aug. (845.) — "Stems 2–5 feet high, much branched. Flowers light purple." — These specimens amply confirm the species, by their divaricate pedicels, short petals, and slender pods; they have besides deeply pinnatifid or lacinate leaves, only the uppermost and rameal ones being merely denticulate.

SISYMBRIUM CANESCENS, *Nutt.; Gray, Gen. Ill. 1. t. 64.* Valley of Coppermine Creek; Aug. (846.) — A form with coarsely dissected leaves and rather large flowers. Also on the Rio Grande; in February.

S. AURICULATUM, *Gray, Pl. Wright. p. 8.* Hills between the Limpia and Leona Spring; June. (1315.)

S. DIFFUSUM, *Gray, Pl. Wright. p. 8.* Mountains at the copper mines, New Mexico, at the base of rocky ledges; Aug. (847.) — Fine flowering specimens, with the (white) petals rather longer than the calyx, but scarcely equalling the style.

ERYSIMUM ASPERUM, *DC.* Pebbly bed of the San Pedro, Limpio, and Mimbres.

GREGGIA CAMPORUM, *Gray, Pl. Wright. p. 9. t. 1.* Valley of the Rio Grande, below El Paso; June. Also in March, in flower. (1316.) — The large flowers are seldom white; but usually rose-color, changing with age to purple.

DRABA MICRANTHA, *Nutt. in Torr. & Gray, Fl. 1. p. 109; Gray, Pl. Fendl. p. 10.* Stony hills, near El Paso; March. (1317.) — The naked flowering stems are hairy to the top; and the petals are minute or wanting.

VESICARIA ANGUSTIFOLIA, *Nutt. in Torr. & Gray, Fl. 1. p. 101; Gray, Pl. Lindh. 2. p. 145.* On the Rio Frio and Leona, Western Texas; May; — a slender form. (834.) Also in valleys near the Rio Grande, about 60 miles below El Paso; March; — a form with larger flowers and pods, the latter somewhat stipitate. (1318.) Except in the more cinereous pubescence and the want of a considerable stipe to the silicle, I cannot distinguish this from *V. gracilis*, *Hook.*

V. RECURVATA, *Engelm.; Gray, l. c. p. 147.* Stony prairies from Chicon Creek to Piedra Pinta Creek, Western Texas; May. (849.) — To this belong the specimens of *Berlandier* referred by *Hooker* to his *V. gracilis*; but *Drummond's* plant (No. 13 of the third collection), from whose seeds was raised the plant figured under this name, is the true *V. gracilis*. — *V. lasiocarpa*, *Hook.* I have seen only in the *Hookerian* herbarium. The subjoined character was taken from the specimen.*

V. STENOPHYLLA, *Gray, Pl. Lindh. 2. p. 149: var. β. procera; foliis omnibus latioribus lineari-spathulatis vel lanceolatis.* — High rocky (limestone) prairies, Turkey Creek, Texas, and westward; May. (850.)

V. STENOPHYLLA, var. *γ. siliculis ovatis!* Gravelly banks of the Sabinal, Texas; May. (851.) — The silicles are from 3 to $4\frac{1}{2}$ lines long, ovate; the septum elliptical!

V. STENOPHYLLA, var. *δ. humilis; foliis inferioribus spathulatis nunc parce dentatis; calyce pl. m. persistente!* — Prairies at the head of the Limpio; also on the Pecos, &c.; June. (852.) — The condensed and broad-leaved specimens look very different from the ordinary state of *V. stenophylla*, into which, however, the living plants raised from their seeds evidently pass. The calyx is often persistent until the pod is nearly full grown.

V. STENOPHYLLA, var. *ε. diffusa; foliis oblanceolatis et lineari-spathulatis pulchre argenteis.* — *V. arctica*, *Gray, Pl. Fendl. p. 9.* — Stony hills on the Rio Grande, near El Paso; March. (1319.) — An early state of the species, between 850 and 852; and with an apparently annual root. To this (and not to the less silvery *V. argyræa*) belongs *Fendler's* No. 39, which is likewise an early state of this polymorphous species.

* *VESICARIA LASIOCARPA* (*Hook. ined. vide Bot. Mag. sub t. 3464*): annua vel biennis; foliis tenuiter pubescentibus haud canescentibus oblongis pinnatifido-laciniatis; racemo laxo; floribus inferioribus sæpe axillaribus; pedicellis folium adæquantibus gracilibus (12–15 lin. longis), fructiferis apice recurvo-nutantibus; silicula immatura estipitata globosa stylo sublongiore (cum ovario) dense hirsuto-pilosa. — Between Bexar and Trinity River, May, 1828, *Berlandier* (in herb. *Hook.*). — Habit and foliage much that of *V. grandiflora*, but greener; the inflorescence nearly as in *V. argyræa*. Remarkable for its hirsute-hairy fruit.

V. PURPUREA (sp. nov.): multicaulis e radice crassa perenni; foliis canescentibus, radicalibus rosulatis obovatis oblongisve nunc sinuato-panduratis in petiolum attenuatis, caulinis paucis parvis sessilibus; racemis multifloris, fructiferis elongatis; petalis roseo-purpureis; siliculis ovoideo-globosis stylo gracili longioribus. — Stony hills near El Paso; March, April. (1320.) — Flowering stems numerous from a thickened root, scape-like and simple, erect, a span, or in fruit a foot, high, including the raceme. Radical leaves one to two inches long, half an inch or more in width, contracted into a petiole of nearly the same length, canescent and slightly scabrous with a very fine and close stellate pubescence, entire, or some of them sinuate and fiddle-shaped. Cauline leaves sparse, mostly bract-like, only from 2 to 4 lines in length, obovate, spatulate, or oblanceolate. Raceme strict, in fruit 3 to 6 inches long, with the spreading or at length recurved pedicels 3 to 6 lines long. Petals spatulate-obovate, 3 lines long, light purple (destitute of any tinge of yellow); the calyx sometimes tinged with purple. Filaments enlarged at the base. Ovary ovoid, glabrous, about the length of the style: ovules 5 or 6 in each cell. Silicle $1\frac{1}{2}$ to 2 lines in diameter, not stipitate; the valves hemispherical, membranaceous. Immature seeds orbicular, wingless; the funiculi free. Embryo not seen; but from the flatness of the seed the cotyledons are undoubtedly accumbent. — A genuine Vesicaria, of the section Vesicariana, with purple flowers!

DITHYREA WISLIZENI, *Engelm.; Gray, Pl. Wright. p. 10.* Valley of the Rio Grande, near El Paso, and above Doña Ana, common. (1321.) — D. Californica, *Harvey*, which I have seen in the herbarium of Trinity College, Dublin, has much smaller silicles than D. Wislizeni; they are also more deeply emarginate, the cells being nearly orbicular, and their thickened edge is tomentose.

THLASPI FENDLERI: foliis carnosulis subintegerrimis, radicalibus petiolatis ovalibus, caulinis sagittato-oblongis amplexicaulibus; racemo etiam fructifero brevi conferto; floribus majusculis; petalis calyce triplo longioribus; siliculis lato-obovatis subalatis basi acutis apice immaturis sinu aperto leviter obcordatis maturis truncato-subintegris, loculis 3-4-ovulatis; stylo filiformi fructu dimidio brevior. — T. cochleariforme, *Gray, Pl. Fendl. p. 10, non DC., nec Hook.* — On the Organ Mountains, northeast of El Paso; May: mostly in fruit. (1322.) — Plant a span high, or lower; the raceme an inch, or, even in full fruit, not over 2 inches, in length; the pedicels closely approximate, spreading, in fruit 5 or 6 lines long. Petals (in Fendler's specimens) 4 lines long. Ovary obcordate by a broad and shallow sinus; the cells 3-4-ovulate. Ripe silicles 4 lines long, with sharp but slightly winged edges, obscurely emarginate or even truncate at the broad summit; the style a line and a half or two lines long. — The specimens of Fendler were mostly in flower only: mine with young fruit have the raceme more loose than in those gathered this spring by Mr. Wright; which, being in fruit, plainly show that I was wrong in referring the New Mexican plant to T. cochleariforme. The latter has the fructiferous raceme long and loose, and has likewise smaller flowers, narrower pods, with a deep and narrow apical sinus, and a short style. Our plant is more like T. præcox; which also has smaller flowers, and winged pods, with a very deep notch.

HYMENOLOBUS PUBENS, *Gray, Pl. Wright. p. 9.* On Rainwater Creek, between

the Limpio and the Rio Grande; June. (1323.) — These are younger specimens than those gathered in 1849, and show the lower leaves, which are much like the upper, only more sinuate-toothed and inclining to spatulate. The petals are white, and scarcely longer than the calyx.

LEPIDIUM ALYSSOIDES, *Gray, Pl. Fendl. p. 10, & Pl. Wright. p. 10.* Valley of Live Oak Creek, Western Texas; May. Also on stony hills at the copper mines, New Mexico; Aug. (853.) Also on Rainwater Creek, June; a dwarf variety (1324); and on the Rio Grande below El Paso; a large form with the lower cauline leaves divided. (1325.)

L. MONTANUM, *Nutt. in Torr. & Gray, Fl. 1. p. 116 & 669.* Valley of Coppermine Creek, New Mexico, in sandy soil; Aug.; and west of the Chiricahui Mountains, Sonora; Sept. (854.) — This has orbicular-ovate (not elliptical) silicles, and is better described by Hooker and Arnott, in *Bot. Beechey, p. 323*, under the name of *L. corymbosum*, except that the older fruiting racemes are elongated. The petals are white and conspicuous; the stamens 6. Some specimens are nearly glabrous, others granulose and minutely hirsute-pubescent. I suspect that *L. sordidum*, *Gray, Pl. Wright. p. 10*, is only a late and depauperate state of the same species, producing diminished flowers.

L. WRIGHTII (sp. nov.): annuum, humile, hirsutulum; caulibus diffusis; ramis brevibus; foliis caulinis spathulatis dentatis vel incisis, imis et radicalibus sæpius pinnatifidis; floribus apetalis diandris; siliculis orbiculatis hispidulis apice bifido (sinu angustissimo) subalatis pedicello complanato plerumque longioribus; cotyledonibus incumbentibus. — Valley of the Pecos, in alluvial soil; May. Also sandy hills on the Rio Grande, near El Paso; March. (855.) — Plant 3 to 6 inches high, flowering when only an inch high, from an annual root. Fruiting racemes an inch long or more, dense. Silicles 2 lines long, twice as large as those of *L. ruderales*, beset with short and acute hispid spreading hairs; the short pedicel as broad and flat in proportion as in *L. latipes*, *Hook.* The low and spreading stems, the larger pods, which are decidedly wing-margined at the apex, and especially the short and flattened pedicels, distinguish this from *L. ruderales* var. *lasiocarpum*, *Engelm. in litt.* (coll. *Lindh.* 1850, No. 459, 460), which is perhaps *L. lasiocarpum*, *Nutt.*

L. INTERMEDIUM (sp. nov.): similis *L. Virginico* formæ gracili, sed cotyledonibus incumbentibus! (foliis superioribus rameisque linearibus integerrimis). — Ravines of the Organ Mountains, northeast of El Paso; April. (1320). (Also near Austin, Texas, 1848; and New Braunfels, *Lindheimer?*) — This plant is exactly like a small and slender form of *L. Virginicum*; except that the upper leaves are nearly all linear and entire, and the cotyledons are incumbent. It is glabrous or nearly so; the white petals are perhaps rather larger and more conspicuous than in *L. Virginicum*; the stamens are only two; and the silicles are orbicular. On the other hand, it accords so perfectly with all the indigenous North American *L. ruderales* I possess (such, for instance, as Fendler's No. 45, except in having petals, that I cannot believe them to be specifically distinct. All these, however, differ from my specimens of *L. ruderales* from Europe in their orbicular (not oval) pods, of about twice the size.

CAPPARIDACEÆ.

WISLIZENIA REFRACTA, *Engelm. in Wisl. Mem. N. Mex. p. 15; Gray, Pl. Wright. p. 11. t. 2.* Cleomella Coulteri, *Harvey, ined.* Sandy soil along the Rio Grande below and above El Paso; April, in flower; July, in fruit. Also between the Chiricahui Mountains and the San Pedro, Sonora. (856.)

CLEOMELLA LONGIPES, *Torr. in Pl. Wright. p. 11. adn.* Low, subsaline grounds, west of the Chiricahui Mountains, Sonora; Sept. (857.) — Stems 2 or 3 feet high, much branched from near the ground; the older racemes a foot long, loaded at the apex with light yellow flowers, and below with copious ripe capsules. These are triangular, turgid, the upper angles produced into a short horn. Stipe half an inch long, exceeding the pedicel. Seeds smooth, about ten in each pod.

CLEOME SONORÆ (sp. nov.): annua, glabra, inermis; caule gracili erecto; foliis brevissime petiolatis trifoliolatis; foliolis anguste linearibus integerrimis, floralibus pedunculo patente subdimidio brevioribus; petalis albis mox roseis oblongis exungiculatis sepala cuspidato-apiculata quadruplo superantibus; siliqua oblonga 6–7-sperma pendula thecaphoro longiore. — With the foregoing. — Stem 1 to 2 feet high, nearly simple. Lowest cauline leaves fallen; those extant have petioles of only a line in length, scarcely exceeding the minute and setaceous stipules; those of the upper and floral leaves still shorter, or almost wanting. Leaflets 5–8 lines long, a line or less in width, canaliculate or conduplicate in the specimens. Peduncles 6–9 lines long; the decurved stipe about 3 lines long in fruit. Petals about 2 lines long. Anthers 6, linear. Style very short. Pod torulose, about half an inch long, usually acute at both ends. Seeds smooth.

RESEDACEÆ.

OLIGOMERIS GLAUDESCENS, *Cambess. in Jacq. Voy. Bot. p. 24. t. 25.* Reseda subulata, *Delile, Ill. Fl. Egypt. p. 15.* Resedella subulata & R. dipetala, *Webb & Berth. Phyt. Canar. 1. p. 107. t. 11.* Ellimia ruderalis, *Nutt. in Torr. & Gray, Fl. 1. p. 125.* Valley between the Salado and Lake Santa Maria, Chihuahua; April. (1321.) Also, Bolson de Mapimi, *Dr. Gregg.* California, *Coulter.*

VIOLACEÆ.

IONIDIUM LINEARE, *Torr.; Gray, Gen. Ill. 1. t. 82.* Base of the Organ Mountains, northeast of El Paso; April. Valley of the Limpio; June; — the ordinary Texan form. Also, gathered on the return, on the Pecos, a narrower-leaved form, approaching No. 21 of the former collection. (1322.)

I. RIPARIUM, *H. B. K. Nov. Gen. & Spec. 5. p. 378; var. æstivum, cryptopetalum, pedicellis plerisque brevissimis.* — Mountains east of Santa Cruz, Sonora; Sept. (859.) — The specimens are covered with ripe fruit; many of the pods are sessile and clustered, and the petals are very small and nearly equal, like the later, cryptopetalous flowers of many violets. Root annual. — To I. riparium, placed in the wrong section by De Candolle, belongs his I. parietariæfolium, according to Mr. Bentham.

HYPERICACEÆ.

HYPERICUM FORMOSUM, *H. B. K. Nov. Gen. & Spec.* 5. p. 196. t. 160; *DC. Prodr.* 1. p. 547. Valleys near Santa Cruz, Sonora, in springy places; Sept. (860.) — This accords very closely with the description and figure of Kunth's species. It is the same as the *H. Scouleri*, *Gray, Pl. Fendl.* p. 11, from New Mexico. The Oregon plant has blunter sepals with scarcely any glands along their margins; but I suspect it is not specifically distinct.

ELATINACEÆ.

ELATINE AMERICANA, *Arn. ; Gray, Gen. Ill.* 1. p. 220. t. 95. Margin of mountain streams near the copper mines, New Mexico; Oct.

CARYOPHYLLACEÆ.

SILENE GREGGII (sp. nov. Siphonomorpha): viscoso-pubescens; caulibus e radice perenni assurgentibus ramosis foliosis; foliis basi angusta sessilibus obovatis subacutis; pedunculis semper erectis calyce longe tubuloso clavato longioribus; petalis puniceis, lamina 4-fida, lobis lineari-lanceolatis, coronæ bipartitæ segmentis truncatis apice 3-4-dentatis; capsula cylindræa breviter stipitata. — Stony hills at the copper mines, New Mexico; Aug. (861.) (Mountains near Saltillo, *Gregg*, No. 223.) — Stems 1 to 2 feet long, usually glandular and viscid. Leaves 1 to 2 inches long, broadly obovate; the bracts oblong-lanceolate. Panicle several-flowered. Peduncles about an inch and a half, the calyx nearly an inch, in length. Lamina of the petals 8 lines long; the lobes entire, the middle ones somewhat larger than the lateral, but the sinuses of equal depth. Capsule an inch long, nearly included in the calyx. — Except in the form of the leaves, this plant differs little from what I take for *Silene laciniata*, *Cav.* (No. 723 of Coulter's Mexican collection; also gathered by Wislizenus, at Cosiquiriachi), to which *Lychnis pulchra*, *Cham. & Schlecht. Linnæa*, 5. p. 234, may apparently be referred.

S. WRIGHTII (sp. nov. Siphonomorpha): undique viscoso-pubescens, multiceps e caudice lignescente crasso; caulibus adscendentibus spithamæis foliosis; foliis oblongo-lanceolatis acuminatis sessilibus, inferioribus basi attenuatis; pedunculis subsolitariis erectis foliis brevioribus calyce fructifero clavato sæpius longioribus; dentibus calycis subulatis tubo vix dimidio brevioribus; petalis albis, lamina 4-fida, lobis lateralibus minoribus, centralibus 2-3-lobatis incisive seu integris; coronæ segmentis ovatis integerrimis; capsula oblonga stipite paullo longiore. — In crevices of rocks, mountain-sides near the copper mines, New Mexico; Aug. to Oct. (862.) — This is a low, very glutinous-pubescent species, forming tufts from a thickened root; the weak and at length diffuse crowded stems from a span to a foot long. Leaves 2 inches long, thin; the lowest tapering into a margined petiole. Calyx 7 to 9 lines long. Lamina of the petals 3 lines long, sometimes nearly 4-cleft, often with the middle lobes incised.

STELLARIA PROSTRATA, *Baldw. in Ell. Sk.* 1. p. 518. Along the Limpio, near its head; June. (863.)

ARENARIA DIFFUSA, *Ell. Sk.* 1. p. 519. *A. nemorosa*, *H. B. K. Nov. Gen. & Spec.* 1. p. 35. *Spergulastrum lanuginosum*, *Michx.* *Stellaria elongata*, *Nutt.* *S. lanuginosa*, *Torr. & Gray, Fl.* 1. p. 187; *Gray, Pl. Fendl.* p. 13. Hills near the copper mines, New Mexico; and near Santa Cruz, Sonora. (864.)—This is a true *Arenaria*, as the genus is characterized by Fenzl. The petals, which are present in some of these specimens, are entire, and nearly as long as the calyx. This species extends southward to the Quitensian and the Peruvian Andes. The testa of the seed is very smooth and shining. In the nearly allied *A. Benthamii*, which Mr. Wright formerly gathered in Texas, the testa is tuberculate.

A. SAXOSA (sp. nov.): multiceps e radice perenni; caulibus subsimplicibus erectis (2–3-pollicaribus) foliosissimis puberulis; foliis oblongo-lanceolatis acutato-mucronatis uninerviis glabriusculis subcarnosis; pedunculis folia æquantibus; sepalis ovato-oblongis acutis margine scariosis carinato-uninerviis petalis brevioribus. — Stony hills at the copper mines, New Mexico; Aug. (865.) — Stems very numerous and tufted, erect, or somewhat spreading, very leafy, 1–5-flowered. Leaves 2 or 3 lines long, crowded, longer than the internodes, minutely scabrous-puberulent, scarcely ciliolate, thickish, rather strongly one-nerved. Peduncles simple, 2–4-lines long. Sepals about 2 lines long, a little shorter than the obovate-oblong white petals. Stamens 10: filaments glabrous. Styles 3. Ovary globose-ovoid, about 40-ovulate. Capsule rather longer than the calyx, 3-valved at the apex; the valves soon 2-cleft. Seeds rather numerous, smooth, not strophiolate. — The plant I named *Mœhringia umbrosa* in *Pl. Fendl.* p. 13, is probably a form of the present species, with a looser mode of growth, and with much longer and smoother leaves. I have no fruit of that plant. The present plant has estrophiolate seeds, and therefore cannot be a *Mœhringia*.

CERASTIUM VULGATUM, *Linn.*; *Fenzl in Ledeb. Fl. Ross.* 1. p. 408. *C. triviale*, *Auct.* Ravines, on the Organ Mountains, New Mexico, April. (1323.)

DRYMARIA GLANDULOSA, *Bartl. in Presl, Rel. Hænk.* 2. p. 9. *D. ramosissima*, *Schlecht. in Linnæa*, 12. p. 206? *D. cordata*? *Gray, Pl. Fendl.* p. 13. New Mexico near the copper mines; Aug. and Oct. (866.) — Distinguished from *D. cordata* by the viscid-glandular pubescence of the branches, pedicels, and calyx; the more glomerate flowers; and the longer, sharply acuminate sepals. The specimens stick to the paper in which they were dried. The stamens are only 3.*

* No. 722 of Coulter's Mexican collection can hardly be separated with propriety from this genus, although it has entire petals and axillary flowers. It may be characterized as follows: —

DRYMARIA XEROPHYLLA (sp. nov.): glabra; caulibus decumbentibus ramisque floridis foliosis; foliis subsessilibus ovatis cuspidato-acuminatis chartaceo-membranaceis siccis 3–5-plinerviis venosis; stipulis plurisetosis; cymulis axillaribus 1–5-floris subsessilibus folia haud superantibus; sepalis oblongis obtusis 3-nerviis; petalis minimis spathulatis integris; ovario 3-ovulato. — The petals, which are not half the length of the sepals, are quite entire, or barely emarginate, or rarely one or two of them 2-lobed at the apex; they appear to be hypogynous. The stamens are only 3, with their filaments dilated at the base and connate into a ring. Capsule three-valved, one-seeded; the seed smooth. Embryo as in the genus. Leaves 3 to 5 lines in length.

D. polycarpoides, *Pl. Fendl. l. c.*, is, I believe, not distinct from *D. crassifolia*, *Benth. Bot. Voy. Sulph.*, which is the species inadvertently referred to under the name of *D. glauca*.

D. SPERGULOIDES, *Gray, Pl. Fendl. p. 11.* Stony hills, at the copper mines, New Mexico; Aug. and Oct. (867.) — The autumnal specimens, more branched, and loaded with fruit, have the pedicels all erect. The seeds are nearly smooth.

D. TENELLA, *Gray, Pl. Fendl. p. 12.* Banks of mountain torrents, near the copper mines, New Mexico; Aug., in flower; and on hill-sides under bushes, in fruit, Oct. (868.) — The young specimens are depauperate, only two inches high, with the spatulate-oblong or linear leaves 2 or 3 lines long. The later specimens are 3 or 4 inches high; the principal length of the stem of one almost capillary internode, which is often 2 inches long; the leaves very narrow and 6 lines long. The cyme effuse and many-flowered; the central pedicels all much shorter than the calyx. Capsule about the length of the calyx. Seeds very minutely roughened.

D. EFFUSA (sp. nov.): annua, glaberrima, nisi internodiis supra medium glandulosis viscosis; caule filiformi superne ramoso in cymam patentissimam multifloram diliquescente; foliis anguste linearibus sessilibus imis spathulatis parvis; pedicellis bracteis ovatas scarioras vix excedentibus flore brevioribus; sepalis ovatis obtusis 3-nerviis leviter scarioso-marginatis petalis alte bifidis (lobis oblongis) brevioribus capsulam 3-4-spermam adæquantibus; seminibus læviusculis. — Mountains east of Santa Cruz, Sonora; Sept. (869.) — Stems 3 to 5 inches high, with repeatedly forked and spreading branches. Leaves much shorter than the internodes. Calyx barely a line in length. Petals considerably exerted, and also larger and broader than in *D. tenella*. Stamens 5. Ovary subsessile, 5-7-ovulate. — Distinguished from the preceding by the viscous glandulosity of the upper half of all the internodes (except the very short pedicels), by the larger petals, &c.; from *D. nodosa*, *Engelm.*, which exhibits the first-named character, by the considerably smaller flowers, with obtuse and not at all rigid sepals, which are no longer than the capsule.

SPERGULARIA RUBRA, *St. Hil.; Torr. & Gray, Fl. 1. p. 175;* — diffuse or prostrate and small-flowered forms. Low banks of the Rio Grande at San Elizario; June. (1324.)

MOLLUGO VERTICILLATA, *Linn.* Hills near the copper mines, New Mexico; Aug.

PARONYCHIA JAMESII, *Torr. & Gray, Fl. 1. p. 170; Pl. Wright. no. 27. p. 13.* Hills of the San Pedro; May. On mountains near El Paso; April. (870.) Also on stony hills of the Pecos; July; — a slender and smoother variety, approaching *P. Lindheimeri*, but with a ligneous perennial root. (1325.)

P. LINDHEIMERI, *Engelm. in Pl. Lindh. 2. p. 152.* Hills of the Pecos; July. (1326.)

PORTULACACEÆ.

SESUVIUM PORTULACCASTRUM, *Linn. var. floribus subsessilibus. (S. sessile, Pers.)* Low bottoms of the Rio Grande below El Paso. (871.) — Inner face of the sepals, and the stamens, bright red.

PORTULACA LANCEOLATA, *Engelm. in Pl. Lindh. 2. p. 154.* On the Rio Grande, and west of the copper mines, New Mexico; Aug. (872.)

P. RETUSA, *Engelm. l. c. & Pl. Wright. p. 13.* Doña Ana, New Mexico; July. — "Petals small, yellow, slightly emarginate."

P. PILOSA, *Linn.*; var. *diffusa*, floribus parvis. From the Limpio to the copper mines, New Mexico. (873.) — Var. *erecta*, floribus capsulisque magnis, petalis aurantiacis siccate rubris. Near the copper mines, New Mexico. (874.)

TALINUM PARVIFLORUM (*Nutt. in Torr. & Gray, Fl. 1. p. 197; Gray, Pl. Fendl. p. 14*): humile; staminibus 5; calyce tardius deciduo; capsula ovali; petalis pallide roseis vel lilacinis; cæt. fere *T. teretifolii*. — Stony hills at the copper mines; Aug. (871.) Also near El Paso; April.

T. AURANTIACUM, *Engelm. & Var. β. ANGUSTISSIMUM*, *Gray, Pl. Wright. p. 14*. Western Texas to the Pecos; also, in 1852, between the Limpio and the Rio Grande. (876.) — According to Mr. Wright, there are two forms of this species, which in the living plant appear quite distinct; the one, with copper-colored flowers, being more succulent, and usually with purple stems; the other has pale-yellow flowers, and usually narrower leaves. The dried specimens cannot be satisfactorily distinguished.

T. REFLEXUM, *Cav. Ic. 1. p. 1. t. 1; DC. Prodr. 3. p. 357*. *T. spathulatum*, *Engelm. in Pl. Wright. p. 14*. Rocky banks of Providence Creek, Rock Creek, &c., between the Limpio and the Rio Grande; June. (1327.) — Leaves mostly broader than in Wright's No. 35. "Flowers yellow. Stems spreading or decumbent."

TRIANTHEMA MONOGYNA, *Linn.* Fields near El Paso; July.

MALVACEÆ.

CALLIRRHOE INVOLUCRATA, *Gray, Pl. Fendl. p. 15, & Gen. Ill. 2. t. 117*. On the San Pedro and Pecos; May. (877.)

C. DIGITATA, *Nutt.; Gray, l. c.* Prairies of the Hondo, Texas; May. (878.)

C. PEDATA, *Gray, l. c. (excl. syn.), & Pl. Wright. p. 15*. Margin of thickets, from the Hondo to the Sabinal; May.

C. PEDATA, var. *minor*, floribus parvulis pallidis. Along the San Pedro; May. (879.)

SIDALCEA MALVÆFLORA, *Gray, Pl. Wright. p. 16*. Along the Mimbres, New Mexico; Aug. (880.)

MALVASTRUM COCCINEUM, *Gray, Pl. Fendl. p. 24, & Pl. Wright. p. 16*. West of the Limpio; June. (881.)

M. LEPTOPHYLLUM, *Gray, Pl. Wright. p. 17*. Stony hills, Escondido Springs, Western Texas; June. Prairies, from Santa Barbara to the copper mines, New Mexico; July. (882.)

M. PEDATIFIDUM, *Gray, Pl. Wright. p. 17*; forma humilis; ramis floridis simpliciusculis in racemum majus elongatum strictum abeuntibus; segmentis foliorum parce incisus vel subintegris. — Stony hills near El Paso; and in the valley of the Salado, Chihuahua; April. (1328.) — This is an earlier and simpler state of the species than Mr. Wright's No. 42; usually with larger flowers; the strict and naked racemes often 6 inches long. The lowest leaves are ovate or roundish in circumscription, and pedately 3-5-lobed. The Chihuahua specimens are more scurfy, and their flowers more purple.

SPHÆRALCEA HASTULATA, Gray, *Pl. Wright.* p. 17. Valley of the Pecos, in alluvial soil; June. Sandy valleys of the Mimbres Mountains; Aug. (883.)

S. FENDLERI, Gray, *Pl. Wright. l. c.*; var. foliis subtus plerumque subcanescentibus. On the Mimbres; and mountain-sides near the copper mines; July. (884.)

S. INCANA, Torr., var. *DISSECTA*, Gray, *Pl. Wright. l. c.* Hill-sides, at Conde's Camp, west of the copper mines, New Mexico; Aug. (885.)

S. INCANA? var. *OBLONGIFOLIA*: foliis inferioribus ovatis, superioribus rameisque oblongis vel lanceolatis, omnibus pl. m. trilobis lobo medio elongato vel subhastatis dentatis furfuraceo-canescens (2-3-pollicaribus). — Banks of the Rio Grande near San Elisario; April. (1329.) — A puzzling form, manifestly inclined to run into the following, some specimens of which have the lower leaves hastately somewhat 3-lobed.

S. ANGUSTIFOLIA, Spach; var. foliis lanceolatis, inferioribus nunc hastato-subtrilobatis! Alluvial soil on the Piedra Pinta, Western Texas; and around El Paso; July. (886.)

S. ANGUSTIFOLIA, var. floribus et fructibus minoribus, Gray, *Pl. Wright.* p. 21. Between Providence Creek and the Rio Grande; June. (887.)

S. WRIGHTII (sp. nov.): pube laxa canescenti-tomentosa, sesquipedalis; caulibus e basi suffrutescente plurimis simplicibus apice longe racemoso-floriferis; foliis cordato-rotundis longe petiolatis, radicalibus inciso-sublobatis crenatis, caulinis 3-5-fidis pedatisve, lobis cuneatis crenato-dentatis; capsula 12-15-cocca calyce æquilonga, coccis mucronulatis dispermis. — On a mountain, near Lake Santa Maria, Chihuahua, April; chiefly in fruit. (1330.) — This species has much the habit of a *Sidalcea*, having mostly simple and virgate stems, long-petioled leaves with rounded cordate outline, and nearly naked, racemose inflorescence. It is from 8 to 20 inches high; the leaves about an inch in diameter, shorter than their petioles. Petals apparently purple, 4 or 5 lines in length. Capsule large in proportion, 3 lines long, ovoid-subglobose, with the apex truncate.

SIDA HEDERACEA, Torr. in *Pl. Fendl.* p. 23; Gray, *Pl. Wright.* p. 18. Bottoms of the Rio Grande below El Paso; May, June. (888.)

S. LEPIDOTA, Gray, *Pl. Wright.* p. 18. Around prairie-dog holes, between Providence Creek and the Rio Grande; June. Sandy valleys of the Mimbres Mountains; July. (889.) "Corolla light yellow."

S. LEPIDOTA, var. *SAGITTÆFOLIA*, Gray, *l. c.* Plains, from Escondido Creek to the Pecos; June. (1331.) — Much finer specimens than those gathered in 1849 (No. 47); all with the same long and narrow leaves, with 2 or 3 sharp lobes at the base.

S. LONGIPES, Gray, *Pl. Wright.* p. 19. Rocky hills, from Live Oak Creek, Texas, to the Pecos. (890.)

S. ELLIOTTII, Torr. & Gray, *Fl.* 1. p. 232? var.? *humilis*; floribus minoribus. — Between the Limpio and the Rio Grande; and on mountains at the copper mines, New Mexico; Aug. — A dwarf perennial with "deep yellow petals." There is no mature fruit. The carpels appear to be muticous.

S. ANGUSTIFOLIA, Lam.; Cav. *Diss.* 1. p. 14. t. 2. *S. heterocarpa*, Engelm. in *Pl. Lindh.* 2. p. 163. Prairies at Santa Cruz, Sonora; Sept. (891.)

S. FILICAULIS, Torr. & Gray, *l. c.* Live Oak Creek, Western Texas. (1332.)

S. FILICAULIS, Torr. & Gray; var. *SETOSA*: ramis adscendentibus pedunculis calycibusque pilis longis patentissimis setosis. — Bottoms of the San Pedro, Texas; May. Between Santa Barbara and the copper mines, New Mexico; July. (892.) — In *Pl. Lindh.* 2. p. 163, I have alluded to the slender hairs which beset the young stems of *S. filicaulis*; but in the present specimens they are vastly more conspicuous, and the stems are less procumbent; so that, at first sight, they would be taken for a different species. Dr. Gregg gathered this form in Chihuahua, and at Monterey. It is very likely to be the *Sida diffusa*, *H. B. K.*, the branches of which are said to be “molliter pilosi”; for, although the corolla is yellow, they often turn purplish in drying.

S. PHYSOCALYX, Gray, *Pl. Lindh.* 2. p. 163, & *Pl. Wright.* p. 20. Prairies of Western Texas; May.

ANODA PENTASCHISTA (sp. nov.): scabrido-pubens; foliis subtus cinereis, infimis cordatis, caulinis hastato-trilobis, summis hastato-lanceolatis vel linearibus pedunculo brevioribus; petalis flavis integerrimis lacinias calycis triangulares acuminatas paullo superantibus; capsula vix depressa 5-carpellari mutica calycem æquantibus. — Valley between Ojo de Gavilan and Conde's camp, beyond the copper mines, New Mexico; Aug. (893.) — Root annual. Stem erect, paniculately branched, 1 or 2 feet high. Leaves an inch to an inch and a half long, more or less toothed; the upper successively becoming lanceolate or linear, but always more or less hastate-lobed at the base, 5 to 12 lines long. Flower only 3 lines long! Calyx cinereous-pubescent like the lower surface of the leaves, not much spreading even in fruit, in length scarcely equalling the capsule. Corolla bright yellow; the obovate petals only about $2\frac{1}{2}$ or 3 lines in length. Ovary 5-celled, with a solitary resupinate ovule in each cell. Capsule puberulent, somewhat 5-lobed, only moderately flattened at the top; the 5 carpels opposite the sepals, obscurely umbonate on the back; the dissepiments entirely evanescent, while the broad dorsal portion of each carpel is wrapped, in the manner of the genus, half round the turgid seed. — Although the fruit is only pentacarpellary, and little depressed, its whole structure and dehiscence are the same as in *Anoda*, with which the foliage likewise accords. The only character left to distinguish *Anoda* from *Sida* is the obliteration of the dissepiments of the fruit.

A. WRIGHTII (sp. nov.): caulibus pedunculis petiolisque scabro-pubescentibus et viscosis; foliis glabriusculis obtusis, infimis ovatis grosse crenatis, cæteris oblongo-ovatis seu triangulato-lanceolatis integris aut vix subtrilobis basi haud cordatis; pedunculis folium superantibus; petalis flavis apice obsolete crenulatis calycis laciniiis ovatis obtusiusculis duplo longioribus; capsula hirsuta 11–12-carpellari stellariformi calyce patentissimo paullo brevior; carpellis dorso crista calcariformi obtusa appendiculatis. — On the summit of mountains near the copper mines, New Mexico; Oct. (894.) — Root annual. Stems one or two feet high, with divergent branches, rough with a rather coarse and viscous pubescence. Leaves slightly if at all subcordate, green both sides, 10 to 18 or 20 lines long, obscurely if at all lobed, not hastate nor acuminate. Lower peduncles $1\frac{1}{2}$ to 2 inches long; the upper about an

inch long. Sepals barely 3 lines long, united below the middle, triangular-ovate, not pointed, in fruit becoming 4 or 5 lines long, and appearing acuminate by the involution of the edges towards the tip. The fructiferous calyx is as widely spreading as in *A. hastata*. Petals about 5 lines long, yellow, the nearly truncate summit obscurely erose-crenulate. Fruit depressed and stellariform, as in the genus generally, about 5 lines in diameter, very hirsute, usually of 11 carpels; each of them produced on the back into an appendage as long and conspicuous as in many specimens of *A. hastata* (*Gen. Ill.* 2. t. 124), but broader and more spur-shaped. Seed as in the other species. — I have not seen *A. crenatiflora*, *Ort.* (*A. parviflora*, *Cav.*); but judging from the description, and from the figure of Cavanilles, our species is to be distinguished by its undivided and not cordate leaves, its glutinous pubescence, its longer peduncles, its petals about twice the length of the calyx, the obtuse lobes of the latter, and the manifest dorsal appendage of the carpels. *A. pubescens*, *Schlecht.* is said to have deeply cordate and sharply acuminate leaves, very acutely acuminate sepals, and mucous carpels. The character of *A. lanceolata*, *Hook. & Arn.* (of which the corolla is doubtfully said to be yellow), accords better with our plant; but that has the leaves velvety underneath, and the petals (nine lines long) thrice the length of the calyx.

A. HASTATA, *Cav. Diss.* 1. t. 11. f. 2; *Gray, Gen. Ill.* 2. t. 127; var. *depauperata*, floribus parvis. — Mountain valleys at the copper mines, New Mexico, and near Santa Cruz, Sonora; Aug., Sept. (895.) — Another small-flowered form of this, or perhaps a different species, was sparingly gathered, in flower only, in valleys of Chiricahui Mountains.

ABUTILON WRIGHTII, *Gray, Pl. Wright.* p. 20. Rocky hills, from Escondido Creek to Comanche Spring, Western Texas; June. (896.)

A. TEXENSE, *Torr. & Gray, Fl.* 1. p. 231; *Gray, Pl. Wright.* p. 21. Alluvial soil, from the Piedra Pinta to the Pecos, Texas; May, June. (897.)

A. PARVULUM, *Gray, Pl. Wright.* l. c. Stony prairies, Comanche Spring and Chicon Creek, Texas; May. Also between the Limpio and the Rio Grande. (898.)

A. SONORÆ (sp. nov.): caule erecto petiolisque pilis longis patentissimis hirsutis; foliis rotundo-cordatis acuminatis subtrilobis crenatis vel duplicato-dentatis 7–9-nerviis supra velutino-puberis subtus mollissime cano-tomentosis; stipulis caducissimis; floribus laxè paniculatis parvulis; pedunculis plurifloris; calycis laciniis ovatis acutiusculis petalis flavis capsulaque puberula apice truncata dimidio brevioribus; carpellis 7–11 chartaceis mucronatis trispermis. — Hill-sides on the Sonoita, in the northern part of Sonora; Sept. (899.) — Stem 1 to 4 feet high, herbaceous, somewhat branched, below densely, above more sparsely hirsute, as well as the petioles, with shaggy and rather stiff spreading hairs. Leaves 3 or 4 inches in diameter, the deep sinus nearly closed. Floral leaves very small; the large and loose terminal panicle nearly naked. Peduncles mostly several-flowered, nearly glabrous. Pedicels articulated towards the summit. Petals only 3 lines long. Capsule 4 or 5 lines long, fully twice the length of the calyx; the carpels not inflated, their apex dorsally tipped with a short and abrupt mucro.

HIBISCUS (BOMBICELLA) DENUDATUS, β . *INVOLUCELLATUS*, *Gray, Pl. Wright.* p. 22.

Mountains, between the copper mines, New Mexico, and Santa Cruz, Sonora; Sept. (900.)

H. (BOMBICELLA) COULTERI, *Harv. in Pl. Wright. l. c.* With the preceding. (901.)

PAVONIA WRIGHTII, *Gray, Gen. Ill. 2. t. 130, & Pl. Wright. p. 72.* Between the Leona and the Sabinal, Western Texas. (1333.)

BYTTNERIACEÆ.

MELOCHIA PYRAMIDATA, *Linn.* Margin of a stream at Painted Caves, on the San Pedro, Western Texas; July. (1334.)

HERMANNIA TEXANA, *Gray, Gen. Ill. 2. t. 135, & Pl. Wright. p. 34.* Stony prairies of Chicon Creek, Western Texas; May. (902.)

AYENIA PUSILLA, *Linn. var., Gray, Pl. Wright. p. 24. no. 645.* Rocks between Eagle Springs and the Limpio; June. Also (with still narrower leaves) in Sonora, between the Chiricahui Mountains and the San Pedro; Sept. (903.)—The fertile stamens adhere to the petals and come away with them. The anthers are not bilocular, as the genus is described, but trilocular!

A. MICROPHYLLA (*Gray, l. c.*): foliis cordato-rotundis; floribus in axillis solitariis breviter pedicellatis; petalorum lamina absque glandula dorsali; tubo stamineo brevissimo cyathiformi; antheris fertilibus (trilocularibus!) sessilibus sterilibus difformibus brevioribus; ovario haud stipitato. — Rocky ravines near Frontera, New Mexico; May: in flower and fruit. (1335.)—I have completed the character of the species from the flowering specimens gathered in the spring of the present year. The flowers are smaller than in *A. pusilla*; and the (dark red) petals have shorter claws. The lamina of the latter, when outspread, has nearly the shape of the leaf of *Liriodendron*; the two terminal angles are pointed and apparently glandular at the tips, by which they adhere to the column; the notch bears an apical acumination which is strongly recurved, but is not produced into a gland, nor is there any such dorsal appendage as in *A. pusilla*. The very short and cup-shaped stamineal column is terminated by five thick lobes, or deformed sterile anthers, alternating with the petals and much larger than the fertile anthers; they are somewhat two-lobed, like an ordinary anther, and bear a strongly reflexed and acuminate apical appendage, like that of the petals. The fertile anthers are sessile in the sinuses, and consist of *three* oval parallel cells, opening longitudinally. The ovary and capsule are nearly as in *A. pusilla*, except that they are not raised on a stipe. The obovate seeds are rugose-corrugated.

WALTHERIA DETONSA (sp. nov.): pube brevissima cinereo-tomentulosa; caulibus e basi lignescente plurimis gracilibus; foliis ovalibus denticulatis haud plicatis; glomerulis axillaribus breviter pedunculatis; calycibus et ovario canescentibus (haud villosis). — Rocky hills on the Sonoita, near Deserted Rancho, Sonora; Sept. (904.)—The slender stems are a foot or less in height; the leaves about an inch long, not plicate-veined nor velvety like those of *W. Americana*; the heads are also smaller, and the calyx not all hirsute-villous. Mr. Bentham informs me that he has apparently the same species from British Guiana; No. 497 of Rob. Schomburgk's second collection, and No. 761 of Rich. Schomburgk.

LINACEÆ.

LINUM PERENNE, *Linn.* Valley of the Pecos, Limpio, &c.; very common. (905.)

L. RUPESTRE, *Engelm. in Pl. Lindh.* 2. p. 232, & *Pl. Wright.* p. 26. Crevices of rocks on the Sabinal. (1336.)

L. RIGIDUM, *Pursh, Fl.* 1. p. 210. *L. puberulum*, seu *rigidum* var. *puberulum*, *Engelm. in Pl. Wright.* p. 25. Stony hills near the Rio Grande above El Paso; April. (1337.) — These fine flowering specimens have the bright yellow petals (deeper-colored next the base) half an inch or more in length, and therefore nearly as large as those of *L. Berlandieri*. From this it is distinguished by its glaucescent appearance, its more subulate erect leaves, and especially by the whole face of the dissepiments being excessively thin and hyaline, — a character pointed out by Dr. Engelmann. Stipular glands are not unfrequently visible.

L. ARISTATUM, *Engelm. in Wisliz. Mem. N. Mex.* p. 101; *Gray, Pl. Wright.* p. 26. Sandy hills on the Rio Grande near El Paso; April. (1338.) — Petals 4 or 5 lines in length, light yellow.

OXALIDACEÆ.

OXALIS DICHONDRAEFOLIA, *Gray, Pl. Wright.* p. 27. Shady bottoms of the San Pedro, Western Texas; May. (906.)

O. WRIGHTII, *Gray, l. c.* Painted Camp, near the head of the Limpio. Also, in 1852, on Rainwater Creek and Rock Creek; June. (907.) — One of the forms in the collection of 1852 is dwarf; the other is fully as large as the specimens gathered in 1851. The peduncles, often an inch and a half long, are more commonly 2-flowered; and one of the pedicels is occasionally bibracteolate in the middle. Mr. Wright informs me that the petals are yellow.

O. VIOLACEA, *Linn.* Stony hills at the copper mines, New Mexico; Aug. (908.) — A small-flowered variety, the same as No. 91 of Fendler's collection, which was erroneously called *O. vespertilionis* in *Pl. Fendl.* p. 27. The latter name, being preoccupied by Zuccarini, must be replaced by that of *O. DRUMMONDII*.

O. DECAPHYLLA, *H. B. K. Nov. Gen. & Spec.* 5. p. 238. t. 468; *Zucc. Mon. Oxal.* no. 26, & *Nachtr. Oxal.* p. 41. Stony hills at the copper mines, New Mexico; Aug. (909.) — Leaflets 6 to 8, or rarely only 3 in depauperate specimens. The flowers accord with Zuccarini's character, rather than Kunth's; for the "purple" flowers are twice the size of those of *O. stricta*; the filaments are glabrous and shorter than the styles, which are hirsute. There is probably a sexual dimorphism.

GERANIACEÆ.

GERANIUM CÆSPITOSUM, *James; Gray, Pl. Fendl.* p. 25. Hill-sides, Mule Creek and Coppermine Creek, New Mexico; Aug. (910.) — Varieties with shorter peduncles, and mostly with larger leaves, than in Fendler's specimens.

G. CAROLINIANUM, *Linn.* Banks of Lake Santa Maria, Chihuahua; April; just coming into flower.

ERODIUM TEXANUM, *Gray, Gen. Ill.* 2. t. 150. Hills above El Paso, April. (1339.)

ZYGOPHYLLACEÆ.

KALLSTRÆMIA GRANDIFLORA, *Torr. in Pl. Wright. p. 28.* Near Ojo de Gavilan, beyond the copper mines, New Mexico; Aug. (911.) — The same as Coulter's and Emory's specimens. Leaflets often 6 pairs. Flowers very large and showy.

K. MAXIMA, *Torr. & Gray*, — a depauperate variety. East of the Rio Grande, New Mexico; June. (912.)

LARREA MEXICANA, *Moricand; Gray, Pl. Wright. p. 28.* Bottoms of the San Pedro, Western Texas; May. (913.)

RUTACEÆ.

KÆBERLINIA SPINOSA, *Zucc.; Gray, Pl. Wright. p. 30.* East of the Rio Grande, New Mexico; June, in flower. (914.)

RUTOSMA TEXANUM, *Gray, Gen. Ill. t. 155, & Pl. Wright. l. c.* Stony prairies of the Sabinal, and near Comanche Spring, Western Texas; May, June. (915.) — Corolla dull yellow.

R. TEXANUM, var. corolla purpurea! Hills near El Paso; April. Mountains near Santa Cruz, Sonora; Sept. (915^a.) — All the specimens from about El Paso and westward are said to have purple flowers, and they are purplish in the dried specimens. They are yellow in Gregg's specimens from Monterey.

COCHLOSPERMEÆ.

AMOREUXIA SCHIEDEANA, (*Planch. in Hook. Lond. Jour. Bot. 6. p. 140. t. 1; non Gray, Pl. Wright.*): foliis 7-9-partitis, segmentis spathulatis; fructu ovoideo-globose pollicari; seminibus reniformi-curvatis, tegumento externo tenui hispidulo interiori conformi; embryone homotrope incurvo. (Tab. XII. A.) — Euryanthe Schiedeana, *Cham. & Schlecht. in Linnæa, 5. p. 225.* Amoreuxia palmatifida, *DC. Prodr. 2. p. 638?* (Mexico, *Schiede. Coulter!* (Sonora Alta). New Granada, *Purdie!*) Hills along mountain streams, near Deserted Rancho, in the northern part of Sonora; Sept. (916.) — The specimens are chiefly with ripe fruit; the pods ovoid-globose, barely an inch long, and therefore only half, or less than half, the size of those of Mr. Wright's former specimens (No. 79), figured in *Pl. Wright. t. 3, B.* A more remarkable difference is found in the seeds, which in the present specimens are strongly incurved-reniform, with the fragile exterior integument conformed to the inner one, and beset with minute hispid hairs; and the embryo is simply curved, without any double flexure. The lobes of the leaves, also, are more numerous and narrower. I cannot doubt that these specimens belong to the species characterized by Chamisso and Schlechtendal (who describe the pod as scarcely an inch long and ovoid-globose, the seeds as reniform? and the leaves as 5-9-parted). It is certainly the plant recently figured by Planchon.

A. WRIGHTII: foliis 5-partitis vel sub-7-partitis, segmentis obovatis basi cuneatis; fructu oblongo-ovoideo (sæpius bipollicari); seminibus obovoideis haud incurvis, tegumento externo laxo arilliformi glabro; embryone biarcuato. — A. Scheideana, *Gray, Pl. Wright. p. 29. t. 3. B., excl. syn.* — Hills at Painted Caves, near the San

Pedro River (the same locality as that of No. 79); July: with young fruit. (1340.) — These few specimens were gathered on the return journey, the past summer. They resemble those of the collection of 1849, the unripe pods being an inch and a half long; except that one or two stunted plants have ripened pods which are no larger than those of the preceding species; but their seeds, &c. exactly resemble those figured in *Plantæ Wrightianæ*. — The specimens gathered by Dr. Gregg and Dr. Edwards near Monterey appear to belong to this species, but they show no fruit.

ANACARDIACEÆ.

RHUS VIRENS, *Lindh. in Pl. Lindh. 2. p. 159.* Along mountain streams on the Sonoita, Sonora; Sept. — The specimens, mostly in fruit, resemble the Texan plant.*

R. (LOBADIUM) MICROPHYLLA, *Engelm. in Pl. Wright. p. 40.* Stony hills near El Paso, March, in flower, before leafing; also on the San Pedro, Western Texas, July, in fruit, and with smaller leaves than in the specimens of 1849. (1341.)

R. TRILOBATA, *Nutt. in Torr. & Gray, Fl. 1. p. 219; Gray, Pl. Wright. p. 31.* Pebbly banks of the San Pedro, Western Texas; May, in fruit. (917.) — Var. *molliter tomentosa*. Organ Mountains, New Mexico, and toward the Limpio; April, June: in fruit. (1342.)

VITACEÆ.

VITIS RUPESTRIS, *Scheele in Linnæa, 21. p. 591; Gray, Pl. Lindh. 2. p. 165.* Pebbly bottom of the San Pedro; and hill-sides on the Limpio; May, June: in fruit. (918.) — "Climbing 8–10 feet."

V. ÆSTIVALIS, *Michx. Fl. 2. p. 230; var.* Banks of Elm Creek, Texas; climbing on trees, July; in fruit. — The same form as Lindheimer's No. 359.

V. ÆSTIVALIS, *Michx.*; var. ? *foliis parvis*. Ravine at Santa Cruz, Sonora; Sept.; in fruit. (919.) "Climbing on small trees 8 or 10 feet high."

RHAMNACEÆ.

ZIZYPHUS LYCIOIDES, *Gray, Pl. Lindh. 2. p. 168, & Pl. Wright. p. 32.* Between Western Texas and El Paso, the locality not recorded; in flower. (920.) Also on rocky hills opposite Frontera, New Mexico, March, in young fruit; and May, with ripe fruit. (1343.)

Z. OBTUSIFOLIA, *Gray, Gen. Ill. 2. t. 163, & Pl. Lindh. l. c.* Prairies between the Rio Grande, New Mexico, and Eagle Spring; June. (1344.)

CONDALIA SPATHULATA, *Gray, Pl. Wright. p. 32.* Sides of a cañon on the San Pedro, Sonora; Sept. (921.) — "Shrub 4–6-feet high, much branched; flowers greenish-yellow." Leaves 2 or 3 lines long, crowded and fascicled.

C. OBOVATA, *Hook.*, var. *foliis parvis*. Hills of the San Pedro and Zoquete Creek, Western Texas; July. (1345.)

* *Pistacia Mexicana*, *H. B. K.* was gathered by the late Dr. Gregg, near Monterey and Rinconada.

MICRORHAMNUS ERICOIDES, *Gray, Pl. Wright. p. 34.* Prairies between Howard's Creek and Live Oak Creek, Western Texas, May; also between the Limpio and the Rio Grande. (922.) — The specimens are loaded with the fruit, which has been described in the account of Mr. Wright's former collection.

KARWINSKIA HUMBOLDTIANA, *Zucc.; Gray, Pl. Wright. p. 32.* Limestone hills in the Big Bend of the San Pedro River, Western Texas; July. (1346.)

ADOLPHIA INFESTA, *Meisner; Gray, Pl. Wright. l. c.* Mountain valleys between the Limpio and the Rio Grande, June; in flower. (923.)

FRANGULA CALIFORNICA, *Gray, Gen. Ill. 2. p. 178; var. TOMENTELLA.* Rhamnus tomentellus, *Benth. Pl. Hartw. p. 303.* Ojo de Gavilan, beyond the copper mines, New Mexico; Aug. (924.) "Shrub 4 to 6 feet high." — In these specimens the leaves are glabrous and bright green above, even when young, but are clothed beneath, as are the branchlets, with a fine and soft whitish pubescence. They are mostly serrulate, as they also are in my specimen of Hartweg's No. 1686. From Fremont's Californian collection, Dr. Torrey has specimens still more tomentose, even on both sides of the leaves; but I think that all these are merely varieties of Hooker's Rhamnus oleifolius, which was earlier published by Eschscholtz, under the name of Rhamnus Californicus.

SAGERETIA MICHAUXII, *Brongn.; Gray, Gen. Ill. 2. t. 166.* Rocky banks, east of Santa Cruz, Sonora; Sept. (925.) — The specimens, which are sparingly in flower, appear to agree in all respects with those from Florida. I am not aware that this species has been yet observed at any intermediate station.

CEANOTHUS GREGGII (sp. nov.): divaricato-ramosissimus; ramulis tomentoso-puberulis; foliis confertis ellipticis oblongisve integerrimis coriaceis crassis uninerviis glabellis subtus leviter penninerviis primum tomentulosi (3–5 lin. longis); pedicellis pubescentibus (demum glabratis) flore albo paullo longioribus. — (Battlefield of Buena Vista, *Gregg*; in flower.) Side of mountains near Frontera, New Mexico, July; in fruit. — Shrub 2–5 feet high, with very rigid branches. Pedicels shorter than the leaves. Flowers small. Fruit about 2 lines in diameter. — I have only poor specimens of this species. It bears considerable resemblance to small-leaved forms of *C. cuneatus*, *Nutt.*; but the leaves are not narrowed towards the base, and the pinnate veins underneath are obscure.

CELASTRACEÆ.

MORTONIA SEMPERVIRENS, *Gray, Pl. Wright. p. 35. t. 4.* Stony prairies, San Felipe Creek, Western Texas; May. (926.) — The flower, in all the species, is articulated with the peduncle, just above the pair of bracts.

M. SCABRELLA (sp. nov.): fruticosa; foliis obovatis ovalibusve margine incrassatis undique ramulisque hispidulo-scabris; petalis et disco margine fere integerrimis; calyce fructu ovali-oblongo dimidio brevioribus; stylo breviusculo. — Mountain-sides, near the San Pedro, Sonora, Sept.; in flower and fruit. Mountains near El Paso, April; in flower. (927.) — Stems 2 to 4 feet high, much branched. Leaves 3 or 4 lines long, and 2 or nearly 3 lines wide, very obtuse, seldom mucronulate, very thick and with a thickened margin, rough with a short and close pubescence which

consists of very short bristly hairs from a papillose base. The flowers, &c. are nearly as in *M. sempervirens*; except that the petals are not erose-denticulate, but are minutely ciliolate under a lens, with a pubescence much like that of the leaves, though finer and apparently glandular, and which also covers their surface; the disk is not lobed nor manifestly repand; the fruit is rather shorter, and so is the style. The oblong cotyledons are, perhaps, less fleshy.

SCHLEFFERIA CUNEIFOLIA, Gray, *Pl. Wright.* p. 35. Stony prairies, from the San Felipe to the San Pedro, Western Texas; May, in fruit. (928.)

PACHYSTIMA MYRSINITES, Raf.; Gray, *Pl. Fendl.* p. 29. Mountain-sides, at the copper mines, New Mexico; Oct., in flower. (929.)

GLOSSOPETALON, *Nov. Gen.*

Flores hermaphroditi. Calyx profunde 5-fidus, persistens; lobis ovatis obtusis æstivatione imbricatis. Petala 5, lineari-ligulata, calyce multo longiora, sub margine undulato-10-crenulato glanduloso disci tenuis perigyni inserta, marcescentia. Stamina 10, sinibus disci inserta, calyce breviora: filamenta subulata: antheræ didymæ, muticæ, filamento æquilongæ, loculis longitudinaliter dehiscentibus. Ovarium liberum, ovoideum, obliquum, apice acutum, stigmatibus sessilibus orbiculato depresso simplicissimo coronatum, uniloculare. Ovula 2, e basi fere loculi erecta, subcollateralia, anatropa. Fructus oblique ovoideus vel oblongus, apiculatus, coriaceus, multistriatus, 1-2-spermus, tandem bivalvis? Semen obovoideum, compressiusculum, hilo exciso arillo parvo carunculæformi bilobo munitum; testa lævi crustaceo. (Embryo haud visus.) — Frutex 2-4-pedalis, ramosissimus, glaber; ramis viridibus striatis spinescentibus; foliis alternis oblongo-linearibus spathulatisve integerrimis parvis, vel ramulorum florif. ad squamulas subulatas minimas reductis; stipulis nullis; floribus albis secus ramulos sparsis axillaribus breviter pedunculatis.

GLOSSOPETALON SPINESCENS. (TAB. XII. B.) — In a mountain ravine near Frontera, New Mexico; April. (1347.) — The general aspect of this singular shrub is so nearly that of *Adolphia infesta*, that it was mistaken for it by Mr. Wright, and therefore was only sparingly gathered, in flower, with a few immature fruits. It is to be hoped that the botanists of the Boundary Commission will yet obtain it in greater abundance and perfection. The detailed character given above will show that it belongs to an entirely new genus, and probably to the order Celastraceæ. To this order I venture to refer it, notwithstanding two decidedly exceptional characters, namely, the stamens of twice the number of the petals, and the strictly simple pistil. The fruit, which is probably dehiscent at maturity, is a good deal like one of the separate carpels of *Euscaphis staphylæoides*, although many times smaller (only two lines in length); and the seed resembles that of *Staphylæa*, except that it is appendaged at the hilum with a small, rather fleshy arillus. In these respects, therefore, (but in no other,) our plant appears to be intermediate between Celastraceæ and Staphyleaceæ. Ordinarily only one seed matures; but in a specimen gathered by Dr. Bigelow, two full-grown (superposed) seeds are occasionally found. In none have I found a perfect embryo. In the few seeds examined, there is a bulge of the crustaceous testa on each side, which corresponds to a defined

empty cavity underneath, separated by a firm partition from the central portion, which contains the scanty albumen and forming embryo. The leaves are 2 to 4 lines long, with a tapering base, dilated at the insertion; on many of the branches they are reduced to this base, the lamina being abortive. The narrow, strap-shaped petals are nearly 3 lines in length, about thrice the length of the very obtuse and slightly scarious-margined lobes of the calyx; they are inserted by a narrow base.

SAPINDACEÆ.

UNGNADIA SPECIOSA, *Endl. ; Gray, Pl. Wright. p. 38.* Ravines of the Organ Mountains, New Mexico; April, in flower. — This has not before been found west of the Rio Nueces.

MALPIGHIACEÆ.

GALPHIMIA LINIFOLIA, *Gray, Gen. Ill. 2. p. 196. t. 173, & Pl. Wright. p. 36.* From the Sabinal to the San Pedro, Texas; May. (930.)

ASPICARPA HYSSOPIFOLIA, *Gray, Pl. Lindh. 2. p. 167, & Pl. Wright. p. 36.* Stony prairies, Chicon Creek, Western Texas, May; and on the San Pedro, July. (931.)

A. LONGIPES, *Gray, Pl. Wright. p. 37.* Crevices of rocks, Wild Rose Pass, valley of the Limpio; June. Also, mountain valleys near Santa Cruz, Sonora; Sept. (932.) — In the later specimens, both carpels of the apetalous flowers often ripen.

JANUSIA GRACILIS, *Gray, Pl. Wright. p. 37.* Mountains, Guadalupe Pass, and heads of the Aqua Prieta, east of Santa Cruz, Sonora; Sept. (933.) — Some petaliferous flowers occur, which accord with the generic character. The petals are yellow, with a rounded and nearly entire lamina, raised on a slender claw. Fertile stamens 2 or 3.

POLYGALACEÆ.

POLYGALA ALBA, *Nutt. ; Gray, Pl. Wright. p. 38.* Valley of Live Oak Creek, Texas; May. — A specimen or two of an abbreviated form occurs in the collection from Sonora.

P. SCOPARIA, *H. B. K., var. MULTICAULIS, Gray, Pl. Wright. p. 38.* Mountains, Guadalupe Pass, Sonora; Oct. Also mountains near El Paso; April. (934.) Stems rather taller and more branched above than in No. 100 of Wright's former collection.

P. MACRADENIA, *Gray, Pl. Wright. l. c.* Hills of Live Oak Creek, Texas; May. Stony hills near El Paso; March, May. (1348.)

P. LINDHEIMERI, *Gray, Pl. Lindh. 2. p. 110, & Pl. Wright. l. c.* Hill-sides on the Limpio, San Pedro, and Comanche Spring, Western Texas; May, June. (1349.)

P. OVATIFOLIA, *Gray, Pl. Wright. p. 39.* Elm Creek, Western Texas, to the San Pedro; May. (935.)

P. PUBERULA, *Gray, Pl. Wright. p. 40.* Stony ridges, and in the alluvion at their base, on the Pecos; May. (936.) Also near the copper mines, New Mexico; July.

P. (MONNINOPSIS) HEMIPTEROCARPA (sp. nov.): glabra, perennis; caulibus gracilibus ramisque strictis striato-angulatis foliosis; foliis subulato-linearibus uninerviis alternis; racemo virgato multifloro; floribus albis mox pendulis; carina cristata alis obovatis paullo brevioribus; capsula oblonga membranacea, loculo postico dupliciter alato inter laminas dehiscente, antico paullo minore indehiscente semen fere ecarunculatum includente. — Stony hills of the Sonoita, near Deserted Rancho, on the borders of Sonora. (937.) — Root perpendicular, perennial. Stems erect, sparingly branched above (the branches strict), slender, strongly striate-angled, 12 to 20 inches high. Leaves mostly erect, rather rigid, somewhat crowded, alternate, sessile; acute, seldom half a line wide; the lower cauline about 3 lines long; the upper and those of the branches 7 to 10 lines long. Raceme rather densely flowered, 2 or 3 inches in length. Bracts subulate-lanceolate, about the length of the short pedicels, very caducous. Calyx white or whitish; the three small sepals ovate, rather obtuse; the wings obovate, slightly unguiculate, rather longer than the corolla, one third shorter than the capsule. Lateral petals obovate, as long as the entire and hooded keel, not including its crest; which is nearly as in *P. scoparia*. Stamens 8, in two sets. Stigma cucullate and bilabiate; the short upper lip truncate and tipped with a small tuft of bearded hairs; the lower lip decurved, also somewhat truncate and ciliolate. Ovary equal-sided, two-celled, with a single ovule in each cell. Capsule thin and membranaceous, glabrous, oblong, obscurely emarginate, $2\frac{1}{2}$ lines in length, somewhat gibbous; the cell next the axis being rather larger than the other, and appendaged with a crenulate, bilamellar wing, reaching from near its base to the apex, dehiscent between the two laminæ; the valves then becoming outspread, so that they form, as it were, a broad, obcordate wing, surrounding the anterior cell (the one next the carina), which is indehiscent, conformed to the seed, and not at all winged or margined on its back. Seed cylindrical, hirsute with spreading hairs; that of the posterior cell with a conspicuous caruncle, the linear lobes of which are fully half the length of the seed; that of the indehiscent and anterior cell with the caruncle obsolete or rudimentary. — In general aspect, this species is intermediate between *P. alba* and *P. scoparia*; but taller than either. From the singular structure of the fruit, it must constitute a marked new section of the genus.

MONNINA WRIGHTII (sp. nov.): annua, fere glabra; caule gracili; foliis lanceolatis linearibusve subsessilibus; floribus parvis mox deflexis hexandris; fructu sicco complanato inæqualiter ovato acutissime marginato uniloculari, faciebus uninerviis venulosis. — Crevices of rocks, mountain-sides, near the copper mines, New Mexico; Aug., in flower; Oct., in fruit. (938.) — The flowering specimens are about a span, the slender fruitful ones a foot or more, in height. Leaves one or two inches long, 2 to 4 lines wide; the very lowest small and obovate; the others acute. Raceme one or two inches long; sometimes there are other and very short racemes in the axils. Bracts minute. Flowers a line and a half long, greenish-white tinged with purple. Stamens 3 in each phalanx: filaments glabrous. Fruit deflexed, flattened, scarcely 2 lines long, with a sharp and wing-like margin, and the sides carinately one-nerved, minutely puberulent under a lens. Seed smooth, not carunculate.

KRAMERIACEÆ.

KRAMERIA PARVIFOLIA, *Benth.*; *Gray, Pl. Wright. p. 41.* Valleys, between the Limpio and the Rio Grande, June; and on sand-hills near Frontera, July. (939.)

— A dwarf variety of this, with more numerous glandular setæ on the peduncles, &c., was gathered between San Pedro and Santa Cruz, Sonora; Sept. (940.) — A few specimens of the var. RAMOSISSIMA (no. 105), were gathered on the San Felipe.

K. CANESCENS, *Gray, l. c.* Hills of Live Oak Creek, Texas; May. Also between Eagle Springs and the Rio Grande. (941.)

K. LANCEOLATA, *Torr. in Ann. Lyc. New York, 2. p. 168*; verging to *K. secundiflora, DC.* Stony prairies of Chicon Creek, W. Texas. Near El Paso; May. (942.)

LEGUMINOSÆ.

VICIA PULCHELLA, *H. B. K. Nov. Gen. & Sp. 6. p. 499. t. 583 ?* var. *foliolis majoribus obtusis cuspidato-mucronatis*; *stipulis plerisque integerrimis.* — Pine hills between the copper mines and the Mimbres, New Mexico; Oct., with mature fruit. (943.) (San Antonio de las Alanzanes, Mexico, *Gregg*; in flower and fruit.) — Dr. Gregg's specimen accords with Kunth's figure, except that most of the leaflets are obtuse. Ours, which are autumnal specimens, with ripe fruit, have rather larger and more rigid leaflets, and linear and entire stipules. The numerous pods are an inch in length, nearly 3 lines wide, somewhat falcate, acute, 6 – 10-seeded.

V. EXIGUA, *Nutt. in Torr. & Gray, Fl. 1. p. 272.* Ravines near El Paso; also on the banks of Lake Santa Maria, Chihuahua; April. (1350.) — The earlier peduncles are very short, while some of the later ones are almost as long as the leaf.

LATHYRUS POLYMORPHUS, *Nutt.*; *Torr. & Gray, Fl. l. c.*; *Gray, Pl. Fendl. p. 30.* Along streams, between the San Pedro and Santa Cruz, Sonora; Sept. (944.)

L. LINEARIS, *Nutt. in Torr. & Gray, l. c.* (*L. dissitifolius, Nutt. l. c.*); var. *stipulis minimis subulatis integerrimis.* Stony hills at the copper mines, New Mexico; Aug. (945.) — Flowers in the dried specimens blue-purple, especially towards the tip, three fourths of an inch long.

L. PALUSTRIS, *Linn. ?* var. *foliolis elongatis angustis gramineis*; *stipulis minoribus, nunc semisagittatis, nunc subulatis integris.* — Stony hills near the copper mines, and along Coppermine Creek; Aug. (946.) — I cannot distinguish this from American forms of *L. palustris*; and in some specimens the stipules are of the same shape as in that species. The flowers were purple, but have mostly lost their color in drying, as in Fendler's No. 116.

CICER ARIETINUM, *Linn.* New Mexico or Sonora (the locality not recorded): doubtless introduced.

PHASEOLUS RETUSUS, *Benth. Pl. Hartw. p. 11*; *Gray, Pl. Wright. p. 43.* Valley of the Limpio; June. Sandy banks of the Mimbres, and near the copper mines, New Mexico; Aug. (947.) — "Prostrate. Root very large, 2 feet long, 5 inches thick at the crown, rather ligneous, astringent."

P. ACUTIFOLIUS, *Gray, Pl. Wright. p. 43.* Sides of the Chiricahui Mountains, Sonora; Sept. (948.) — The root is annual; the flowers purple or purplish.

P. ACUTIFOLIUS; var. *foliolis majoribus ovatis acuminatis*; legumine majore (3-pollicari). — Valleys of Sonora; Sept. (949.)

P. ACUTIFOLIUS, var. *TENUIFOLIUS*: *gracilis*; *foliolis lanceolatis e basi pl. m. dilatata hinc interdum sublobata seu lineari-lanceolatis*; *calycis labio superiore brevi mucronulato*; *seminibus lævibus nitidis*. — Mountain-sides near the copper mines, New Mexico, and in Guadalupe Pass; Oct. (950.) — Leaflets 2 or 3 inches long, mostly 2 or 3 lines wide at the base, thence tapering to an acute point. Cultivated specimens, however, show broader leaflets, more or less dilated or obsoletely sublobed, or gibbous at the base, and passing into the type of *P. acutifolius*.

P. ANGUSTISSIMUS (sp. nov.): *perennis, lævigatus*; *caulibus diffusis seu volubilibus gracillimis*; *stipulis ovatis minimis*; *foliolis angustissime linearibus obtusiusculis aveniis pedunculo paucifloro filiformi brevioribus*; *calyce breviter campanulato, labio superiore latissimo subemarginato dentibus inferioris ovatis obtusis æquilongo*; *legumine oblongo falcato plano 3-4-spermo*; *seminibus leviter rugulosis*. — Stony hill-sides, at the crossing of the Rio Grande above Doña Ana, New Mexico, July; and between San Pedro and Santa Cruz, Sonora, Sept. (951.) — Stems numerous, from a firm perennial root, slender and very smooth. Leaflets $1\frac{1}{2}$ to 2 inches long, a line or a line and a half wide, thickish, smooth, very minutely puberulent beneath under a lens, longer than the petiole. Peduncle 2-5 inches long, loosely 2-5-flowered. Pedicels longer than the calyx. Flowers 4 lines long; the ample vexillum and wings purple; the spirally coiled keel yellow. Pod 8-10 lines long, 3 lines wide, narrowed towards the base, nearly glabrous; the flat valves thin.

P. WRIGHTII, *Gray, Pl. Wright. p. 43*. Sides of stony hills, at the copper mines, New Mexico; Aug. (952.) — The specimens are much better than those of 1849, and in fine flowering state. It is a perennial, with a lignescent fusiform root, of a foot or so in length, and an inch in diameter. Stems either prostrate or twining. The leaflets vary considerably in shape; the lateral lobes sometimes little shorter than the middle one, and in the larger leaflets themselves inclined to be two-lobed at the apex. The racemes are rather many-flowered, with the bracts inclined to be persistent. The young legumes are destitute of the conspicuous style which tips those of the former, chiefly fruiting specimens. The character of the species therefore needs some modification.

P. MACROPOIDES (sp. nov. § *Microcochle*): *radice tuberosa*; *caulibus decumbentibus retrorsum hirsutis*; *stipulis ovatis acuminatis nervosis*; *foliolis ovalibus vel subrhombeis integris aut supra medium subunilobatis fol. infimum obtusis superiorum acutis pilis appressis utrinque hirto-pubescentibus*; *pedunculis folio pluries longioribus puberulis plurifloris*; *calycibus subsessilibus villosulis, laciniis conformibus lanceolato-subulatis*; *alis corollæ rotundatis vexillo duplo majoribus*; *legumine deflexo lineari-falcato puberulo subcompresso 4-6-spermo*. — Stony hills at the copper mines, New Mexico; Aug. (953.) — Stems beginning to flower when only 2 inches long, extending a foot or two in length, decumbent or diffusely spreading, flexuose, thickly villous-hirsute; the pubescence of the petioles similar, but not reversed. Stipules 2 or 3 lines long, rather scarious. Petioles 12-18 lines long. Stipels subulate, longer than the petiolules. Leaflets 9-18 lines in length, mucro-

nate, sometimes obscurely angled on one side nearer the summit than the base, sometimes with the angle produced into a broad tooth or lobe of 2 or 3 lines in length. Peduncles 4 to 9 inches long, minutely and retrorsely pubescent, floriferous above the middle. Bracts minute, subulate, caducous. Calyx 2 lines long, equally 5-cleft, or more deeply so between the upper lobes, the narrow and very acute lobes longer than the tube. Vexillum and wings purple in the dried specimens, rotund; the former emarginate, 3 or 4 lines, the latter 6 lines long. Carina yellowish, shorter than the vexillum, strongly circinate-incurved, as in *P. heterophyllus*. Ovary minutely pubescent, 6-ovuled. Legume 8 or 9 lines long, 2 lines wide, torulose, incurved. Seeds reniform, smooth. — This species is evidently allied to *P. macropus*, *Benth.* (which I have not seen), the fruit of which is unknown. It appears to differ in the shape of the leaflets, as well as in their pubescence, which is nearly similar on both surfaces, in the hirsute stems, and in the shape and pubescence of the calyx. It should likewise be compared with *P. parviflorus*, *Schlecht.*

P. ROTUNDIFOLIUS (sp. nov. § Microcochle): perennis, radice tuberosa? caulibus decumbentibus cum pedunculis plurifloris folio ter longioribus retrorsum villosis; stipulis ovatis nervosis; foliolis rotundatis integris utrinque appresso-pubescentibus; calycibus brevissime pedicellatis villosis, laciniis conformibus subulatis; vexillo alis orbiculatis subæquali; legumine deflexo lineari-falcato subcompresso 4–6-spermo villosissimo. — Valley west of the Chiricahui Mountains, Sonora, in sandy soil; Sept. (954.) — Closely related to the preceding species; but the peduncles are hairy like the diffuse and slender stems; the leaflets are orbicular or rounded-obovate, often retuse (8 to 12 lines in diameter); the flowers perhaps rather smaller; the calyx more hairy; the wings not so large in proportion to the deeply emarginate vexillum, and the ovary and pod very villous. The blossoms have dried of a purple color; but according to Mr. Wright's memorandum, they are "deep red."

RHYNCHOSIA TEXANA, *Torr. & Gray*, & var. *ANGUSTIFOLIA*, *Gray, Pl. Wright.* p. 44. Prairies of Turkey Creek, Western Texas, and on the Limpio; May, June. (955.)

GALACTIA TEPHRODES (sp. nov.): subvolubilis; caulibus foliisque pube minuta appressissima sericeo-canescens; foliolis 3 oblongo-linearibus utrinque obtusissimis mucronulatis; pedunculis plurifloris; calycis lobis oblongis obtusis, postico integro; legumine recto canescente. — Mountain-sides, near Conde's Camp, between the copper mines and Chiricahui Mountains, New Mexico; Aug. (956.) — Stems numerous from a lignescent root, 2 or 3 feet long, whitened or cinereous with the very fine and close pubescence. Leaflets less canescent above than beneath, 10 to 16 lines long, those of the lower leaves narrowly oblong, of the upper linear, not narrowed at the base, often slightly retuse at both ends; the terminal one rather remote from the others. Lower peduncles longer, the upper shorter, than the leaves. Calyx minutely cinereous-pubescent, nearly 3 lines long. Pod 10 to 14 lines long, 2 lines wide, 4–7-seeded. — The pubescence is nearly as in *G. heterophylla*, *Gray, Pl. Lindh.*

COLOGANIA PULCHELLA, *H. B. K. Nov. Gen. & Sp.* 6. p. 413; *Gray, Pl. Wright.* p. 44. Mountain-sides, from Smith's Run to Providence Creek, between the Limpio

and the Rio Grande; June. (957.) — The leaflets are pale and cinereous (not bright green) above as well as beneath, otherwise the specimens accord pretty well with Kunth's description of *C. pulchella*, of which it is probably only a variety.

C. ANGUSTIFOLIA, *H. B. K. l. c.*; *Gray, l. c.* (cum char.). Rocky sides of mountains, at the head of the Limpio; June, in flower and fruit. (958.) — Except that the flowers are not so large, our specimens admirably agree with Kunth's description, especially in the particulars in which they differ from the narrow-leaved species described below. The linear and *falcate* legumes (which were before unknown in the genus) I have already described. Plants raised from seeds taken from these specimens have the earlier leaves broadly oval (7 or 8 lines long); the succeeding ones oblong, and finally linear.

C. LONGIFOLIA (sp. nov.): volubilis; foliolis ternis nunc 4–5-nis linearibus elongatis acutis vel obtusis longe mucronatis supra glaberrimis subtus reticulatis cum caulibus calycibusque (pedicello longioribus) pilis brevissimis appressis strigulosis; legumine lineari subcompresso recto. — Variat, α . foliolis rigidiusculis $1\frac{1}{2}$ –3 unc. longis 2–3 lin. latis. β . foliolis membranaceis glabellis sæpius lato-linearibus 3 unc. longis 5–8 lin. latis, costa in mucronem sesquilineam longum producta. δ . caule simplici suberecto $\frac{1}{2}$ -sesquipedali; foliolis angustissime linearibus 3–4 unc. longis 2 lin. latis. — Hills near the copper mines, New Mexico, climbing on low bushes; Aug. ? (α . 959. β . 960.) δ . Mountain ravines, on the Sonoita, near Deserted Rancho, Sonora; Sept., in fruit. (961.) — The leaves in all the forms are some of them often 4–5-foliolate, the additional leaflets being inserted with the lateral pair, which are separated from the terminal one by a rhachis of 2 or 3 lines in length. The minute, strigose pubescence of the stem is retrorse. Stipules lanceolate-subulate, strigulose, very small. Pedicels 2 or 3 lines long, shorter than the calyx; which in α . and β . is 5 or 6 lines long, its upper lobe entire. Corolla violet-purple in the dried specimens. Legume about 2 inches long, 2 lines wide, straight, less compressed than in *C. angustifolia*, cinereous with the same fine pubescence as the calyx, 10–14-seeded. Seeds subrotund, with a small hilum, not strophiolate. The root is said to be thickened or somewhat tuberous, and to penetrate very deeply. — In the glabrous upper surface of the leaves, and in the fine and close pubescence of the calyx, this plant agrees with the character of *C. intermedia*, *H. B. K.*, with which it should be compared, notwithstanding the size and shape of the leaflets, which in *C. intermedia* are said to be only from 9 to 14 lines long. The straight pod, and the characters furnished by the pubescence, sufficiently distinguish it from *C. angustifolia*.

PETERIA SCOPARIA, *Gray, Pl. Wright. p. 50.* Stony hills near Smith's Run and Eagle Springs, between the Limpio and the Rio Grande; June. Also between Frontera and the Mimbres, New Mexico; July. (962.) — A well-marked, new genus. The flowers are tinged with purple.

CRACCA EDWARDSII (sp. nov.): molliter sericeo-pubescent; caulibus herbaceis e basi suffrutescente; stipulis setaceis; foliolis 4–8-jugis membranaceis ellipticis mucronatis reticulato-venosis concoloribus; racemis laxifloris; bracteis setaceo-subulatis persistentibus; vexillo purpureo; carina flavida; legumine elongato 13–

19-spermo inter semina interstincto. — (Near Monterey, Mexico, *Dr. Edwards*, in herb. Torr.) Valleys in the mountains between the San Pedro and the Sonoita, Sonora (in flower and with young fruit); and on hills between the Barbocomori and Santa Cruz (with ripe pods); Sept. (1963.) — Plant a foot high. Lobes of the calyx elongated-subulate, a little shorter than the corolla. Legumes 2 to $2\frac{1}{2}$ inches long, a line and a half wide, straight or nearly so, perfectly glabrous in the specimens from the first-named locality; but minutely pubescent in the others. The latter likewise have smaller leaflets (only half an inch in length) with a shorter mucro, and the soft silky pubescence deciduous, except that of the margins and midrib. — The genus is a yet unpublished one of Mr. Bentham, equivalent to *Tephrosia* § *Craccoides* of De Candolle, including also *T. Caribæa*, &c.; but is nearer *Coursetia* than *Tephrosia*.

TEPHROSIA LEUCANTHA, *H. B. K. Nov. Gen. & Sp.* 6. p. 460. t. 577? Hill-sides between Barbocomori and Santa Cruz, Sonora; Sept. (1964.) — The stems are one or two feet high, from a thickened root, terminated by a single short raceme, which bears ripe pods only. The foliage, calyx, &c. accord very well with Kunth's figure. The legumes are widely spreading, $1\frac{1}{2}$ to 2 inches long, 2 lines wide, linear, straight or nearly so, pointed, thickly clothed with a yellowish villous tomentum. Seeds 8–10. The flowers not seen.

T. LEOCARPA (sp. nov.): caule erecto subsimplici petiolis calycibusque pube minuta appressa cinereis; stipulis setaceis; foliolis 8–10-jugis cum impari linear-oblongis obtusis mucronatis supra glabris subtus sericeis juventute canescentibus; pedunculis terminalibus et in axillis summis brevibus plurifloris; calycis lobis triangulari-subulatis tubo longioribus; legumine recto 10–14-spermo glaberrimo. — On the Sonoita, near Deserted Rancho, Sonora; Sept. (1965.) — Stems a foot or more in height, rather slender, very numerous from a thick and lignescent root. Leaflets 9 to 14 lines long, 3 lines wide, often a little narrowed towards the base, thickish. Peduncle, with the rhachis, 2 to 4 inches long. Flowers not seen. Un-ripe pods linear, about 2 inches long, 3 lines wide, flat, very smooth, not stipitate.

T. TENELLA (sp. nov.): annua, glabella; caule ramoso spithamæo; stipulis setaceis; foliolis 1–3-jugis cum impari linearibus obtusis membranaceis subtus (sub lente) parce striguloso-puberulis; racemis oppositifoliis paucifloris; pedicellis plerisque geminis paribus remotis, infimis ad basim pedunculo folio bracteatis; laciniis calycis subulatis, posticis ad medium coalitis; staminibus diadelphis; legumine rectiusculo glabello. — Pebbly beds of mountain torrents, near the San Pedro, Sonora; Sept. (1966.) — Stems slender, branched from the base, erect or diffuse. Leaflets mostly 3 or 5, an inch long, $1\frac{1}{2}$ to 3 lines wide, mucronate, thin, green both sides, the straight veins not conspicuous underneath. Peduncle 3–5 inches long, with an internode of one to three inches between the lowest pair of pedicels (which are as if axillary) and the next pair. Bracts minute. Flowers 3 lines long, simple. Legume spreading, 12 to 16 lines long, 2 lines wide, 6–7-seeded.

GLYCIRRHIZA LEPIDOTA, *Nutt.; Gray, Pl. Wright.* p. 50. *G. glutinosa*, *Nutt.* Along the Rio Grande above and below El Paso. Also on the Mimbres; July, Aug. (1967.)

INDIGOFERA SPHÆROCARPA (sp. nov.): frutescens, glabella; caulibus erectis foliosissimis; foliis pinnatis; petioli brevi; foliolis 7-8-jugis cum impari lineari-oblongis basi attenuatis apice obtusis retusisve supra glabris; racemis multifloris; leguminibus ovato-globosis monospermis. — Bed of a mountain torrent, near Santa Cruz, Sonora; Sept. (968.) — "Stems numerous from the root, 2-4 feet high." Leaflets 5 or 6 lines long, 2 lines wide, very glabrous above, minutely and sparsely strigulose and cinereous underneath. Stipules none, or a mere gland. Flowers not seen; the specimens being entirely in fruit. Fruiting racemes 4 or 5 inches long, bearing a great number of globular and nearly glabrous legumes, which are only a line and a half long, on pedicels of nearly the same length, tardily if at all dehiscent. Seed entirely solitary, globose.

I. LEPTOSEPALA, *Nutt.*; var. cinereo-argentata. Pebbly bed of a tributary of the Pecos; June.

PRORALEA CUSPIDATA, *Pursh. Fl. 2. p. 741.* Rocky hills of the San Pedro, Western Texas; May.

P. ESCULENTA, *Pursh.* Stony hills of the San Felipe, Western Texas; June.

P. FLORIBUNDA, *Nutt. in Torr. & Gray, Fl. 1. p. 300.* Sides of mountains at the copper mines, New Mexico; Oct. (969.)

EYSENHARDTIA AMORPHOIDES, *H. B. K.?* var. ORTHOCARPA: leguminibus rectis 6-7 lin. longis pendulis; foliolis majoribus 6-8 lin. longis crebre glanduloso-punctatis. — Mountains at Guadalupe Pass, between San Bernardino, Sonora, and the copper mines, Sept.; in fruit. (980.) — The leaflets are still larger than those of Wright's No. 116, of which the fruit is not known. The legumes are nearly twice as large as those of Lindheimer's No. 374 and Coulter's and Gregg's Mexican specimens, in which they are ascending on the rhachis and falcate-incurved; in the present plant they are linear, straight, and all deflexed. If further specimens do not tend to unite them, the present plant must be distinguished specifically. But Schauer describes the fruit of his Mexican specimens in Aschenborn's collection as lanceolate, a little arcuate at the apex, 7 lines long and 2 lines wide.

DALEA LANATA, *Spreng.; Gray, Pl. Wright. p. 47.* Sandy soil, on the Rio Grande; very common; July. (981.)

D. LACHNOSTACHYS, *Gray, Pl. Wright. p. 46.* Hill-sides, between the Barbocomori and Santa Cruz, Sonora; Sept. (982.) — Root tapering, apparently perennial. Stems 6 to 12 inches high, with spreading branches.

D. NANA, *Torr. in Pl. Fendl. p. 31.* Hills on the Pecos; June. (1351.)

D. POGONATHERA, *Gray, Pl. Fendl. p. 31, & Pl. Wright. p. 48.* Stony hills near El Paso, May; and at Comanche Spring, Texas, June. (1352.)

D. LASIATHERA, *Gray, Pl. Wright. p. 48.* Stony prairies, Western Texas; May. Valley of the Limpio; June. (983.)

D. FRUTESCENS; var. spicis pl. m. elongatis densifloris, *Gray, l. c. p. 46.* Rocky hills on the Pecos; June. — Also with short and dense spikes, on Live Oak Creek. (1353.)

D. FORMOSA, *Torr.; Gray, l. c.* Stony prairies on San Felipe Creek; May. Sandy hills on the Rio Grande, New Mexico; March, Oct. (984.)

PL. WR. — 6.

D. ALOPECUROIDES, *Linn.*; *Gray, l. c.* Hill-sides at the copper mines, New Mexico; and on the borders of Sonora. (985.)

D. WISLIZENI, *Gray, Pl. Fendl. p. 32*; var. *foliolis minus sericeis obtusis supra glabellis subtus tantum cinereo-pilosis (caulibus frutescentibus e basi ramosis).* — Mountain ravines near Santa Cruz, Sonora, Sept. (986.) — Except in the points mentioned, the specimens accord with *D. Wislizeni*. They have the same gland-like setulæ on the calyx-lobes, and the solitary gland near the tip of the petals, the wings excepted. The corolla is bright rose-purple in the specimens. The stems are woody towards the base, erect or ascending, 2 or 3 feet high. Stipules subulate.

D. ARGYRÆA, *Gray, Pl. Wright. p. 47.* On the San Pedro or Devil's River, Western Texas; July.

D. SCOPARIA, *Gray, Pl. Fendl. p. 32, & Pl. Wright. p. 47.* Sand-hills near San Elizario, New Mexico; June. (1354.)

D. ALBIFLORA (sp. nov.): cinereo-pubescens; caulibus erectis e radice perenni vix glandulosis; foliis juvenis sericeo-canescens; foliolis 10–15-jugis cum impari oblongis obtusis supra glabellis subtus parce glanduloso-punctatis; petiolo communi brevissimo; stipulis minimis subulatis; spicis cylindricis densis; calycibus cum bracteis subulatis æquilongis albo-villosis, dentibus subulatis tubo paullo brevioribus; petalis albis æquilongis subconformibus. — Hill-sides on the San Pedro and Barbocomori, Sonora; Sept. (987.) — Stems one or two feet high, simple, or sparingly branched above. Leaves 1–2 inches long. Leaflets crowded, 2 or 3 lines long, more or less pubescent beneath with very fine silky hairs. Spikes silvery-canescens before the flowers expand, one or two inches long, very dense. Bracts caducous. Flowers 3 lines long; the lamina of the pure white petals a line and a half long, of the vexillum round-oval, of the other petals oval-oblong. Anthers yellow, tipped with a gland. Ovary and base of the style villous. — The plant has somewhat the general aspect of *D. alopecuroides* or of *Petalostemon phleoides*.

D. ALBIFLORA; var. *humilis*; foliolis spicisque angustioribus. — On mountains near Santa Cruz; Sept. (988.)

D. LÆVIGATA (sp. nov.): caulibus e radice crassa perenni pluribus erectis striatis foliisque glaberrimis lævibus; foliolis 17–20-jugis cum impari lineari-oblongis subacutis canaliculatis (sesquilineam longis) subtus parce punctatis; spicis cylindraceis densis; bracteis ovatis acuminatissimis parce glandulosis margine præsertim arachnoideo-villosis florem subæquantibus; calyce villosissimo, dentibus triangulari-subulatis tubo brevioribus; petalis pallide flavis subæquilongis. — On the Chiricahui Mountains, and on the Barbocomori, Sonora; Aug., Sept. (989.) — Stems about 2 feet high from a lignescent root, rather strict and slender, more or less branched above, sharply striate-angled, perfectly glabrous and smooth, leafy; the branches sparingly if at all punctate. Stipules minute, subulate. Leaves 1 to 2 inches long, pale green. Leaflets thickish, veinless except the obscure midrib, perfectly glabrous as well as the rhachis, and sparingly punctate underneath. Spikes about an inch long and a quarter of an inch thick, silky-villous. Bracts deciduous only with the fruiting calyx, greenish, 2 lines long. Corolla small; the lamina of the petals a line and a half long; vexillum orbicular; the others oblong. Ovary and base of the style silky-villous.

D. BRACHYSTACHYS (sp. nov.): annua, humilis; caulibus e basi ramosis diffusis foliisque glaberrimis; foliolis 5–11 cuneato-oblongis vel sublinearibus emarginatis subtus rhachique grosse glandulosis; spicis breviter pedunculatis globosis demum oblongis densifloris; bracteis ovatis acuminatis concavis grosse glandulosis margine haud scarioso villosa-ciliatis calyce paullo brevioribus subpersistentibus; calyce sericeo-villosissimo, dentibus setaceo-subulatis tubo sublongioribus corolla flava paullo brevioribus; petalis inæqualibus. — Valleys, in alluvial soil, between the San Pedro and the Sonoita, Sonora; Sept. (1990.) — Stems a span high, ascending, slender, sparingly glandular-punctate. Stipules subulate, minute, rather persistent. Leaflets 4 to 6 lines long, much like those of *D. pogonathera* and *D. lasiathera*. Spikes 3 lines in diameter, in fruit only twice that length, very densely flowered. Bracts greenish, less boat-shaped than those of the above-mentioned species, and the margins not scarious, but more or less villous-ciliate, otherwise glabrous, or the upper ones villous next the base. Calyx 2 lines long; the teeth very plumose-villous, equalling the small vexillum and the wings. Keel-petals more than twice the size of the others, $2\frac{1}{2}$ lines long, including the claws. Ovary villous with white hairs like those of the calyx.

D. POLYGONOIDES (sp. nov.): annua, humilis; caule ramosissimo gracili foliisque glaberrimis; foliolis 3–9 lato-linearibus emarginatis basi acutis glaucescentibus rariter glanduloso-punctatis; pedunculis gracilibus; spicis oblongis vel cylindricis densifloris; bracteis ovatis seu obovatis acuminatissimis membranaceis grosse-glandulosis villosa-ciliatis calycem æquantibus persistentibus; calyce sericeo-villosissimo, dentibus subulato-setaceis tubo æquilongis; petalis subæquilongis albidis. — Pebble bed of mountain torrents, near the copper mines, New Mexico; Oct., in fruit. (1991.) — Stems a span high, much branched; the branches divergent, slender, sparingly glandular-dotted. Stipules subulate, minute, deciduous. Petiole with the rhachis half an inch long. Leaflets 4 to 6 lines long, a line and a half wide, veinless, apparently a little succulent, livid, the upper surface often purplish; the glands few and rather small. Spikes half an inch to an inch long, 2 to 3 lines thick, dense, livid. Bracts a line and a half long, dotted with a few large glands, wholly persistent, even after the fruited calyces have fallen, glabrous, except the villous margins and sometimes the base; the lowest broadly ovate, the upper obovate and tapering to the base. The specimens are nearly all in fruit; the flowers found at the apex of the spikes bear petals, which are only a line in length, and white or whitish. Legume villous.

D. FILIFORMIS (sp. nov.): annua; caule exili erecto laxè ramoso foliisque glaberrimis; foliolis 3 digitatis (raro 5 pinnatis) filiformibus parce punctatis; pedunculis filiformibus; spicis capitatis demum cylindræis densifloris; bracteis ovatis acutis carinatis ciliatis vix glandulosis calyce brevioribus caducis; dentibus calycis sericeo-villosissimi subulatis tubo æqualibus; petalis subæquilongis (purpureis vel roseis). — Hill-sides near the copper mines, New Mexico; Aug., in flower; Oct., in fruit. (1992.) — The most slender of all the species known to me; the stems from 4 to 10 inches high, at length copiously and paniculately branched; the filiform branches spreading. Stipules minute, setaceous. Leaflets 6 to 12 lines long, usually longer

but scarcely thicker than the petiole, channelled on the upper side; when three, manifestly digitate; when five, the additional pair inserted one or two lines lower down. Peduncles one or two inches long. Spike silky-villous, 2 or 3 lines in diameter in flower; in fruit becoming half an inch long. Calyx a line and a half long. Lamina of the petals half a line long; vexillum round-cordate; the wings very oblique, nearly the length of the keel. Ovary villous. — Cultivated, from seeds communicated by Mr. Wright, in the Cambridge Botanic Garden, the much-branched stems attain a foot or more in height.

D. WRIGHTII, *Gray, Pl. Wright. p. 49.* Stony hills near El Paso; May. (1355.) — “Flowers yellow, turning purplish.”

D. JAMESII, *Torr. & Gray, Fl. 1. p. 308; Gray, Pl. Wright. p. 49.* Stony hills on the Pecos and the Limpio; June. (993.)

D. CALYCOSA (sp. nov.): suffruticulosa, cinereo-puberula; caulibus ramosissimis decumbentibus; foliolis 7–14-jugis cum impari obovatis ovalibusve retusis juxta incisuram unipunctatis supra glabris subtus nunc glabratis; spicis breviter pedunculatis oblongis modice densifloris; floribus post anthesin recurvis; bracteis lanceolatis calyce brevioribus caducis; dentibus calycis obliqui villosi lato-lanceolatis tubo duplo longioribus; petalis albo-purpureis, vexillo reniformi alisque carina dimidio brevioribus. — Hills near the Deserted Rancho, on the San Pedro, Sonora; Sept. (994.) — Stems a span long, slender, from a suffrutescent base. Stipules subulate. Leaflets 2 or 3 lines long, minutely and often sparsely strigose-pubescent underneath. Spikes 1 to 2 inches long, with the flowers contiguous but not compact. Calyx campanulate, oblique, 3 lines long, sparsely villous; the short tube glandular-dotted between the ribs; the lobes remarkably long and large for the genus, greenish, about the length of the vexillum and oblique wings. Keel (2–3 lines long) and wings apparently white marked with rose-purple, the vexillum bright purple. Legume orbicular, flat, apparently 2-valved, one-seeded. Ovules 2.*

* The species of *Dalea* described or enumerated in this and the former memoir, and in *Plantæ Fendlerianæ* and *Plantæ Lindheimerianæ*, are so numerous as to render an artificial conspectus convenient. The species may be disposed as follows: —

* *Calyx profunde quinquefidus; lobis lato-lanceolatis subfoliaceis.*

D. CALYCOSA. *Gr*

* * *Calyx villosissimus, dentibus setaceis vel subulatis.*

+ Fruticosæ, glabræ, multijugatæ; spicis paucifloris.

D. FORMOSA. *Torr*

+ + Herbacæ, glabræ; foliis 5–6-jugis; spicis multifloris.

Perennes. Bracteæ cymbæformes, scarioso-marginatæ, glaberrimæ, persistentes.

Spica laxiflora, plumosa. Corolla flava. Stamina 9.

D. LAXIFLORA. *Pursh*

Spica densiflora. Corolla purpurea.

Calycis dentes setacei, plumosissimi, tubo longiores.

D. POGONATHERA. *Gr*

Calycis dentes subulati, villosissimi, tubo breviores.

D. LASIATHERA. *Gr*

Annui. Bracteæ villosa-ciliatæ, immarginatæ.

Bracteæ subpersistentes: spica globosa vel oblonga: corolla flava.

D. BRACHYSTACHYS. *Gr*

Bracteæ persistentes: spica cylindrica: corolla albida.

D. POLYGONOIDES. *Gr*

Bracteæ caducæ: foliola filiformia: corolla purpurea.

D. FILIFORMIS. *Gr*

PETALOSTEMON EXILE (sp. nov.): annum, glabrum; caule erecto tenui simplici vel simpliciter ramoso; foliolis 3 raro 5 linearibus mucronato-apiculatis parce punctatis, impari lateralibus longiore; spica longe pedunculata cylindrica densa; bracteis ovatis subulato-acuminatis subvillosis floribus paullo brevioribus persistentibus; calyce villosissimo, dentibus setaceo-subulatis tubo æquilongis petala rosea subæquantibus. — Hill-sides, near Santa Cruz, Sonora, Sept.; also near the copper mines, New Mexico, Oct. (995.) — Stems 6 to 14 inches high, very slender. Lateral leaflets 4 to 6 lines, the terminal one 9–18 lines in length, a line or less in width, plane, glabrous, or with a few minute hairs. Spike an inch or an inch and a half long in fruit, 3 lines thick; the lowest bracts broader and less subulate-pointed than the upper, and nearly glabrous; the others are arachnoid-villous, especially the margins. Calyx 2 lines long. Petals very small, oval, nearly similar. Stamens 5. — The genus Dalea scarcely occurs east of the Mississippi; and even in Arkansas and Eastern Texas there are ten Petalostemons to five Daleas. But as we proceed westward and southward, the former genus disappears, and the species of the latter largely increase. Petalostemon violaceum, the most widely diffused species, alone reaches the northern frontiers of New Mexico; the present species comes from farther south, and is the only one known to occur in Mexico.

MELILOTUS PARVIFLORA, Desf. Near El Paso, and in Sonora; naturalized. (996.)

MEDICAGO SATIVA, Linn. Fields, El Paso and San Elisario; introduced. (1356.)

TRIFOLIUM INVOLUCRATUM, Willd.; Benth. Pl. Hartw. no. 54; Gray, Pl. Fendl. p. 33. Valley of the Sierra de los Animas, New Mexico, on the borders of springs; Oct. (997.) — The margin of the leaflets is fringed with as long setaceous teeth as in any form of T. fimbriatum, Lindl.; but the calyx-teeth are much longer than the tube.

+ + + Herbaceæ, glabræ; foliis multijugis; spicis elongatis alopecuroideis.

Perennis, microphylla: corolla flava.

Annua: corolla alba roseo tincta.

+ + + + Herbaceæ vel suffruticosæ, pubescentes, tomentosæ, vel sericeæ.

Spica densissima, recta; floribus albis.

Spica densissima, crassa, villosissima; floribus flavis vel purpureis.

Foliola appresso-sericea, 2–4-juga, raro pinnato-trifoliolata.

Spica longissime pedunculata, e caule virgato erecto.

Spica breviter pedunculata: caules ramosi: foliola oblonga obtusa.

Spica sessilis: foliola lanceolata acuta.

Foliola appresso-sericea, tria, digitata!

Foliola laxè villosa, 4–8-juga.

Glanduloso-tuberculata: spica crassa, bracteis pubescentibus.

Villoso-canescens, humilis; bracteis villosissimis.

Spica laxiuscula; corolla pulchre purpurea.

Tomentosa; caulibus diffusis ramosissimis.

Sericea; caulibus strictis simpliciusculis.

* * * Calyx pubescens vel canescens, dentibus brevibus. (Frutescentes.)

Foliola 7–13, sericeo-argentea: corolla flavo-purpurea.

Foliola 5–7, glabella: corolla alba.

Foliola 1–3, linearia: corolla pulchre violacea.

* * * * Calyx nisi ad margines glaber; dentibus brevibus.

D. LEVIGATA. Gr.

D. ALOPECUROIDES. Willd. Linn.

D. ALBIFLORA. Gr.

D. AUREA. Nutt.

D. NANA. Torr.

D. WRIGHTII. Gr.

D. JAMESII. Torr. & Gr.

D. LACHNOSTACHYS. Gr.

D. MOLLIS. Benth.

D. LANATA. Gray.

D. WISLIZENI. Gr.

D. ARGYRÆA. Gr.

D. LEUCOSTACHYS. Gr.

D. SCOPARIA. Gr.

D. FRUTESCENS. Gr.

HOSACKIA PURSHIANA, *Benth.*; *Torr. & Gray, Fl. 1. p. 327.* Valley of Sonoita Creek, Sonora; Sept. (998.)

H. PUBERULA, *Benth. Pl. Hartw. p. 305; Gray, Pl. Wright. p. 50.* Hills near the San Pedro, Sonora; Sept. Also on Rock Creek, towards the head of the Limpio; June. (999.)

H. PUBERULA; var. *nana*, diffusa, magis cinerea; foliolis brevioribus et latioribus. — Organ Mountains, northeast of El Paso, April; in flower and fruit. (1357.)

H. WRIGHTII (sp. nov.): sericeo-pubescent; caulibus e radice perenni erectis rigidis ramosissimis; stipulis nigris glandulæformibus; petiolo vix ullo; foliolis 3–5 linearibus imisve oblongis; pedunculis unifloris folio brevioribus, superioribus brevissimis; bractea unifoliolata lineari; calycis dentibus setaceo-subulatis tubo oblongo-campanulato æquilongis corolla (flava purpureo tincta) multo brevioribus.

— Stony hills at the copper mines, New Mexico, Aug. (1000.) — Plant about a foot high, herbaceous; the young branches and foliage silvery-pubescent, when old glabrate. Petioles of the lower leaves barely half a line long; the upper almost none. Leaflets 5 to 7 lines long, half a line wide, or towards the base of the stem a line and a half wide. Lower peduncles 6 to 8 lines long, the upper one to three lines long, rarely 2-flowered. Calyx minutely silky-pubescent, the tube 2 to 2½ lines long. Corolla 6 lines long, not counting the included claws. Legume over an inch long, straight, acute, clothed with the same pubescence as the calyx. — Allied to the preceding species; from which it is distinguished by its more upright and bushy growth, its nearly sessile leaflets, short peduncles, and larger flowers. From *H. rigida*, *Benth.*, its narrow leaflets, shorter calyx-tube with longer teeth, and short peduncles seem abundantly to distinguish it.

ASTRAGALUS MOLLISSIMUS, *Torr. ; Gray, Pl. Wright. p. 53.* Prairies of Escondido Creek, between the Pecos and the Limpio; June, in fruit.

A. BIGELOVII (sp. nov.): multiceps, acaulescens, undique sericeo-villosissimus; stipulis triangulari-subulatis basi petioli adnatis; foliolis 9–12-jugis ovalibus seu obovato-oblongis; pedunculis scapiformibus folia superantibus, fructiferis recurvis vel humifusis; spica cylindrica confertiflora; tubo calycis villosissimi cylindrico dentibus subulatis triplo longiore; corolla purpurea; leguminibus ovatis apiculato-acuminatis incurvis lanosissimis complete bilocularibus suturis parum sulcatis, loculis polyspermis. — On the Organ Mountains northeast of El Paso; April 30th; chiefly in fruit. (1358.) — Plant a span or more in height from a perennial lignescent root; the leaves, scapes, &c. thickly clothed with a canescent wool, which is rather villous than silky. Leaflets 5 to 8 lines in length. Spike 3 or 4 inches long, many-flowered, compact. Flowers nearly sessile, 7–8 lines long. Legumes half an inch long, very densely woolly, as well as the scariously marcescent calyx, coriaceous, the cross-section orbicular. — Manifestly allied to *A. mollissimus*, and with the same habit; but more strictly acaulescent, more villous, and especially distinguished by its turgid and very woolly (instead of glabrous) pods, the sutures not introflexed. I dedicate it to Dr. J. M. Bigelow, the physician of the Boundary Commission, to whom, with Mr. Wright, we are indebted for the discovery of this striking species.

A. NUTTALLIANUS, DC.; var. pube strigulosa subcanescens; leguminibus arcuatis nunc striguloso-hispidulis (ut in var. trichocarpo) nunc cum ovario glabris. — Stony hills near El Paso; March, April. (1359.) — Plant about as large as Texan and Arkansan specimens, but much more strigose-cinereous.

A. NUTTALLIANUS, var. pumilus, etc. (*Gray, Pl. Wright. p. 52*); 2–3-pollicaris, cæt. ut in præcedente; leguminibus sæpe cinereo-hispidulis. — Dry hills on the Rio Blanco, Piedra Pinta, and Pecos. Also at El Paso, and on Lake Gusman, Chihuahua; April, May. (1001.) Some specimens with shorter pods pass into the next.

A. NUTTALLIANUS? var. pumilus, strigoso-canescens; caulibus diffusis; leguminibus brevioribus. — Near Lake Santa Maria, Chihuahua; April. (1360.)*

A. VACCARUM (sp. nov.): perennis, strigoso-puberulus; caulibus adscendentibus gracilibus; stipulis lanceolatis basi imo petiolo adnatis; foliolis 5–8-jugis subsparsis lato-linearibus obtusis mucronulatis supra glabris; pedunculis folio longioribus; racemis multifloris densis; floribus brevissime pedicellatis mox deflexis; calycis dentibus subulatis tubo campanulato subæquilongis; corolla incurva ochroleuca; leguminibus haud stipitatis lineari-oblongis arcuatis puberulis dorso lato-sulcatis (sectione transversali obcordata) bilocularibus oligospermis. — Ojo de Vaca, west of the copper mines, New Mexico; Aug. (1002.) — Stems 1 or 2 feet high, branched from the base, weak. Leaflets 6–8 lines long, a line and a half or less in width, the pairs rather distant. Peduncles 3–5, the spicate raceme one to two, inches in length. Bracts subulate, persistent, as long as the calyx. Flowers only 2 lines long, smaller than those of *A. gracilis*, *Nutt.*, and the corolla more incurved. Legume 4 lines long, a line in diameter; the cells 3–5-seeded. — This species resembles *A. Hartwegi*, *Benth.*, more than any other known to me; but the incurved flowers are only half as large, the stipules and leaflets are narrower, the latter fewer, the racemes much shorter, &c.

A. HUMISTRATUS (sp. nov.): subsericeus; caulibus e basi suffrutescente ramosissimis prostratis foliosis; stipulis inter se coalitis oppositifoliis; petiolo brevissimo; foliolis 7–9-jugis lineari-oblongis acutis supra glabris subtus pilis laxè appressis hirsuto-sericeis; pedunculis folium æquantibus; racemo cylindræo subdensifloro;

* The following species was found near the copper mines by Dr. Bigelow, early in the season. It is allied to *Astragalus leptopus*, *Benth. ined.*, in Coulter's Mexican collection; but has fewer and retuse leaflets, smaller flowers, and smaller pods, which are obtuse at each end and not stipitate.

ASTRAGALUS COBRENSIS (sp. nov.): striguloso-puberulus; caule humili gracili; stipulis triangulatis a petiolo modice elongato liberis; foliolis 7–10-jugis obovatis oblongisve retusis supra glabris; pedunculo folium superante plurifloro; calyce pedicello paullo longiore, dentibus subulatis tubo æquilongis; leguminibus haud stipitatis oblongis utrinque obtusis obcompressis glabellis dorso late concavis bilocularibus polyspermis, sutura ventrali extus prominente. — Near the *Cobre* or copper mines (Santa Rita del Cobre), New Mexico; April or May. — Stems slender, a span high; the root wanting in the specimen. Petioles half an inch or more in length to the lowest pinnæ. Leaflets 3 lines long, rather fleshy, strigulose-pubescent when young, the upper surface early glabrate and the lower at length nearly so. Racemes loose, 10–15-flowered; the flowers spreading, barely 3 lines long. Bracts shorter than the pedicels. Calyx pubescent with dark hairs. Corolla purple. Legumes pendulous, half an inch long, 2 to 2½ lines wide (contrary to the partition); the ventral suture salient; the dorsal face broadly concave; the partition extending quite to the ventral suture, but not coherent with it.

calycis villosi dentibus lineari-subulatis tubo campanulato æquilongis; corollæ violaceæ carina apice angustata producta; leguminibus lineari-oblongis arcuatis pubentibus sutura dorsali introflexa semibilocularibus polyspermis. — Pebbly bed of a stream, and on hills under pine-trees, near the copper mines, New Mexico; Aug. (1003.) — Root perpendicular, penetrating deeply. Stems a foot or more in length, canescently strigose-hirsute, leafy throughout. Stipules scarious, 3 lines long, hairy, ovate-lanceolate, acuminate; the upper united to the middle, the lower almost to their summits. Leaves $1\frac{1}{2}$ to 2 inches long. Leaflets 5 or 6 lines long, one or two lines wide, linear or oblong, silky-hirsute (like the peduncles, &c.), and when young silky-canescant, especially beneath, with rather long and loosely-appressed straight hairs. Raceme one or two inches long, 12–20-flowered; the flowers at first contiguous, but not densely crowded, 4 or 5 lines long, showy. Bracts rather persistent, lanceolate-subulate, villous, as long as the calyx. Calyx-tube a line and a half long. Corolla deep violet in the dried specimens; the keel tapering and somewhat prolonged at the apex, but obtuse. Ovules about 24. Immature legume 8 or 9 lines long, with a broad and shallow dorsal groove. Mature pods not seen.

A. (PHACA) FENDLERI: parce striguloso-puberulus; caule adscendente gracili flexuoso e radice perenni; stipulis triangulato-subulatis; foliolis 7–11-jugis oblongo-linearibus oblongisve obtusis nunc retusis (6–10 lin. longis); racemis longe pedunculatis patentibus 10–20-floris laxis folium superantibus; floribus purpureis patulis; calycis nigro-puberuli dentibus subulatis tubo brevioribus; leguminibus oblongis inflatis chartaceis glabellis apiculatis facie ventrali rectiusculis dorsali gibbosis polyspermis. — *Phaca Fendleri*, Gray, *Pl. Fendl.* p. 36. (1004.) — Pine hills, from the Mimbres to the copper mines, New Mexico; Oct. — The specimens are entirely in ripe fruit, and, except that they are larger, correspond with Fendler's No. 158 (which was likewise gathered in fruit), having shorter and broader, oblong or elliptical, and often emarginate leaflets; but some specimens make a near approach to Fendler's No. 157 (flowering specimens), to which they may be safely united. The ripe pods are from 9 to 12 lines long, and 4 or 5 in diameter. — I defer to Mr. Bentham in uniting *Phaca* to the vast genus *Astragalus*.

A. (PHACA) SONORÆ (sp. nov.): argenteo-sericeus, humilis; caulibus decumbentibus gracilibus e radice perenni; stipulis ovatis scariosis, inferioribus inter se folio opposito pl. m. coalitis; foliolis 7–8-jugis anguste oblongis lanceolatisve acutatis utrinque sericeis; pedunculis folio mox longioribus; racemo 8–12-floro; calycis sericei dentibus setaceis tubo æquilongis; corolla purpurea; leguminibus lunatis turgidis chartaceis puberulis, suturis haud introflexis. — Mountain valleys, between the San Pedro and the Sonoita, Sonora; Sept. (1005.) — Stems a span or more in length, leafy. Leaflets 3 or 4 lines long, canescently silky and silvery beneath, and hardly less so above. Peduncle 2 or 3 inches long. Flowers 4 to 5 lines long, approximate. Bracts a little longer than the very short pedicels. Legumes barely half an inch long, 2 to 3 lines in diameter, falcate-incurved, pointed, turgid, but somewhat compressed, the upper suture acute. Seeds 8 or 10. — This bears some resemblance to A. (*Phaca*) *gracilentus*, No. 159 of Fendler's collection: but that is not silky, and has larger and nearly straight pods, smaller and paler flowers, &c.

A. (PHACA) TRIFLORUS. *Phaca triflora*, DC. *Astrag.* t. 1. & *Prodr.* 2. p. 273. *P. Candolliana*, H. B. K. *Nov. Gen. & Sp.* 6. p. 495. t. 586. Sandy banks of the Rio Grande below El Paso; April, June. (1361.) (Chihuahua, &c., Gregg. Mexico, Coulter.) — The specimens accord very well with the figures and description of Humboldt's plant, from the volcano of Jorullo, which is in Mexico, not in Peru, as is inadvertently stated by De Candolle. The name is scarcely allowable; since the peduncle is sometimes as much as 15-flowered. But there is a recent *Astragalus Candollianus*. *Phaca annua*, Geyer, apparently differs from this only in its incurved and sharp-pointed pods. Should they be joined, this later name might be adopted. — There are two forms in the collection of 1852, one dwarf or early, with narrow leaflets, the root plainly annual; the other (also from near Lake Gusman) larger and smoother, with obovate leaflets.

A. (PHACA) TEPHRODES (sp. nov.): villosa-canescens; caule brevi e radice bienni? stipulis triangulatis scariosis fere liberis; foliolis 7–9-jugis oblongis seu ovalibus supra nunc subglabratis; pedunculo plurifloro foliis brevioribus; floribus subsessilibus; calycis tomentosi dentibus subulatis tubo campanulato dimidio brevioribus; "corolla purpurea"; leguminibus oblongis acuto-apiculatis arcuatis turgidis cinereis chartaceis, suturis haud introflexis extus prominulis. — Plains at the base of the Organ Mountains, New Mexico; April. — The single specimen gathered is not in good condition, although it has both flowers and full-grown fruit. The stems are only an inch long; but they doubtless elongate later in the season; they are clothed, like the whole plant, with a cinereous rather hirsute-villous pubescence. Leaves crowded; the leaflets 4 or 5 lines long. Spike an inch long, rather dense. Flowers 4 or 5 lines in length: the corolla pale, but said to be purple in Mr. Wright's notes. Legume half an inch long, not stipitate, the transverse section probably orbicular or nearly so, and 2 lines broad in the living plant.

OXYTROPIS LAMBERTI, Pursh, var. Gray, *Pl. Wright.* p. 53. Sides of ravines between the Mimbres and the copper mines, New Mexico, Oct.; in flower and fruit. (1006.) — Specimens even larger than Wright's No. 180; the scapes sometimes a foot high; and the leaflets 3 or 4 lines wide.

CHÆTOCALYX WISLIZENI (Gray, *Pl. Wright.* p. 51): adde char.: lomento moniliformi, 3–4-articulato, articulis oblongis compressis faciebus trinervatis. — Open prairies on branches of the San Pedro, east of Santa Cruz, Sonora, Sept.; in fruit. (1007.) — A few scattered and minute bristles may be seen on the fruiting calyx. Legumes an inch to an inch and a half in length, subsessile in the calyx, more or less contracted at the joints, which break apart at maturity; the articles are 3 or 4, oval or oblong, truncate at the ends, compressed, somewhat margined, one-seeded, 3–5 lines long, coriaceous, puberulent, their faces marked with three subparallel nerves, and minutely reticulated between the nerves; the terminal joint wholly, or its sterile apex, somewhat foliaceous and dilated. The cells are lined with woolly hairs. Seeds oblong, compressed. Radicle incurved. — The fruit of the original species of *Chætocalyx*, DC. is still unknown. That of the present plant is truly *Hedysareous*. It differs from the character of *Rhadinocarpus*, Vogel, (which Mr.

Bentham has suggested to me as probably a *Chætocalyx*,) chiefly in the distinctly flattened loment.

ZORNIA RETICULATA, *Smith*; *DC. Prodr.* 2. p. 316. Hills near Santa Cruz, Sonora; Sept. (1008.)—The short aculei of the loment are not smooth, but retrorsely scabrous under a lens.

DESMODIUM GRAMINEUM (sp. nov.): glaberrimum; caulibus e radice perenni erectis gracillimis; stipulis minutis subulatis; foliis omnibus unifoliolatis; foliolo anguste lineari prælongo subtus nervato-venoso; racemis paniculatis; lomento 3–4-articulato breviter stipitato, articulis ovalibus. — Crevices of rocks on the Sonoita, near Deserted Rancho, Sonora; Sept. (1009.)—A unifoliolate species of the section *Chalarium*, remarkable for its long and slender grass-like leaflets. These are from three to five or even six inches long, and from one to two, the very largest three, lines wide, membranaceous in texture, and perfectly glabrous, like the rest of the plant. The slender stems are one or two feet high. Bracts minute. Flowers small. Articles of the loment $1\frac{1}{2}$ to 2 lines long, much deeper separated than in *D. linearifolium*.

D. ANNUUM (sp. nov.): pilosulum; caule tenello e radice annua erecto subsimplici; stipulis stipellisque setaceis cum petiolo longiusculo semper unifoliolato pilosis; foliolo ovali membranaceo concolore ciliato; racemis paucifloris; lomento deflexo vix stipitato, articulis 4–5 orbiculatis ciliolatis medio adnexis. — Sonora, with the preceding and the succeeding. (1009^a.)—Stem 4 to 8 inches high, slender, erect or ascending, 8–10-leaved. Leaves all unifoliolate, very thin, oval or ovate-oblong, or the uppermost narrowly oblong, obtuse at both ends, not in the least inclined to be cordate; the larger $1\frac{1}{2}$ inches long and an inch wide; the earlier ones much smaller; the primordial ones opposite. Pedicels 3 to 5 lines long. Flower 2 lines long. Loments 6 to 9 lines long, straight; the articles when young inclined to twist or infold, glabrate, or at length glabrous, except the margin. — This is wholly distinct from the perennial *D. Wrightii*, and is a smaller and more delicate plant.

D. EXIGUUM (sp. nov.): annuum, puberulum; caule tenello erecto ramoso; stipulis bracteisque setaceis; foliis plerisque unifoliolatis, foliolo inferiorum deltoideo vel rhomboideo summorum lineari, paucis intermediis nunc trifoliolatis foliolis linearibus vel lanceolatis; racemis filiformibus; lomento 2–3-articulato longiuscule stipitato, articulis rhombeis scabris. — Mountain ravines, on the Sonoita, Sonora; Sept. (1010.)—Stem a span high, diffusely branched. Leaflets hirtello-puberulent, not reticulated, obtuse; those of the lowest leaves 3 to 5 lines long and 5 or 6 broad; the next longer, and often deltoid-oblong, passing into lanceolate; the upper, and those of the trifoliolate leaves when present, 6–9 lines long, and one or two wide. Pedicels capillary, an inch long. Flowers very small. Stipe of the loment three or four times the length of the calyx. Articles $1\frac{1}{2}$ to 2 lines long. — From *D. Wislizeni* this well-marked species (which belongs, like all the following, to the section *Chalarium*) differs in its annual root, its less reticulated and smaller leaflets, the lower strikingly dilated, and in the scabrous articles of the loment, which are more contracted at each end.

D. NEO-MEXICANUM, *Gray, Pl. Wright. p. 53*; var. *glabellum*, caulibus erectis diffuse ramosis; foliolis membranaceis vix reticulatis obtusis; lomento glabello. — Borders of thickets, on stony hills along the Coppermine Creek, New Mexico; also in Sonora, along with the preceding species; Aug., Sept. (1011.) — Stems a span to a foot long from an annual root, erect, with the basal branches diffusely spreading. Leaves thinner and less rigid than in Wright's No. 141; the primordial ones unifoliate, and oblong or oval. Corolla purple, two lines long. Articles of the loment almost glabrous, plane. — Cultivated in the Cambridge Botanic Garden, this forms a much-branched plant, three or four feet high, the branches very slender.

D. BIGELOVII (sp. nov.): annuum; caulibus gracilibus procumbentibus elongatis angulatis scabrido-pubescentibus; foliis trifoliolatis; stipulis bracteisque setaceo-subulatis persistentibus; foliolis lato-lanceolatis obtusis membranaceis laxe venosis ciliatis glabellis; racemis laxifloris; lomento vix stipitato 3 – 4-articulato, articulis rhomboideis undulato-torquatis subpuberulis. — Valley on the San Pedro, Sonora; Sept. (1012.) — From the wild specimens I was inclined to consider this a doubtful variety of *D. Neo-Mexicanum*; but in cultivation it proves to be distinct. The slender stems trail on the ground, and attain several feet in length; the leaflets are much broader (3 to 5 lines wide by 12 to 18 in length), blunter, and thinner; and the articles of the pod are thin, undulate, and twisted; while in *D. Neo-Mexicanum* they are perfectly plane.

D. BATOCAULON (sp. nov.): caule elongato procumbente pilis tortis uncinatis aspero-hirto adhæsivo; stipulis e basi lata subulato-aristatis fuscis deciduis; foliis trifoliolatis; foliolis oblongo-lanceolatis acutis utrinque strigoso-hirsutis cinereis laxe venosis; racemis terminalibus et axillaribus laxifloris; bracteis subulatis caducis; lomento breviter stipitato, 5 – 7-articulato, articulis rotundatis lævibus. — Stony banks of small streams, on the San Pedro, Sonora; Sept. (1013.) — Stems numerous from the perennial root, trailing, striate-angled, three feet or more in length, rough with the rigid and adhesive pubescence. Leaflets 12 to 18 inches long, and 3 to 6 lines wide, somewhat canescent underneath. Axillary racemes few-flowered; the terminal many-flowered. Flower purple, 3 or 4 lines in length, as long as the pedicel. Articles of the fruit $2\frac{1}{2}$ lines long, nearly smooth and glabrous.

D. SONORÆ (sp. nov.): caule erecto ramoso pilis apice uncinatis confertis aspero-hirto adhæsivo; stipulis bracteisque parvis e basi lata subulatis fuscis deciduis; foliis trifoliolatis; foliolis oblongis seu lanceolato-oblongis obtusis membranaceis laxe venosis utrinque parce pilosulis subtus pallidis; racemis terminalibus elongatis; lomentis deflexis brevissime stipitatis, articulis 7 – 8 rotundatis scabro-hirtis. — Low valley, on the Sonoita near Deserted Rancho, Sonora; Sept. (1014.) — Stem tall, the base not seen, clothed with a stiff adhesive pubescence much like that of the foregoing species; from which, besides its upright growth, it is distinguished by its less hairy, or glabrate, thinner and larger ($1\frac{1}{2}$ – $2\frac{1}{2}$ inches long and 8 – 10 lines wide), obtuse leaflets, and the hirsute-scabrous articles of the loment. The latter are only a line and a half in diameter. It should be compared with *D. Aparines*, *DC.*

D. GRAHAMI (sp. nov.): caulibus e radice perenni ramosis procumbentibus ramisque gracilibus glabellis; stipulis subulato-acuminatis fuscis persistentibus; foliis trifoliolatis; foliolis ovato-rotundis sæpe retusis membranaceis minute pubescentibus subtus pallidis; racemis plerisque terminalibus demum prælongis sparsifloris; bracteis ovatis acuminatis striatis calyceque primum hispidis deciduis; lomento substipitato deflexo, articulis 4 – 5 ovalibus inæquilateris pubero-scabris. — On mountains, near the copper mines, New Mexico; Aug. (1015.) — Stems much branched from the root, procumbent or decumbent, angled, leafy. Stipules rather small, soon deflexed. Petioles short; the lower little longer, the upper much shorter, than the rhachis, which is half an inch long. Leaflets 12 to 18 lines long by 8 to 14 wide, bright green above, clothed with a fine appressed pubescence which is shorter and sparse underneath. The principal terminal raceme becomes, with its peduncle, a foot and a half long. Flowers in the bud imbricated with the broad bracts (which are 2 – 3 lines long), but are soon sparse. Pedicels 3 or 4 lines long, roughish-pubescent. Corolla purple, 3 or 4 lines long. Loment straight, slightly sinuate on the upper side, deeply lobed on the lower; the articles therefore inequilateral, 3 lines long. — A fine species, the aspect of the foliage much like that of *D. Dillenii*; from which the rounded leaflets, decumbent habit, larger bracts, and simple prolonged racemes, at once distinguish it. I dedicate the plant to Colonel Graham, to whose staff Mr. Wright was attached when this collection was made.

D. PSILOCARPUM (sp. nov.): scabro-pubescent; caule e basi suffrutescente erecto; stipulis ex ovato longe subulatis striatis persistentibus; foliis trifoliolatis; foliolis rhombeo-ovatis oblongisve obtusis reticulatis glabris marginibus venisque subtus hirtellis; racemis terminalibus paniculatis multifloris; bracteis stipulis conformibus caducis; lomentis patentibus, articulis 4 – 5 medio adnexis ovalibus subæquilateris glaberrimis (nisi margine ciliolatis) membranaceis semine multo majoribus. — On detritus of a mountain ravine, near Santa Cruz, Sonora; Sept. (1016.) — Stem 2 or 3 feet high, rigid, roughish with a fine hooked pubescence and some hirsute hairs. Stipules conspicuous, 4 – 5 lines long, green. Stipels setaceous, longer than the petiolules. Leaflets chartaceous, one or two inches long, or sometimes smaller, of nearly the same hue both sides, reticulated underneath, mucronate. The flowering racemes are probably rather dense; the fructiferous ones are often nearly a foot long, and bear a large number of pods. The late flowers at the summit of the spent racemes are small, only two lines long; the calyx-teeth subulate. Pedicels half an inch long. Loment slightly stipitate, smooth and glabrous even when young, except a fine pubescence on the margins; the articles four lines long, thin, appearing broadly winged around the contained seed. — This species is related to *D. canescens*; from which it is distinguished by its smaller and blunter leaflets, of nearly the same hue both sides, by the absence of villosity on the inflorescence, &c., and by the smooth loment, the two sutures of which are equally constricted. It should be compared with *D. stipulaceum*, *DC.*

D. CINERASCENS (sp. nov.): decumbens e radice perenni, pube molle appressa cinereum; stipulis lineari-subulatis fuscis deciduis; foliis trifoliolatis; foliolis elliptico-oblongis obtusis parallele penninerviis utrinque sericeo-pubescentibus pallidis subtus

canescentibus; racemis ad apicem caulis paniculatis multifloris; bracteis subulatis caducis; lomentis adscendentibus breviter stipitatis, articulis 6 – 8 ovalibus inæquilateralis puberulis. — Hills, between Barbocomori and Santa Cruz, Sonora; Sept. (1017.) — “Stems 2 to 4 feet long, procumbent.” Stipules two lines long. Petioles an inch or less in length, longer than the rhachis. Leaflets $1\frac{1}{2}$ to 2 inches long, 7 to 12 lines wide, very obtuse at both ends, cinereous with a very soft pubescence; the straight primary veins, five or six on each side, very prominent underneath (in the manner of *D. Canadense* and *D. cajanifolium*); the veinlets reticulated. Flowers purple, smaller than in *D. Canadense*. Loment more deeply constricted on the under than the upper side; the articles $2\frac{1}{2}$ lines long. — This species bears some resemblance to *D. strobilaceum*; which has very short petioles, much larger flowers and bracts, and a lax pubescence; and *D. cajanifolium*, which has much longer oblong-lanceolate leaflets, green and smooth above, &c.: the form of the pod, as well as of the leaflets, is different from that of *D. incanum*; and the procumbent or decumbent mode of growth is different from all these species.

CROTALARIA LUPULINA, *DC. Prodr.* 2. p. 133. Valleys in the Chiricahui Mountains, Sonora; Sept. (1018.)

C. SAGITTALIS, *Linn.* Hill-sides, near Santa Cruz, Sonora; Sept. (1019.)

LUPINUS MEXICANUS, *Lagasca, Nov. Gen. & Sp.* p. 22; *Bot. Reg. t.* 457. Mountains near the copper mines, New Mexico (July, in flower, *Dr. J. M. Bigelow*), Oct.; in fruit. (1020.) — “Ascending, about two feet high. Spike in fruit often more than a foot long.” — The flowering specimen is small, only a foot high, and villous-hirsute, except the upper face of the leaves. Those in fruit, from the same locality later in the season, are much less hairy. Root perennial. Leaflets 8 to 10, from one to $2\frac{1}{2}$ inches long. Flowers pretty large, blue or purple. Bractlets minute. Upper lip of the calyx acutely emarginate – 2-cleft at the apex, the lower 3-denticulate or entire. Carina ciliate-bearded along the upper part, more so than in *L. Ehrenbergii*. Legume strigose-pubescent, an inch and a half long, 4 or 5 lines wide, flat; 4 – 5-seeded. — Our plant accords so well with the figure in the Botanical Register (made from specimens raised from seeds communicated by *Lagasca* to Mr. Lambert) that I cannot think it different. The leaflets, to be sure, are said to be only from 5 to 7 in the original character; but they are 7, 8, and even 9 in the plant figured; nor is the calyx represented as with the upper lip much if at all more cleft than in our specimens, which, in this respect, agree with the closely allied *L. Ehrenbergii*.

L. PUSILLUS, *Pursh, Fl.* 2. p. 468; *Torr. & Gray, Fl.* 1. p. 374; var. *leguminibus brevioribus* (fere *semipollicaribus*) ovalibus. — Sandy ridges on the Rio Grande opposite Frontera, March, in flower; and plains at the base of the Organ Mountains, May, with fruit. (1362.)

SOPHORA SERICEA, *Nutt.; Gray, Pl. Wright.* p. 54. On the Limpio, June; in fruit. Near San Elisario and Lake Santa Maria, April; in flower. (1021.)

HOFFMANSEGGIA JAMESII, *Torr. & Gray, Fl.* 1. p. 393; *Gray, Pl. Wright.* p. 54. Valley of the Pecos, in stony prairies; June. Prairies from the Mimbres to the copper mines, New Mexico; July. (1022.) “Root a large woody tuber.”

✓ *H. BRACHYCARPA*, *Gray, Pl. Wright. p. 55.* High rocky (limestone) prairies of Elm Creek, Turkey Creek, and the San Pedro, Western Texas, May; mostly in fruit. (1023.)

✓ *H. OXYCARPA*, *Benth. in Pl. Wright. l. c.* Stony prairies of Piedra Pinta Creek, May; and on the San Pedro, June. (1024.)

✓ *H. STRICTA*, *Benth. in Pl. Wright. p. 56.* Valley of the Pecos, in alluvial soil, June. (1025.)

✓ *H. STRICTA*, var. *DEMISSA*, *Pl. Wright. l. c.* Valley of the Rio Grande below Doña Ana, and at El Paso; April, July. (1026.) — It passes manifestly into the taller form.

✓ *H. DREPANOCARPA*, *Gray, Pl. Wright. p. 58.* Stony prairies, valley of the Pecos; June. Sandy hills near El Paso and Doña Ana, New Mexico; May. (1027.) — “Flowers sweet-scented.” — A plant raised from the seed is glaucous; and the weak scapes are decumbent, or prostrate in fruit.

✓ *CERCIDIUM TEXANUM*, *Gray, Pl. Wright. p. 58.* Stony prairies of the Piedra Pinta, &c., Western Texas; May. (1028.)

CASSIA ROEMERIANA, *Scheele; Gray, Pl. Wright. p. 59.* Stony prairies, Zoquete Creek, Texas; May. (1029.)

✓ *C. BAUHINIOIDES*, *Gray, Pl. Lindh. 2. p. 180, & Pl. Wright. l. c.* Valleys, near Eagle Springs, between the Limpio and the Rio Grande; June. Also on sandy ridges, west of the Chiricahui Mountains, Sonora; Sept. (1030.)

✓ *C. PUMILIO*, *Gray, l. c.* Along the San Pedro and Pecos, Western Texas; May. (1031.)

C. LEPTOCARPA (*Benth. in Linnæa, 22. p. 528*): glabra, herbacea; caule erecto (2–3-pedali); petioli basiglanduloso; foliolis 4–6-jugis ovato-lanceolatis acumina-
tis; racemis brevibus paniculatis, infimis folio brevioribus; floribus aureis; legu-
mine attenuato-lineari prælongo compresso marginato recurvato! (Cæt. fere *C. occi-*
dentalis.) — Pebbly bed of mountain streamlets, near the San Pedro, Sonora; Sept.
(1032.) — The gland at the base of the petiole is oblong and acute. The leaflets
are smaller than is usual in *C. occidentalis* (from one to barely two inches in length),
and the flowers in the dried specimens are much deeper-colored. But the principal
character is furnished by the pods, which (even when very immature) are eight inches
long, and only a line and a half wide, tapering upwards, and arcuate-recurved, as in
C. obtusifolia. Ripe seeds not seen; their longer diameter lengthwise in the pod. —
From the character this must be the *C. leptocarpa*, which was gathered in Brazil.

✓ *C. (CHAMÆSENNA) WISLIZENI*, *Gray, Pl. Wright. p. 60*: adde char.: ramis spines-
centibus; legumine lineari plano vernicoso, valvis chartaceis. — Heads of the Agua
Prieta, Sonora; Oct. (1033.) — “A much-branched and spreading shrub, 4 to 6
feet high.” Leaflets often three pairs, 2 or 3 lines long, thickish. Legumes 4 or 5
inches long, 3 lines wide, very flat and thin, obtuse or apiculate, somewhat stipitate,
many-seeded; the surface appearing as if covered with a shining varnish. It be-
longs to the section *Chamæsenna*.

✓ *C. (CHAMÆCRISTA) WRIGHTII* (sp. nov.): glabra, humilis; caulibus assurgentibus
plurimis e radice crassa perenni; stipulis subulatis; foliolis 4–7-jugis lineari-ellip-

ticis mucronulatis; glandula clavuliformi stipitata infra par infimum; pedicellis axillaribus subsolitariis folium subæquantibus; sepalis membranaceis acutis subcoloratis haud striatis, minoribus lanceolatis, majoribus ovatis; legumine acutato vel apiculato. — Hill-sides, on the Sonoita, near Deserted Rancho, Sonora; Sept. (1034.) — Root very thick and rather ligneous, sending up numerous stems 6 or 8 inches high. Petiolar gland small, raised on a slender setiform stalk, nearly as broad as itself. Leaves an inch long; the leaflets 3 or 4 lines long, much fewer and less inequilateral than those of *C. Chamæcrista*; the pedicels longer in proportion. Flowers showy; the sepals 3 or 4 lines long, often reddish, shorter than the bright yellow petals. Pod glabrous or nearly so, an inch and a half long, often abruptly pointed at both ends, 8 – 10-seeded.

ALGAROBIA GLANDULOSA, Torr. & Gray, *Fl.* 1. p. 399; *Pl. Wright.* p. 60. On the Rio Grande, near San Elizario; May.

STROMBOCARPA PUBESCENS, Gray, *Pl. Wright.* p. 60. *Prosopis* (*Strombocarpa*) *pubescens*, Benth. *P.* (*Strombocarpa*) *Emoryi*, Torr. in *Emory, Rep.* p. 139. Valley of the Rio Grande, below and above El Paso; June, July. (1035.)

DESMANTHUS VELUTINUS, Scheele in *Linnæa*, 21. p. 456. Rocky hills, valley of the Pecos; and Elm Creek, Western Texas; June. (1036.) — Probably a variety of the next.

D. JAMESII, Torr. & Gray, *Fl.* 1. p. 402, & var. Gray, *Pl. Wright.* p. 63. Prairies, on the Mimbres, New Mexico; July.

MIMOSA FRAGRANS, Gray, *Pl. Lindh.* 2. p. 182, & *Pl. Wright.* p. 61. Prairies on the San Pedro, Western Texas (in fruit); May. (1037.)

M. BOREALIS, Gray, *Pl. Fendl.* p. 39. Rocky hills, valley of the Pecos (in fruit); June. (1038.)

M. LINDHEIMERI, Gray, *Pl. Lindh.* 2. p. 181. ? var. *pinnis 3-jugis* (nunc 1 – 2-jugis in ramulos floridos); foliolis 5 – 7-jugis; leguminibus rectiusculis margine aculeis crebris uncinatis horridis. — Prairies at the head of the Los Moros, Western Texas, July; in flower and fruit. (1363.) — “A low and spreading or procumbent bush, 1 to 4 feet high. Flowers light purple.” — Apparently only a form of *M. Lindheimeri*, with the pinnæ and leaflets reduced more or less, and the margins of the pod excessively armed.

M. BIUNCIFERA, Benth.; Gray, *Pl. Wright.* p. 61. Between El Paso and Western Texas, 1832; in flower. (1364.)

M. BIUNCIFERA, var. *glabrescens*. — Hills on the Sonoita, Sonora, Sept.; in fruit. (1039.) — “Procumbent, branched from the root, the branches 2 to 3 feet long.” — *M. Lindheimeri* too closely approaches this form.

M. FLEXUOSA, Benth. in *Pl. Wright.* l. c. Hills, from Rainwater Creek to the Limpio, June; in flower. (1365.) — Calyx and corolla tomentulose or cinereous-pubescent, like the slender branches.

M. DYSOCARPA, Benth. in *Pl. Wright.* p. 62. Mountain valleys, between the Limpio and the Rio Grande, June; in flower. (1366.)

M. DYSOCARPA; var. *minus villosa*; ramis herbaceis; aculeis petiolorum etiam validis. — Stony hills at the copper mines, New Mexico; Aug. (1040.) — The flat

cauline prickles are 4 or 5 lines long, and often 3 lines wide at their base. The stems are apparently procumbent.

M. WRIGHTII (sp. nov.): suffrutescens, sericeo-puberula; caulibus (decumbentibus?) aculeis sparsis brevibus rectis armatis; stipulis subulatis; petiolis parce aculeolatis; pinnis 7-10-jugis; foliolis 10-15-jugis dimidiato-oblongis fere aveniis mucronulatis supra glabratibus subtus sericeis; spicis cylindricis; floribus 4-5-meris 8-10-andris glabriusculis; calyce corolla dimidio brevior; ovario pubescente. — Hill-sides on the Sonoita, Sonora; Sept. (1041.) — “Many stems from the same root, two or three feet long.” Stems slender, striate-angled, in the specimens mostly simple and herbaceous (the base not seen), copiously armed with straight and conical, or slightly flattened, scattered prickles, which are from one to two lines in length. Rhachis with the petiole 2 to $3\frac{1}{2}$ inches long, armed with a few minute prickles. Pinnæ 7-9 lines long. Leaflets $1\frac{1}{2}$ to barely 2 lines long, half a line wide. Spikes axillary, and somewhat paniced or racemose at the summit of the stem, one to two inches long, densely flowered. Calyx and corolla minutely puberulent, membranaceous; the latter broadly funnel-form, a line and a half long. Stamens three or four times the length of the corolla. Legume not seen; the specimen being in flower only. — This would appear to be related to *M. puberula*, *Benth. in Hook. Lond. Jour. Bot.* 5. p. 88; but that is described as unarmed, and with larger leaflets.

M. GRAHAMI (sp. nov. Ameria, Acanthocarpæ): frutescens, decumbens, glabra; caule aculeis infrastipularibus geminis rectis cum paucis sparsis subrecurvis armato; rhachi communi sæpeque partialibus aculeolis recurvis raris obsitis; stipulis setaceis; pinnis 6-8-jugis; foliolis 10-15-jugis oblongis venosis; pedunculis folio brevioribus; capitulis globosis; floribus glabris 5-meris; corolla calyce brevissime dentato triplo longiore; legumine oblongo-lineari recto glabro margine rariter aculeolato vel inermi. — Mountain valleys of Sonora, between the San Pedro and the Sonoita; Sept. (1042.) — “Stems many from the root, one or two feet high, procumbent,” rather stout and rigid, lignescent; the base probably truly woody. Infrastipular prickles 2 or 3 lines long, straight: on some stems there are a number of (similar, but more or less recurved) scattered prickles besides; on others, scarcely any. The small prickles on the leaves (on the main rhachis and often on its branches also) are hooked. Rhachis with the petiole 3 or 4 inches long: pinnæ about an inch long. Leaflets 2-3 lines long, oblong or ovate-oblong, mucronulate, oblique, coriaceous, 3-5-nerved at the base, and pinnately veined from the mid-nerve (the veins conspicuous and somewhat reticulated underneath), glabrous, except a few minute and scattered hairs along the margins, and on the rhachis. Peduncles axillary, 7-18 lines long. Bracts minute. Corolla a line and a half long. Pod an inch to an inch and a half long, three lines wide, straight, obtuse, glabrous; the margin beset with two or three minute prickles on each side, or else naked; the valves thick and coriaceous, separating entire from the margin at maturity. Seeds 5 or 6.

CALLIANDRA CHAMÆDRYS, *Engelm. in Pl. Fendl.* p. 39; var. pinnis nunc 4-jugis (2-4-jugis); foliolis magis sericeo-pilosis ($1-2\frac{1}{2}$ lin. longis); pedunculis gracili-

bus (8–12 lin. longis.) — Stony soil, between the copper mines, New Mexico, and the Chiricahui Mountains; Sept. (1043.) Also between the Leona and Rio Frio, Western Texas; July. (1367.) — Stems upright, a foot or more high, from a thick woody caudex. Pods 2–3 or even 4 inches long, strigosely silky-canescens, tapering from the middle to the base, but not truly stipitate. — Engelmann described the species from Gregg's stunted specimens: these are well-developed ones; those from New Mexico are more silky-pubescent; so that I fear the species is hardly distinct from *C. eriophylla*, *Benth.*

C. CONFERTA, *Benth. in Pl. Wright. l. c.* Limestone hills near the San Pedro, Western Texas; July. (1368.)

C. HUMILIS, *Benth. in Lond. Jour. Bot. 5. p. 103.* *C. herbacea*, *Engelm. in Pl. Fendl. p. 39; Gray, Pl. Wright. p. 63.* Hill-sides of the Limpio, and westward; June. Also at the copper mines; and near Santa Cruz, Sonora; Sept. (1044.) — The stems are herbaceous nearly to the base, at most a span high, from a lignescent, very long and horizontal root. The pubescence is either copious, or at length nearly all deciduous. Pinnæ 3–6 pairs, 1–2 inches long. Most of the capitula are on peduncles of about an inch in length, while others are sessile or nearly so. The very young pods are hirsute; the mature ones hirsute-puberulent or glabrate: valves coriaceo-membranaceous, with very thick margins. “Stamens pale red.”

C. RETICULATA (sp. nov.): pilosa, mox glabrata; caulibus spithamæis diffusis subherbaceis e radice magna lignescente; stipulis ovatis nervosis; pinnis 1–3-jugis; foliolis 4–11-jugis ovalibus obtusissimis obliquis 3–5-nerviis laxè reticulatis supra nitidulis glabris; pedunculis petiolo communi subæquilongis; calyce ad medium fere 5-fido hirsuto corolla glabriuscula dimidio brevior; legumine glabello, valvulis membranaceo-coriaceis marginibus incrassatis. — Stony hills at the copper mines, New Mexico; Aug. (1045.) — Manifestly related to the foregoing, and with the same low and nearly herbaceous stems from a lignescent root, which is one or two feet long. But the pinnæ (1 to 2½ inches long) are rarely more than two pairs, and the leaflets are from 3 to 5 lines long, 1½ to 2½ lines wide, more conspicuously nerved and reticulated; and the calyx is fully half the length of the corolla. Stipules rigid, 2 lines long, ovate, or the uppermost oblong or lanceolate. “Filaments pink,” exerted 3 or 4 lines. Immature legumes as in *C. humilis*.

LEUCÆNA RETUSA, *Benth. in Pl. Wright. p. 64.* Pebbly banks of the Rio Frio, Texas, and west to the Limpio, May, June. (1046.) — “Stems much branched from the root, 4–6 feet high.”

ACACIA WRIGHTII, *Benth. in Pl. Wright. p. 64.* Prairies of the Rio Frio, to Los Moros, Texas. (1047.) — “A spreading bush, 4 to 10 feet high.”

A. GREGGII, *Gray, Pl. Wright. p. 65.* Hills of Live Oak Creek, Western Texas; May. Also between Van Horne's Wells and the Rio Grande; June. (1048.)

A. COULTERI, *Benth. in Pl. Wright. p. 66.* Prairies between Piedra Pinta Creek and Los Moros; July. (1369.) — The specimens are in flower, with a single ripe pod of the preceding year. The shrub is said to be from 4 to 6 feet high; the branches are armed with a few minute prickles. The pinnæ are 5 to 6 pairs. The densely-flowered spikes are oblong or cylindrical, not over an inch in length and

often much shorter; and the peduncle an inch or an inch and a half long. By an error in transcribing, in *Plantæ Wrightianæ* the flowers are said to be $2\frac{1}{2}$ inches, instead of $2\frac{1}{2}$ lines, in length.

A. TEPHIROLOBA, *Gray, l. c.* Stony prairies, Zoquete Creek, &c., Western Texas, May; in flower and with young fruit. Big bend of the San Pedro, July; with ripe fruit. (1049.) — "Shrub 1 – 2 feet high."

A. CONSTRICTA, *Benth. in Pl. Wright. p. 66.* Stony hills, from the Limpio to the Rio Grande; May, June (in flower and fruit). Also in valleys of the Agua Prieta, Sonora, Sept.; in fruit. (1050.)

A. CUSPIDATA, *Schlecht. in Linnæa, 12. p. 573; Gray, Pl. Wright. p. 66.* Stony hills, at the copper mines; Aug. (1051.)

A. RÖMERIANA, *Scheele in Linnæa, 21. p. 546.* Rocky hills of the San Pedro, Texas, May; in fruit. (1052.)

ROSACEÆ.

CERASUS (MICROSERASUS) MINUTIFLORA, *Engelm. in Pl. Lindh. 2. p. 185; Gray, Pl. Wright. p. 68.* Stony hills of San Felipe Creek, Texas, May; in fruit. (1053.)

C. VIRGINIANA, *DC.*; var. foliis parvulis subtus molliter pubescentibus pallidis. — Sides of mountains, at the copper mines, New Mexico, Aug.; in fruit. (1054.) The same as Fendler's No. 186.

C. CAPOLLIN, *DC. Prodr. 2. p. 539; Benth. Pl. Hartw. p. 10.* Banks of a torrent between Rock Creek and the Limpio, June; in fruit. (1370.) — This is exactly Hartweg's No. 48, and Coulter's No. 89; all with broader leaves than is described by De Candolle, namely, oblong-ovate. No. 623 of Gregg's collection, from Real del Monte, however, accords with the character, having leaves of about the shape and size of those of *Salix fragilis*. I think all of them are no more than varieties of *C. serotina*.

SPIRÆA DUMOSA, *Nutt. in Hook. Lond. Jour. Bot. 6. p. 217.* New Mexico; probably with the next. The same as Fendler's No. 188.

S. DUMOSA; var. foliis majoribus rotundatis haud cuneatis; panicula ampla nutante ut in *S. ariaefolia*. — Sides of hills at the copper mines, New Mexico; Aug. (1055.) — "A slender bush, 6 – 10 feet high."

CERCOCARPUS PARVIFOLIUS, *Nutt. in Torr. & Gray, Fl. 1. p. 427; var. foliis sub-integris parvis (5 – 10 lin. longis).* — Hill-sides, along Coppermine Creek, New Mexico; Aug. (1056.) — Shrub 6 to 8 feet high. The same as No. 183 of Wright's first collection; but the leaves still smaller.

C. BREVIFLORUS (sp. nov.): foliis spathulato-oblongis integris sessilibus utrinque sericeo-puberulis; floribus plerisque geminis sessilibus; tubo calycis limbo brevior. — Sides of mountains near Frontera, New Mexico; July. (1057.) — "Shrub 2 – 4 feet high, much branched; the branches tortuous, spinescent. Leaves 4 to 6 lines long, minutely silky-pubescent and of nearly the same hue both sides, entire, or obscurely 2 – 3-toothed at the apex. Flowers shorter than the leaves, closely sessile; the pedicelliform tube at most a line in length, usually still shorter; the

expanded limb 2 lines in diameter. Fruit not seen. Style villous below. — The smallest of all the species, both for the leaves and the flowers.

COWANIA MEXICANA, *Don in Linn. Trans.* 14. p. 574. t. 22; *Benth. Pl. Hartw.* p. 16. Hills on the Sonoita, near Deserted Rancho, Sonora; Sept. (1058.) — “Shrub 6 to 10 feet high, with short and stout branches.” The petals would appear to have been ochroleucous, at most sulphur-colored; but Mr. Wright assures me that they were *white* in the living plant, which is also stated of *Geum? dryadoides*, DC. Were the flowers of Don’s plant truly yellow?

FALLUGIA PARADOXA, *Torr. in Emory’s Rep.* t. 2; *Gray, Pl. Wright.* p. 68. On the Pecos, Western Texas, in alluvial soil; June. (1059.)

POTENTILLA PARADOXA, *Nutt. in Torr. & Gray, Fl.* 1. p. 437; *Gray, Pl. Wright.* p. 68. Sand-bars of the Rio Grande near El Paso and Frontera; July. (1060.)

RUBUS NEO-MEXICANUS (sp. nov.): inermis, fruticosus; ramis glabellis eglandulosis; foliis rotundo-cordatis breviter 3–5-lobis molliter pubescentibus, lobis argute serratis subincisis; stipulis lanceolatis; pedunculis 1–2-floris sepalisque apice caudatis parce glandulosis; petalis albis orbiculatis calyce longioribus; carpellis numerosis rubris. — Mountain-sides at the copper mines; Aug., in flower; Oct., in fruit. (1061.) — Stems 3–5 feet high, much branched, glabrous; the branchlets pubescent, but not glandular nor hispid, slender. Stipules proportionally larger than in *R. Nutkanus*. Leaves one to 2½ inches in diameter, with short and roundish or obtuse lobes, or the terminal lobe acute; when old, the surface is somewhat plicate and rugose. Peduncles about an inch long. Corolla, when expanded, an inch in diameter. — Manifestly related to *R. deliciosus*, Torr., which has purple flowers.

ROSA BLANDA, *Ait.*, var. β . *Torr. & Gray*. Valley of the Limpio, especially at Wild Rose Pass, to which it gives the name; June.

LYTHRACEÆ.

AMMANNIA WRIGHTII (sp. nov.): caule erecto; foliis lineari-lanceolatis basi auriculatis imis oblongis basi attenuatis sessilibus; pedunculis 1–5-floris floribus longioribus; calycis dentibus propriis atque accessoriis brevissimis; petalis et staminibus 4; stylo longiusculo. — Margin of pools and mountain streams east of Santa Cruz, and along the San Pedro, Sonora; Sept. (1062.) — Root annual. Stems 2 to 7 inches high. Leaves 6 to 12 lines long, rather obtuse. Peduncles 3 to 5 lines long; the pedicels 1 to 2 lines long. Bracts linear-subulate. Calyx a line and a half long. Petals orbicular, purple, about the length of the stamens and style. Capsule 2-celled. — The conspicuously pedunculate flowers at once distinguish this from all other North American species.

A. DENTIFERA (sp. nov.): humilis; caule erecto; foliis oblongo-linearibus omnibus basi attenuatis subsessilibus; floribus solitariis sessilibus apetalis tetrandris; calycis dentibus accessoriis subulatis patentibus proprios triangulares conniventes triplo excedentibus. — East of Santa Cruz, Sonora, with the preceding. (1063.) Also at Santa Cruz (a dwarf form, only an inch high). — This species much resembles *A. humilis*; but it has prolonged and conspicuous accessory calyx-teeth. The stamens are included and the style very short in all the specimens.

CUPHEA WRIGHTII (sp. nov.): annua; caule gracili ramoso adscendente calycibusque setis rubellis subviscosis hispidis; foliis oppositis longe petiolatis ovatis basi rotundatis subacuminatis glabellis; floribus plerisque racemosis; pedicellis binis vel ternis e singulis bracteis quorum superioribus alternis; calyce basi subcalcarato, fauce imberbi, dente postico multo majore; petalis 6; staminibus 11; filamentis basi pilosis; ovario 3-ovulato. — Hills near Santa Cruz, Sonora; Sept. (1064.) — Stems 5 to 10 inches high, slender, sparingly branched. Leaves 8 to 12 lines long, on petioles of half their length, thin, with inconspicuous veins, not scabrous. Flowers solitary or 2 to 3 together in the axils of the upper leaves, and crowded in a terminal raceme; the upper bracts becoming minute, and chiefly alternate. Calyx about as long as the pedicels, $2\frac{1}{2}$ to 3 lines in length, shaped nearly as in *C. viscosissima*, except that the upper tooth is proportionally larger, and the throat is not bearded within, purplish. Petals $1\frac{1}{2}$ line long, purple. Stamens included: anthers glabrous. Style glabrous. Seeds smooth.

NESÆA LONGIPES, Gray, *Pl. Wright.* p. 68. Comanche Spring, Texas. (1371.)

ONAGRACEÆ.

EPILOBIUM COLORATUM, Muhl. Head of the Limpio, in water; June. (1065.)

ZAUSCHNERIA CALIFORNICA, Presl, *Rel. Hænk.* 2. t. 52; Torr. & Gray, *Fl.* 1. p. 486 (fere var. β). Pebbly bed of mountain streams near the San Pedro, Sonora; Sept. (1372.)

Z. CALIFORNICA; var. foliis glabellis brevibus oblongis vel ovato-oblongis e basi lata sessilibus, inferioribus denticulatis, superioribus intègerrimis; floribus intense rubris. — Pebbly bed of a mountain torrent on the New Mexican side of the Chiricahui Mountains; Sept. (1373.) — This variety of this very showy plant considerably resembles the var. *latifolia*, *Bot. Mag.* t. 4493.

ŒNOTHERA BIENNIS, var. *HIRSUTISSIMA*, Gray, *Pl. Fendl.* p. 43. Margin of Coppermine Creek, New Mexico; and on the Sonoita, Sonora. (1066.)

Œ. ALBICAULIS, Nutt.; var. *subcinerea*, ramosissima, lignescens, subpinnatifida, Gray, *Pl. Wright.* p. 69. — Sandy soil on the Rio Grande at Doña Ana, New Mexico; July. (1067.) — The same as No. 191 of the former collection. The seeds are fusiform-cylindrical and smooth, neither striate nor punctate (so that Nuttall's description of them, in Torr. & Gray, *Fl. N. Amer.*, must refer to those of *Œ. coronopifolia*).

Œ. ALBICAULIS; var. ? foliis oblongis sinuato-dentatis vel subpinnatifidis cinereo-puberulis vel glabratibus; ramis junioribus capsulis calycibusque hirsuto-villosis. — Sandy bed of a creek near the copper mines, Aug. (1068.) — The flowers are large; the tube of the calyx and the petals being an inch long. The scarcely mature pods are rather short for this species; but the seeds are oblong and perfectly smooth. The calyx in the bud is clothed with long villous hairs, in some specimens very copiously; so that this plant may be Nuttall's *Œ. trichocalyx*.

Œ. CORONOPIFOLIA, Torr. & Gray, *Fl.* 1. p. 495; Gray, *Pl. Fendl.* p. 43. Valleys near the copper mines, New Mexico; Aug. (1069.) — A form with the pods longer than in Fendler's No. 222 ($1 - 1\frac{1}{2}$ inches long); but the seeds, as in that plant, are

turgid-oval or subglobose, apiculate, longitudinally striate-ribbed, and punctate between the ribs.

Æ. CORONOPIFOLIA; var. calycibus hirsuto-villosis seu villosissimis. — Valley of the Pecos, in alluvial soil; June. (1070.) — Seeds striate and punctate, as in the preceding.

Æ. ROSEA, *Ait.*; *DC. Prodr.* 3. p. 51. *Hartmannia gauroides*, *Spach, Monogr. Onagr.* p. 41. On steep banks of the San Pedro, Sonora; Sept. (1071.) — Also collected by Coulter (No. 165), and by Gregg (Saltillo, and San Angel, near Mexico).

Æ. (MEGAPTERIUM) WRIGHTII (sp. nov.): subcaulescens e caudice perenni, cinereo-puberula; foliis lanceolato-oblongis acutis mucronatis venosis dentatis basi plerumque laciniatis seu lyrato-pinnatifidis petiolatis; laciniis calycis tubo multo brevioribus petala flabelliformia subæquantibus; capsula immatura quadrialata. — Stony hills, near the copper mines, New Mexico; Aug. (1072.) — “Flowers open in the morning, withering early.” The corolla is evidently yellow, and turns faintly rose-colored in fading, about as large as in Æ. Missouriensis (namely 2 to 2½ inches long), the calyx (tube 5 or 6 inches long), stamens, stigmas, and immature seeds likewise similar. The leaves are herbaceous in texture, from 5 to 11 inches long, including the short petiole, an inch to an inch and a half wide, repand-denticulate or sharply and even doubly toothed, and commonly with 2 to 6 narrow and sharp lobes at the tapering base. The few and very immature capsules are sessile, an inch long, half an inch wide when flattened, canescent or sparsely hairy; the wings two lines wide, but obviously not fully developed.

Æ. WRIGHTII; var. vernalis, minor, magis canescens; foliis brevioribus ovatis oblongisve integerrimis vel plerisque lyratis. — Stony hills near Frontera, New Mexico; April. (1374.) — Root or caudex stout and deeply descending, bearing a rosulate tuft of leaves of 3 or 4 inches in length, and numerous flowers and young pods, and beginning to show short stems. Flowers smaller than in the foregoing; the petals scarcely more than an inch and a half in length. Immature pods an inch and a half long, about half an inch wide, narrowly ovate-oblong, tapering to the summit, sessile, cinereous-puberulent, 4-winged, the wings 2 to 3 lines in width; the texture chartaceo-coriaceous. Seeds packed in a double row in each cell, angled, with a thick testa, transversely corrugate below, the upper part winged in the manner of Æ. Missouriensis, but more decidedly so. — I can scarcely doubt that this is a vernal form of the preceding, and that it should be referred to the section Megapterium, although the wings of the pod are narrow. Except in the fruit it much resembles the following, which indeed belongs to the same section rather than to Lavauxia.

Æ. BRACHYCARPA, *Gray, Pl. Wright.* p. 70. Hill-sides on the Limpio; June. (1073.) — “Flowers expand about sunset.” A specimen of this was also gathered on the mountains east of El Paso, in fruit, May. The larger pods are nearly an inch in length, cartilaginous in texture, with pretty thick walls; the angles very narrowly but distinctly winged. Seeds much as in the preceding, but with a thickened crest-like apex with a sharp edge, rather than winged.

Æ. TRILOBA, *Nutt. ; Gray, Pl. Wright. p. 70.* Valley between the Salado and Lake Santa Maria, Chihuahua; April. (1375.) — This species has never before been found in the New Mexican region.

Æ. (PACHYLOPHIS?) PRIMIVERIS (sp. nov.): acaulescens, pygmæa, annua vel biennis; radice exili; foliis lyrato-pinnatifidis vel primordialibus integris lanceolato-oblongis ad margines costamque cum calyce villosa-pubescentibus; tubo calycis filiformi lobis (petala flava subæquantibus) multoties longioribus; capsulis ovoideo-conicis acutis leviter 10-costatis in collo sessilibus; seminibus ad chalazam suberoso-cristatis. — Dry hills near El Paso, Feb. — April. (1376.) — This little plant evidently springs from the seed in the autumn, or even in the winter, and flowers at the first opening of spring. Some of the specimens are barely an inch high; the leaves of the larger ones attain the length of 3 or 4 inches; and the tube of the calyx is one or two inches long. The petals, from 5 to 8 lines long, are pure yellow, not turning purplish. Anthers linear, fixed by the middle. Lobes of the stigma linear, distinct. Capsule 8 or 10 lines long, tapering from near the base to the apex, terete, somewhat hirsute, coriaceous; the ribs filiform, equal, not crested nor tuberculate. Seeds very numerous and biserial in each cell, oval, with a thick and rather corky testa, somewhat rugose, grooved along the raphe, and enlarged into a thick and short appendage at the chalaza. The plant is strictly acaulescent and probably disappears by the end of spring. The leaves become glabrate. Strictly speaking, this belongs to a new section analogous to *Pachylophis*.

Æ. (SALPINGIA) LAVANDULÆFOLIA, *Torr. & Gray ; Gray, Pl. Wright. p. 72.* Prairies on the Pecos; June. (1074.)

Æ. HARTWEGI, *Benth.*; var. caulibus elongatis; foliis lanceolato-linearibus, *Gray, Pl. Wright. p. 72.* Stony hills of the Pecos; June. (1075.) — Same as Wright's No. 198; passing into

Æ. HARTWEGI, var. FENDLERI; major, foliis lanceolatis et oblongo-lanceolatis. — Æ. Fendleri, *Gray, Pl. Fendl. p. 45.* Declivities, on the Sabinal, Western Texas, May. (1076.)

Æ. TUBICULA, *Gray, Pl. Wright. p. 71.* Valley of the Pecos and toward the Limpio, in alluvial soil; June. (1077.)

Æ. (SPHEROSTIGMA) CHAMÆNERIOIDES (sp. nov.): annua vel biennis, glabella; caule humili tenero e basi ramoso; foliis oblongis seu lanceolatis repandis subsessilibus, radicalibus subspathulatis in petiolum attenuatis; floribus racemosis primum confertis parvis purpurascens; tubo calycis infundibuliformi lobis subduplo ovario multoties longiore; petalis spathulato-oblongis integerrimis calycem stylumque æquantibus; capsulis elongatis filiformibus rectis sessilibus. — Stony hills along the Rio Grande near El Paso; March. (1377.) — Plant a span, or at length 9 or 10 inches high, erect, or the side branches from the base ascending, with wholly the aspect of a small *Epilobium*; the branches slightly viscous-pubescent. Radical leaves $1\frac{1}{2}$ to 2 inches long, 3 to 5 lines wide; the cauline smaller; the later floral linear-subulate, much shorter than the ovary, and like it pruinose-puberulent. Calyx-tube scarcely a line and a half long. Petals less than a line long. Stigma large, globular. Pods $1\frac{1}{2}$ to 2 inches long, filiform, terete, half a line in diameter, erect-

spreading, straight or slightly curved, 4-valved, exactly like that of an *Epilobium*; but the seeds are not comose.

GAURA SINUATA, *Nutt. in DC. Prodr.* 3. p. 44. Valley of the Limpio; May.

G. SUFFULTA, *Engelm. in Pl. Lindh.* 2. p. 190. Valley of the Pecos; May. Also valley of Coppermine Creek, New Mexico; Aug. (1078.)

G. VILLOSA, *Torr.; Gray, Pl. Wright.* p. 73. Valley of the Limpio, in alluvial soil; June. (1079.)

G. COCCINEA, *Nutt.*, var. *Gray, Pl. Wright.* p. 73. Prairies from Zoquete Creek, Texas, to the Limpio and the Rio Grande near El Paso. (1080.)

G. PARVIFLORA, *Dougl.* Along the Rio Grande below El Paso; June.

PROSERPINACA PALUSTRIS, *Linn.* Margins of Chicon or Elm Creek, Western Texas; July. (1378.)

MYRIOPHYLLUM HETEROPHYLLUM, *Michx.*; var. *foliis emersis parvulis*. — With the preceding. (1379.) — The same as No. 202 of the former collection.

LOASACEÆ.

MENTZELIA OLIGOSPERMA, *Nutt.* Pass of the Chiricahui Mountains, Sonora; Sept. (1081.)

M. (BARTONIA) MULTIFLORA, *Nutt.; Gray, Pl. Fendl.* p. 48, & *Pl. Wright.* p. 74. Valleys near Eagle Spring, east of the Rio Grande; June. Mountains near El Paso; April, in flower. (1082.) — Petals ochroleucous, or pale yellow, 7 or 8 lines long, opening at evening.

M. (TRACHYPHYTUM) ALBICAULIS, *Dougl.; Gray, Pl. Wright.* p. 74. *adn.* Sides of mountains near El Paso; April. (1380.)

EUCNIDE BARTONIOIDES, *Zucc.; Gray, Pl. Lindh.* 2. p. 192. On the Rio Blanco, and Guadalupe, Texas.

CEVALLIA SINUATA, *Lagasca.* Stony prairies, on San Felipe Creek, and the Limpio; May, June. (1381.)

PASSIFLORACEÆ.

PASSIFLORA TENUILOBA, *Engelm. in Pl. Lindh.* 2. p. 192; *Gray, Pl. Wright.* p. 74. Stony prairies, Chicon Creek to the San Pedro. (1083.)

P. AFFINIS, *Engelm. in Pl. Lindh.* 2. p. 233. On the Sabinal, Western Texas, July; in fruit.

P. INAMCENA (sp. nov. § Cieca): herbacea, pilis hamatis hirsuto-pubescent; foliis membranaceis basi cordata trinerviis profunde trifidis, lobis ovali-oblongis subser-ratis, lateralibus paullo brevioribus plerumque bilobis seu grosse 2-3-dentatis; petiolis apicem versus biglandulosus; pedicellis solitariis; bracteolis 2 setaceis; calyce quinquepartito viridulo. — Sides of mountains near Santa Cruz, Sonora; Sept. (1084.) — "Climbing among rocks, one or two feet high." Leaves 2 or 3 inches in diameter, very thin, roughish-pubescent; the terminal lobe narrowed at the base. Stipules lunate, acuminate. Tendrils axillary, simple. Lobes of the calyx about half an inch in length, triangular-lanceolate. Berry ovoid, an inch and a half in length; the stipe not longer than the persistent calyx.

CUCURBITACEÆ.

MELOTHRIA PENDULA, *Linn.*; *Gray, Pl. Wright. p.* 75. On the San Pedro, Western Texas.

SICYDIUM LINDHEIMERI, *Gray, Pl. Lindh. 2. p.* 194, & *Pl. Wright. p.* 75. On the Rio Frio, Leona, Howard's Creek, and San Pedro, Western Texas; May, June. (1085.) — Berry an inch in diameter.

S. LINDHEIMERI, var. *TENUISECTUM*, *Gray, Pl. Wright. l. c.* Valley of the Pecos, June; and New Mexico between Frontera and the Mimbres, July. (1086.) — The New-Mexican specimens have small leaves, barely an inch in diameter, and compoundly dissected into lobes which are only a line in width. The globose berries are from half to two thirds of an inch in diameter.

CUCURBITA PERENNIS, *Gray, Pl. Lindh. 2. p.* 193. Along the San Pedro, Western Texas; May. (1087.) — "Certainly monœcious. It exhales an unpleasant smell when bruised."

C. DIGITATA (sp. nov.): radice perenni carnosâ; foliis 5-partitis subtus ramisque hispidis-scabris supra glabellis secus costas venasque pube brevissima sæpius albo-variegatis, infimis segmentis oblongis sinuato-lobatis, superioribus lobis linearibus elongatis subintegris; calycis lobis fl. fœm. brevissimis, masc. obsoletis; fructu globoso. — Prairies, in loose, sandy soil, between the copper mines, New Mexico, and Conde's Camp; Aug. (1088.) — "Root large, fleshy. Branches prostrate, running from 10 to 20 feet." The segments of the upper leaves are about 3 inches long and 2 to 4 lines wide, either entire, or with one or two lacinate teeth or small lobes towards their base; those of the lower leaves are shorter, about an inch wide, and considerably lobed or incised. Corolla 3 inches long, funnel-form, yellow.

APODANTHERA? UNDULATA (sp. nov.): cinereo-hispidula, caulibus e radice carnosâ maxima plurimis prostratis; foliis rotundato-reniformibus undulatis denticulatis nunc sublobatis subtus strigoso-canescens; floribus pedunculatis luteis, masculis ex axillis infimis racemoso-corymbosis, fœmineis ex superioribus axillis solitariis; tubo calycis maris tubuloso-infundibuliformi; pepone ovoideo. — In valleys from Eagle Springs to the Limpio; June. (1382.) (*Carizal*, below *El Paso*, *Wislizenus*.) — Root nearly as thick as a man's leg, penetrating two or three feet in depth, then branching. Stems prostrate, extending from 3 to 8 feet, and with the foliage strigose-cinereous. Leaves 2 to 6 inches in diameter, undulate and somewhat crisped, green above. Staminate flowers all from the lowest axils; the others, however prolonged the stems, bearing solitary pistillate flowers only. Peduncles about the length of the petiole; or the sterile longer than the leaves, bearing several flowers, on pedicels of one or two inches in length. Calyx-tube about an inch long; of the sterile flower narrowly tubular funnel-form; of the fertile oblong-urceolate, and little produced beyond the summit of the ovary; the lobes subulate, 3 lines long. Petals of the sterile flowers oblong, or oval, distinct, inserted by a narrowed base, 9 or 10 lines long; those of the fertile flowers nearly similar. Anthers sessile or nearly so in the throat of the calyx, lightly cohering, at length separate, three in number, two of them bilocular and one unilocular (scil. 5, triadelphous,

of authors), rarely 4, two of them bilocular and two unilocular: connective somewhat dilated; the cells linear, $2\frac{1}{2}$ lines long, straight or nearly so. There is a thickish disk in the bottom of the calyx. Stigma 3-lobed, fleshy. Ovary 3-celled? many-ovuled. The mature fruit, according to Mr. Wright, is ovoid, 3 or 4 inches long, about the size of that of *Cucurbita perennis*, perhaps of softer consistence than in that plant, but a true pepo. — I cannot hesitate to refer this to the imperfectly known genus *Apodanthera* of Arnott. I doubt, however, if it be a congener of *Apodanthera gracilis*, *Benth.*, as it is certainly very different from *Melothria*.

CYCLANTHERA DISSECTA, *Arn. in Hook. Jour. Bot.* 3. p. 280; *Gray, Pl. Wright. p.* 75. Guadalupe Pass, between Santa Cruz, Sonora, and the copper mines, New Mexico; Oct., with ripe fruit. (1089.) — The mature fruit is dry, with thin walls, somewhat compressed, semiovate, one margin strongly gibbous, the other straight or slightly concave, pointed (the point a little recurved), an inch long, beset with soft and naked prickles; within, near the concave or inner edge, hangs from the summit an elongated placenta, which reaches nearly to the base of the single cell; here, on short and persistent 2-ranked funiculi, are attached 6 or 7 ascending seeds, partly covered by the fibrous remains of the tissue of a sparing pulp. The seeds are 3 lines long, compressed, pointed at the hilum, nearly truncate at the opposite end; the testa brown, firm, tuberculate-roughened. Whether the ovary is more than one-celled I cannot clearly ascertain. If there are any partitions, they speedily disappear.

ELATERIUM? WRIGHTII (sp. nov.): caule pubescente; foliis reniformi-cordatis subangulatis apice triangulato-acuminatis puberulis marginè vix denticulatis; cirrhis trifidis; floribus masculis racemosis, calyce brevissimo subplano, fœmineis solitariis collo filiformi; petalis ovalibus acutiusculis; ovario biloculari, loculis singulis 3-ovulatis; fructu oblongo recto aculeis longis mollibus hirsutis armato apice rostrato-apiculato. — Mountains at Guadalupe Pass, with the preceding; Oct. (1090.) Organ Mountains, near El Paso; May. — “Climbing, 4–6 feet high.” This is evidently a congener of *Elaterium pubescens*, *Benth.*, and of other Mexican plants referred to this genus. The leaves are much like those of *E. pubescens*, and the inflorescence is similar; but the male flowers are several times smaller (only 3 lines in diameter) and on shorter pedicels, and the calyx is as flat as that of a *Sicyos*. I should have referred it to *E. hastatum*, *H. B. K.*, except that the male flowers can hardly be called minute; and the fruit is not reniform; nor is it 2-valved, but dehiscent at the apex. The fruit is from 12 to 18 lines long, the slender prickles half an inch long. The dissepiment remains, either complete or incomplete, at maturity. Seeds 2 or 3 in each cell, flattish, truncate at the apex, tuberculate, nearly 3 lines long. — The petals are sprinkled with adherent pollen-grains as in *E. pubescens*, in which they were described as “punctate.”

E.? COULTERI (sp. nov.): parce scabro-pubescent; foliis rotundo-cordatis profunde 5-lobis, lobis ovatis dentatis acutis, terminali acuminato; cirrhis trifidis; floribus masculis racemosis, calyce brevissimo patente, fœmineis solitariis collo filiformi; petalis oblongis retusis; fructu fere præcedentis. — (Zacatecas, Mexico, *Coulter*, No. 51.) Hills along the Coppermine Creek, New Mexico; Aug. — The few specimens are in flower only; but it appears to be the same as one I possess

from Coulter's Mexican collection, which exhibits the fruit. The corolla is twice the size of that of *E. Wrightii*. The leaves are one to two inches in diameter. — *Sicyos eremocarpus*, *Schauer in Linnæa*, 20. p. 722, is probably a congener of this, and possibly the same species; but it is said to have the lobes of the leaves entire or nearly so, the tendrils simple, and the fruit glabrous. The surface of the fruit and the prickles in ours are sparsely hirsute.

SICYOS PARVIFLORUS, *Willd. Spec.* 4. p. 626; *H. B. K. Nov. Gen. & Spec.* 2. p. 119. Stony hills, near the copper mines, New Mexico, Aug.; and in a rocky cañon towards the Guadalupe Pass, Oct. (1091.) — This is the same as No. 50 of Coulter's Mexican collection, from Real del Monte. The branches and the leaves are usually scabrous-pubescent; and the ripe fruit, which is only three lines long, is ovoid, obtuse, and not crowned with the remains of the calyx. The retrorsely barbed prickles are at length partly deciduous from the mature pericarp, which is closely conformed to the oval seed. The leaves are rugosely veined, rounded in outline, and very unlike those of *S. angulatus*. Instead of the rank smell of that species, the foliage, in cultivated specimens, exhales a rather pleasant odor in drying.

SICYOSPERMA, Nov. Gen.

Flores monoici. *Masc.* Calyx late campanulatus, subulato-5-dentatus. Corolla calyci adnatim inserta, limbo 5-partito, lobis apice bicuspidatis. Stamina 5, in columnam apice capitato-antheriferam connata, imo calyce inserta: antheræ ovales, uniloculares, parallelæ, adnatæ. *Fæm.* Calycis tubo supra ovarium constricto, limbo planiusculo 5-dentato. Corolla maris, nisi lobis integris muticis. Ovarium uniloculare, ovulo unico pendulo. Stylus brevis: stigma peltatum trilobum. Fructus utriculiformis, ovatus, lenticularis, pericarpio membranaceo lævi semini arcte conformi. Testa crustacea, lævis. Cotyledones carnosæ, orbiculares, plano-convexæ. — Herba annua, scandens, cirrhosæ; foliis cordato-rotundis angulatis vel sublobatis; floribus minimis albidis, masculis in racemo brevi sæpe trifido, fœmineis in eadem axilla solitariis, primariis breviter pedunculatis nudis, secundariis (ex ramo axillari prolifero androgyno) subsessilibus bractea foliacea tripartita inclusis.

SICYOSPERMA GRACILE. — Mountain ravine at Santa Cruz, Sonora; Sept. (1092.) — Stems 2 to 5 feet long, slender, glabrous, or slightly scabrous-hispid, like the petioles. Leaves from three fourths of an inch to three inches in diameter, somewhat pubescent and scabrous, denticulated, angled or obscurely 5-lobed, the terminal lobe conspicuously mucronate. Tendrils mostly 2-cleft. Sterile racemes shorter than the petiole; those of the proliferous branches of the inflorescence shorter than the 3-parted and crenate-toothed bract, which subtends and loosely incloses the accompanying fertile flower. Corolla barely a line or a line and a half in diameter; the lobes ovate; those of the sterile flowers tipped with two conspicuous cuspidate points; which are wanting in the fertile flowers. Ovary at first pubescent with sparse and lax hairs, containing a single ovule suspended from the summit of the cell. Fruit 2 lines long, ovate-lenticular, smooth, green, turning brown or blackish when fully mature, and appearing like a seed: the thin and membranaceous pericarp closely investing the turgid-lenticular and smooth seed. — The character

of this singular new genus, of the tribe Sicyoideæ, is drawn both from the dried specimens and from living plants raised from their seeds in the Cambridge Botanic Garden.

GROSSULACEÆ.

RIBES TENUIFLORUM, *Lindl. Bot. Reg. t. 1274?* Banks of the San Pedro, Sonora, Sept.; in fruit only. Cimielluque Springs, Chihuahua, April; in flower and fruit. (1093.)

R. LEPTANTHUM, *Gray, Pl. Fendl. p. 53.* Sides of mountains at the copper mines, New Mexico; Aug. (1094.) — "Stems 3 to 5 feet high." Leaves mostly larger and less fascicled than in Fendler's specimens.

FOUQUIERIACEÆ.

FOUQUIERA SPLENDENS, *Engelm. in Wislitz. Mem. N. Mex. p. 98; Gray, Pl. Wright. p. 76.* Rocky hills of the San Pedro, Western Texas, May; in fruit. Hills around El Paso, May; in flower. — Mr. Wright has called my attention to a singular structure of the leaves in this plant, which is well shown in the growing shoots of some of the specimens; namely, that the spines are the persistent petioles of the cauline leaves, or rather a dorsal portion of them, to which a long and slender downward prolongation of the blade of the leaf is adnate for its whole length, and from which it separates, when full-grown, from the apex to the base. The foliaceous portion soon falls away, leaving the long and naked spine, from the axil of which a cluster of subsessile secondary leaves is developed. The spine itself is decurrent on the stem into an elongated *pulvinus* or ridge, which extends downward quite to the next axil directly underneath.*

CRASSULACEÆ.

SEDUM WRIGHTII, *Gray, Pl. Wright. p. 76.* Crevices of rocks at the copper mines, New Mexico; and at Santa Cruz, Sonora; Sept., Oct. (1095.)

SAXIFRAGACEÆ.

HEUCHERA SANGUINEA, *Engelm. in Wislitz. Mem. N. Mex. p. 107.* In ravines, at Santa Cruz, Sonora; Sept. (1096.) — "Certainly the most ornamental species of the genus." The flowers are deep red, 4 or 5 lines long, crowded in a simple or occasionally branched thyrsus of an inch or two in length. As in other species, the scape is sometimes perfectly naked, and sometimes furnished with small leaves.

H. RUBESCENS (*Torr. in Stansb. Rep. p. 388. t. 5*): glabella; scapo subfoliato vel nudo; foliis cordato-rotundis sublobatis inciso dentatis ciliatis, dentibus brevibus setiferis; panícula laxa multiflora; floribus virido-albis mox rubellis;

* *Fouquiera formosa*, *H. B. K.* has recently (in *Kongel. Danske Vidensk. Selk. Skrifter*, for 1851) been characterized and figured by Liebmann as a new and anomalous genus of Polemoniaceæ, named *Philetæria horrida*. From the details of the seeds, it appears that the wing differs from that of *F. splendens* in being deeply cleft at both ends. — Kunth writes the name *Fouquieria*; but De Candolle, Endlicher, &c. write it *Fouquiera*.

calyce cylindraceo-campanulato, tubo turbinato, lobis oblongis æqualibus; petalis unguiculatis lineari-spathulatis cum staminibus stylisque breviter exsertis. — Crevices of rocks, on mountains near the copper mines, New Mexico; Aug. (a large form, the scapes with the compound panicle one to two feet long), and Oct. (a small form like the specimens gathered in Utah by Capt. Stansbury, the scapes with the more simple panicle a span to a foot high). (1097.) — Petioles either beset with spreading hairs, or naked, as are the scapes. Leaves one to nearly two inches wide; the lobes and teeth short and broad. Scape either leafless or with a few small and sharply toothed or cleft leaves. Pedicels 2 or 3 lines long, minutely granulose-glandular, like the calyx-tube and rhachis, longer than the linear or subulate bracts. Calyx 2 or 3 lines long, at first whitish with the lobes tipped with green, soon turning rose-red or purple. Bracts and pedicels often purplish.

H. RUBESCENS, Torr.; var. *nana*; scapo subspithamæo; floribus parvulis. — With the preceding; Aug. — A few specimens were gathered of this plant, apparently only a dwarfed state of *H. rubescens*, with the flowers much smaller, but scarcely developed. I suspect it is the same as the *Tiarella*? *bracteata* of Torrey, in James's Rocky Mountain collection, and therefore *Heuchera bracteata*, *Seringe in DC. Prodr.* If it truly prove to be only a depauperate form of *H. rubescens*, the anterior name ought to give way, on account of its manifest inapplicability.

H. PARVIFOLIA, Nutt. in Torr. & Gray, *Fl.* 1. p. 581; Gray, *Pl. Fendl.* p. 54; var. *floribus majoribus magis campanulatis*. — Mountain-sides near the copper mines, New Mexico. (1098.) — A form with more campanulate flowers, as large as those of *H. Americana*. The plant connects the section *Heucherella* with *Holochloa*.

FENDLERIA RUPICOLA, Engelm. & Gray, *Pl. Wright.* p. 77. t. 5. Rocky banks of the San Pedro, Western Texas, May; in fruit. Mountains near El Paso, April; in flower. (1049.) — The petals are puberulent externally (like the inside of the calyx-lobes); they are imbricated in æstivation! — Specimens recently communicated by Lindheimer, in full flower, have their virgate branches loaded with the white blossoms, showing that the plant would be very ornamental in cultivation.

PHILADELPHUS SERPYLLIFOLIUS, Gray, *Pl. Wright.* p. 77. Summit of mountains, at Wild Rose Pass, head of the Limpio; June. (1100.) — Shrub 2–5 feet high, much branched.

P. SERPYLLIFOLIUS, var. *foliis floribusque majoribus*. — Mountain-sides at the copper mines, New Mexico; Aug. (1101.) — The leaves on the more vigorous branches are from half an inch to even an inch in length, and the expanded flowers almost an inch in diameter; but there is no other apparent difference.

UMBELLIFERÆ.

HYDROCOTYLE RANUNCULOIDES, Linn. f. Margin of a creek at Santa Cruz, Sonora; Sept. (1102.)

H. INTERRUPTA, Muhl. Comanche Spring, Western Texas; June. (1383.) — The California plant referred here is different.

BOWLESIA TENERA, Spreng. was found by Mr. Wright in the streets of San Antonio, Texas; doubtless introduced.

ERYNGIUM LONGIFOLIUM, *Cav. Ic. 6. t. 555*; *DC. Prodr. 4. p. 95*? Las Playas Springs, near the Sierra de los Animas, New Mexico; Oct. (1103.)—The radical leaves are 3 or 4 feet long, 4 or 5 lines wide, tapering to a point, soft, resembling those of a large *Sparganium*; their margins entire and naked, or rarely with one or two setiform teeth; these sparingly appear on the similar but shorter cauline leaves. The scales of the involucre are much shorter than the oval heads, linear-subulate, often resembling the paleæ and scarcely exceeding them.

E. LEAVENWORTHII, *Torr. & Gray, Fl. 1. p. 604*. Zoquete Creek, Western Texas; July.

E. WRIGHTII, *Gray, Pl. Wright. p. 78*. Pebbly bed of the Limpio; June; also mountain valleys in Sonora, Sept. (1104.)

BERULA ANGUSTIFOLIA, *Koch, Fl. Germ. & Helv. ed. 2. 1. p. 317*? *Gray, Pl. Fendl. p. 55*. *Helosciadium*? *Californicum*, *Hook. & Arn. Bot. Beech. p. 142*? *Sium pusillum*, *Nutt.*? Margin of the Mimbres, New Mexico, July; and of the Barbocomori, Sonora, Sept. Between the Leona and Comanche Springs. (1105.) Also found by Lindheimer in Western Texas.—The leaflets vary on the same plant, from oblong and barely serrate, to deeply pinnatifid with linear and often incised segments. I cannot clearly distinguish it from the European plant; although it is likely to be different.

LEPTOCAULIS PATENS, *Nutt.* Hills of the San Pedro and the Pecos; May. (1106.)

L. ECHINATUS, *Nutt.* Dry soil near El Paso, and at Lake Santa Maria; April. (1384.)

CICUTA MACULATA, *Linn.* Springs on the Pecos; June.

DAUCOSMA LACINIATUM, *Engelm. & Gray, Pl. Lindh. 2. p. 210*. Pebbly bed of Pedregal Creek, Western Texas; July. (1385.)

THASPIUM? *MONTANUM*, *Gray, Pl. Fendl. p. 57*; var.? *TENUIFOLIUM*. Hill-sides of Coppermine Creek, New Mexico; Aug. (1107.)—The specimens accord with the slender-leaved form of Fendler's No. 276, except that they are larger, a foot or more in height. The thick root is inodorous. The segment and lobes of the leaves are all narrowly linear, from 6 to 18 lines long. Umbel on a long peduncle, dense; the primary and secondary rays short. Fruit 2 to 3 lines long, tasteless; the mericarps flattened as much as in most *Angeliceæ*, oval, each with rather wide marginal wings, the three dorsal ribs extended into sharp and strong ridges, or one or two of them into wings of variable size, occasionally as wide as the marginal ones. Vittæ single and large, or usually double, in each interval.

DAUCUS PUSILLUS, *Michx. γ. SCABER*, *Torr. & Gray, Fl. 1. p. 636*. *D. scaber*, *Nutt.* Mountains near Lake Santa Maria, Chihuahua; April. (1386.)

ATREMA AMERICANA, *Nutt.* Prairies of the Leona and Nueces, May. (1108.)

ARALIACEÆ.

ARALIA HUMILIS, *Cav. Ic. 4. p. 7. t. 313*. *A. pubescens*, *DC.*? Mountain ravine, in crevices of rocks, at Santa Cruz, Sonora; Sept. (1109.)—"Stem 2 to 4 feet high," suffruticose, smooth. Leaflets membranaceous, 2 or 3 inches long, minutely pubescent, at length glabrate, ovate or oblong-ovate and acuminate, some of them

cordate, others obtuse or acute at the base. I suspect, therefore, that *A. humilis*, *Cav.* and *A. pubescens*, *DC.* are not distinct, if the present plant really belongs to either of them.

CAPRIFOLIACEÆ.

SAMBUCUS GLAUCA, *Nutt. in Torr. & Gray, Fl. 2. p. 13*; var. *foliolis anguste lanceolatis*. — Among rocks, on mountains near the copper mines, New Mexico, Oct.; in fruit. (1110.) — “Stems 6 to 10 feet high.” Leaflets 5, or the uppermost 3 (wrongly said to be 3–5-pairs in the *Flora* above cited), about 3 inches long, 6 to 8 lines wide. Berries glaucous. To this probably belongs Fendler’s No. 286, which was erroneously referred to *S. pubens*.

S. MEXICANA, *Presl in DC. Prodr. 4. p. 323*. Around houses at San Elizario on the Rio Grande, June; in flower. (1387.) — “Trunk 8 to 12 feet high, 6 inches or more in diameter.” The leaflets vary from 5, or even 3, to 7. Hartweg’s No. 1756 belongs apparently to the same species.

SYMPHORICARPUS ROTUNDIFOLIUS (sp. nov.): *foliis orbiculatis seu ovato-rotundis parvulis ramulisque molliter pubescentibus; floribus axillaribus solitariis; bracteolis ovario brevioribus dentibusque calycis cyathiformis ovatis obtusis glabris; corolla infundibuliformi intus glabra, lobis stamina superantibus*. — Sides of mountains around the copper mines, New Mexico; Aug. (1388.) — Stems 3 or 4 feet high, much branched. Leaves 5 to 9 lines long and 4 to 9 wide, softly and finely pubescent above, and finely tomentose underneath, entire, or the larger often repand; the petiole a line or less in length. Flowers almost sessile in the axils of the upper leaves. Calyx with the ovary a line and a half long, its lobes slightly if at all ciliate. Corolla 3 lines long, tubular-funnelform. Fruit not seen. — The leaves are rounded and more downy than in Nuttall’s *S. mollis*, and the inflorescence as well as the shape of the corolla is entirely different. The flowers are more like those of *S. glaucescens* and *S. montanus*, but only half as large; and they, as well as the leaves, are larger than in *S. microphyllus* (as described by Kunth), with which in other particulars its characters do not accord.

LONICERA (CAPRIFOLIUM) DUMOSA (sp. nov.): *foliis ovalibus basi acutis sessilibus subcoriaceis subtus pallidis utrinque cum ramulis confertis crebre piloso-pubescentibus, floralibus in discum ellipticum connato-confluentibus; capitulo simplici arcte sessili; ovario glaberrimo; calycis limbo truncato hirsuto*. — Banks of a torrent between Rock Creek and the Limpio, June; in fruit. (1389.) — A much-branched, slightly twining shrub, 3–5 feet high. Leaves 10 to 18 lines long, mostly obtuse, clothed with a soft spreading pubescence, especially underneath; only the uppermost pair connate-perfoliate. Berries globose, 2 lines or more in diameter. Pubescence not at all glandular or viscid. — Although the corolla is unknown, I do not hesitate to characterize this as a new species.

RUBIACEÆ.

GALIUM MICROPHYLLUM, *Gray, Pl. Wright. p. 80*. Bed of the Limpio, June; also in ravines and on stony hills, on the Organ Mountains, and at the copper mines,

New Mexico; and near Santa Cruz, Sonora. (1111.) — Leaves in some forms larger than in Wright's No. 234.

G. PROLIFERUM (sp. nov.): annuum, hispidulum; caule tenero suberecto debili; foliis quaternatis oblongis internodiis multoties brevioribus; pedunculis axillaribus gracilibus apice florem unicum deflexum inter bracteas 2 foliiformes subsessilem gerentibus nunc sæpe proliferis 2-3-floris nunc quadrifoliatis furcatis atque in ramulum floridum extensis; corolla minima albida; fructu setis longis apice uncinatis hispidissimo. — *G. virgatum*, var. *diffusum*, *Gray, Pl. Wright. p. 80.* — High, rocky hills of the Pecos; June, 1851. Stony hills on the Rio Grande, near San Elizario and El Paso; March, April. (1112.) — Stems slender, at first simple and 3 to 5 inches high, bearing one or two slender and spreading peduncles, or simple flower-branches of 4 to 10 lines in length, from each whorl; these are terminated by a pair of leaf-like bracts subtending a deflexed flower, in the manner of *G. virgatum* (only that has the peduncle extremely short); many of them are proliferous, especially as the plant grows larger, and produce 2, 3, or even 4 flowers one above the other in the same manner; or some bear a whorl of leaves, and are extended into an ordinary branch. The main stem soon branches from the base, attains 6 to 10 inches in length, and becomes diffuse. The bristles of the fruit are longer than in *G. virgatum*, their length equalling the diameter of the cocci.

G. WRIGHTII, *Gray, l. c.* Crevices of rocks in ravines, at Santa Cruz, Sonora, growing in dense branches; Sept. (1113.)

G. ——— Too young to determine. On the Limpio, with No. 1111.

G. ASPERRIMUM, *Gray, Pl. Fendl. p. 60.* Mountains, east of Santa Cruz, Sonora; Sept. (1114.)

G. TRIFIDUM, fere *γ. LATIFOLIUM*, *Torr. & Gray, Fl. 2. p. 22.* In springs, near the Sierra de los Animas, New Mexico; Oct. (1115.) — "Stems 2 to 3 feet high, supported by club-rushes."

BOUVARDIA HIRTELLA, *H. B. K.; Gray, Pl. Wright. p. 80.* Wild Rose Pass, on the Limpio, and on Rock Creek; June. (1116.)

B. JACQUINI, *H. B. K. l. c.*, var. *ovata*, *DC. Prodr. 4. p. 365?* Mountain ravine at Santa Cruz, Sonora; Sept. — "A foot high. Flowers scarlet."

B. OVATA (sp. nov.): herbacea? glabra; foliis quaternis ternisve ovatis utrinque acutis subpetiolatis penninerviis; stipulis setaceis; cyma multiflora; calycis lobis subulatis tubo subduplo longioribus tubo corollæ intus pilosulo sextuplo brevioribus. — Mountain valley from San Pedro to Santa Cruz, Sonora; Sept. (1117.) — Stems a foot or more high, the base not seen, but probably herbaceous, simple, leafy to the top. Leaves about the length of the internodes, $1\frac{1}{4}$ to $2\frac{1}{2}$ inches long, an inch or more in width, the margins, as also the lobes of the calyx, minutely ciliolate. Corolla an inch long, apparently purple, the lobes short, ovate, and obtuse.

OLDENLANDIA (EREICOTIS) ACEROSA. *Hedyotis (Ereicotis acerosa)*, *Gray, Pl. Wright. p. 81.* Limestone prairies, Turkey Creek, Texas, and westward; May. (1118.) — Mr. Benthams, in *Kew Jour. Bot. 4. p. 172*, has pointed out the difference between "Hedyotis, with its fruit splitting into two cocci," and "Oldenlandia,

Anotis, and Houstonia, with their purely loculicidal dehiscence," constituting "a natural genus, which is the Hedyotis of Torrey and Gray's Flora." Moreover, the name Oldenlandia should have been preferred by the botanists who combined the whole into one genus, inasmuch as it has forty-four years' priority over Hedyotis, and ten over Houstonia; and Bentham has rightly restored it for the present genus.

O. (HOUSTONIA) RUBRA. Hedyotis rubra, *Gray, Pl. Fendl. p. 61.* Stony hills, from Santa Barbara to the copper mines, New Mexico; July. (1119.)

O. (HOUSTONIA) HUMIFUSA. Hedyotis humifusa, *Gray, Pl. Lindh. 2. p. 216, & Pl. Wright. p. 82.* On the Limpio; June.

O. ANGUSTIFOLIA (*Houstonia angustifolia, Michx.*), var. = Hedyotis stenophylla, var. parviflora, etc., *Gray, Pl. Wright. p. 81.* Rocky hills, near Eagle Springs; June. (1390.)*

MITRACARPIUM BREVIFLORUM (sp. nov.): annuum, glabriusculum; caule erecto subtetragono; foliis lanceolatis utrinque acutis sessilibus; stipulis parce hispidis; calycis laciniis 2 majoribus lanceolato-subulatis corolla subduplo longioribus, 2 hyalinis multo minoribus. — Mountain ravines and hill-sides, near Santa Cruz, Sonora; Sept. (1120.) — Stems 2 to 6 inches high. Leaves about an inch long, $1\frac{1}{2}$ to 3 lines wide, usually four subtending the terminal capitulum. Bracts hyaline, setaceous, glabrous. Calyx almost glabrous; the two large teeth canaliculate, soon recurved-spreading, rigid, a line and a half long; the two small ones resembling interposed stipules, usually considerably shorter than the tubular-funnel-form corolla, which is white, glabrous, and seldom a line in length. Dehiscence and seeds as in *M. Schizangium*. — The shortness of the corolla and the shape of the leaves appear to distinguish this from Bentham's *M. lineare*.

CRUSEA WRIGHTII (sp. nov.): annua; caule subreverse hirsutulo tereti; foliis lanceolatis acutis hirtello-scabris nervis utrinque 3-4, floralibus 4-8 capitulum laxiflorum terminale involucrantibus basi dilatatis et hispido-ciliatis; calycis laciniis subulatis corollæ purpureæ tubum subæquantibus. Prairies, near Santa Cruz, Sonora; Sept. (1121.) — Stems 3 to 10 inches high, slender, terete, not in the least angled, sparingly branched. Primordial leaves subrotund, small; the others lanceolate or linear-lanceolate, 12 to 20 lines long and 2 or 3 broad, narrowed at the

* The following species was discovered in Texas several years since by Mr. Wright; but I have not until now received sufficient specimens to characterize it.

OLDENLANDIA SUBVISCOSA (*Wright. in herb.*): annua, minutim viscoso-hirtella; caule tenello ramoso; ramis divaricatis; foliis linearibus imisve sublanceolatis acutis basi attenuatis; floribus terminalibus nunc alaribus et pseudo-lateralibus solitariis pedunculo æquilongis; corolla minima (albida) hypocraterimorpha, tubo calycem viscoso-hirtellum 4-fidum adæquante lobis obovatis longiore; capsula didyma ad apicem liberum transversim loculicida. — Between La Grange and Lockhart Springs, Fayette County, Texas, in sandy post-oak woods; May. — Plant 3 to 5 inches high, slender, divaricately branched, with a flower in each fork. Leaves half an inch long, half a line, or the lowest a line, in width, sessile, mostly shorter than the internodes. Stipules triangular or ovate, minute, scarious. Pedicels slender, $1\frac{1}{2}$ to 2 lines long, often recurved or spreading in fruit. Lobes of the deeply 4-cleft calyx lanceolate-subulate, in fruit as long as the tube. Corolla a line or a line and a half in length; the limb 4-lobed. Capsule membranaceous, subglobose, didymous, a line and a half in length, somewhat greater in width, loculicidal across the top, which alone is free from the calyx; the cells 10-seeded. Seeds meniscoid, smooth.

base, except the floral ones. Stipular sheaths bearing 5 to 7 setæ on each side; these are beset, especially those of the upper and floral leaves, with strong bristles. Head rather few-flowered. Bracteal stipular setæ strongly setose with long hispid hairs. Ovary didymous, nearly glabrous. Lobes of the calyx four, equal (or sometimes two of them very short), and with as many small interposed teeth, hispid-ciliate towards the base. Corolla slender, only two lines long. Mature fruit not seen.

DIODIA TERES, *Watt.*; *Torr. & Gray*; var. ? *parvula*; caule subsimplici erectiusculo; foliis anguste linearibus acutissimis. — Mountain valleys between the San Pedro and Santa Cruz, Sonora; Sept. (1122.) — The specimens are small, from 2 to 6 inches high, from an annual root, nearly erect, and resemble the narrowest-leaved forms from New Jersey, rather than the plant of the Southern States.

COMPOSITÆ.

VERNONIA JAMESII, *Torr. & Gray, Fl. 2. p. 58.* Valley of the Limpio and Rainwater Creek; June. — The form with smaller heads. (1391.)

V. LINDHEIMERI, *Gray & Engelm. Pl. Lindh. 2. p. 217.* Pebbly bed of the San Pedro, Western Texas; July. (1392.)

PECTIS PROSTRATA, *Cav.*; *Gray, Pl. Wright. p. 83.* Rocky hills, between the copper mines and Conde's Camp, New Mexico, Aug.; and near Santa Cruz, Sonora, Sept. A dwarf variety, like Wright's No. 245. (1123.)

P. (PECTIDOPSIS) ANGUSTIFOLIA, *Torr.*; *Gray, Pl. Fendl. p. 61, & Pl. Wright. l. c.* Stony hills near the copper mines, New Mexico; Aug. (1124.) — The original form of the species, without any awns to the pappus.

P. (PECTIDOPSIS) FILIPES, *Harv. & Gray, Pl. Fendl. p. 62.* Stony hills of Coppermine Creek, New Mexico; Aug. (1125.) — A low, divergently much-branched plant, with the capillary peduncles from 12 to 18 lines long: exactly like No. 329 of Coulter's Californian Collection, except that the pappus of the disk-flowers is commonly one-awned. *P. uniaristata*, *DC.* is described as having mucronate-aristate leaves, and the scales of the involucre acuminate.

P. (PECTOTHRIX) PAPPOSA, *Harv. & Gray, l. c.* Sandy soil, at Doña Ana, New Mexico; July. (1126.) — "Divaricately much-branched from the root, procumbent." I have raised this from seed in the Cambridge Botanic Garden. Its prostrate, divergently-branched stems extend to a foot in length; its leaves are often 2 inches or more in length, barely a line wide, rather fleshy; the peduncles about an inch long. Involucre 3 lines long; the golden-yellow ligules (8) about the same length. The pappus of the ray is very short, somewhat auriculate or coroniform, sometimes nearly obsolete. — In a single wild specimen, intermixed with the others, the pappus is reduced to setæ very much shorter than the tube of the corolla, and more or less coroniform-concreted; otherwise it is undistinguishable from the rest of the specimens.

P. (PECTOTHRIX) LONGIPES (sp. nov.): herbacea, glabra; caulibus brevibus ramosissimis decumbentibus; foliis linearibus mucronatis secus margines grosse glandulosis basi ciliis utrinque 1-3 instructis; pedunculis prælongis; involucri multiflori squamis 12-13 uniglandulosis; pappo radii biaristato, disci multisetoso.

— Mountain valleys, between the San Pedro and Santa Cruz, Sonora; Sept. (1127.) — Stems 1 to 3 inches long, in the cultivated plant longer and more procumbent, slender. Leaves 12 to 18 lines long, $1\frac{1}{2}$ to 2 lines wide, rather fleshy. Peduncles 4 to 6 inches long, the earliest scapiform, naked or with a few minute bractlets. Scales of the campanulate involucre 3 lines long, linear, rather obtuse, bearing usually only a single gland. Ligules 12 or 13, oblong. Disk-flowers 40 or more. Achenia puberulent. Pappus in the ray of two slender awns or stout bristles, as long as the tube of the ligule, not scarious-dilated at the base, minutely scabrous; in the disk of 30 or 40 capillary and very unequal scabrous bristles; the longer ones little shorter than the corolla.

P. IMBERBIS (sp. nov.): glaberrima, ultrapedalis; caulibus e radice perenni plurimis erectis gracilibus rigidis angulatis apice paniculato-cymosis polycephalis; foliis anguste linearibus secus margines parce nigro-glandulosis haud setigeris; capitulis pedicellatis; involucri squamis 5 linearibus obtusis glandulis nigris oblongis linearibusve parce notatis; ligulis 5 oblongis; fl. disci 5–7; acheniis hirtellis; pappo conformi e paleis 2–5 inæqualibus sæpius dimidiato. — On the Sonoita, near Deserted Rancho, Sonora; Sept. (1399.) — This singular species, with the characters otherwise of a genuine *Pectis*, is remarkable for the total absence of cilia fringing the base of the leaves, as well as for its size; the stems being a foot or more in height. The root is rather ligneous. The leaves are $1\frac{1}{2}$ to 2 inches long, only a line wide, and perfectly entire. Peduncles an inch or less in length, sparingly and minutely bracteolate. Involucre 4 lines long; the scales conduplicate around the ray-achenia. Ligules 3 lines long, yellow, changing, as do also the disk-flowers, to red or purple. Disk-corollas slightly bilabiate, the teeth each dotted with a dark gland. Pappus nearly alike in the disk and ray, mostly of about 5 lanceolate paleæ, three of which are minute, and two half the length of the disk-corolla, or in the central achenia all small and nearly equal; in the exterior achenia more or less unilateral.

TRICHOCORONIS RIVULARIS, Gray, *Pl. Fendl.* p. 66. In Piedra Pinta Creek, Western Texas; May. (1128.)

CÆLESTINA AGERATOIDES, H. B. K.; DC. *Prodr.* 5. p. 108. Crevices of rocks, Guadalupe Pass, between the San Pedro, Sonora, and the copper mines; Oct. (1129.)

STEVIA MACELLA (sp. nov.): annua, subpedalis, viscoso-pubens; foliis tenui-membranaceis glabellis ovatis grosse dentatis triplinerviis basi acutis in petiolum marginatum decurrentibus, superioribus alternis; capitulis paniculatis breviter pedicellatis; involucri squamis acutis; pappo paleaceo brevissimo subcoroniformi floris unici exaristato cæt. aristis 3 corolla sublongioribus. — On shaded rocky cliffs of Coppermine Creek, New Mexico; Oct. (1130.) — Stem slender, erect, with short paniculate flowering branches. Leaves very thin and membranaceous, about an inch and a half long, and an inch wide, all more or less cuneate at the base, on slender margined petioles; the lower only opposite. Heads rather numerous in terminal and lateral short corymbose panicles, longer than the pedicels. Involucre 3 lines long, viscous-pubescent. Corolla 2 lines long, whitish. Awns of the pap-

St. micrantha Lag. wide Bot. Board 713

pus denticulate, purplish. Achenia with the pappus $4\frac{1}{2}$ lines long. — This needs to be compared with *S. micrantha*, *Lagasca*, which is said to have subcordate leaves and very small flowers.

S. CANESCENS, *H. B. K. ? Benth. Pl. Hartw.*; var. *glabriuscula*; capitulis paullo longioribus; aristis pappi sæpius 4 – 5. — Hill-sides, near Santa Cruz, Sonora; and on mountains near the copper mines, New Mexico; Sept., Oct. (1131.) — This appears to be the same as Hartweg's No. 136, although the stem is less hirsute, and the heads rather longer and looser. To neither is the specific name at all applicable, and very probably it is not the plant described by Kunth. In both the awns are frequently 4, or in ours 5, in number; and one of the flowers is occasionally awnless. The corolla is white or whitish.

CARPHOCLETE BIGELOVII (*Gray, Pl. Wright. p. 89, adnot.*): fruticulosa, subpuberula; caulibus foliosis ramosis; foliis brevibus linearibus oblongisve, inferioribus spathulato-oblongis trinervatis; capitulis solitariis 2 – 3-nisve in ramis brevibus conferte foliosis sessilibus; squamis involucri cuspidato-acuminatis resinoso-punctatis; pappi paleis 11 – 14 aristatis cum squamellis 1 – 3 parvis lanceolatis muticis obsolete uninerviis. — (Near the copper mines, New Mexico, *Dr. J. M. Bigelow.*) Hill-sides in the Organ Mountains, northeast of El Paso; April. (1393.) — Stems numerous from a ligneous root, tufted, a span to a foot high, often fasciculately branched, leafy to the top. Leaves mostly fascicled in the axils and crowded on the short flowering branches; the lowest an inch long and 4 or 5 lines wide, very obtuse, manifestly 3-nerved; the upper narrower, and varying from linear-oblong to linear; those of the fascicles and flowering branches 3 to 6 lines long and 1 to 2 wide, mucronate-acute, usually crowded about the base of the sessile heads, which are fully an inch in length. "Limb of the corolla white; the tube purple." — From the fine specimens gathered last spring by Mr. Wright along with Dr. Bigelow, I am now enabled to complete the account of this well-marked species, which I before imperfectly characterized from a fragment received in a letter. It differs remarkably from the other species in its fasciculate habit and sessile heads.

KUHNTIA EUPATORIoidES, var. (= 247, *Pl. Wright. p. 83*). Zoquete Creek, Western Texas; May. (1132.)

K. EUPATORIoidES, var. verging to *δ. gracillima*. Stony hills at the copper mines, New Mexico, Aug.; and from the pass of the Chiricahui Mountains to Santa Cruz, Sonora, Sept. (1133.) Also between Comanche Spring, Texas, and the Pecos; June. (1394.)

CARMINATIA TENUIFLORA, *DC. Prodr. 7. p. 267; Deless. Ic. Sel. 4. t. 99*. Among rocks, at the copper mines, New Mexico; and on the Sonoita, near Deserted Rancho, Sonora; Sept., Oct. (1134.) — I have raised this from seed in the Cambridge Botanic Garden. The young stems are sparingly hairy.

BRICKELLIA OLIGANTHES, *Gray, Pl. Wright. p. 84*; var. *magis cinerea vel canescens*; foliis plerisque linearibus. — Crevices of rocks, in a mountain ravine at Santa Cruz, Sonora; Sept. (1135.)

B. WISLIZENI, *Gray, Pl. Fendl. p. 64, & Pl. Wright. l. c.*; var. *foliis majoribus* (3-pollicaribus); ramis axillaribus floriferis 3 – 5-cephalis. — Sides of mountains,

near Santa Cruz, Sonora; Sept. (1136.) — This, if I rightly remember, will nearly accord with a plant gathered by Seemann, at Cerro de Pinal.

B. BETONICÆFOLIA (sp. nov.): herbacea, pilis multiarticulatis patentibus hirsuta; caulibus virgatis simplicibus; foliis omnibus oppositis breviter petiolatis cordato-oblongis obtusis grosse crenatis scabro-hirtellis triplinerviis subtus rugoso-reticulatis, floralibus decrescentibus nunc parvis subsessilibus; capitulis pedicellatis in thyrsum terminalem racemosum elongatum laxum superne nudum digestis; pedunculis singulis 2–5-cephalis; involucrio 12-floro laxo, squamis 2–3-serialibus lanceolatis et linearibus acuminatis, extimis brevibus ciliatis; acheniis sericeo-villosis; pappo scabro. — Hills, near the copper mines, New Mexico; Oct. (1137.) — Stems several from the same perennial root, 2–3 feet high, roughish-hirsute, or nearly hispid, terminating in a raceme-like, loose and interrupted, nearly leafless, virgate thyrsus, of a foot or more in length. Leaves as long as the internodes, rather rigid, but not coriaceous, very veiny underneath with coarse reticulations, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, all more or less cordate at the base; the petioles distinct, but only a line and a half in length. Peduncles and pedicels 3 to 9 lines long, hirsute and somewhat glandular. Heads 5 or 6 lines long; the involucre and the pappus nearly as in *B. Wislizeni*. — This species should stand next to *B. cylindracea* and *B. Wislizeni*, to which it is more closely related than to any of the section which contains *B. Cavanillesii*, notwithstanding the cordate leaves.

B. BETONICÆFOLIA, var. *humilis*; foliis parvulis (majoribus sesquipollicaribus) subsessilibus. — Hills east of Santa Cruz, Sonora; Sept. (1138.)

B. CYLINDRACEA, *Gray*; a small variety. Western Texas; May.

B. WRIGHTII (sp. nov.): suffruticosa, minutim glanduloso-scabrella; caulibus ramosissimis; foliis plerisque alternis longe petiolatis deltoideo-ovatis (basi truncatis subcordatisve) acutis grosse-serratis subcoriaceis 3–5-plinerviis subreticulatis; thyrsis paniculatis polycephalis subfoliosis; capitulis pedicellatis; involucrio cylindraceo 14–18-floro glabro purpurascente, squamis 3–4-seriatis obtusis, extimis ovalibus, intimis oblongo-linearibus; acheniis hirto-puberulis; pappo scabro. — Hills, near the copper mines, New Mexico; Oct. (1139.) — Stems 3 or 4 feet high, paniculately much branched, smooth; the branches, &c. very minutely glandular-scabrous. Leaves from the base of the stem not seen; the upper cauline all alternate, $1\frac{1}{2}$ to 2 inches long, and the petioles $\frac{1}{2}$ to $\frac{2}{3}$ inch long; those of the flowering branches similar but smaller, not numerous. The leaves are rigid, but not so coriaceous as those of *B. baccharidea*, not much reticulated. The very numerous heads are larger than in the last-named species (about 5 lines long), and the inflorescence more open. Pedicels $1\frac{1}{2}$ to 3 lines long. The scales of the involucre are nearly all tinged with purple, especially above the middle. In the arrangement of the species published in *Pl. Wright. p.* 84–86, this would stand between *B. baccharidea* and *B. reniformis*. It is probable that its lower leaves are cordate.

B. TENERA (sp. nov.): herbacea, puberula; caulibus adscendentibus ad apicem usque foliosis; foliis omnibus alternis longe petiolatis deltoideo-ovatis obtusis vel acutis crenato-dentatis membranaceis basi trinervatis in petiolum breviter attenuatis; capitulis axillaribus subsolitariis vel paucis in ramulos floridos petiolum haud su-

perantibus; involucre 12-floro cylindraceo glaberrimo, squamis pluriseriatis obtusis, exterioribus ovalibus oblongisve, intimis linearibus; acheniis puberulis; pappo scabro. — In a mountain ravine near Santa Cruz, Sonora; Sept. (1140.) — “Stems branching from the root, 1 – 3 feet high.” Leaves very thin and membranaceous, one to two inches in length, longer than broad, especially the upper ones, not so veiny as those of *B. reniformis*, slightly if at all subcordate. Heads about 5 lines long, on short pedicels. Involucre stramineous. — Perhaps too closely related to *B. reniformis*; but none of the leaves are reniform, nor so much dilated, and the heads are larger.

B. FLORIBUNDA (sp. nov.): herbacea; caule glabello erecto folioso superne paniculato; foliis alternis longe petiolatis glabris deltoideo-ovatis vel summis ovato-oblongis acutis dentatis triplinerviis venosis; corymbis polycephalis subaphyllis in paniculam compositam amplam laxam digestis; pedunculis pedicellisque glanduloso-pubescentibus erectis; involucre 18 – 20-floro pauciseriali basi 2 – 4-bracteato, squamis extimis oblongis seu lanceolatis acutis parce glandulosis, intimis linearibus obtusis glabris; acheniis puberulis; pappo scabro. — Ravines near Santa Cruz, and on rocky banks of the San Pedro, Sonora; Sept. (1141.) — Stems apparently 3 or 4 feet high; the ample compound corymbose panicle often a foot in length when fully developed, and bearing a large number of heads. Leaves sparsely resinous-punctate, and the floral ones glandular, otherwise glabrous, rather firm in texture, in shape much like those of *Eupatorium ageratifolium*, but alternate, the lower truncate at the base, slightly if at all subcordate, 2 to 3 inches long, $1\frac{1}{2}$ to 2 inches wide at the base; the uppermost narrower and becoming acute or cuneate at the base. Bractlets lanceolate and linear. Heads 5 lines long, not pendulous. — A very distinct species, belonging to the same section as *B. cordifolia*.

B. FENDLERI, Gray, *Pl. Fendl.* p. 63. Sides of mountains, near the copper mines, New Mexico; Aug. (1142.) — Leaves both opposite and alternate.

B. GRANDIFLORA, Nutt.; Torr. & Gray, *Fl.* Sides of mountains, at the copper mines, New Mexico; Oct. (1143.)

B. SIMPLEX (sp. nov.): herbacea, glabella; caulibus e radice lignescente plurimis simplicibus apice nudo monocephalis vel 2 – 4-cephalis; foliis oppositis nunc alternis deltoideo-cordatis summis triangulato-hastatis crenato-dentatis basi trinervatis longiuscule petiolatis; involucre plusquam 20-floro pauciseriali basi breviter bracteolato, squamis linearibus acutis; acheniis hirtellis; pappo barbellulato-scabro. — Hills east of Santa Cruz, Sonora; Sept. (1144.) — Stems slender, erect, 12 to 18 inches high. Leaves an inch or less in length, on petioles 4 to 6 lines long; the lowest broad and very obtuse; the upper successively more triangular-oblong and at length acute, strongly crenate-toothed towards the cordate base, almost glabrous. Peduncle 2 – 3 inches long, at least when solitary; when there are two or more heads the peduncle of the lower one is an inch long. Heads 7 or 8 lines long, larger than in *B. grandiflora*; the involucre resembling that of *B. oblongifolia*; but the scales narrower.

EUPATORIUM WRIGHTII, Gray, *Pl. Wright.* p. 87. Crevices of rocks, at Guadalupe Pass, New Mexico; Oct. (1145.) — Heads rather larger than in No. 254.

E. SOLIDAGINIFOLIUM, Gray, *l. c.*; var. *caulibus* 1–2-pedalibus subsimplicibus herbaceis e basi suffrutescente pubescentibus; foliis ovato-lanceolatis parce serratis magis venosis puberulis; panicula magis evoluta; capitulis 5–7-floris. — With the foregoing. (1146.) — These fine specimens require that the character of the species should be a little reformed.

E. AGERATIFOLIUM, DC., var. ? HERBACEUM; caulibus basi tantum suffrutescente; foliis sæpius pl. m. cordatis. — Mountains, east of Santa Cruz, Sonora (a small-leaved form); also at Guadalupe Pass, and at the copper mines, under trees (a large-leaved form), Oct. (1147.) — Stems one to three feet high; the foliage in the dried specimens somewhat aromatic. — The longer petioles, acute scales of the involucre, and the pubescent achenia distinguish this from *E. aromaticum*. Although the stems are herbaceous nearly or quite to the base, it certainly is not specifically distinct from *E. ageratifolium*, var. *Texense*, which, like the present specimens, has from 12 to 22 flowers in the capitula. — The pappus in all my indigenous specimens is nearly as long as the corolla; but in a plant raised in the Cambridge Botanic Garden from Lindheimer's Texan seeds, the pappus is only half the length of the corolla; whence I suspect that *E. Berlandieri*, DC. belongs to the same species.

E. SONORÆ (sp. nov. *Subimbricata*): caulibus herbaceis gracilibus assurgentibus paniculato-ramosis pubescentibus; foliis longe petiolatis oppositis membranaceis deltoideis acuminatis grosse dentatis basi 3–5-nerviis puberulis; corymbis oligocephalis; involucre 24-floro subbiseriali, squamis oblongis bi–trinerviis, exterioribus acutiusculis pubescentibus, interioribus obtusis; corollis carneis; acheniis acute angulatis, angulis hirtellis. — Crevices of rocks, in a mountain ravine, near Santa Cruz, Sonora; Sept. (1148.) — Stems 10 to 20 inches long, often decumbent, striate. Leaves 12 to 18 lines long, on petioles of 4 to 10 lines in length, thin, conspicuously acuminate, deeply dentate with 6 or 8 strong and spreading teeth, or the upper with 3 or 4 on each side, truncate at the base, not cordate, the smaller rameal ones sometimes contracted at the base. Involucre two lines long. Pappus rather shorter than the corolla. — Allied to *E. Schiedianum*, DC.; from which its smaller heads, and smaller, more triangular, abruptly long-acuminate and incisely toothed leaves distinguish it. From *E. multinerve*, Benth., which seems to be *E. Schiedianum* γ. *diversifolium*, DC., it differs in nearly the same particulars, but I fear not sufficiently.

CONOCLINIUM DISSECTUM, Gray, *Pl. Wright. p.* 88, var. (= No. 259). Valleys, between Eagle Springs and the Rio Grande; June. (1149.)

MACHLERANTHERA TANACETIFOLIA, Nees, *Ast. p.* 224; Gray, *Pl. Wright. p.* 90. Valley of the Pecos, in alluvial soil; June. Also near the San Pedro, Sonora, in low, damp soil; Sept. (1150.)

M. TANACETIFOLIA, var. *humilis* (spithamæa); involucre subturbinato, appendicibus foliaceis squamarum brevibus minus patentibus. — Near Ojo de Gavilan, New Mexico; Aug. (1151.) — The green tips of the involucral scales are scarcely more prolonged than in some forms of *M. canescens*.

M. TANACETIFOLIA, var. *pygmæa* (3–6-pollicaris); capitulis multo minoribus; involucre hemisphærico, squamis breviter appendiculatis. — Dry, stony hills, valley

of the Salado, Chihuahua, and near El Paso; April. (1395.)—A remarkably dwarf, precociously flowering state of the species.

M. CANESCENS, var. *LATIFOLIA*: scabro-pubescent vel puberula (viridi aut cinerea); foliis oblongis seu lanceolatis multidentatis obtusis; involucri squarrosi, appendicibus subulatis. — *Dieteria asteroides*, Torr. in Emory, Rep. p. 142. Near the copper mines, New Mexico, and in Sonora near Deserted Rancho; Sept., Oct. (1152.)—Leaves from one third to two thirds of an inch wide; the somewhat hemispherical involucre half an inch in diameter. Rays mostly deep violet in the dried specimens.

M. PARVIFLORA, Gray, Pl. Wright. p. 90. Valley west of the Chiricahui Mountains, Sonora; Sept. (1153.)

PSILACTIS ASTEROIDES, Gray, Pl. Fendl. p. 72, & Pl. Wright. p. 91. On the Rio Grande, near El Paso; and in Sonora near the San Pedro. (1154.)

ASTER? (*MEGALASTRUM*; pappi setæ rigidæ, complanatæ, serrato-barbellatæ) *WRIGHTII* (sp. nov.): suffrutescens, subviscoso-pubescent; caulibus ramisque apice nudis monocephalis; foliis spathulatis integerrimis acumine setifero apiculatis in petiolum marginatum attenuatis; capitulo maximo; involucri biseriali squamis ovato-lanceolatis longe caudato-acuminatis. — Stony hills on the Rio Grande 60 or 70 miles below El Paso, near the cañon through which passes the road to San Antonio; March. — Unwilling to multiply the Asteroid genera, I append this remarkable plant to Aster, because if it had yellow rays I should not hesitate to refer it to the analogous genus *Aplopappus*. Yet the rigid bristles of the pappus (which, although stout and manifestly flattened under the lens, are still capillary), with so strong a denticulation as to become almost barbellate, and the membranaceous, long-acuminate scales of the involucre, taken with the rather peculiar habit, might justly entitle it to rank as the type of a new genus. It has higher claims to such a rank than *Biotia*, *Heleastrum*, &c. The involucre, as flattened in the dried specimens, is over an inch in diameter; and the puberulent-glandular scales are from 6 to 10 lines long, including the acumination. Rays 30 to 40, rather broad, 8 or 9 lines long, 2–3-toothed at the apex, purple, according to Mr. Wright. Receptacle nearly flat, alveolate. Disk-corolla, stamens, &c. as in Aster; so is the style, except that the hispid appendages are rather short and obtuse. Ovaries compressed, villous. Pappus white, similar in the disk and ray, about the length of the disk-corollas, not very copious; the bristles stouter even than in *A. eryngiifolius*, Torr. & Gr., manifestly flattened, taper-pointed, unequal, the smallest half the length of the longer ones and more slender. Stems about a foot high, from a lignescent base, angled. Leaves one to two inches long, including the tapering base or petiole, obscurely veined, 4 to 8 lines wide, abruptly mucronate-acuminate, and with the point extended into a setiform cusp. — Unfortunately only two specimens were seen in flower at the early season when it was discovered. It has doubtless been since collected by Dr. Bigelow or Dr. Parry.

ASTER MULTIFLORUS, Ait.; Torr. & Gray, Fl. 2. p. 125 (fere β). Stony hills near the copper mines, New Mexico; and near Santa Cruz, Sonora; Aug., Sept. (1155.) Also on prairies of Zoquete Creek, Texas; — a cinereous form, with small

and fascicled or crowded leaves, and small heads; exactly *A. hebecladus*, DC. (1396.)

A. MULTIFLORUS, Ait., γ . *COMMUTATUS*, Torr. & Gray, l. c. Rocky mountain-sides, at the copper mines, New Mexico; Oct. (1156.) Also, a large form, with more paniculate heads, of unusual size, passing to *A. falcatus*.*

A. PUNICEUS, Linn., γ . *VIMINEUS*, Torr. & Gray, Fl. 2. p. 141. Margin of springs, valley of the Sierra de los Animas, New Mexico; Oct. (1157.)

A. LONGIFOLIUS, Lam.; Torr. & Gray, Fl. 2. p. 139. Low bottom of the Mimbres, New Mexico; Nov.

A. NOVI BELGI, Linn.? var. *foliis membranaceis*. — In thickets, on the Mimbres; Oct. (1758.) — *A. Novi Belgii* and *A. longifolius* will absorb several nominal species.

A. SIMPLEX, Willd.; Torr. & Gray, Fl. 2. p. 131. Banks of the Barbocomori, Sonora; Sept. (1159.) — There is more than one prior name for this species.

A. SPINOSUS, Benth. Pl. Hartw. p. 20. Low grounds, on the Rio Grande, near San Elizario; June. (1397.)

A. DIVARICATUS, Nutt.; Torr. & Gray, l. c. Banks of the Rio Grande, and of the San Pedro, Sonora. (1160.)

A. ANGUSTUS, Torr. & Gray, l. c. *Tripolium angustum*, Lindl. *Crinitaria humilis*, Hook. Fl. Bor.-Am. *Aster* (*Tripolium*) *frondosus*, Nutt. *Conyza Altaica*, DC. Sand-bars of the Rio Grande, below Doña Ana, New Mexico; July. (1161.) — The older stems are not strict, but diffusely spreading, the lateral ones procumbent. The root is annual or biennial.

A. PAUCIFLORUS, Nutt. Gen. 2. p. 154; Torr. & Gray, l. c. ^{2. 164} *A. caricifolius*, H. B. K.! Nov. Gen. & Spec. 4. p. 92. t. 333. *Tripolium caricifolium*, Schauer in *Linnaea*, 19. p. 721. Valley west of the Chiricahui Mountains, in damp, subsaline soil, and near Santa Cruz, Sonora; Sept. (1162.) — Well distinguished by its rigid foliage, and the viscid pubescence or glandulosity of the flowering branchlets, bracts, and pauciserial involucre. The rays when fresh are blue or purple. It is the same as the Mexican plant of Humboldt and Bonpland above cited.

A. PAUCIFLORUS, var. *caule tenero, foliis angustissime linearibus*. — Las Playas Springs, New Mexico, in subsaline soil; Oct.

A. (OXYTRIPOLIUM) SONORÆ (sp. nov.): *glaberrimus*; *radice annua vel bienni*; *caule e basi ramoso*; *ramis patentibus rigidis foliosis*; *foliis infimis oblanceolatis inciso-dentatis basi attenuatis, superioribus linearibus rârîter spinuloso-denticulatis mucronatis*; *capitulis solitariis majusculis*; *involucri hemisphærici squamis pluri-serialibus gradatim imbricatis lineari-lanceolatis acutissime acuminatis appressis glabris*; *ligulis exsertis*; *acheniis sericeo-pubescentibus*. — Low valley, in subsaline soil, west of the Chiricahui Mountains, and at San Bernardino, Sonora; Sept. (1163.) — “Stems 10 to 18 inches high, branched from the base; the branches rigid. Leaves about an inch long, thickish, veinless; those of the flowering branchlets small and subulate. Heads about half an inch in diameter, hemispherical. Scales of the involucre all short, the greenish tips subulate-pointed. Rays

* *A. Fendleri*, Gray, Pl. Fendl. p. 66, appears to be only a form of *A. Nuttallii*, Torr. & Gray.

30 – 40, slender, purple. — A very distinct species, with the heads as large as in *A. Moranensis*, *H. B. K.* (to which probably belongs *A. purpuratus*, *Nees*), and nearly as large as in *A. flexuosus*, not at all turbinate at the base; the scales closely imbricated in numerous series.

A. (OXYTRIPOLIUM) BLEPHAROPHYLLUS (sp. nov.): surculoso-cæspitosus, humilis, glaber; foliis linearibus vel surculorum lineari-spathulatis eximie setoso-ciliatis, ramorum brevissimis; ramulis fastigiatis monocephalis; involucri turbinati squamis pluriserialibus oblongis acutis chartaceis; ligulis 10 – 14 oblongis exsertis; acheniis sericeis. — Las Playas Springs, New Mexico, in subsaline soil; Oct. (1164.) — “Plant forming large patches,” the flowering stems a span high. Leaves, more especially those of the surculose shoots, conspicuously fringed with strong white bristles of a length nearly equal to the breadth of the leaf, and the apex tipped with a similar bristle; the upper cauline and rameal only one or two lines long, and soon reduced to subulate bracts less fringed or naked. Heads 3 lines long; the one-nerved scales of the involucre with minutely scarious and ciliolate margins.

ERIGERON MACRANTHUM, *Nutt.*; *Gray, Pl. Fendl. p. 67.* Stony hills at the copper mines, New Mexico; Aug., Oct. (1165.) — The stems are hispid, more so than in *Fendler's No. 330.*

E. BELLIDIASTRUM, *Nutt.*; *Gray, Pl. Fendl. p. 67.* Near El Paso? (locality not recorded).

E. MODESTUM, *Gray, Pl. Fendl. p. 68, & Pl. Wright. p. 90.* Prairies of Live Oak Creek, &c.; May. (1166.)

E. DIVERGENS, *Torr. & Gray, Fl. 2. p. 175; Gray, Pl. Wright. p. 91.* Valleys of the Pecos, Limpio, and Rainwater Creek, in alluvial soil; June: and sides of the Organ Mountains. (1167.) Also on mountains at the copper mines, New Mexico; Aug.: a still more flagelliform state (*E. flagellare*, *Gray, Pl. Fendl.*). (1168.)

E. DIVERGENS, var. *CINEREUM*, *Gray, Pl. Wright. l. c.* Mountains, around the copper mines; Oct: a late, much-branched state. (1169.) Hills near El Paso; March, April: the early, normal form. (1398.)

E. (POLYACTIDIUM) DELPHINIFOLIUM, *Willd. Hort. Berol. t. 90.* *Polyactidium delphinifolium*, *DC. Prodr. 5. p. 282.* On mountains at the copper mines, common; Aug. – Oct. (1170.)

E. (CÆNOTUS) ERIOPHYLLUM (sp. nov.): annuum? floccoso-lanatum; caule erecto superne paniculato, ramulis patentibus monocephalis; foliis sessilibus, inferioribus spathulatis vel oblanceolatis versus apicem dentatis, superioribus linearibus integerrimis; involucri squamis glabratis 3 – 4-seriatis, exterioribus brevioribus; ligulis pluriserialibus purpurascensibus pappum simplicem haud superantibus; acheniis plano-compressis hirtellis margine crasso cinctis. — On the Sonoita, near Deserted Rancho, Sonora; Sept. — Stem a foot or more in height. Leaves 12 to 16 lines long, the white and floccose wool at length nearly deciduous from the upper surface. Heads 4 lines long, hemispherical, many-flowered. Ligules narrowly linear. Achenia all fertile, flat, obovate, with a small terminal areola. Pappus entirely simple and capillary, rather longer than the disk-flowers, white, deciduous, the bristles slightly connected at the base. — This plant much resembles the figure of

Erigeron gnaphalioides, *H. B. K.* (*Heterochaeta*? *gnaphalioides*, *DC.*), except that the panicle consists of fewer, longer, and more spreading branches, and there is no trace of the short exterior pappus which is so conspicuous in Kunth's figure. It is manifestly an *Erigeron*, of the section *Cænotus*, to which Mr. Benthams, no doubt correctly, adduces those American *Conyzæ* of De Candolle with fertile hermaphrodite flowers.*

DIPLOPAPPUS ERICOIDES, β . *HIRTELLA*, *Gray*, *Pl. Fendl.* p. 69. Stony hills near El Paso; April: a stout, vernal form, like Fendler's No. 348. Prairies from Live Oak Creek to the Rio Grande and the copper mines, New Mexico. (1171.)

TOWNSENDIA STRIGOSA, *Nutt.*; *Gray*, *Pl. Fendl.* p. 70. Sandy banks of the Rio Grande, above Doña Ana; July. Stony hills near El Paso; March, April. (1172.) — The plant begins to flower when only an inch high; at length it attains the height of 3 or 4 inches. The root is long and filiform.

DISTASIS MODESTA, *DC. Prodr.* 5. p. 279; *Gray*, *Pl. Wright.* p. 91. Rocky prairies and hills, from Turkey Creek, Texas, to Providence Creek. (1173.)

KEERLIA BELLIDIFOLIA, *Gray & Engelm. Pl. Lindh.* 2. p. 220, & *Pl. Wright.* p. 91. Sand-bars of the Nueces; May.

APHANOSTEPHUS RAMOSISSIMUS, *DC.*; *Gray*, *Pl. Wright.* p. 93. Prairies of the Sabinal and Nueces, Western Texas; May. (1174.)

A. HUMILIS, *Gray*, *Pl. Wright. l.c.* Sandy bed of streams, from Eagle Springs to the Rio Grande; June. Near El Paso; March – May. (1175.)

BELLIS INTEGRIFOLIA, *Michx.* Valley of the Pecos to the Prairie-dog towns beyond the Limpio; June. (1176.)

GUTIERREZIA (HEMIACHYRIS) WRIGHTII (sp. nov.): radice annua; caule erecto gracili pedali apice corymboso-paniculato; ramis monocephalis; foliis linearibus planis; capitulis turbinato-hemisphæricis; ligulis 12; acheniis glabris; pappo in radio et disco conformi brevissimo coroniformi margine fere integerrimo. — Margin of dried-up streams, between Barbocomori and Santa Cruz, Sonora; Sept. (1177.) — Stem somewhat striate-angled, strict, simple, or corymbosely branched at the summit; each branch or peduncle terminated by a solitary head. Leaves thin, 12 to 20 lines long, and a line and a half wide, rather obtuse. Heads pretty large for the genus, nearly the size of those of *G. (Brachyris, DC.) paniculata*, not half as large as in *G. Alamani*. Scales of the involucre with short and obtuse green tips. Ligules nearly 3 lines long. Disk-flowers 20 or more, all fertile. Appendages of the style linear-lanceolate, acute. Pappus strictly coroniform, with the even edge entire or very obscurely denticulate. — An interesting accession to the genus, on account of the annual root and the entire pappus. In the allied *G. Alamani*, *Gray*, *Pl. Wright.* p. 91, as in other species of the section, it is coroniform, but strongly toothed or lobed. The shape of the appendages of the style, as well as the presence of a pappus, distinguishes this and *G. Alamani* from *Xanthocoma*. The fol-

* *Erigeron gnaphalioides*, *H. B. K.* is plainly a congener of the *Conyza gnaphalioides*, *H. B. K.* (to which, if I mistake not, belongs *Heterochaeta stricta*, *Benth. Pl. Hartw.*), the type of Cassini's genus *Lænnecia*, which should rank merely as a subgenus of *Erigeron*, between *Cænotus* and *Stenactis*; differing from the former in the conspicuous exterior pappus, from the latter in the short rays as well as in habit.

lowing plant, however, with much the habit of an enlarged *Gymnosperma*, has short and broad appendages to the style. Yet I cannot separate it from the genus *Gutierrezia*.

G. ? (HEMIACHYRIS) GYMNOSPERMOIDES (sp. nov.): caule herbaceo valido subsimplici; foliis lanceolatis vel oblongo-lanceolatis inferne attenuatis apicem versus sæpius denticulatis mucronato-acutis glutinosis penninerviis; capitulis confertissime corymbosis hemisphæricis fere omnibus pedicellatis; involucri squamis linearibus acutis; receptaculo planiusculo; ligulis 25 – 30 angustis discum vix superantibus; fl. disci 40 – 60; acheniis radii glaberrimis calvis, disci minute hirtellis pappo coroniformi dentato lacero et in fl. centralibus setoso-paleaceo superatis. — Low banks of the San Pedro, Sonora; Sept. (1178.) — “Stem 2 to 4 feet high,” very leafy to the top, terete. Leaves about 3 inches long, 4 to 6 lines wide, rather thin, rather obscurely feather-veined. Heads very numerous, cymose-crowded at the summit of the stem and of the short flowering branches, forming an ample compound corymb. Involucre glutinous, hemispherical, about 3 lines in diameter; the scales with loose or spreading tips. Receptacle nearly flat, alveolate. Ligules linear-oblong, not longer than their filiform tube. Appendages of the style in the disk-flowers ovate-triangular, acute. Achenia oblong, compressed; those of the ray perfectly glabrous, with a small terminal areola, entirely destitute of pappus; those of the disk minutely and sparsely hairy, with a toothed and lacerate coroniform pappus, which in the exterior flowers is very short, or sometimes obsolete, in the central flowers larger and often produced into 4 – 8 unequal rigid setiform paleæ, the larger occasionally nearly as long as the achenium.

G. (HEMIACHYRIS) SPHÆROCEPHALA, *Gray, Pl. Fendl. p. 73.* Banks of the Rio Grande near El Paso; June, in flower. Hills near the copper mines, New Mexico; Oct. (1179.) — Root annual! Stems a span to a foot high, diffusely very much branched, bearing very numerous solitary heads; the upper leaves reduced to subulate bracts. Heads 2 lines in diameter. Achenia turbinate, silky-villous, especially on the 10 strong ribs. Pappus in these specimens all truly coroniform, as long as the proper tube of the disk-corollas, fully half the length of the achenium, irregularly 4 – 5-lobed or toothed; the lobes mostly obtuse, short, erose. — Those from the copper mines are well-developed specimens of the same plant as Fendler's No. 343, which was immature. No. 315 of Coulter's Mexican collection may be a variety of this, with the paleæ much less concreted. *G. eriocarpa* differs principally in the multipaleate pappus.

G. MICROCEPHALA, *Gray, Pl. Fendl. l. c., & Pl. Wright. p. 94.* Mountains at Guadalupe Pass, New Mexico; Oct. (1180.)

S. MOLLIS, *Bartl. Ind. Sem. Hort. Gætt. 1836; DC. Prodr. 7. p. 279.* *S. incana*, *Torr. & Gray, Fl. 2. p. 221 (α & β).* Sides of mountains at the copper mines, New Mexico; Aug. and Oct. Also on the Limpio. (1181.) — It runs, I fear, into *S. nemoralis*, and certainly is not distinct from *S. nemoralis* γ, *Torr. & Gray.*

S. PETIOLARIS, *Ait.; Torr. & Gray, l. c.;* at least the plant of *Pl. Wright. p. 94.* With the preceding. (1182.)

S. OCCIDENTALIS, *Nutt. in Torr. & Gray, Fl. 2. p. 226.* Thickets, in the bottom of the Mimbres, New Mexico; Oct. (1183.)

LINOSYRIS GRAVEOLENS, Torr. & Gray, *Fl.* 2. p. 234; var. approaching *L. albicaulis*. Pebbly bed of a creek near Sierra de los Animas, New Mexico; Oct. (1184.) — “Stem erect, branched, 4 to 6 feet high.” There is a slight pubescence on the tube of the corolla, but not the long, cobweb-like hairs of *S. albicaulis*.*

L. PULCHELLA, Gray, *Pl. Wright.* p. 96. Sandy ridges along the banks of the Rio Grande, near Frontera; Nov. (1185.) — No. 287, the locality of which was accidentally omitted, was gathered on prairies below El Paso.

L. WRIGHTII, Gray, *Pl. Wright.* p. 95, & var. *foliis inferioribus pinnatifido-dentatis*. — Low banks of the Rio Grande, New Mexico; growing in large bunches; Nov. (1186.) — A few specimens of a minutely hirtello-scabrous variety of this species were gathered on the Rio Grande near Doña Ana, in July; which probably connects *L. hirtella* with this species.

L. ? CARNOSA (sp. nov.): glabra; caulibus e basi suffrutescente ramosissimis diffusis rigidis, ramulis patentibus monocephalis; foliis linearibus (subteretibus?) carnosis glaucescentibus, ramealibus sensim abbreviatis subulatis; involucrio campanulato 40-floro, squamis 3-4-seriatis lanceolatis acuminatis; acheniis sericeo-pubescentibus. — Low, subsaline valley, west of the Chiricahui Mountains, Sonora; Sept. (1187.) — I am doubtful of the genus of this plant, which looks as if it might be a *Tripolium* without rays. The rigid, but herbaceous, spreading stems are two feet or more in length, bearing numerous alternate leaves, which were fleshy and appear to have been terete or laterally flattened; the lower ones an inch long; those of the flowering branches reduced to minute subulate bracts. The herbage has a strong saline and acrid-bitter taste. The involucre is 3 or 4 lines long, a little shorter than the disk; the scales regularly imbricated and appressed, the exterior successively shorter. Pappus copious, tawny. Appendages of the style slender, linear-subulate.

L. (APLODISCUS) RAMULOSA; Gray, *Pl. Wright.* p. 97. *Aplopappus* (*Aplodiscus*) *ramulosus*, DC. ! *Prodr.* 5. p. 350. Ravines, at the base of the Organ Mountains, New Mexico; April. (1400.) — Stems 1-2 feet high, much branched. Plant with somewhat the habit of *Aster multiflorus*.

APLOPAPPUS (ERICAMERIA) LARICIFOLIUS (sp. nov.): fruticosus, humilis, fastigiato-ramosissimus, glaber; foliis confertis angusto-linearibus basi attenuatis mucronulatis integerrimis rigidis uninerviis crebre punctatis subresinosis; capitulis ramulos foliosos terminantibus corymbosis; involucrio turbinato disco brevior, squamis 3-4-seriatis lineari-subulatis appressis; ligulis 5-6; fl. disci circiter 12; acheniis sericeo-villosis, oblongis. — On mountains, at Guadalupe Pass, New Mexico; Oct. (1188.) — “Shrub a foot high, very much branched.” Leaves 6 to 9 lines long, less than a line wide, very much crowded on the branches, but not fascicled. Heads 4 lines long, fastigate-corymbose. Ligules 2-3 lines long. Appendages of the style in the disk-flowers linear, rather obtuse, shorter than the long and linear stigmatic portion. Bristles of the pappus not very copious, slender and

* *Linosyris serrulata*, Torr. in *Stansbury's Rep.* p. 289, is only a form of *L. pumila* (*Chrysothamnus pumilus*, Nutt.), the *L. viscidiflora*, Torr. & Gray.

capillary, soft, all alike except in length. — This plant destroys the genus *Ericameria*, *Nutt.*, which, as a section of *Aplopappus*, forms another point of connection between that genus and *Linosyris*; *Ericameria resinosa*, *Nutt.*, being nearly undistinguishable from *Linosyris viscidiflora*, except in having from two to six rays.

A. (BLEPHARODON) SPINULOSUS, *DC.* Prairies, &c. from Zoquete Creek, Texas, to New Mexico. (1189.) Also, the nearly glabrous variety, from New Mexico, and a valley west of the Chiricahui Mountains, Sonora. (1190.)

A. GRACILIS, *Gray*, *Pl. Fendl.* p. 76, & *Pl. Wright.* p. 97. Valley of the Rio Grande, New Mexico, and near the San Pedro, Sonora; Sept. (1191.)

CHRYSOPSIS FOLIOSA, *Nutt.*, var. *Pl. Wright.* no. 299. p. 99. Hills, near the Mimbres, New Mexico; Nov.

C. FOLIOSA, var. *sericeo-villosissima*, *incana*; capitulis quam in pl. *Nutt.* majoribus; ligulis elongatis. — Valley between the San Pedro and the Sonoita, Sonora; Sept. — Heads half an inch long, bracteate with leaves. Exterior pappus very manifest, as in all the forms of this species; the short setæ rather than squamellæ often half the length of the achenium.

GRINDELIA ARGUTA, *Schrad. in DC.*? forma glabra. Sonora? (the locality not recorded).

G. SQUARROSA, *Dunal*, fere var. *GRANDIFLORA*, *Gray*, *Pl. Wright.* p. 98. Prairies on the Manzanal, Western Texas; July.

LAPHAMIA (PAPPOTHRIX) RUPESTRIS, *Gray*, *Pl. Wright.* p. 100. t. 9. Crevices of basaltic rocks, on mountains of the Limpio; June. (1192.)

L. HALIMIFOLIA, *Gray*, *l. c.* Hills of the San Pedro, Western Texas; May. (1193.)

L. ANGUSTIFOLIA, *Gray*, *l. c.* High, rocky hills of the Pecos; June. (1194.)*

PERICOME, *Nov. Gen.*

Capitulum multiflorum, homogamum. Involucrum disco brevius, campanulatum, uniseriale; squamis circ. 20 linearibus per margines angustissimos hyalinos inter se coalitis. Receptaculum planiusculum nudum. Flores omnes hermaphroditi. Corollæ tubulosæ, tubo gracili viscoso-glanduloso, fauce cylindræa, dentibus 4 ovatis patentibus. Antheræ exsertæ, basi subsagittatæ. Styli rami filiformes, leviter complanati, obtusiusculi, extus superne et apice minute hirtelli. Achenia lineari-oblonga, compressa, faciebus glaberrima, marginibus nerviformibus undique barbato-

* Dr. Torrey has furnished the characters of the subjoined new species of *Laphamia*, which is remarkable, both for its finely dissected foliage, and for having a pappus of a single seta in some flowers, in others none at all; — thus confirming the union of *Monothrix*, *Torr.* with *Laphamia vera*.

“*LAPHAMIA DISSECTA* (sp. nov.): nana, patenti-pubescent; caulibus e basi ramosis; ramis foliosis monocephalis; foliis plerumque alternis subrotundo-cordatis pedato-multisectis, segmentis oblongo-linearibus confertis; ligulis nullis; fl. disci circiter 20; pappo e seta unica corollæ tubum æquante vel sæpius nullo. — Crevices of rocks, on mountains, near Presidio del Norte, Aug., 1852, *Dr. J. M. Bigelow*. — Stems 3 or 4 inches high, lignescent at the base; the numerous branches mostly simple. Leaves scarcely one third of an inch long, cut into numerous minute and crowded segments. Heads 4 or 5 lines in diameter. Scales of the involucre about 15. Achenia hispid on the margins, blackish when mature.” *Torrey, Mss.*

ciliata. Pappus squamellato-coroniformis, fimbriato-lacerus, fimbriis pilos validos achenii simulantibus. — Herba glabella, ramosa, procera; foliis oppositis summisve subalternis triangulatis vel hastatis longissime acuminatis levissime resinoso-punctatis haud glandulosis; capitulis cymosis; floribus flavis.

PERICOME CAUDATA. — Among rocks, on the sides of mountains, at the copper mines, New Mexico; Oct. (1195.) — "Plant 4 feet high, much branched, growing in large bunches." Base of the stem not gathered. Branches terete, striate, sparingly puberulent. Leaves nearly all opposite, on long petioles, membranaceous, 3-nerved at the base, dilated triangular, or the upper hastate, with the basal angles usually acuminate or more or less produced, often angulate-toothed below the middle, the apex produced into a very long tail-like acumination. The larger leaves in the specimens are 3 inches broad at the nearly truncate base, and 4 inches long, including the acumination, which is $1\frac{1}{2}$ to 2 inches in length; the uppermost are narrower, but equally caudate. They are sparingly puberulent, especially on the veins, sparsely sprinkled or dotted with minute resinous atoms, like a *Eupatorium*; but not at all pellucid-glandular after the mode of *Tagetineæ*. Heads in terminal cymes or corymbs, on slender pedicels, half an inch long. Involucre not bracteate, about 3 lines long; the scales very narrowly linear, one-nerved, their narrowly scarious margins lightly but decidedly coalescent to near the apex, the free tips lanuginous-ciliate. Corolla with the elongated and exserted anthers 3 lines long, yellow; the slender tube very viscous-glandular, about the length of the cylindraceous throat and short limb. Branches of the style convex externally, slightly flattened, the rather indistinct stigmatic lines extending to very near the summit, and there insensibly vanishing, where a fine pubescence begins; the same pubescence extends down the back considerably lower, and disappears insensibly. Achenia 2 lines long, much compressed, margined all round with a strong callous nerve, which bears a dense and conspicuous beard of hispid hairs. Pappus rather shorter than the beard of the achenium, composed of numerous setiform squamellæ which are irregularly united below into a hyaline lacerate crown. There is no trace of any awns. — A genus of even more doubtful position in the family than *Perityle*, *Benth.*, which with *Laphamia*, I have continued to append to the *Asteroidæ*. It agrees with *Perityle* in the achenia and the (disk) corollas, in the prevailingly opposite leaves, and very nearly in the style; but differs in the absence of a ray, as well as of awns to the pappus, and in the coalescence of the strictly uniserial scales of the involucre. The style would almost do for the *Eupatoriaceæ*; but the stigmatic lines are continued almost to the tip; and the flowers are yellow. The involucre is like that of *Hymenatherum*, and the style is exactly that of a *Tagetes*; but there are no large pellucid glands, and the achenia are flat. Notwithstanding, I should append the genus to *Tagetineæ*, were it not for the many points of resemblance to *Perityle*.

PERITYLE CORONOPIFOLIA (sp. nov.): multicaulis e caudice suffrutescente, humilis, puberula; foliis parvis, inferioribus oppositis trisectis segmentis tripartitis vel pinatipartitis, superioribus alternis pinnato-5-7-partitis lobis linearibus, summis sæpe integris; receptaculo subconvexo; ligulis oblongis albis; appendicibus styli fl.

herm. subulatis; acheniis oblongis facie glabratis marginibus hispido-villosissimis; aristis pappi 2 barbellato-scabris corolla disci paullo brevioribus. — Sides of mountains at the copper mines, New Mexico, Oct.; also on mountain-summits near Conde's Camp, Sept.; growing in crevices of rocks. (1196.) — Stems a span high, simple or branched from the somewhat ligneous base, sparingly branched at the summit, the branches terminated by single heads. Leaves rather crowded, 3 to 5 lines long, cinereous-puberulent, dissected into small and mostly linear lobes; the uppermost linear or oblong, sparingly lobed, or often entire. Involucre 2 or 3 lines long; the scales linear or lanceolate, cinereous, biserial, often purplish when old. Ligules nearly 3 lines long, broadly oblong, truncate and three-toothed at the apex, white. Disk-corollas rather short, 4-toothed. Pappus of numerous somewhat confluent hyaline squamellæ, forming a crown, and of two slender awns. — A genuine *Perityle*, although the foliage is finely dissected, much more so than even in *Perityle nuda*, Torr., an unpublished species from the Rio Gila.

BACCHARIS CÆRULESCENS, DC. *Prodr.* 5. p. 402. Banks of the Rio Grande and of the Mimbres, New Mexico; June, Oct. (1197.)

B. SALICINA, Torr. & Gray, *Fl.*; Gray, *Pl. Wright.* p. 101. Banks of the Rio Grande, below El Paso; June. (1198.)

B. BRACHYPHYLLA (sp. nov.): suffruticosa; caulibus ramosissimis diffusis angulato-striatis glabris; foliis minutis bracteæformibus linearibus vel subulatis integerrimis hirtello-scabris; capitulis pl. fœm. ramulos terminantibus laxè paniculatis; involucre pauciseriali disco breviorè, squamis puberulis oblongo-lanceolatis acuminatis margine scariosis; acheniis glabellis. — Between Conde's Camp and the Chiricahui Mountains, in stony soil; Sept. (1199.) — Stems 2 or 3 feet high, slender, excessively branched, very bushy. Cauline leaves 2 to 3 lines long; those of the branches successively shorter, at length reduced to minute bracts. Female heads 2 to 3 lines in length, 12–14-flowered. Pappus short, fulvous. Sterile plant not seen.

B. PTARMICÆFOLIA, DC. *Prodr.* 5. p. 419? Mountain ravine at Santa Cruz, Sonora; Sept.: the male plant. (1200.) — The heads are corymbose; the leaves mostly much smaller than is described by De Candolle; the larger are somewhat 3-veined, or rather triplinerved; but the smaller ones not at all so, nor much if at all acuminate. I should refer this rather to *B. thesioides*, but the bristles of the pappus are clavellate-thickened above. A female plant, which better accords with De Candolle's character, is in Seeman's collection from Northwestern Mexico.

B. PTARMICÆFOLIA, DC.? or var. of *B. thesioides*? Hill-sides, between Barbocómori and Santa Cruz, Sonora; Sept.: the female plant. (1201.) — This is without much doubt the female plant of the last. The small heads are paniculate. The leaves are about an inch long and barely a line and a half wide, not acuminate, tapering to the base, thickly and strongly spinulose-serrulate. Pappus white.

B. TEXANA, Gray, *Pl. Fendl.* p. 75, & *Pl. Wright.* p. 101. Valley of the San Pedro, and near Comanche Spring, Western Texas; July. (1401.)

B. WRIGHTII (Gray, *Pl. Wright.* p. 101): herbacea, glaberrima; caulibus e basi suffrutescente ramosissimis gracilibus flexuosis ramisque acute angulatis, ramulis apice monocephalis; foliis sparsis parvis linearibus et lineari-subulatis integerrimis

uninerviis; involucro hemisphærico pauciseriali, squamis lanceolatis acuminatis scarioso-marginatis; pappo fusco, fl. fœm. involucro subduplo longiore. — Sandy hills between Cimielluque Springs and the Salado, Chihuahua, April: the female plant. (1402.) — This accords very well with the male plant collected in Mr. Wright's first journey (No. 307); but the fertile heads are larger and fuller than the sterile, half an inch in length, many-flowered, and with a copious pappus of a fulvous hue, manifestly inclining to reddish. The scales of the involucre are 3-4-serial, very smooth, with a green centre, and more conspicuous hyaline margins than in the sterile plant.

B. WRIGHTII, var. PYRRHOPAPPA: humilis (semipedali), divergenti-ramosissima; foliis plerisque brevissimis; pappo fl. fœm. rubiginoso vel rubescente involucrum plusduplo superante. — (Near Mapimi, Durango, *Dr. Gregg.*) Prairies from Rainwater Creek to Rock Creek, around Prairie-dog towns; June. (1403.) — The fertile plant of the preceding enables me to identify this as a variety of *B. Wrightii*, of which before the sterile plant alone was known. The mature pappus is half an inch long, of a reddish hue, in Gregg's specimens almost sanguineous.

TESSARIA (PHALACROCLINE) BOREALIS, *Gray, Pl. Fendl. p. 75, & Pl. Wright. p. 102.* Low banks of the Rio Grande, New Mexico; May, Nov. (1202.)

FILAGINOPSIS MULTICAULIS, *Torr. & Gray, Fl. 2. p. 263.* Rocky hills of the San Pedro, Western Texas; May. Hills near El Paso; March, April: a small, vernal form. (1404.)

STYLOCLINE MICROPOIDES (sp. nov.): pygmæa, albo-lanata; paleis receptaculi oblongis basi involutis dorso lanosissimis; pappi fl. masc. setis lævibus. — Hills near Frontera, New Mexico; April. (1405.) — A very woolly, small herb, with the habit of a diminutive *Micropus erectus*, beginning to blossom when only an inch high; when the stem is terminated by several heads in a glomerate cluster, surrounded by linear-lanceolate leaves of 3 or 4 lines in length, similar to the cauline ones. It soon branches more or less from the base, and is often proliferous from the glomerule. Heads ovoid or subglobose, 2 or 3 lines in length, rather larger than those of *S. gnaphalioides*, and much more woolly; the paleæ being thickly covered with long and implexed wool, except the scarious tip. These are like those of the Californian species, except that they are narrowly oblong (instead of broadly ovate), and with the lower part, inclosing the flower, contracted and wholly infolded, instead of having a mere saccate fold in the keel. Receptacle columnar and elongated; the fructiferous paleæ, looking like little pellets of wool, falling away at maturity. Sterile flowers 3 or 4 at the apex of the receptacle, naked, or barely subtended by oblong and glabrous paleæ; the abortive ovaries furnished with a very fugacious pappus of three or four slender and smooth, slightly clavellate bristles. Anthers caudate. Achenia obovoid-oblong, slightly compressed, nearly straight. — A true congener of *S. gnaphalioides*. I see nothing to separate it, nor the other *Evacoid* genera, from the *Gnaphalieæ*.

DIAPERIA PROLIFERA, *Nutt.; Torr. & Gray, Fl. 2. p. 264.* Stony hills of the Pecos; May. (1406.) — A very depressed form.

BORRICHIA FRUTESCENS, *DC.* Banks of the Pecos; June: in patches. (1407.)

SILPHIUM SCABERRIMUM, *Ell.*, var. γ . *Torr. & Gray, Fl. 2. p. 279.* Thickets on the Sabinal, Texas; July. (1408.)

BERLANDIERA LYRATA, *Benth. Pl. Hartw. p. 17; Gray, Pl. Fendl. p. 78.* Valley of Live Oak Creek, Western Texas; May. On Mule Creek, New Mexico; July. (1203.)

MELAMPODIUM CINEREUM, *DC.; Gray, Pl. Fendl. l. c., & Pl. Wright. p. 103.* On the Leona and San Felipe, Western Texas; May: the variety that corresponds to *M. ramosissimum, DC.!* (1204.) Hills near El Paso; April: the form described as *M. leucanthum, Torr. & Gray*, and No. 311 of the collection of 1849.

M. HISPIDUM, H. B. K. Nov. Gen. & Spec. 4. p. 273. t. 399. Valleys between the San Pedro and Santa Cruz, Sonora; Sept. (1205.) — A slender state of the species. The ligules are extremely short, 2–3-toothed.

PARTHENIUM INCANUM, *H. B. K. l. c. p. 260. t. 391; Gray, Pl. Wright. p. 103.* *P. ramosissimum, DC. Prodr. 5. p. 532.* Prairies at Cook's Spring, between the Rio Grande and the Mimbres; July. (1206.)

EUPHROSYNE AMBROSIAEFOLIA, *Gray, Pl. Wright. p. 102.* Sides of mountains, near Conde's Camp, New Mexico; Aug. (1207.) — "Stems branching widely." Cauline leaves ovate in circumscription, tripinnatifid; the divisions and lobes crowded. — *Cyclachæna xanthiifolia* is plainly a congener of this; and that genus must accordingly be reduced to *Euphrosyne*, notwithstanding the minute rudiment of a corolla in the fertile flowers. — The following plant has nearly the habit of *Euphrosyne xanthiifolia*, with a floral structure intermediate between that genus, or *Iva*, and *Parthenium*.

PARTHENICE, *Nov. Gen.*

Capitulum hemisphæricum monoicum; floribus fœmineis 6–8 in ambitu, masculis 40–50 in disco. Involucrum biseriale; squamis herbaceo-membranaceis, exterioribus 5 ovalibus, interioribus 6–8 paullo majoribus orbiculari-obovatis. Receptaculum convexum, ambitu serie simplici palearum instructum, paleis lineari-navicularibus carnosocoriaceis per paria ima basi ovariorum fertilium utrimque accretis, in disco paleis minimis setaceis vel obsoletis inter ovaria abortiva. Corollæ radii subtubulosæ, obliquæ, intus fissæ, extus 2–3-dentatæ, discum demum subæquantes, styli ramis lato-linearibus dimidio breviores, deciduæ. Flores disci steriles Ivæ. Achenia (radii) obovato-oblonga, obcompressa, glabra, faciebus tuberculis minimis parcis scabra, vix marginata, vertice incurva apiculata, obliqua, intus dente minimo squamaceo instructa, ab involucri squamis discreta, cum paleis vacuis receptaculi utrimque quasi bracteolata secedentia. — Herba annua? orgyalis, pube brevissima molli undique cinerea; foliis omnibus alternis ovatis, majoribus subcordatis, acuminatis duplicato-dentatis; paniculis foliosis laxis; capitulis longiuscule pedicellatis parvulis.

PARTHENICE MOLLIS. — Mountain ravine at Santa Cruz, Sonora; Sept. (1208.) — I have also raised this from seeds, in the Cambridge Botanic Garden. It is an herb of from 4 to 6 feet high, paniculately branched above, with the aromatic odor of an *Artemisia*, and with much the aspect of *Euphrosyne xanthiifolia*, except that

the leaves are all alternate, and clothed, like the rest of the plant, with a fine and very soft velvety pubescence, and the larger heads (2–3 lines in diameter) are all distinctly pedicelled. Leaves triplinerved; the larger ones 6 to 8 inches long. Inner scales of the involucre with scarious margins, nearly plane, not wrapped around the achenia, nor adherent to them at the base. Corollas greenish, pubescent above; those of the fertile flowers scarcely half the length of the ovary; those of the disk stipitate on the abortive ovaries, funnel-form, 5-toothed. Achenia a line long, rather shorter than the purplish paleæ that are attached to their base, one on each side, and which, when detached, do not carry away the margins of the achenium (as in *Parthenium*), except a bit at the base. The paleæ are not broad enough to inclose any sterile flowers: those they subtend are deciduous, with the others. Pappus none, except the minute paleaceous tooth at the pointed apex of the achenium. — Distinguished from *Euphrosyne* by the manifest and almost ligulate corolla of the fertile flowers, the form of the achenium, and the subtending lateral paleæ, &c.; from *Parthenium* by the less ligulate and deciduous ray-corollas, the reduction of the paleæ of the disk to minute rudiments, and the want of a pappus.

AMBROSIA PSILOSTACHYA, *DC. Prodr.* 5. p. 526; *Gray, Pl. Wright. adn.* p. 104. Low banks of the San Pedro, Sonora; Sept. (1209.)

FRANSERIA TENUIFOLIA, var. TRIPINNATIFIDA, *Gray, Pl. Lindh.* 2. p. 227, & *Pl. Wright. l. c.* Alluvial prairies of the San Felipe, Western Texas; May (a dwarf form). Cooke's Spring, New Mexico; and in Sonora; Sept., Oct. (1210.)

F. HOOKERIANA, *Nutt.* Valley west of the Chiricahui Mountains, Sonora; Sept. (1211.)

HYMENOCLEA MONOGYRA, *Torr. & Gray, Pl. Fendl.* p. 79, & *Pl. Wright. l. c.* Pebbly bed of a mountain torrent, near Santa Cruz, Sonora; Sept. (1212.) — "Branching from the root, 2 to 5 feet high."

ZINNIA TENUIFLORA, *Jacq. Ic. Rar.* 3. t. 590; *DC. ! Prodr.* 5. p. 535. *Z. intermedia*, *Engelm. in Wisl. Mem. N. Mex.* p. 107. Hills near Santa Cruz, Sonora; Sept. (1213.) — The specimens well accord with authentic ones of *Z. tenuiflora* (the name of which is hardly appropriate), and like them are more or less pubescent, and with the peduncles very often neither elongated nor cylindrical.

Z. (DIPLOTHRIX) GRANDIFLORA, *Nutt.; Gray, Pl. Wright.* p. 105. Live Oak Creek, Western Texas, and between the Limpio and the Rio Grande. (1214.)

Z. (DIPLOTHRIX) PUMILA, *Gray, Pl. Fendl.* p. 81, & *Pl. Wright. l. c.* Rocky hills near El Paso; March. Heads of the Aqua Prieta, in mountains east of Santa Cruz, Sonora; Oct. (1215.)

Z. (HETEROGYNE) ANOMALA, var. *Gray, Pl. Wright. l. c. t. 10. f. 2.* Alluvial prairies from Chicon Creek, Western Texas, to the Pecos; May, July. (1216.) — "Flowers dark orange."

HALEA TEXANA, *Gray, Pl. Fendl.* p. 83, & *Pl. Wright. l. c.* Stony hills, from San Felipe to the San Pedro, Texas; May. (1217.)

HELIOPSIS PARVIFOLIA (sp. nov.): scabrella; caule gracili; foliis lanceolatis vel subhastatis basi paucidentatis (pollicaribus); pedunculis elongatis sub capitulo ampliatis; involucri brevissimi squamis oblongis obtusis; ligulis persistentibus; acheniis

papillosis, disci prismaticis areola acute quadrata. — Hill-sides, between Barbocomori and Santa Cruz, Sonora; Sept. (1218.) — Stem 12 to 18 inches high, very slender, branched. Leaves barely an inch long, 3 to 5 lines wide at the base, which is abruptly contracted into a petiole of 3 or 4 lines in length, mostly obtuse and entire, except near the base. Peduncles 4 to 6 inches long; the apex more or less enlarged and hollow. Involucre 4 lines in diameter. Ligules deep yellow, oblong, half an inch in length, three-toothed at the broad apex. Achenia of the disk acutely quadrangular, the apex square and exactly truncate, with the angles sharp. Ligules persistent, but withering with age.

LEPACHYS COLUMNARIS, var. TAGETES, *Gray, Pl. Wright. p. 106.* Banks of the San Pedro, Western Texas; May. (1219.)

HELIOMERIS MULTIFLORA, *Nutt.; Gray, Pl. Fendl. p. 84, & Pl. Wright. p. 107.* Sides of mountains at the copper mines, New Mexico, and near the San Pedro, Sonora; Sept., Oct.: a narrow-leaved form, like Wright's No. 334. (1220.) Also on pine hills between the copper mines and the Mimbres; Oct.: a large and broad-leaved form, like Wright's No. 328. (1221.) — The latter, like the former, has an annual root. The larger leaves are 4 inches long and 6 or 8 lines wide.

H. MULTIFLORA, var. HISPIDA. Low, damp soil, near Santa Cruz and San Bernardino, Sonora; Sept. (1222.) — The leaves are linear or narrowly linear-lanceolate, and, like the stems and peduncles, either sparsely, or in young plants very densely, setose-hispid. Some specimens are canescently hispid: others exhibit gradations to the ordinary forms; else I should certainly have characterized the plant as a new species. A cultivated specimen shows that the leaves are thickish, canaliculate above, and with the large and strong midrib very prominent underneath.

H. TENUIFOLIA, *Gray, l. c.* Rocky hills of the San Pedro, Western Texas; May. Near Eagle Springs; June. (1223.)

SIMSIA EXARISTATA (sp. nov.): annua; caule erecto superne pedunculis petiolisque pilis patentissimis hispido-villosis; foliis ovatis seu oblongo-ovatis acuminatis subserratis hirsutulis longe petiolatis, petiolis exauritis; capitulis corymboso-paniculatis; squamis involucri lanceolatis, exterioribus parce hispidis paullo brevioribus; ligulis 4–7 parvis discum haud superantibus; acheniis glaberrimis omnino calvis vel obsoletissime biaristellatis. — *S. lagasœformis, Gray, Pl. Wright. no. 331, pro parte.* — Valley of a tributary of the San Pedro, Sonora; Sept. (1224.) — Stem mostly slender and rather simple, one to two feet high. Leaves all undivided and almost entire, 2 to 4 inches long, on petioles of 1–2 inches in length, which are not at all auriculate or dilated at the base. Heads 5 or 6 inches in length: the rays very small and inconspicuous, yellow, as are the disk-flowers. Paleæ of the receptacle mostly scarious, pointed. The achenia are like those of *S. subaristata, Gray, Pl. Fendl.*, but more rarely showing any trace whatever of pappus. That species is canescently strigose, with deeply lobed leaves, the petioles auriculate at the base, the heads larger and solitary, and the exterior scales of the involucre as long as the inner, the ligules exserted, &c. I cannot now refer to these specimens of Wright's former collection, distributed under No. 331, which

exhibited awned and silky-pubescent achenia. The specimens preserved in my own herbarium and in that of Mr. Lowell are entirely of the present plant, which has the achenia glabrous and awnless, or rarely with two minute and aristelliform teeth; adding another instance of the want of a pappus in this genus.

S. ? (GERÆA) SCAPOSA (sp. nov.): cinereo-puberula; caulibus suffruticosis? abbreviatis folia linearia rigidula scabra conferta gerentibus in pedunculum prælongum scapiformem monocephalum productis; involucre fere uniseriale discum æquante, squamis linearibus foliaceis hirsutis laxis; pappi aristis inæqualibus corolla brevioribus undique cum achenio villosissimis. — Stony hills between the Mimbres and the Rio Grande, New Mexico; Oct. — Only four specimens were gathered, and all but one of them with the flowers not yet expanded. The proper stems are only two or three inches long, and very leafy. Leaves alternate, much crowded, sessile, 2 or 3 inches long, one or two lines wide, acutish, rather thick and rigid, cinereous-scabrous, one-nerved, or obscurely three-nerved, somewhat veiny. Scape, or peduncle, 6 to 12 inches long, naked or nearly so. Head half an inch in length. Involucre lax or spreading, many-flowered. Flowers yellow. Ligules broadly obovate or cuneiform, 3-toothed at the apex, half an inch long. Paleæ of the convex receptacle conduplicate around the disk-flowers, membranaceous, a little hairy near the obtuse tip. Disk-flowers nearly as in *S. (Geræa) canescens*, *Pl. Fendl. p. 85*. Ovaries compressed, very silky-villous. Pappus of two chaffy awns of unequal length; the shorter awn often not longer than the villous hairs of the achenium, both very villous for their whole length. Although different in habit, this plant appears to be congeneric with one which, in *Proceed. Amer. Acad. 1. p. 48*, I named *Geræa canescens*, and subsequently, in *Pl. Fendl. l. c.*, reduced to a subgenus of *Simsia*. It is, as it were, an *Encelia* with awns.

VIGUIERA CORDIFOLIA, *Gray, Pl. Wright. p. 107*; var. foliis omnibus breviter sed manifeste petiolatis tantum subcordatis acuminatis. — Valley of Coppermine Creek, New Mexico, growing under trees; Oct. (1225.) — These are better specimens than Wright's No. 332, on which the species was founded, with thinner leaves, all of them on petioles of $1\frac{1}{2}$ to 3 lines in length. The scales of the involucre are lanceolate, the exterior, with their considerable acumination, little shorter than the inner. The awned scales of the pappus are nearly as long as the disk-corolla; the intermediate scales, 2 or 3 on each side, are almost a line in length, oblong, erose-laciniate at the apex, nearly glabrous. Ligules about 8, half an inch long.

V. CORDIFOLIA, var. *gracilis*; foliis minoribus fere membranaceis grosse serratis; involucri squamis æquilongis. — With the foregoing; of which it is evidently a state, growing in more shaded situations.

V. CORDIFOLIA, var. foliis amplis (3–4 unc. longis $2\frac{1}{2}$ –3 latis) membranaceis basi vix subcordatis breviter petiolatis. — Sides of a ravine at Santa Cruz, Sonora; Sept. (1226.) — This has the involucre with broader scales, as in No. 332, except that the outer ones are mostly as long as the inner. The leaves are thin, and distinctly petioled. The intermediate paleæ of the pappus are shorter than in No. 1225, commonly 4 or 5 on each side, and either strigose-pubescent or nearly glabrous. I cannot distinguish any of these plants from *V. cordifolia*; the name of which proves not to have been happily chosen.

V. LAXA, DC.; *Gray, Pl. Wright. p. 108.* *V. Texana*, Torr. & Gray, *Fl. 2. p. 318.* In thickets, valley of the Coppermine Creek, New Mexico; Oct. (1227.) — The large and thin-leaved form of the species. It belongs to De Candolle's first section of the genus, the receptacle, at first convex, becoming truly conical (as well in Berlandier's as in other specimens), as is also noticed by Schauer, in *Linnaea*, 19. p. 728. The rays are from 5 to 10 in number.

V. LAXA, DC., fere var. *BREVIPIES*, Gray, *Pl. Wright. l. c.* In a ravine, at Santa Cruz, Sonora; Sept. (1228.) — Leaves either opposite or alternate.

FLOURENSIA CERNUA, DC. *Prodr. 5. p. 593; Gray, Pl. Wright. p. 114.* Valley of the Pecos, on stony hills; May. Hills between the Mimbres and the Rio Grande; Nov. (1229.)

HELIANTHUS LENTICULARIS, Dougl. in *Bot. Reg. t. 1265; Gray, Pl. Fendl. p. 83.* Valley of Coppermine Creek, New Mexico; Aug. and Oct. (1230.)

H. PETIOLARIS, Nutt.; Torr. & Gray, *l. c.* Valley of Coppermine Creek; Oct.: two forms. (1231.)

H. PETIOLARIS, var. *CANESCENS*, Gray, *Pl. Wright. p. 108.* Valley of the Rio Grande, New Mexico; July. (1232.) — The same as No. 335. — There are also specimens of a more silvery-canescant plant, with the lower leaves broadly deltoid-ovate, as long as their petioles; from the Rio Grande, 40 or 50 miles below El Paso, mentioned in *Pl. Wright.* under No. 335, which I know not what to do with, except to refer them provisionally to the same species. (1232^a.)

H. CILIARIS, DC. *Prodr. 5. p. 587; Gray, Pl. Wright. p. 108.* Prairies of Turkey Creek, Western Texas; May. (1233.)

H. GROSSE-SERRATUS, Martens, var. *γ.* Gray, *Pl. Wright. l. c.* Valley of the Mimbres, New Mexico; Oct. (Two specimens only.)

ACTINOMERIS LONGIFOLIA (sp. nov.): caule glaberrimo tereti exalato; foliis plerumque alternis (nunc oppositis nunc ternis) subsessilibus lineari-lanceolatis elongatis denticulatis reticulatis utrinque hispidulo-scabris; pedunculis corymbosis scabris monocephalis; involucrio biseriali, squamis exterioribus linearibus patulis disco convexo longioribus ligulas subæquantibus, interioribus paleis receptaculi referentibus; acheniis ovalibus alatis calvis vel paucis uniaristatis. — Mountains east of Santa Cruz, Sonora; Sept. (1234.) — Stem 2 feet high, from a perennial root, leafy to the top. Leaves 6 or 7 inches long and 4 to 6 lines wide, a few of them opposite or verticillate in threes, thickish, rough, especially above, acute. Peduncles in a simple corymb, or sometimes solitary. Heads in fruit depressed-globose, and 8 or 9 lines in diameter. Paleæ of the receptacle lanceolate, rather obtuse. Achenia almost 3 lines long, smooth, surrounded by a thickish and rather narrow wing, the outer side of which is sometimes more extended at the emarginate summit. Pappus none, or with minute rudiments of the two awns, or occasionally with one short and naked awn.

A. WRIGHTII, Gray, *Pl. Fendl. p. 85.* Margin of mountain torrents, between the copper mines and Conde's Camp, New Mexico; Aug. (1235.)

COREOPSIS CARDAMINEFOLIA, Torr. & Gray, *Fl. 2. p. 346.* Old bed of the Rio Grande, 50 miles below El Paso; June. (1236.)

C. DRUMMONDII, Torr. & Gray, *l. c.* var. *Gray*, *Pl. Wright.* p. 109. — Prairies of the Leona and Nueces, Texas; May. (1237.) — On rocky hills of the San Pedro, Western Texas, were gathered a few specimens, apparently of this species, with large and remarkably thickened achenia.

COSMOS BIPINNATUS, var. *PARVIFLORUS*. *C. parviflorus*, *H. B. K.*; *DC. Prodr.* 5. p. 606. Margin of streams, from Barbocomori towards Santa Cruz, Sonora; Sept.: and on mountains near the copper mines, New Mexico; Oct. (1238.) — This is the same as Fendler's No. 447, 448; but with still smaller ligules (only 3 or 4 lines long, pale rose-color). The scales of the outer involucre are lanceolate, but not narrower than in depauperate specimens of the cultivated *C. bipinnatus*; they are as long as the inner involucre. Although the exterior achenia are short-beaked, the inner are long-beaked; the beaks scabrous. The awns of the pappus are 2, 3, or occasionally 4.

THELESERMA GRACILIS, *Gray in Kew Jour. Bot.* 1. p. 252, & *Pl. Wright.* p. 109. Hills of the Limpio; June: near Frontera; May: and at the copper mines, New Mexico; Aug. (1239.)

T. FILIFOLIA, *Gray, l. c.* *Coreopsis filifolia*, *Hook. Bot. Mag. t.* 3505. Rocky hills of the San Pedro, and of the San Felipe, Western Texas; May. (1230 bis.)

T. (ABUCEROS) LONGIPES, *Gray, Pl. Wright.* p. 109. Stony hills of the San Pedro and Pecos, Western Texas; May. (1231 bis.)

BIDENS FÆNICULIFOLIA, *DC. Prodr.* 5. p. 603? var. *acheniis minoribus* ($2\frac{1}{2}$ lin. longis) *scabro-hirsutulis*. — Valleys of Sonora, between the San Pedro and Sonoita, along streams; Sept. (1232 bis.) Also gathered by Dr. Gregg, at San Antonio de las Alanzanes. — The achenia are linear-oblong, tetragonal, but much obcompressed, and shorter than those of *B. fœniculifolia*, as characterized by De Candolle; the heads probably smaller. Perhaps it is an undescribed species.

B. HETEROPHYLLA, *Ort.?* *DC. Prodr.* 5. p. 597? var. *caule ramoso; segmentis foliorum (superiorum) fere integerrimis*. — Bed of small streams, in mountain valleys, between the San Pedro and Santa Cruz, Sonora; Sept. (1233 bis.) — I am not able to consult Ortega's figure. Our specimens consist of the upper part of branched stems, apparently of a rather tall herb, in flower. The lower cauline leaves present are pinnately 5–7-parted, the upper mostly 3-parted, only a few of the uppermost entire: the segments linear, or very narrowly linear-lanceolate, one or two lines wide, the lateral ones 1–2 inches, the terminal 2–3½ inches, in length, sparingly denticulate-serrate, or nearly entire. Ligules oblong, 6 or 8 lines in length, yellow.

B. BIPINNATA, *Linn.* Valley of Coppermine Creek, New Mexico. (1234 bis.) — Depauperate forms.

B. HETEROSPERMA (sp. nov.): *annua, undique glabra; caule ramosissimo ramisque gracilibus; foliis 1–2-ternatipartitis, segmentis anguste linearibus integerrimis nunc 2–3-fidis; capitulis paniculatis sparsis breviuscule pedunculatis parvis discoideis; acheniis anguste linearibus tetragonis glabris, extimis brevioribus crostratis aristis 2 brevissimis caducis superatis, interioribus elongatis 2–3-aristatis*. — Raised from seeds gathered by Mr. Wright near the copper mines, New Mexico. (There

are no dried specimens in the collection.) — Plant a foot or two in height, paniculately or corymbosely much branched, leafy. Leaves one to two inches long, including the short and naked petiole, rarely pinnately 5-parted; the upper usually 3-parted, with the segments either entire or 2–3-cleft; the lower ones biternately parted: segments 3 to 12 lines long, and half a line wide. Heads sparsely corymbose-paniculate, 3 lines long, one or two lines wide, rather few-flowered, on peduncles of an inch or less in length. Involucre entirely glabrous; the scales broadly linear, obtuse; the exterior shorter; the inner yellow or yellowish. Exterior achenia 2 lines long, blunt, not broader than the others, their two minute retrorsely barbed awns early deciduous: next to these are a few achenia with awns like the innermost, which are 4 or 5 lines long, projecting beyond the disk at maturity, and crowned with two, or sometimes three, retrorsely barbed persistent awns of a line in length.

HETEROSPERMUM TAGETINUM, *Gray, Pl. Fendl. p. 87, & Pl. Wright. p. 110*; var. acheniis plerumque omnibus exaristatis. — Mountain-sides at the copper mines; Oct. (1235 bis.) — The lobes of the rather rigid leaves are simple and obscurely and irregularly dotted, as in other plants of this group. Both in the indigenous specimens, and in those raised from their seeds, even the central achenia rarely show even the rudiments of awns. — A few specimens from Ojo de Gavilan have the segments of the leaves often lobed, and the central achenia awned. The want of awns on the short fertile achenia alone distinguishes them, and perhaps not permanently, from *H. pinnatum*.

GUARDIOLA PLATYPHYLLA (sp. nov.): glaucescens; foliis brevissime petiolatis ovato-rotundis pl. m. cordatis dentatis triplinerviis; involucre cylindrico, squamis oblongis obtusis; ligulis 1–3, tubo glaberrimo, fl. disci 5–7; achenio pilosulo. — Hill-sides, along exsiccated streams, between Barbocomori and Santa Cruz, Sonora; Sept. (1236 bis.) — This is an interesting addition to this well-marked genus, of which three species were characterized in *Pl. Wright. p. 111*. I have it also in cultivation, from seeds communicated by Mr. Wright. The terete stems are about 3 feet high, with many corymbose branches. The leaves are pale and more or less glaucous, thickish in texture, rounded, mostly obtuse, mucronate, subcordate or truncate-cordate at the base, repandly and sometimes strongly dentate with callous mucronate teeth. The larger cauline ones are about 3 inches in length and $2\frac{1}{2}$ or more in breadth; the upper and rameal successively smaller, but otherwise similar; the petioles only 1 to 3 lines long. The other species have much longer petioles, and the base of the leaves inclined to be cuneate. Inflorescence, involucre, &c. nearly as in *G. Tulocarpus*. Involucre about 5 lines long. Ray-flowers not longer than those of the disk, the slender tube shorter: ligule 3 lines long, obscurely 2–3-toothed, white, as are the disk-corollas and styles. Anthers green. Fertile achenia nearly 3 lines long, obscurely striate, furnished at the base with a sort of tuberosity or cushion-like enlargement on the back, which cannot be called an adherent scale: in the dried state it shrinks away.

SANVITALIA ABERTI, *Gray, Pl. Fendl. p. 87, & Pl. Wright. p. 111*. Stony hills and valleys, at the copper mines, New Mexico; Aug. (1237 bis.)

XIMENESIA ENCELIoides, Cav., fere δ . CANA, DC.; Gray, *Pl. Wright.* p. 112. From Eagle Springs to the Rio Grande below El Paso; June. (1238 bis.)

X. ENCELIoides, var. *NANA*: caulibus depressis vel assurgentibus vix spithamæis; ramis monocephalis; ligulis parvis discum vix superantibus; acheniis dense pubescentibus pachypteris. — Around the dwellings of Prairie-dogs (*Pseudostoma Ludoviciana*), between the Limpio and the Rio Grande; June. (1407.) — Here this dwarf variety abundantly occurs, unmixed with the ordinary state of the species.

VERBESINA PODOCEPHALA (sp. nov.): humilis, hispida; caulibus herbaceis plurimis e basi suffrutescente simplicibus vel simpliciter ramosis teretibus; foliis oppositis oblongo-ovatis serratis tripli – quintuplinerviis reticulatis basi rotundata subsessilibus haud decurrentibus; pedunculo solitario elongato monocephalo; involucre hemisphærico disco breviori biseriali, squamis ovatis, exterioribus 5 foliaceis obtusissimis laxis, interioribus 10 chartaceis subacutis; ligulis circ. 10 oblongis exsertis; acheniis exalatis, radii triquetris muticis, disci inæqualiter biaristatis vel arista unica abortiva. — Mountain valleys between the San Pedro and the Sonoita, and in a ravine at Santa Cruz, Sonora; Sept. (1239 bis.) — Plant 10 to 20 inches high; the stems hirsute or hispid and scabrous, slender, not at all winged. Leaves rather thin in texture, 2–3 inches long, 12 to 20 lines wide, acute or obtuse. Peduncles 6 to 10 inches long. Head nearly half an inch in diameter. Flowers golden-yellow. Ligules linear-oblong, 4 lines in length, usually styliferous and fertile; some of them occasionally sterile or even neutral. Achenia destitute of any coroniform or squamellate pappus: those of the ray obscurely 3-toothed at the angles; of the disk with short and rather stout erect awns. — This is evidently related to *V. Capitaneja*, Nees in *Linnaea*, 19. p. 729, which is only briefly characterized, and is said to have decurrent leaves. Our plant has the aspect of a *Gymnolomia*, or of a monocephalous *Zexmenia*, from which the pappus distinguishes it.

ADENOPHYLLUM WRIGHTII (sp. nov.): gracile, scabridum; foliis pinnatipartitis, segmentis 5–11 filiformibus inæqualibus muticis; involucre turbinato 8–12-dentato haud setigero basi parce subulato-bracteato; floribus flavis; ligulis brevissimis apice bifidis; pappo utroque 10-paleaceo, paleis exterioribus brevibus oblongis, interioribus aristato-trifidis, arista media achenio pubescente æquilonga. — Hill-sides near the copper mines, New Mexico; Oct. (1240.) — Herb a span to a foot high, from an annual root, erect, paniculate-branched, with the aspect of a *Dysodia*. Leaves with sparse lobes which are not broader than the rhachis, beset with a few large dark glands; the lower opposite, the upper alternate. Peduncles 1–2 inches long, furnished with a few subulate bracts; and with 4 or 5 similar ones surrounding the base of the involucre, none of them bristle-bearing. Involucre 3 or 4 lines long, smaller than in *Dysodia chrysanthemoides*, composed of 8 or the terminal of 10 to 12 lanceolate-oblong glanduliferous scales, which are concreted for three fourths of their length; their membranaceous tips rather obtuse, not awned nor bristle-bearing. Receptacle small, conical, alveolate and fimbriate. Rays rather shorter than the pappus; the oval ligule shorter than its tube. Lobes of the disk-corolla subulate. Achenia silky-pubescent, or when old glabrate, pentangular. Outer pappus of 10 very short and truncate corneous palæ, in a single series; the

inner of as many alternate and larger paleæ, cleft beyond the middle into three scabrous awns; the middle awn twice the length of the two lateral. — This plant has more of the habit of *Lebetina* than of *Adenophyllum coccineum*. Were the three aristiform segments of the inner pappus again trifid, it would be a true *Lebetina*. Although the paleæ are twice as numerous as in *Adenophyllum coccineum*, and deeper cleft, I refer it to that genus because it is the older one, and should consider *Lebetina* merely as a section of it, resting the character mainly on the double pappus.

DYSODIA CHRYSANTHEMOIDES, *Lagasca*. *D. fastigiata*, *DC.*, excl. syn. Open prairies, on the San Pedro, Sonora; Sept.

HYMENATHERUM (*ACIPHYLLÆA*) *ACEROSUM*, *Gray*, *Pl. Wright*. p. 115. Stony prairies of San Felipe Creek, Western Texas; hills near El Paso; and around the hot springs between the copper mines and the Mimbres, New Mexico. Also heads of the Aqua Prieta, Sonora. (1241.)

H. PENTACHÆTUM, *DC.*, var. (= 362, 363) *Gray*, *Pl. Wright*. p. 117. *H. Berlandieri*, *DC.* Rocky hills of the San Pedro and Pecos, Western Texas; May, June. (1242.)

H. TENUIFOLIUM, *Cass.*; *Gray*, *Pl. Wright*. p. 118; var. ? *ramis brevibus*; *foliorum lobis paucioribus et longioribus*; *paleis pappi alternis sæpius minoribus vel minus aristatis paucisve fere muticis*. — Stony hills near El Paso; March. (1408.) — An early state probably of *H. tenuifolium*, with the foliage much as in *H. pentachætum*; also approaching that species in the tendency to a reduction of the alternate paleæ of the pappus.

H. POLYCHÆTUM, *Gray*, *l. c.*; var. *foliorum lobis linearibus*; *capitulis paucioribus*. — Prairies, from Las Playas to the copper mines, New Mexico; Oct. (1243.) — Mixed with this species, as in the former collection, and so like it as to be overlooked in collecting, I find a single specimen of

LOWELLIA AUREA, *Gray*, *Pl. Fendl.* p. 91, & *Pl. Wright*. p. 118. — The paleæ of the pappus are about 12 in this specimen.

TAGETES MICRANTHA, *Cav. Ic.* 4. p. 31. t. 352; *DC. Prodr.* 5. p. 646. Mountains around the copper mines, New Mexico; Aug., Oct. (1244.) — “Called *Anis* by the Mexicans.” The plant, raised from Mr. Wright’s seeds in the Cambridge Botanic Garden, exhales a powerful and pleasant odor of Anise, when bruised. The ligules are white (“albicans,” *Cav.*), usually solitary, occasionally two, and rarely three, in each head, only $1\frac{1}{2}$ to 2 lines long, nearly entire, 2 – 3-denticulate or 2-lobed at the apex. Disk-flowers 3 to 8. Pappus of two awns and two broad paleæ; the latter unequal, shorter than the disk-corolla, sometimes connate into a sheath inclosing the awns, which are longer than the corolla.

CHRYSACTINIA MEXICANA, *Gray*, *Pl. Fendl.* p. 93, & *Pl. Wright*. p. 119. Hills at the Big Bend of the San Pedro, Western Texas; May. (1245.)

POROPHYLLUM MACROCEPHALUM, *DC. Prodr.* 5. p. 648. — Shaded mountain ravines on the Sonoita, Sonora; Sept. (1246.) — The primordial and lower cauline leaves are linear and linear-lanceolate, successively becoming ovate-lanceolate, an inch long. The upper ones are elliptical and broadly oval, 8 or 10 lines long, about the

length of their slender petioles; those of the branches similar, but smaller. There are often a few glands on the face of the leaf, as well as at the obscure repand crenatures. Peduncles, heads, &c. as described by De Candolle; except that the involucre is not quite an inch long, and its scales are scarcely if at all apiculate or mucronate. Achenia pubescent. — This is more closely allied to *P. ruderale* (which often has pellucid glands on the leaves) than to *P. ellipticum*.

P. GREGGII, *Gray, Pl. Wright. p. 120.* On the Sonoita near Deserted Rancho, Sonora; Sept. Mountain-sides near Lake Santa Maria, Chihuahua; April. (1247.)

P. SCOPARIUM, *Gray, Pl. Wright. p. 119.* Rocky hills, near El Paso; May. Painted Caves on the San Pedro; July. (1409.)

GAILLARDIA PULCHELLA, *Foug.* Prairies from the Mimbres to the copper mines, New Mexico; July. (1248.)

G. PINNATIFIDA, *Torr.* Stony hills of the Pecos; also from El Paso to Doña Ana, and at the copper mines, New Mexico; Aug. (1249.)

PALAFOXIA HOOKERIANA, *Torr. & Gray.* Sandy banks of the Rio Grande above Frontera, and below San Elizario; July. (1250.) — A smaller form, but with ample rays.

P. CALLOSA, *Torr. & Gray, Fl. 2. p. 369.* Valley of the Pecos; July. (1410.)

FLORESTINA TRIPTERIS, *DC., var. Gray, Pl. Wright. p. 121.* Valley of the Pecos; June. (1251.) — Flowers flesh-color or almost white. The paleæ of the pappus are all very obtuse.

CHEENACTIS STEVIOIDES, *Hook. & Arn.; Torr. in Stansbury, Rep. p. 390.* Hills near Camp Fillmore, on the Rio Grande, New Mexico; April. (1411.) — The marginal corollas have a somewhat ampliate limb.

HYMENOPAPPUS LUTEUS, *Nutt.; Gray, Pl. Fendl. p. 97.* Stony hills at the copper mines; Aug. (1252.) — The specimens resemble those of Fendler. The scales of the involucre are sometimes tinged with purple at the tips; but the corolla is truly yellow, with the pappus (a line and a half in length) fully as long as its tube.

H. FLAVESCENS, *Gray, Pl. Fendl. p. 97, & Pl. Wright. p. 121:* — the form with bipinnately-parted leaves, the lobes narrowly linear. — Valley of the Pecos, on stony hills; June. (1253.) The flowers are pale yellow.

H. FLAVESCENS, var. *cano-tomentosus*; foliis 2–3-pinnatipartitis, lobis angustolinearibus confertis; floribus vero flavis. — Sand-hills near Frontera, New Mexico; April, May. (1412.) — The heads are as bright yellow as in *H. luteus*; but they are smaller, and corymbose, the paleæ of the pappus shorter and more obovate, and the stems leafy.

H. FLAVESCENS, var. ? foliis radicalibus et caulinis inferioribus oblanceolatis integerrimis nunc pinnatifidis, lobis majusculis; pappo minore. — Mountain ravine near the Mimbres; Oct. — The root is biennial.

SCHKURIA HOPKIRKIA: capitulis 3–4-floris, flore unico sæpius fœminco, ligula brevissima imperfecta; acheniis obpyramidatis angulis longe villosissimis; pappi paleis 8 conformibus ovatis extus hirtellis nervo valido excurrente breviter aristatis corollam adæquantibus. — *Hopkirkia anthemioidea*, *DC. Prodr. 5. p. 660.* — Raised

in the Cambridge Botanic Garden, from seeds collected by Mr. Wright in Sonora. — The cultivated plants are one or two feet high, much branched and bush-like, annual: the cauline leaves pinnately 5–7-parted, or the upper 3-parted; the rameal mostly entire, narrowly linear. Involucre somewhat clavate and quadrangular, 3 lines long, nearly equalling the flowers, subtended with one or two small bractlets; the scales 4 or 5, obovate, their scarious tips tinged with purple. Corollas yellow, a line and a half long; those of the hermaphrodite flowers 4–5-toothed; that of the solitary female flower when present not longer than the others, and imperfectly ligulate; being 2-lipped, the inner lip small and entire, the outer, or ligule, involute, 2–3-toothed at the apex, about the length of the style. Achenia 2 lines in length, more or less villous or glabrate on the four sides, very strongly villous on the angles. Paleæ of the pappus, including the short projecting awn, not longer than the corolla, somewhat crose, the obtuse apex often splitting away from the base of the awn, so as to appear “trifid.” — I cannot doubt that this is De Candolle’s *Hopkirkia*, which must be reduced to *Schkuhria*, as remarked in *Pl. Fendl. p. 96*. The *Schkuhria Wislizeni* (to which belongs Galeotti’s No. 2049), which I there characterized, is to this exactly what *S. abrotanoides* is to *S. octo-aristata*; and the following, which I unwillingly characterize as a species, differs only in its rather small, entirely nerveless and awnless pappus.

S. WRIGHTII (sp. nov.): capitulis 3–5-floris, flore unico fœmineo, ligula brevissima imperfecta; acheniis ad angulos villosissimis; pappi paleis 8 obovato-oblongis conformibus enerviis muticis corolla paullo brevioribus. — On the Sonoita near Deserted Rancho, Sonora; Sept. (1254.) — This is to *Schkuhria Hopkirkia* and *S. Wislizeni* exactly what *S. isopappa*, *Benth.* is to *S. octo-aristata* and *S. abrotanoides*. It is therefore highly probable that the difference in the pappus, although constant in the specimens, is not of specific importance; and that the three Peruvian species should be viewed as forms of *S. abrotanoides*, and our three Mexican plants as analogous forms of *S. Hopkirkia*. *S. virgata*, *DC.*, with its very unequal pappus and nearly naked achenia, is distinct from either.*

BAHIA ABSINTHIFOLIA, *Benth.*, var. *DEALBATA*, *Gray, Pl. Wright. p. 121*. Sandy valley in the Mimbres mountains; July: near Frontera; March. (1255.)

B. BITERNATA (sp. nov.): annua, cinereo-puberula; caule erecto gracili superne corymboso-paniculato, ramis oligocephalis; foliis alternis petiolatis biternatisectis, segmentis linearibus obtusis sæpius 2–3-lobatis; involucre laxo disco brevior, squamis 12 obovatis obtusis; acheniis hirsutis; pappo e paleis 12–14 uninerviis, fl. exteriorum obovatis muticis tubum corollæ adæquantibus, fl. interiorum oblongo-lanceolatis aristatis corolla subdimidio brevioribus. — Gravelly hills near Ojo de Gavilan, New Mexico; Aug. (1256.) — Plant one or two feet high, loosely and paniculately branched; the heads corymbose, on peduncles of an inch or less in length. Segments and lobes of the leaves a line or less in width. Involucre as in *B. ambrosioides* and *B. pedata*; the scales about 3 lines in length, membranaceous.

* *Achyropappus anthemoides*, *H. B. K.* is wholly intermediate between *Schkuhria* and *Bahia*, *Lag.*, and will certainly fall into the one or the other genus.

Ligules 8 or 10, broadly obovate, 3-lobed at the apex, bright yellow, as are the numerous disk-flowers. Pappus of the ray and exterior disk-flowers entirely muticous and obtuse, about half the length of the achenium; of the inner disk-flowers, including their rather short scabrous-denticulate awn, almost as long as the achenium. The pappus of some of the intermediate flowers is intermediate in character. — This plant so much resembles *Bahia pedata*, No. 387 of Wright's former collection, that I was about to pass it as a variety of that species, with more dissected leaves, when I observed the elongated and awned paleæ of the pappus of all the inner flowers. This is an anomaly in the genus: none of the species except *B. pedata* show even a manifest midnerve to the pappus.

B. PEDATA, *Gray, Pl. Wright. p. 123.* Hills between the Limpio and Ojo de Leon; June. (The original specimens, No. 387, were gathered on the Limpio.) — The few specimens collected the present season are stouter than those of 1840; the leaves with larger, broader, and more incised or lobed segments. It still more resembles the following plant; from which the obtuse and fewer scales of the involucre, as well as the pappus, distinguish it.

VILLANOVA CHRYSANTHEMOIDES: puberula, glabella; caule erecto superne paniculato; ramis floridis pedunculisque subcorymbosis viscoso-glandulosis; foliis alternis 1-2-ternatipartitis, segmentis 2-3-lobatis seu pinnatifidis, lobis oblongis vel sublinearibus obtusis; involucri squamis subtriseriatis æqualibus acuminatis; ligulis 16-20 ovali-oblongis; fl. disci multis. — *Amauria?* dissecta, *Gray, Pl. Fendl. p. 104.* — Sides of mountains, at the copper mines, New Mexico; Oct. (1257.) — Stems one to four feet high. Leaves all alternate; the larger ones 2 to 4 inches in diameter, glabrous or nearly so. Heads half an inch in diameter, exclusive of the ligules, which are 5 lines long. Flowers all yellow. Scales of the involucre 16 to 20, herbaceous; the exterior lanceolate; the inner oblong-obovate and conspicuously acuminate. Corollas, especially the tube, beset with very glandular short hairs. Branches of the style in the disk-flowers tipped with a short and obtuse cone. Receptacle rather convex. Achenia quadrangular, subclavate, nearly glabrous, striate, all fertile. — This plant is to *Bahia* proper what the original species of *Villanova* are to *Achyropappus*. There is nothing but a larger number of flowers in the head to distinguish it from *Villanova*, with which it accords very well in habit.

AMBLIOLEPIS SETIGERA, *DC. Prodr. 5. p. 668; Gray, Pl. Wright. p. 121.* Prairies of the Leona, Western Texas; May. (1258.)

RIDDELLIA TAGETINA, *Nutt.; Torr. in Emory, Rep. t. 5; Gray, Pl. Fendl. p. 93.* Alluvial soil along the San Pedro, Western Texas; May. (1259.)

ACTINELLA RICHARDSONII, *Nutt.; Torr. & Gray, Fl. 2. p. 381; Gray, Pl. Fendl. p. 101.* Stony hills at the copper mines, New Mexico; Aug. (1260.)*

* On the Mimbres, in the spring of 1851, Dr. J. M. Bigelow gathered specimens of *Actinella argentea*, *Gray, Pl. Fendl. p. 100.* In the same region he likewise discovered another well-marked species, viz.: —

ACTINELLA BIGELOVII (sp. nov.): caulescens, floccoso-lanata, demum glabrescens; caulibus e rhizomate perenni erectis simplicibus striatis apice longe aphyllis scabris monocephalis; foliis angustissime

A. ODORATA, Gray, *Pl. Fendl. l. c.*, & *Pl. Wright. p.* 122. Along the Rio Grande near El Paso; May, in flower; July, in fruit. (1261.)

A. SCAPOSA, Nutt.; Torr. & Gray, *Fl. 2. p.* 382: the villous form. Stony prairies, near Rock Creek and Escondido Springs; June. (1262.)

A. LINEARIFOLIA, Torr. & Gray, *l. c.* Rocky hills along the Pecos, and at Escondido Springs; June. (1263.)

A. LINEARIFOLIA, var. *caule elatiore (ultrapedali) strictiore*. — Prairies of the Leona, Western Texas; May. (1264.)

HYMENOTHRIX WISLIZENI, Gray, *Pl. Fendl. p.* 102, *adnot.* Valley of the Sierra de los Animas, south of the copper mines, New Mexico; Oct. (1265.) "Also common in Sonora." — The specimens well accord with that of Wislizenus. I think the root is perennial. The disk-corollas are moderately 5-lobed; the anthers partly exserted, and yellow, like the flowers. The achenia are 4-5-angled, and minutely hairy. The pappus is correctly described in *Pl. Fendl. l. c.*, except that the paleate portion is mostly rather longer than the awn. — The following plant, with the involucre and pappus of *Hymenothrix*, might well claim the rank of a genus, on account of its rayless capitula, with the limb of the corolla parted to the base.

H.? *WRIGHTII* (sp. nov.): floribus purpurascentibus; ligulis nullis; corollis fl. hermaphroditis limbo 5-partito, lobis oblongo-linearibus; acheniis villosis; paleis pappi 15-18 lanceolatis nervo valido in aristam breviusculum desinente; foliis inferioribus 2-3-ternatisectis, superioribus trisectis segmentis lineari-filiformibus integerrimis. — On hills between the Barbocomori and Santa Cruz, and on the side of the Chiricahui Mountains, Sonora; Sept. (1266.) — Root perennial. Stems glabrous, rigid, corymbosely branched, 2 or 3 feet high. Lower leaves biternately divided and more or less hirsute; the others glabrous: segments of the upper leaves an inch or more in length, and less than a line in width. Peduncles or branches of the loose corymb glandular, or entirely glabrous. Heads 4 or 5 lines in length, about 30-flowered. Involucre shorter than the disk, glabrous, biserial; the exterior scales 4 or 5, linear and smaller; the inner about 7, obovate or oblong, partly scarious, tinged with purple. Corolla pale purple; the limb 5-parted nearly to the summit of the glandular tube; the lobes oblong-linear, spreading, a line and a half in length, equal, or in some of the marginal flowers more or less irregular from the partial union of two of the lobes. Anthers purple, wholly exserted, tipped with an ovate appendage, bidentate at the base. Branches of the style flat, linear, like those of *H. Wislizeni*, except that the conical appendage is subulate-pointed. Receptacle small and nearly flat, tuberculate, naked. Achenia quadrangular, tapering to the base, villous. Pappus rather longer than the achenia, shorter than

linearibus rigidis integerrimis paucisve caulinis trilobis; involucri squamis oblongo-lanceolatis acuminatis, interioribus acuminatissimis inferne scarioso-marginatis; pappi paleis lanceolatis sensim aristato-acuminatissimis (nervo evanido) corollam disci subæquantibus. — On mountains near the copper mines, and near the Mimbres, New Mexico; April, June. — Stems slender, 8 to 12 inches high. Radical leaves cæspitose, 2 to 3 inches long, barely a line wide, the cauline several on the lower half of the stem, similar, or some of the larger ones furnished with a short lobe on each side above the middle. Head and ligules nearly as large as those of *A. argentea*. Paleæ of the pappus 3 lines long.

the corolla, composed of 15 to 18 linear-lanceolate hyaline paleæ (which are broader than in *II. Wislizeni*), with a very strong hispid midrib, produced at the apex into a short hispid-barbellate awn. The aspect of the heads in fruit is something like those of *Petalostemon corymbosum*.

GALINSOGA PARVIFLORA, *Cav.*, var. *CARACASANA*. *Vargasia Caracasana*, *DC. Prodr.* 5. p. 676. Valley of Coppermine Creek, New Mexico; Aug., Oct. (1267.) — The achenia of the ray are slightly hairy near the summit, and furnished with a very small setiform pappus, as De Candolle characterized *Vargasia*, much more reduced than in the figure in *Deless. Ic. Sel.* 4. t. 47.

G. PARVIFLORA, var. *SEMICALVA*: acheniis radii glaberrimis calvis. — Side of mountains, at the copper mines; Oct. (1268.)*

BAILEYA MULTIRADIATA, *Harv. & Gray, Pl. Fendl.* p. 106; *Torr. in Emory, Rep.* p. 144. t. 6. Valleys between Eagle Springs and the Rio Grande; and on the Mimbres; July. Near El Paso, abundant; April, May. (1269.)

B. PLENIRADIATA, *Harv. & Gray, l. c.* Valleys west of Chiricahui Mountains, Sonora; Sept. (1270.)

ACHILLEA MILLEFOLIUM, *Linn.* Mountain ravine near the Mimbres; Oct. (1271.)

ARTEMISIA DRACUNCULOIDES, *Pursh.; Gray, Pl. Wright.* p. 124. Hills, around the copper mines, New Mexico; Oct. (1272.)

A. FILIFOLIA, *Torr.* Valley of Coppermine Creek; Oct. (1273.)

A. CANADENSIS, *Michx.; Torr. & Gray, Fl.* 2. p. 417. Hills and valleys around the copper mines; Aug., in flower; Oct., in fruit. (1274.) — A form with the radical leaves canescent.

A. LUDOVICIANA, *Nutt.; Torr. & Gray, l. c.* Side of mountains at the copper-mines; Oct. Also on mountains near Conde's Camp; Sept. (1275.) Also a small-leaved and very canescent form, like Wright's No. 391. (1276.)

A. LUDOVICIANA, var. *foliis lobisve lineari-lanceolatis supra glabratis*. — Valleys near the copper mines; Oct. (1277.) — A form resembling Lindheimer's No. 442, and approaching that called *A. Mexicana*.

A. LUDOVICIANA, var. *MEXICANA*, forma *tenuifolia*. — Mountains around the copper mines; Oct. (1278.) — Lobes of the leaves finer, and the involucre less pubescent, than in Lindheimer's No. 444, which I cannot specifically distinguish from *A. Ludoviciana*. — Collected with the above is a plant with similar and canescent leaves on the sterile shoots; but those of the fertile stems glabrate, pinnately 3 5-parted, with the lobes and rhachis nearly filiform. (1279.)

GNAPHALIUM PALUSTRE, *Nutt.; Torr. & Gray, Fl.* 2. p. 427. Sandy banks of the Rio Grande above El Paso; July. (1280.)

* The following is a New Mexican representative of a Californian and Oregon genus: —

LAYIA (MADAROGLOSSA) NEO-MEXICANA (sp. nov.): hispida, parce glandulosa; foliis linearibus integerrimis; ligulis trifidis albis; acheniis radii pappo parvo paleaceo subdimidiato laciniato coronatis, disci parce pilosis; cæt. fere *L. glandulosæ*. — Near Santa Barbara, New Mexico, Aug., *Dr. J. M. Bigelow*. (Communicated by Dr. Torrey.) — This might, perhaps, have been taken for *Layia glandulosa*, if it were not for the constant presence of a pappus in the ray-flowers; in which respect it differs not only from the rest of the genus, but from the sole distinguishing character of the division *Madieæ*. The character of the genus and of the section *Madaroglossa* must accordingly be extended in this particular.

G. LUTEO-ALBUM, *Linn.* Sandy bars of the Nueces, Texas; also on the Pecos, and the Rio Grande, near El Paso. (1281.)

G. SPRENGELII, *Hook. & Arn.*; *Gray, Pl. Wright. p. 124.* Hills, near Cooke's Spring, between the Rio Grande and the Mimbres; Nov. (1282.) — Also (a large form) on hills around the copper mines (1283), and in valleys of Sonora (1284).

G. MICROCEPHALUM, *Nutt.*; *Gray, Pl. Wright. p. 124.* Mountains near the copper mines: a single specimen only gathered.

G. LEUCOCEPHALUM (sp. nov.): caulibus e basi herbacea plurimis erectis simplicibus cano-lanatis; foliis anguste linearibus acutissimis basi breviter decurrentibus supra viridibus pube brevissima subglandulosa scabridis subtus cano-lanatis; capitulis in corymbum densum polycephalum congestis; involucri campanulati squamis (basi angustata tomentosa exclusa) ovatis oblongisve obtusis glabris candidis. — *G. polycephalum*, *Gray, Pl. Wright. p. 124. n. 393*, non *Michx.* — Bed of mountain torrents near Santa Cruz, Sonora; Sept. (1285.) — Stems one or two feet high, leafy to the top, puberulent-glandular under the coat of wool, terminated by a dense compound corymb. Leaves 2 or 3 inches long, only a line and a half wide, about the same breadth at the manifestly decurrent base. Heads more than 50-flowered, the hermaphrodite flowers few in the centre. Involucre 3 lines in length and breadth; the scales bright white, all (except perhaps the outermost) obtuse. — This is manifestly different from *G. polycephalum*, to which I wrongly referred the specimens gathered in 1849. It is more closely related to *G. leptophyllum*, which has straw-colored or fuscous and lanceolate scales of the involucre.

CACALIA DECOMPOSITA (sp. nov.): glabrata; caule longe subaphyllo apice corymboso polycephalo; foliis 3-4-pinnatisectis, segmentis linearibus; petiolo basi vaginante; involucre 5-6-phylo 5-6-floro basi vix bracteolato; pappo corollam subæquante. — Mountains, east of Santa Cruz, Sonora; Sept. (1286.) — Stem 3 feet high, terete, floccose-woolly at the base and at the base of the petioles, otherwise nearly glabrous, bearing one or two very large leaves (6-12 inches long and little less broad) at the base, naked above, or with one or two small but similarly dissected leaves, those which subtend the branches of the compound corymb reduced to bracts. Segments of the leaves 6 to 18 lines long, a line to a line and a half wide, entire, or with one or two lobes; the rhachis not toothed. Pedicels pubescent. Heads half an inch long; the involucre about half that length. Achenia thick. Corolla apparently flesh-color.

SENECIO LOBATUS, *Pers.*; *Torr. & Gray, Fl. 2. p. 437.* Banks of the Rio Grande, near El Paso; and banks of the Rio Santa Maria, Chihuahua; April, May. (1413.)

S. TAMPICANUS, *DC. Prodr. 6. p. 427*; *Gray, Pl. Wright. p. 125.* Hills on the Limpio; June. (1287.)

S. FILIFOLIUS, *Nutt. β.* *FREMONTI*, *Torr. & Gray, Fl. 2. p. 444.* Stony prairies of the Leona and Nueces, Texas; May. (1288.)

S. LONGILOBUS, *Benth.*, var. *floccoso-lanatus*, mox *glabrescens*. — Valley of the Rio Grande, near El Paso; April. (1414.) — Between No. 399 and No. 400.

S. FASTIGIATUS, *Nutt.*; *Torr. & Gray, l. c.* Ravines between the copper mines and the Mimbres, New Mexico; Oct. (1289.) — A low form, exactly agreeing

with a specimen from Nuttall, except that the cauline leaves are repandly toothed in several specimens. It probably passes into *S. canus*, *Hook.*

→ *S. AUREUS*, *Linn.*, var. *BOREALIS*, *Torr. & Gray, Fl. l. c.*, verging towards a stout and floccose form of var. *Balsamitæ* (*S. Plattensis*, *Nutt.*). Sides of the Organ Mountains, northeast of El Paso; April. (1415.)

PSATHYROTES SCAPOSA (sp. nov.): spithamæa, arachnoideo-lanuginosa; foliis fere omnibus radicalibus rotundo-ovatis subcrenatis basi trinerviis petiolatis; scapo glanduloso sæpe diviso 2–10-cephalo; involucri multiflori squamis estriatis oblongo-lanceolatis. (Tab. XIII.) — Stony hills above El Paso; May: also near Lake Santa Maria; April. (1416.) — Root slender, biennial or annual, producing from one to several scapes or nearly leafless flowering stems, from 3 to 6 inches high, which are glandular and viscid, as are the peduncles and heads. Leaves all radical, or approximated on very short and forking stems (the subcauline ones alternate), 6 to 18 lines long, obtuse, obscurely or irregularly crenate, or entire, abruptly contracted into a petiole as long as the blade, clothed, as well as the base of the stem, with a loose and white arachnoid tomentum, which is partially deciduous with age, under which the surface is more or less viscid. Bracts, subtending the peduncles or branches of the scape, inconspicuous and linear, one or two lines long. Heads subcorymbose, 4 lines long. Involucre of about 16 equal oblong-lanceolate scales, which are nearly in a single series, membranaceous but greenish, flat, not striate, obscurely veiny by transmitted light, rather obtuse, viscid-pubescent, shorter than the flowers. Receptacle nearly flat, naked. Flowers 30 to 40, all similar and tubular; the corolla light yellow, viscid. Style nearly as in *Arnica*. Achenia turbinate, obscurely pentangular, villous. Pappus shorter than the achenia, and only about half the length of the corolla, fine and capillary, copious, the bristles very unequal in length, rather rigid, scarcely at all denticulate even under a strong lens, persistent. — In *Plantæ Wrightianæ*, p. 86, among the species to be excluded from *Brickellia*, the *Bulbostylis annua* of Nuttall is mentioned as an obscure plant of uncertain genus, either of *Asteroidæ* or *Senecionidæ*. Of it I have seen only a poor specimen in the Hookerian herbarium, from which I took some florets for examination; which show that it and the plant now under consideration are undoubted congeners. As they cannot be associated with any genus known to me, I merely raise to generic rank the section under which Nuttall characterized his *Bulbostylis annua*, changing a single letter in the termination of the name, that it may correspond to the Greek word (*ψαθυρότης*) from which he derived it.* The

* *PSATHYROTES*. (*Bulbostylis* § *Psathyrotus*, *Nutt.*)

Capitulum homogamum multiflorum; floribus tubulosis. Involucrum 1–2-seriale, squamis æqualibus. Receptaculum nudum, fere planum. Corolla cylindræco-infundibularis, tubo proprio brevissimo, limbo 5-dentato. Anthæræ elongatæ, demum exsertæ, ecaudatæ. Styli rami subcompressi, lineis stigmaticis obscuris percursi, extus hirtelli, cono inconspicuo terminati. Achenia oblongo-turbinate, villosa. Pappus pilosus, corolla dimidio brevior, parum copiosus; setis tenuibus rigidulis vix scabris valde inæqualibus. — Herbariæ Neo-Mexicanæ monocarpicæ, nanæ, glanduloso-viscosæ; foliis alternis ovatis vel cuneatis; floribus pallide flavis.

1. *P. ANNUA*. *Bulbostylis* (*Psathyrotus*) *annua*, *Nutt. in Jour. Acad. Philad. n. ser. 1. p. 179.*

2. *P. SCAPOSA*. Vide supra.

name has no particular applicability to the present species (the stems of which are by no means brittle or fragile), nor apparently to Nuttall's plant either. The genus may be provisionally referred, I think, to the Senecionideæ of the subtribe Senecioneæ.

CIRSIIUM WRIGHTII (sp. nov.): caule elato (3–9-pedali) superne corymboso-paniculato polycephalo; foliis cum ramis utrinque tenuiter arachnoideo-lanuginosis demum glabrescentibus, radicalibus magnis profunde pinnatifidis in petiolum superne lobulatum inferne spinosum attenuatis, caulinis pinnatifido-sinuatis basi attenuatis in caulem leviter decurrentibus dentibus marginibusque spinulosis, ramealibus parvis sensim ad bracteas subulatas reductis; capitulis nudis parvulis; involucri hemisphærici squamis subulatis appressis cuspidato-apiculatis; corollis carneis vel ochroleucis. — *C. altissimum*, var. *Gray, Pl. Wright. p. 125. no. 406.* — Around springs near San Bernardino, on the borders of New Mexico and Sonora; Oct. (1290.) — A tall species, which in the former collection I took for a variety of *C. altissimum*. From that it obviously differs in the thin and cobwebby, and rather deciduous pubescence, the naked peduncles and heads, as well as in the shorter and hemispherical involucre, the scales of which are barely callous-pointed, but not spinescent. It should stand next to *C. muticum*, which has a differently shaped involucre, with broader and blunter scales, shorter peduncles, more divided leaves, &c. The radical leaves of *C. Wrightii* are about two feet long; the cauline a foot or more in length; those of the flowering branches one or two inches, or still smaller. Heads barely an inch in length.

C. VIRGINIANUM, *Michx.* var. *γ. Torr. & Gray, Fl. 2. p. 458.* Low and grassy flats around Escondido Springs, between the Pecos and the Limpio; June. (1291.)

C. UNDULATUM, *Spreng.*; *Torr. & Gray, l. c.*; *Gray, Pl. Wright. p. 125.* Prairies from Howard's Creek, Western Texas, to the Limpio; May. (1292.) — Two or three forms. One or two very spinose specimens make a transition to *C. ochrocentrum*. Also, with smaller heads, on Coppermine Creek; Oct. (1293.) Another variety, with numerous lanceolate lobes to the elongated leaves, was gathered between the Barbocomori and Santa Cruz, Sonora. (1294.)

C. OCHROCENTRUM, *Gray, Pl. Fendl. p. 110.* Sandy banks of the Rio Grande above Doña Ana; Sept. (1295.) — The leaves are perfectly crowded with long, yellowish spines, and similar spines tip the scales of the involucre. Yet I fear it is only an extreme form of the polymorphous *C. undulatum*.

C. NEO-MEXICANUM (sp. nov.): foliis lanceolatis seu oblongo-linearibus sinuato-pinnatifidis spinosis utrinque cauleque arachnoideo-lanatis incanis, caulinis basi angusta spinosa decurrentibus, radicalibus subpetiolatis; capitulis solitariis vel subcorymbosis subglobosis erectis; involucre arachnoideo-lanato, squamis lanceolatis, exterioribus apice foliaceo patulo vel recurvo in spinam subulato-productis, intimis linearibus acuminatis fere inermibus. (*C. canescens*, *Gray, Pl. Fendl. p. 110?* haud *Nutt.*, is probably a variety of this, with smaller and more numerous heads, and less spreading involucre scales.) — Side of the Organ Mountains, northeast of El Paso; April. (1417.) — "Stem 2–4 feet high, somewhat branching"; the branches

usually monocephalous. The whole plant is covered with a white wool, which is looser and more arachnoid than in *C. undulatum*; and the upper surface is found to be smooth when the woolly covering is rubbed off. The involucre, also loosely woolly, is about an inch and a half in diameter, not bracteate; the scales with a chartaceous or coriaceous and appressed base; and all but the innermost with a foliaceous-acuminate and spine-tipped entire appendage, which is widely spreading, or the exterior scales reflexed. This should be compared with *Cirsium Mexicanum*, *DC.* (but it is wholly unlike *C. lanceolatum*) and with *C. cernuum*, *Lag.* The involucre most resembles that of *C. heterolepis*, *Benth.* (to which belongs, I believe, No. 467 of Coulter's Mexican collection), but it is smaller and less foliaceous.

C. GRAHAMI (sp. nov.): caule 3–5-pedali apice parce ramoso; ramis monocephalis; foliis subtus cano-lanuginosis supra leviter arachnoideis mox nudis minute viscoso-hirtellis lanceolatis sinuatis vel subpinnatifidis spinuloso-ciliatis lobis dentibusve breviter spinosis, caulinis semiamplexicaulibus haud decurrentibus; involucre subgloboso basi bracteolis 2–3 parvis instructo, squamis coriaceis appressis glabris lanceolatis spinula brevissima apiculatis; corollis intense purpureis. — Low grounds, in valleys between the Sonoita and the San Pedro, Sonora; Sept. (1296.) — Radical leaves over a foot in length and three inches wide; those of the elongated flowering branches one to three inches long; the uppermost linear. Head an inch and a half in length. Scales of the involucre barely spinulose-mucronate or cuspidate. Flowers very bright and deep purple. The nearly muticous involucre, the deep purple flowers, and the leaves bare and green above, principally distinguish this from some forms of *C. undulatum*, which moreover grows in high and dry ground. It is named in honor of Col. J. D. Graham, under whose auspices the collection was made.

PEREZIA RUNCINATA, *Lagasca*; *Gray, Pl. Wright. p. 125.* Stony hills of the Pecos and San Felipe Creek, Texas; May, July. (1297.)

P. NANA, *Gray, Pl. Fendl. p. 111, & Pl. Wright. l. c.* Along branches of the San Pedro, Sonora; Sept. Stony hills, near El Paso; March. (1418.) — “Plant very sweet-scented in drying.”

P. WRIGHTII, *Gray, Pl. Wright. p. 127.* Prairies along the Rio Frio, Western Texas; May. (1298.)

TRIXIS ANGUSTIFOLIA, *DC. Prodr. 7. p. 69*; *Gray, Pl. Wright. p. 128*; var. foliis lato-lanceolatis sæpe denticulatis. — Ravines, at Santa Cruz, Sonora; Sept. Mountains near El Paso; May. (1299.) — The leaves are very much wider than in Gregg's specimens; those of Wright's former collection are intermediate in their form.

LERIA NUTANS, *DC. Prodr. 7. p. 42.* Comanche Creek, Western Texas; May.

CALAIS LINEARIFOLIA, *DC.*; *Torr. & Gray, Fl. 2. p. 471.* Shore of Lake Gusman, Chihuahua. Also sandy hills, Camp Fillmore, and on the adjacent Organ Mountains, New Mexico; April. (1419.) — The specimens accord well with the Californian plant, except that the scales of the involucre are scarcely so much acuminate, and the achenia rather less beaked; — differences which do not appear to

be of specific importance. As in the Californian plant, the leaves are either glabrous or pubescent; and either entire, or with a few spreading teeth, or laciniate-pinnatifid. In some of the exterior, chiefly sterile flowers, the awns of the pappus are as long as the palea.*

PINAROPAPPUS ROSEUS, *Less., DC. Prodr.* 7. p. 99. Stony hills of the San Felipe, Western Texas. (1420.)

RAFINESQUIA NEO-MEXICANA (sp. nov.): humilis; foliis runcinato-pinnatifidis; involucri squamis propriis 7 – 8 lanceolatis uniseriatis; acheniis breviuscule rostratis, exterioribus cinereo-pubescentibus, intimis glabris; pappo albo, setis rigidulis. — Stony hills along the Rio Grande near El Paso, abundant; March, April. (1421.) — Plant from 3 to 12 inches high, branching, from a slender monocarpic root (which probably originated from the seed late in the autumn previous), rather slender, entirely glabrous. Leaves slightly fleshy, one to two inches long; the radical obovate or oblong, barely toothed; the cauline lanceolate or linear, auriculate-clasping at the base, and pinnatifid, with few or several oblong or linear spreading or somewhat recurved lobes; the uppermost linear and entire, gradually reduced to small bracts. Heads solitary, terminating the branches. Involucre an inch long, cylindraceous, tapering upwards, or elongated-conical, composed of about 10 short ovate-acuminate calyculate scales, and of 7 or 8 elongated lanceolate membranaceous scales, tapering to a point, as long as the disk; all somewhat united and thickened at the base. Receptacle flat, naked, areolate. Flowers from 15 to 18, all fertile and similar. Ligules rose-color, or nearly white above and purple underneath. Achenia terete, obscurely 5-ribbed, tapering from the base (the large areola of insertion basilar) upwards, and prolonged into a not very slender beak, which is about half the length of the body of the achenium; the exterior canescently pubescent; the innermost glabrous and smooth, or very nearly so. Pappus bright white, composed of 10 or 12 rather rigid setæ (like those of *Scorzonera*), about the length of the achenium, and conspicuously and densely plumose from the base to a little below the capillary apex. — This handsome vernal plant appears to be a genuine congener of the *Rafinesquia Californica* of Nuttall, notwithstanding the shorter and stouter beak to the fruit, and stronger, more paleolate bristles of the pappus.

STEPHANOMERIA MINOR, *Nutt.; Gray, Pl. Wright.* p. 128. Alluvial soil on the Pecos; June. (1300.)

S. RUNCINATA, *Nutt.; Gray, Pl. Fendl.* p. 112. *Jamesia pauciflora*, *Nees! in Neuwied Trav. App.* p. 16. Hills near El Paso; May. (1422.) — “Flowers purple.”

S. RUNCINATA, *Nutt.*, var. *caulibus elatioribus* (1 – 2-pedalibus); ramis paniculatis; foliis tenuioribus. — Pebbly bed of Howard’s Creek, Western Texas; May. (1301.)

* *Hymenonema?* *glaucum*, *Hook. Fl. Bor.-Am.* 1. p. 300, judging from the imperfect original specimen, is not the *Calais macrochæta*, *Gray, Pl. Fendl.*; but a *Scorzonella*; perhaps the entire-leaved state of *S. laciniata*.

CALYCOSERIS, *Nov. Gen.*

Capitulum liguliflorum multiflorum. Involucrum campanulatum, duplex, interius e squamis circa 12 lineari-lanceolatis margine scariosis subuniseriatis; exterius calyculiforme, e squamis totidem brevibus laxis. Receptaculum planum, paleis tenuissimis piliformibus inter flores onustum. Achenia conformia, fusiformia, crasse 5-6-costata, muricato-scabra, apice attenuato-rostrata. Pappus duplex; exterior coroniformis persistens; interior pilosus, copiosus, setis mollibus niveis vix scabris basi in annulum concretis caducis. — Herba monocarpica, humilis, glabra; caule a basi ramoso; foliis pinnatipartitis, lobis rhachique linearibus; pedunculis breviusculis monocephalis ante anthesin nutantibus cum involucri basi hispido-glandulosis; floribus roseis.

CALYCOSERIS WRIGHTII. (Tab. XIV.) — Stony hills around El Paso, abundant; March, April. (1423.) — Plant about a span high, from a slender simple root, branched from the base; the branches or stems ascending, sparsely leafy, sparingly setose-glandular towards the summit. Leaves glaucescent, linear, and with few or several spreading linear lobes from 2 to 5 lines in length; the terminal lobe prolonged. Involucre half an inch long, externally sparsely beset, like the peduncle, with nail-headed glandular setæ. Ligules pale rose-color, marked with deeper purple underneath, half an inch long. Receptacle flat, about 25-flowered, areolate, each flower subtended by a delicate capillary bristle in place of a palea: these bristles, which may perhaps be compared with those of the receptacle of *Andryala*, are persistent, though rather fragile, and as long as the achenia. Achenia all alike, $2\frac{1}{2}$ lines long, terete, with 5 or 6 broad ribs separated by narrow grooves, tuberculate-roughened, tapering gradually into a thickish beak which is rather shorter than the body of the achenium, its dilated apex crowned with the hyaline crateriform outer pappus, the edge of which is even, but multidenticulate. Inner pappus pilose, bright white, consisting of copious and equal, scarcely denticulate, soft bristles, all rather firmly united into a ring at the base and deciduous together. — This well-marked genus (as well as *Anisocoma*, *Torr. & Gray in Bost. Jour. Nat. Hist.* 5. t. 13, which agrees with it in having an exterior coroniform pappus) will hardly find a place in any of De Candolle's subtribes, as they now stand. Disregarding this peculiar character of the pappus, *Calycoseris* would fall into *Rodigiæ*, if the setæ of the receptacle be taken for true paleæ. But if they are of the same nature as those of *Andryala*, the genus might be placed near *Crepis* and *Malacothrix*. However, it is hardly worth while to speculate upon its appropriate place until the whole tribe has undergone revision.

MALACOTHRIX FENDLERI: nana, glabrata; caulibus e radice exili plurimis diffusis; foliis junioribus parce arachnoideis, radicalibus runcinato-pinnatifidis dentatisve lobis cuspidato-mucronatis, caulinis paucis linearibus, summis integerrimis; acheniis fere cylindricis æqualiter multicostatis apice manifeste cupulato integerrimo; pappi seta unico validiore lævi subpersistente, cæteris scabris inferne barbelulatis caducis. — *M. sonchoides*, *Gray, Pl. Fendl. p.* 113, non *Torr. & Gray*. — Stony hills around El Paso, &c., abundant; March, April. (1424.) — The habit

and aspect of this plant are almost exactly as in *M. sonchoides*, with which I formerly confounded it. That species, however, as stated by Dr. Torrey (*Appendix to Stansbury's Report*, p. 392), has five stronger and persistent bristles to the pappus. The achenium, moreover, is strongly angled with five thick and equidistant ribs, which are much larger than the others (two in each interval), and alternating with the stronger setæ of the pappus; and its apex is very minutely denticulate, but not produced into a cup or distinct border. In *M. Fendleri*, the ribs of the brownish achenium are slender and all alike, and its apex is continued into a decided cup, with an even edge, within which the row of minute denticuli, like persistent bases of the setæ of the pappus, are concealed; and only one (sometimes two?) of the rays of the pappus is stronger and persistent. — The Californian plant of Coulter's collection, which I also inadvertently referred to *M. sonchoides*, is doubtless *M. obtusa*, *Benth.*; likewise gathered by Dr. Parry, at Monterey. In this the achenia, in Parry's specimens, are tapering to the base, somewhat angled, but evenly multistriate, and with scarcely any apical border; the pappus is wholly deciduous in a ring; and I find no stronger and naked bristles. — Dr. Torrey indicated to me an analogous structure in the pappus of *Sonchus*, in which four or five of the inner bristles of the pappus are much stronger than the soft and delicate exterior pappus. This, I find, has been duly noticed by C. H. Schultz, in the *Phytographia Canariensis* of Mr. Webb.

PRENANTHES? EXIGUA (sp. nov.): caule 3–4-pollicari ramosissimo; pedunculis divaricatis; foliis radicalibus caulisque oblongis vel obovatis basi attenuatis spinuloso-dentatis nunc sinuatis, ramealibus ad bracteas minimas reductis; involucri tetraphyllo quadrifloro; acheniis 5-sulcatis scabriusculis pappo rigido sublongioribus. — Stony hills above El Paso; April. (1425.) — Root simple, annual or biennial. Leaves 6 to 10 lines long, glabrous. Stem soon deliquescent into a diffuse and corymbose compound panicle. Involucre 2 lines long, subtended by a minute bract, like those of the peduncles and branchlets; the scales oblong-lanceolate. Ligules short; the color not known, probably flesh-colored. Achenia cylindrical, scarcely narrowed at the base, truncate at the apex, the surface occupied by five very broad and flat ribs, separated by narrow grooves, minutely scabrous. Pappus bright white, of copious and very unequal bristles, which are unusually stiff and rigid, slightly thickened downwards, minutely scabrous, the smallest less than half the length of the longest, and these rather shorter than the achenium, at length separating in a ring. This plant seems to fall more readily into *Prenanthes* than into any other genus known to me; but it may not be a true congener of the European species.

LYGODESMIA APHYLLA, var. *TEXANA*, Torr. & Gray, *Fl. 2.* p. 485. Stony hills of the Pecos; June. (1302.)

MULGEDIUM PULCHELLUM, Nutt.; Torr. & Gray, *Fl. 2.* p. 498; Gray, *Pl. Fendl.* p. 115. Banks of the Limpio and of the Rio Grande; also at the copper mines, New Mexico. (1303.)

PYRRHOPAPPUS CAROLINIANUS, DC. *Prodr.* 7. p. 44; Torr. & Gray, *Fl. 2.* p. 495. Along the Rio Grande, above El Paso; May. (1426.)

Fendler
Shully CREPIS AMBIGUA, Gray, *Pl. Fendl.* p. 114. On the sides of the Organ Mountains, northeast of El Paso; April. (1427.) — The specimens exactly accord with those of Fendler, except that the leaves and scape-like stems are rather more setose. The plant (undistributed) which I enumerated under this name in Wright's former collection (*Pl. Wright.* p. 129) is very different, and a true Hieracium, perhaps a less shaggy form of *H. longipilum*.

ADDENDA.

PEGANUM MEXICANUM, Gray, *Pl. Wright.* p. 30, *adn.* Sides of the Chiricahui Mountains, Sonora; Sept., in flower and fruit. (1428.) — The stems are numerous from a deep and lignescent root, when old decumbent, attaining 10 or 12 inches in length. Seeds narrowly clavate-oblong, slightly curved, with a closely alveolate-reticulated testa. Embryo as in *P. Harmala*, but more slender. — The specimens were misplaced and so overlooked at the time of the distribution.

The following are described from specimens just received by Dr. Torrey, from Dr. Parry of the Mexican Boundary Commission, who collected them last autumn on the Rio Grande below New Mexico.

COWANIA ERICÆFOLIA (*Torr. in litt.*): caule ramosissimo; foliis parvis linearibus margine valde revolutis cuspidatis subtus incanis; calycis tubo breviter turbinato; petalis albis. — Crevices of limestone rocks on the Rio Grande, below Presidio del Norte, *Dr. Parry.* — "A straggling bush, one or two feet high." Remarkable for its Heath-like leaves, which are only two or three lines long. Flowers smaller than in *C. Mexicana*.

LAPHAMIA BISETOSA (*Torr. in litt.*): "pygmæa, suffruticulosa, subviscoso-puberula; foliis oppositis et alternis parvis ovatis vel obovatis in petiolum attenuatis subdentatis vel integerrimis resinoso-atomiferis punctatis; capitulis solitariis sessilibus 6–8-floris; ligulis nullis; acheniis puberulis margine lævibus; pappo e setis 2 corolla dimidio brevioribus." — Crevices of rocks in a cañon of the Rio Grande, below Presidio del Norte? Oct., *Dr. Parry.* — Plant many-stemmed from a thickened and ligneous caudex, in the manner of the genus, from one to three inches high. Leaves crowded, barely three lines long, and with a petiole of about two lines in length. Head 3 or 4 lines long, terminating the short branches. Corolla 4-toothed. Bristles of the pappus equal, rather stout, minutely scabrous. — This is the second addition which Dr. Parry and Dr. Bigelow have made to this genus. It is the more interesting, on account of its bisetose pappus and few flowers, as it narrows the interval between the sections *Monothrix* and *Pappothrix*.

PERITYLE PARRYI (sp. nov.): subviscoso-puberula; foliis plerisque alternis reniformi-cordatis crebre dentatis nunc sublobatis; ligulis lineari-oblongis discum

paullo superantibus ; appendicibus styli fl. hermaph. attenuato-filiformibus ; acheniis lineari-oblongis villosa-ciliatis, pilis crebris squamellis pappi æquilongis ; arista unica gracillima barbellato-hispidula corolla disci paullo brevior. — In a cañon of the Rio Grande, with the preceding, *Dr. Parry*. — Heads on a slender and naked peduncle, as large as those of *P. leptoglossa* (4 or 5 lines long); the leaves more rounded and reniform, scarcely incised, of the same hue both sides, nearly an inch in diameter. Involucre shorter than the disk, viscid-puberulent like the leaves and branches ; the scales lanceolate-linear. Ligules 2 or 3 lines long, yellow. Awn of the pappus 2 lines or more in length. Mature achenia not seen. This species ranks between *P. leptoglossa* and *P. plumigera*, most resembling the former. Its heads and flowers are thrice the size of those of the latter.

PERITYLE AGLOSSA (sp. nov.): glabella ; foliis sæpius alternis rotundatis subcordatis incisive lobatisve dentatis ; involucri squamis angustissime linearibus ; ligulis nullis ; appendicibus styli angustis subulatis ; acheniis lineari-oblongis marginibus vix incrassatis villosissimo-ciliatis, pilis squamellas pappi adæquantibus ; seta unica barbellata corollam disci æquante. — In a cañon of the Rio Grande, with the two preceding, *Dr. Parry*. — Plant 6 to 12 inches high from a suffrutescent base. Leaves (in the specimen) only half an inch in diameter, minutely puberulent under a lens with viscid or resinous granules. Heads corymbose, as large as those of the foregoing species ; the peduncles bearing two or three scattered setaceous bractlets. Scales of the involucre uniserial, remarkably narrow. Corolla 3 lines long. Branches of the style not so slender as in *Perityle Parryi* and *P. leptoglossa*, but much more so than in *P. Californica* and *P. Acmella*. Achenia fully a line and a half long, blackish, glabrate on the sides ; the margins ciliate with a dense and strong fringe of hairs, a few of which are also borne on the base of the slender awn. The latter is about twice the length of the achenium. — This species, which is remarkable for the want of ray-flowers, certainly fixes the position of the genus *Pericome* (p. 81) in the immediate neighborhood of *Perityle*, as I had suspected.

* * * The *CACTACEÆ* of Mr. Wright's various collections will soon be published by Dr. Engelmann, in a separate memoir.

I have to correct a mistake respecting the gentleman to whose *memory* the genus *PETERIA* was dedicated (p. 51 of the former memoir), as, I am informed, he is still living, although he has ceased to cultivate Botany.

E R R A T A .

Page 76, line 10, for "NOVI BELGI," read "NOVI BELGII."

" 79, " 8 from bottom, for "S. MOLLIS," read "SOLIDAGO MOLLIS."

" 80, " 4, for "S. albicaulis," read "L. albicaulis."

" 97, " 8 from bottom, for "puppus," read "pappus."

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 STEPHANOMERIA MINOR, 103.
 RUNCINATA, 103.
 STEVIA CANESCENS, 71.
 MACELLA, 70.
 micrantha, 71.
 STREPTANTHUS BRACTEATUS, 11.
 CARINATUS, 11.
 LINEARIFOLIUS, 10.
 LONGIFOLIUS, 10.
 MACULATUS, 11.
 obtusifolius, 11.
 PLATYCARPUS, 10.
 virgatus, 10.
 STROMBOCARPA PUBESCENS, 51.
 STYLOCLINE MICROPOIDES, 84.
 SYMPHORICARPUS ROTUNDIFOLIUS, 66.
 TAGETES MICRANTHA, 93.
 TALINUM AURIANTIAECUM, 20.
 PARVIFLORUM, 20.
 REFLEXUM, 20.
 spathulatum, 20.
 TEPHROSIA LEIOCARPA, 36.
 LEUCANTHA, 36.
 TENELLA, 36.
 TESSARIA BOREALIS, 84.
 THALICTRUM clavatum, 8.
 debile, 8.
 FENDLERI, 7.
 Richardsonii, 8.
 sparsiflorum, 8.
 WRIGHTII, 7.
 THELESPERMA FILIFOLIA, 90.
 GRACILIS, 90.
 LONGIPES, 90.
 THELYPODIUM WRIGHTII, 12.
 THASPIUM MONTANUM, 65.
 THLASPI cochleariforme, 14.
 FENDLERI, 14.
 Tiarella bracteata, 64.
 TOWNSENDIA STRIGOSA, 78.
 TRIANTHEMA MONOGYNA, 20.
 TRICHOCORONIS RIVULARIS, 70.
 TRIFOLIUM INVOLUCRATUM, 41.
 Tripolium angustum, 76.
 caricifolium, 76.

Tripolium frondosum, 76.
Trixis angustifolia, 102.
Turritis patula, 10.

UMBELLIFERÆ, 64.
 UNGNADIA SPECIOSA, 30.

Vargasia Caracasana, 98.
Verbesina podocephala, 92.
Vernonia Lindheimeri, 69.
 JAMESII, 69.

Vesicaria angustifolia, 13.
 arctica, 13.
 gracilis, 13.
 Lasiocarpa, 13.
 purpurea, 14.
 recurvata, 13.
 stenophylla, 13.

Vicia exigua, 32.
 pulchella, 32.

Viguiera cordifolia, 88.
 laxa, 89.

Viguiera Texana, 89.
Villanova chrysanthemoides, 96.
 VITACEÆ, 27.
Vitis æstivalis, 27.
 rupestris, 27.

Waltheria detonsa, 24.
Wislizenia refracta, 16.

Xanthium Texanum + var α , β p. 98
Ximenesia encelioides, 92.

Zauschneria californica, 56.

Zinnia anomala, 86.
 grandiflora, 86.
 intermedia, 86.
 pumila, 86.
 tenuiflora, 86.

Zizyphus lycioides, 27.
 obtusifolia, 27.

Zornia reticulata, 46.

ZYGOPHYLLACEÆ, 26.

EXPLANATION OF THE PLATES.

PLATE XI. *DRYOPETALON RUNCINATUM*, p. 12.

- FIG. 1. A flower, enlarged.
" 2. A sepal, enlarged, seen from within.
" 3. A petal, enlarged.
" 4. The stamens and pistil, with the receptacle, equally enlarged.
" 5. A mature silique, cut across, enlarged.
" 6. Base of a dehiscent silique, more magnified, showing the seeds in place.
" 7. A seed, more magnified, transversely divided.

PLATE XII. A. *AMOREUXIA SCHIEDEANA*, Planch. (non Pl. 3), p. 26.

- FIG. 1. A fruit, of the natural size.
" 2. A seed from the same, magnified.
" 3. The same, with the thin and fragile external integument, or testa, removed.
" 4. Longitudinal section of the seed, magnified, showing the homotropous embryo, &c.
" 5. Embryo detached, and more magnified.

PLATE XII. B. *GLOSSOPETALON SPINESCENS*, p. 29.

- FIG. 1. Diagram of the flower.
" 2. A flower, enlarged.
" 3. Inside, and 4, outside view of a stamen, more enlarged.
" 5. The pistil, more magnified.
" 6. Vertical section of a flower through the ovary, showing the ovules, &c., magnified.
" 7. The fruit, with the persistent calyx, enlarged.
" 8. Vertical section of the same, showing the seed.
" 9. The seed with its carunculate arillus, magnified.
" 10. Transverse section of the same.

PLATE XIII. *PSATHYROTES SCAPOSA*, p. 100.

- FIG. 1. A separate flower, magnified.
" 2. The corolla laid open, and the stamens, magnified.
" 3. A stamen, more magnified.
" 4. The style, equally magnified.

- FIG. 5. The involucre and receptacle, from which the flowers have fallen, enlarged.
" 6. Achenium and pappus, magnified.
" 7. Vertical section of the achenium, showing the embryo, magnified.
" 8. Transverse section of the same.
" 9. One of the bristles of the pappus, highly magnified.

PLATE XIV. CALYCOSERIS WRIGHTII, p. 106.

- FIG. 1. Receptacle (the scales of the involucre reflexed), with its capillary setæ, and a single flower, enlarged.
" 2. An anther, more magnified.
" 3. Summit of the style, equally magnified.
" 5. Achenium, with its exterior coroniform pappus, and the capillary pappus detached, magnified.
" 6. Transverse section of a five-ribbed achenium, magnified.
" 7. Similar section of a six-ribbed achenium.
" 8. A separate bristle of the inner pappus, more magnified.

EXPLICIT. KAL. FEB. MDCCCLIII.

DRYOPETALON RUNCINATUM.

AMOREUXIA SCHIEDEANA.

GLOSSOPETALON SPINESCENS.

Sprague

PSATHYROTES SCAPOSA.

Sprague

CALYCOSERIS WRIGHTII.

Sprague