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CONTRIBUTIONS FROM THE GRAY HERBARIUM OF
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NEW SERIES.—No. XLV.

- I. *Compositae* new and transferred, chiefly Mexican. BY S. F. BLAKE.
- II. New, reclassified, or otherwise noteworthy Spermatophytes. BY B. L. ROBINSON.
- III. Certain *Borraginaceae* new or transferred. BY J. FRANCIS MACBRIDE.

III. CERTAIN BORRAGINACEAE, NEW OR TRANSFERRED.

BY J. FRANCIS MACBRIDE.

IN the course of ordering up portions of the *Borraginaceae* at the Gray Herbarium it has become necessary from time to time to make new names and new combinations of names in order to have the work conform to the International Rules of Botanical Nomenclature. In addition, an attempt to classify the unnamed material in some of the groups has led to the discovery of a few species and varieties apparently undescribed. It seems advisable, therefore, to place these matters on record at this time.

Tournefortia Miquelii, nom. nov.—*T. syringaefolia* Miquel, Stirp. Surin. 137 (1850), not *T. syringaefolia* Vahl, Symb. Bot. iii. 23 (1794), a name which must be revived to replace the more generally used but later synonym *T. laurifolia* Vent. Choix Pl. 2 (1803).

Tournefortia Aubletii, nom. nov.—*T. glabra* Aubl. Pl. Guian. i. 118 (1775), not *T. glabra* L. Sp. Pl. 141 (1753), which must replace *T. cymosa* L. Sp. Pl. ed. 2, 202 (1762).

Heliotropium fragrans, nom. nov.—*H. odorum* (Fres.) Gürke, Nat. Pflanzenf. iv. Ab. 3, 96 (1893). *Heliophytum odorum* Fres. in Mart. Fl. Bras. viii. pt. 1, 45 (1857), not *Heliotropium odorum* Balf. f. Proc. Roy. Soc. Edinb. xii. 81 (1884). Article 53 of the International Rules states that: "When a species is moved from one genus into another, its specific epithet must be changed if it is already borne by a valid species of that genus." Therefore *H. odorum* Fres. requires a new name on being transferred to *Heliotropium* because of the presence there of *H. odorum* Balf. f., a valid species which cannot, according to these rules, be renamed *H. Balfouri* as has been done by Gürke, l. c.

Heliotropium foliosissimum, spec. nov., multicaule decumbens subgriseo-pubescens; radice et caudice lignescentibus atrobrunneis; caulibus 5–14 flexuosis gracilibus basi ad apicem aequabiliter foliosissimus 3–12 cm. longis; foliis elliptico-oblongis margine vix revolutis obtusis nunc alternis nunc suboppositis vel irregulariter dispositis 5–10 mm. longis 2–4 mm. latis; racemis bracteatis brevibus; calycis laciniis oblongo-ovatis; corollae tubo calycem non superante; nucibus strigosis.—SOUTHERN MEXICO in the State of Oaxaca: Hacienda Blanca, July 25, 1895, *L. C. Smith*, no. 627 (TYPE, in Gray Herb.);

sterile hills, Telixtlahuaca, July 27, 1895, *L. C. Smith*, no. 471; near Oaxaca, July 26, 1896, *C. Conzatti*, no. 157, in part; gravelly soil near Oaxaca, July 3, 1900, *Charles C. Deam*, no. 11; Cerro San Antonio, June 26, 1906, *C. Conzatti*, no. 1411. These specimens were labeled *H. limbatum* Benth., but that species is a more canescent plant of rigid erect habit, and with narrower longer leaves (10–15 mm. long, 1.5–2 mm. wide) and almost glabrous nutlets. The aspect, too, is very different both from the dissimilar manner of growth and because the stems of *H. limbatum* are leafiest at the base, where the leaves persist, while in *H. foliosissimum* the stems are equably leafy and the lower leaves soon die.

Heliotropium jaliscense, spec. nov., suffruticosum erectum, ramis hispidis et adpresse strigillosis; foliis petiolatis ovato-lanceolatis subacuminatis basi attenuatis integerrimis 5–10 cm. longis 2–3 cm. latis utrinque strigillosis et subtus in nervis hispidis; racemis flexuosis gracilibus ebracteolatis pedunculatis; pedunculis subterminalibus; calycis lobis hispidis latitudine inaequalibus subacuminatis; corollae tubo calycem ca. 2 mm. superante; corolla 3.5–4 mm. longa; antherae media in parte tubi insertae; stigmatate late conico basi annulato stylum vix superante; nuculis 4 glabris forsan maturitate reticulatis.—MEXICO: bushy slopes near San Sebastian, Jalisco, March 16–19, 1897, *E. W. Nelson*, no. 4083 (TYPE, in Gray Herb.). A species bearing a superficial resemblance to *H. parviflorum* L. but by style and fruit characters a member of the section *Euheliotropium*.

HELIOTROPIUM PHYLLOSTACHYUM Torr., var. **erectum**, var. nov., caulibus erectis 1–4 dm. altis; foliis oblongo-lanceolatis 1–3 cm. longis ca. 3 mm. latis; corollae tubo calycem superante, limbo 3–5 mm. lato.—MEXICO: Culiacan, Sinaloa, Oct. 24, 1904, *T. S. Brandege* (TYPE, in Gray Herb.); between Guichocovi and Lagunas, Oaxaca, June 27, 1895, *E. W. Nelson*, no. 2743; Real de Guadalupe, Sept. 14, 1898, *E. Langlassé*, no. 351; near Cuernavaca, Morelos, July 25, 1896, *C. G. Pringle*, no. 7183; near Iguala, Guerrero, Sept. 22, 1905, *C. G. Pringle*, no. 13,681; Yucatan, 1895, *G. F. Gaumer*, no. 790. *H. phyllostachyum* Torr. in its typical form is a low (rarely 1 dm. high) diffusely spreading plant with short broad leaves and inconspicuous flowers, the corolla 1.5–2 mm. long, scarcely exceeding the calyx. It is mostly of more northern range than the variety, although it has been secured at Manzanillo, Colima, by Dr. Palmer (no. 891) and at Guaymas (no. 232). No. 891 is quite typical but no. 232 represents a transition to the variety in its erect habit. Because of these facts it seems best to give the southern plant varietal rather than specific rank.

Omphalodes lateriflora (Aubrey), comb. nov.—*Cynoglossum lateriflorum* Aubrey, Prog. Morb. x. 25 (1801–1803). *O. littoralis* Lehm. Neue Schrift. Nat. Fr. Berl. viii. 98 (1818).

Solenanthus turkestanicus (Reg. & Smirn.), comb. nov.—*Kuschakewiczia turkestanica* Regel & Smirn. Act. Hort. Petrop. v. 626 (1877). *Solenanthus Kuschakewiczi* Lipsky, Act. Hort. Petrop. xxiii. 182 (1904). As Lipsky has well shown, this plant possesses no characters which justify its being maintained as a genus distinct from *Solenanthus* Ledeb. He, however, as indicated above, failed to retain the original specific name.

Solenanthus stamineus (Desf.), comb. nov.—*Cynoglossum stamineum* Desf. Ann. Mus. Par. x. 431 (1807). *Solenanthus Tournefortii* DC. Prod. x. 164 (1846). DeCandolle rightly gives *Cynoglossum stamineum* Bieb. Fl. Taur.-Cauc. iii. 127 (1819) a new name under *Solenanthus*, namely *S. Biebersteinii*, but there seems to be no need for discarding the much earlier *C. stamineum* of Desfontaines.

Lappula laxa (G. Don), comb. nov.—*Cynoglossum laxum* G. Don Gen. Syst. iv. 356 (1838). *C. uncinatum* Royle ex Benth. in Royle, Ill. i. 305 (1839). *Echinospermum glochidiatum* A. DC. Prod. x. 136 (1846). *Paracaryum glochidiatum* Benth. ex Hook. f. Fl. Brit. Ind. iv. 161 (1885). *Rindera glochidiata* Wall. Cat. no. 926, nomen nudum. DeCandolle (l. c.) was the first to assign this plant to its proper genus, but it had been previously published by George Don as indicated above. It is of interest that the specimens in the Gray Herbarium are marked "Good *Echinospermum*" in Dr. Gray's handwriting.

LAPPULA REDOWSKII (Hornem.) Greene, var. **Karelini** (Fisch. & Mey.), comb. nov.—*Echinospermum Karelini* Fisch. & Mey. Ind. Sem. Hort. Petrop. xi. 67 (1846). *E. Redowskii* (Hornem.) Lehm., var. *Karelini* (Fisch. & Mey.) Regel, Act. Hort. Petrop. vi. 341 (1880). As indicated by Regel (l. c.), like the typical form of the species, but having the sides and faces of the nutlets nearly or quite smooth. The related American species, *L. texana* (Scheele) Britton, shows a variation analogous to this.

Lappula omphaloides (Schrenk), comb. nov.—*Echinospermum omphaloides* Schrenk, Bull. phys.-math. Acad. Sci. St.-Pétersb. iii. 211 (1845). I must concur in the opinion expressed by Lipsky, Act. Hort. Petrop. xxvi. 567 (1910), that this is a good species of the genus *Lappula* (*Echinospermum*). The correct combination, however, does not seem to have been made.

Allocarya glabra (Gray), comb. nov.—*Lithospermum glabrum* Gray, Proc. Am. Acad. xvii. 227 (1882). *Allocarya salina* Jepson,

Fl. West.-Middle Calif. ed. 1, 442 (1901). Mrs. Brandegee, Zoe, v. 94-95, called attention to the true relationship of this plant as long ago as 1901, suggesting that it might be an introduction. More recently Prof. Jepson (l. c.) redescribed it from the Alvarado salt marshes. Although the label on Lemmon's specimen (the original) bears the notation "Arizona," the specimen probably came, as Mrs. Brandegee remarks, from California. Dr. Gray compared his species to *L. incrassatum* Guss. which is a good *Lithospermum* and which consequently bears only a superficial resemblance to *A. glabra*. The Old World plant at maturity develops a similarly fistulous-enlarged rhachis and callous-thickened calyx, but it has the fruit, the flowers and the aspect of other members of the genus. The nearest relative of *A. glabra* is *A. stipitata* Greene. Mrs. Brandegee doubts if the former is anything more than "a swollen form" of the latter. The swollen character is a very noticeable, but not by any means, it would seem, the strongest difference. However this may be, *glabra* is the older name and must be used regardless of the disposition one may make of *A. stipitata*.

Allocarya tenuicaulis (Phil.), comb. nov.—*Eritrichium tenuicaule* Phil. Linnaea, xxix. 18 (1857). *E. uliginosum* Phil. Anal. Univ. Santiago, xliii. 519 (1873). *Krynitzkia trachycarpa* Gray, Proc. Am. Acad. xx. 266 (1885). *Allocarya diffusa* Greene, Pitt. i. 14 (1887). When Dr. Gray described this plant (l. c.) he referred to it two Chilean specimens remarking that "it may be suspected to be the *Lithospermum muricatum* of Ruiz & Pavon, and probably it may have other specific names; none of them, however, can be safely adopted." Two years later Dr. Greene (l. c.) transferred the *Krynitzkia* species belonging to his new genus and maintained the name *trachycarpa* "as to the Californian plants only," at the same time making the new combination *A. uliginosa* (Phil.) Greene, with the notation "*Krynitzkia trachycarpa* Gray as to the Chilean specimens doubtless." Reiche in his Flora de Chile (1910) has defined the *Allocaryas* of that country, and has definitely shown that Ruiz & Pavon's plant is not ours (a conclusion reached by Dr. Greene, l. c.). He treats the North American plant, however, as a synonym of the earlier *E. uliginosum*, thus following the opinion of Dr. Gray, who evidently assigned the new name *trachycarpa* because he had at that time no means of knowing what name should be rightly taken up. The Reed specimen, which he cited, is probably *A. sessiliflora* (Poepp.) Greene, but the Harvey one corroborates Reiche's treatment. Unfortunately this much named plant has never been properly christened even yet. We are given the

synonym *E. tenuicaule* Phil. in the Flora de Chile, but for some reason the author of that work used the much later *E. uliginosum* Phil. It is true that the former name is not desirable but since it is perfectly tenable, it must be used. For the complicated synonymy see the Flora de Chile, where Reiche gives the citations of some of the named forms of this rather variable species.

Allocarya linifolia (Lehm.), comb. nov. — *Anchusa linifolia* Lehm. Asperif. 215, no. 158 (1818). *A. oppositifolia* & *pygmaea* HBK. Nov. Gen. et Spec. iii. 91–92 (1818). *Krynitzkia linifolia* (Lehm.) Gray, Proc. Am. Acad. xx. 266 (1885). From these names of the same date between which priority cannot be determined I have used the name selected by Dr. Gray (l. c.) and have followed his interpretation of the species. Our specimens are from Peru, Ecuador, and Bolivia.

ALLOCARYA LINIFOLIA (Lehm.) Macbr., var. **Kunthii** (Walp.), comb. nov.—*Anchusa Kunthii* Walp. Nov. Act. Nat. Cur. xix. 372 (1843). *Antiphytum Walpersii* A. DC. Prod. x. 122 (1846). *Eritrichium Walpersii* (A. DC.) Wedd. Chlor. And. ii. 90 (1859). The foliar characters given by the authors cited — the much longer and more uniformly linear leaves — seem to be the only differences between this plant and *A. linifolia*; the nutlets are the same.

EREMOCARYA MICRANTHA (Torr.) Greene, var. **lepida** (Gray), comb. nov.—*Eritrichium micranthum* Torr., var. *lepidum* Gray, Syn. Fl. ii. pt. 1, 193 (1878). *E. lepida* (Gray) Greene, Pitt. i. 59 (1887). The variety is confluent with the species, as pointed out by Dr. Gray, Proc. Am. Acad. xx. 275 (1885). The nutlet variation is nicely illustrated by Abrams's no. 2904, Aug. 5, 1902, which is typical of the variety as first described except that some of the plants have smooth and lustrous nutlets. The description of the species given in the Synoptical Flora calls for either "smooth and shining or dull and punctulate-scabrous" fruits. In the type-specimens these are smooth and Dr. Rydberg has segregated those having rough nutlets as *E. muricata* Rydb. Bull. Torr. Bot. Club, xxxvi. 677 (1909). Unfortunately a co-type specimen, viz. *Parry*, no. 164, collected in 1874, has perfectly smooth nutlets. Evidently the character has no specific value in this genus, since the large-flowered plant (var. *lepida*) shows the same variation, and since herbarium material seems to indicate that the smooth- and rough-fruited forms grow intermingled. Furthermore, if one maintains the rough-fruited form of the small-flowered plant as a species (*E. muricata*) we need yet another species for the rough-fruited form of the large-flowered plant.

Greeneocharis dichotoma (Greene), comb. nov.—*Krynitzkia dichotoma* Greene, Bull. Calif. Acad. i. 206 (1885). The original collection from western Nevada is the only representation of this species at the Gray Herbarium; other specimens so referred belong rather to the widely distributed and somewhat variable *G. circumscissa* (H. & A.) Rydb. The latter is canescent with a more or less appressed-strigose pubescence, especially on the stems and branches. A plant with fine widely spreading hairs and scarcely, if at all, strigose-canescens has been collected at an elevation of 3050 m., while the typical form seldom attains half this altitude. This high-mountain variation may be known as

GRENEOCHARIS CIRCUMCISSA (H. & A.) Rydb., var. **hispida**, var. nov., *hispida* vix strigoso-canescens; pilis patentibus.—Specimen examined: CALIFORNIA: trail to Mt. Whitney, August 13, 1904, *Culbertson*, no. 4243 (TYPE, in Gray Herb.).

Plagiobothrys catalinensis (Gray), comb. nov.—*P. arizonicus* (Gray) Greene, var. *catalinensis* Gray, Syn. Fl. ii. pt. 1, 431 (1886). Besides differing from *P. arizonicus* in the open fruiting-calyx with ovate lobes and the duller rougher nutlets (as pointed out by Dr. Gray, l. c.), *P. catalinensis* has other distinguishing features. Mature nutlets are only 1.5 mm. long, dark in color, the rugae obscure and not at all acute, the ventral keel low and narrow, and the caruncle small. Mature nutlets of the former plant are nearly or quite 2.5 mm. long, light (almost white) in color, the rugae very distinct and acute, and the ventral keel and caruncle usually prominent. Moreover the spikes of the mainland plant are usually interruptedly bracteate or even naked above; the spikes of the insular species are uniformly bracteate throughout.

OREOCARYA VIRGATA (Porter) Greene, forma **spicata** (Rydb.), comb. nov.—*O. spicata* Rydb. Bull. Torr. Bot. Club, xxxvi. 678 (1909). Although the surface-character of the nutlets is generally diagnostic in this genus, the smooth-fruited plant represented by the above name is surely not worthy even varietal rank, let alone specific. The nutlets of *O. virgata* vary greatly in the degree of roughness; and plants with more or less roughened fruits and those with perfectly smooth fruits that grow together in the region of Pike's Peak are otherwise indistinguishable.

OREOCARYA MULTICAULIS (Torr.) Greene, var. **cinerea** (Greene), comb. nov.—*O. cinerea* Greene, Pitt. iii. 113 (1896). The only character that distinguishes this is the pubescence. As in the typical form the color of the nutlets and the height of the stems amount to

nothing. It is very doubtful if the several segregate species proposed in this group can be maintained as they are founded on these or other characters equally trivial. However, the variation treated here is so striking in its extreme form that it is worthy varietal designation. Since Dr. Greene failed to indicate any definite specimen, the following representative collections are noted. Specimens examined: COLORADO: plains, Pueblo, 1873, *Edward L. Greene* (TYPE). NEW MEXICO: Mogollon Mountains, on the middle fork of the Gila River, Socorro Co., August 9, 1903, *O. B. Metcalf*, no. 431. ARIZONA: vicinity of Flagstaff, June 4, 1898, *Dr. D. T. MacDougal*, nos. 40, 204. MEXICO: Casas Grandes, Chihuahua, May 13, 1899, *E. A. Goldman*, no. 407.

OREOCARYA SUFFRUTICOSA (Torr.) Greene, var. **abortiva** (Greene), comb. nov.—*O. abortiva* Greene, Pitt. iii. 114 (1896). *Krynitzkia multicaulis* Torr., var. *abortiva* (Greene) Jones, Contrib. W. Bot. xiii. 5 (1910). Jones (l. c.) has pointed out that the incurving of the nutlets is a characteristic common to all members of the group. When only one nutlet forms (as is sometimes the case in this plant and also in others) the ventral keel is larger than when more mature. It then, of course, seems to end even more abruptly. The Californian plant simply represents an extreme in this matter. It is otherwise allied to *O. suffruticosa* rather than to the other species of the group. See the remarks by Parish, Eryth. vii. 95 (1899), which further prove the plant to be unworthy specific rank.

Oreocarya virginensis (Jones), comb. nov.—*Krynitzskia glomerata* (Pursh) Gray, var. *virginensis* Jones, Contrib. W. Bot. xiii. 5 (1910). Very distinct from *O. glomerata*, which has narrowly ovate not at all winged nutlets. Besides the specimens from La Verkin and Diamond Valley, Utah, cited by Mr. Jones, another from the same region, viz.: no. 173 by *Dr. C. C. Parry*, 1874, is of this species.

OREOCARYA SERICEA (Gray) Greene, Pitt. i. 58 (1887).—*O. humilis* (Gray) Greene, l. c. iii. 112 (1896)? *Krynitzkia sericea* Gray, var. *fulvocanescens* Jones, Proc. Calif. Acad. Sci. ser. 2, v. 710 (1895). *Eritrichium glomeratum* (Pursh) DC., var. ? *fulvocanescens* Wats. Bot. King Exped. 243 (1871) in part, not *E. fulvocanescens* Gray, Proc. Am. Acad. x. 61 (1875) i. e. *Krynitzkia echinoides* Jones, l. c. 709. Mr. Jones (l. c.) assigned a new name to the plant collected by Fendler in New Mexico and labeled in herb. by Dr. Gray "*E. fulvocanescens*," on the ground that the name must be applied to a very different plant collected by Watson in Nevada (no. 853), because this was the plant for which the name was first published. It is true that Watson took his no. 853 to be Gray's *fulvocanescens* in herb.; but the first specific

use of the name was by Dr. Gray (l. c.) and although he cited Watson's variety as a synonym his description is entirely based on Fendler's plant. Furthermore, Article 47 of the International Rules states, "When a species . . . is divided into two or more groups of the same nature, if one of the forms was distinguished or described earlier than the other, the name is retained for that form." The name *fulvocanescens* must apply, then, to Fendler's plant, since it was first distinguished and first described as a species. Accordingly it is rather the plant collected by Watson and wrongly included by him in his description of *fulvocanescens* as a variety of *glomerata* which needs the new name unless already described. The latter alternative seems to represent the truth. Jones (l. c.) and Greene (l. c. 111) were evidently writing about the same plant; and when Dr. Gray proposed the name *sericea* he included under it his earlier *Eritrichium glomeratum*, var. *humile*. The material in the Gray Herbarium would indicate that he was justified in this; but Dr. Greene in using the name specifically, wrote "*E. glomeratum*, var. *humile* Gray in part." Therefore, if *O. humilis* Greene is distinct from *O. sericea*, the Watson plant from Nevada discussed above must bear the former rather than the latter name.

Oreocarya oblata (Jones), comb. nov.—*Krynitzkia oblata* Jones, Contrib. W. Bot. xiii. 4 (1910). Very distinct from all other species having long white corollas. *O. Shockleyi* Eastw. and *K. mensana* Jones are the only other members of its immediate group. The latter is probably a good species, nearer the former than is *O. oblata*, but I have seen no specimen. *O. oblata* probably is not uncommon in Arizona, New Mexico, and Texas. Specimens examined: TEXAS: among rocks (corolla white), El Paso, March, 1851, *George Thurber*, no. 147, Sept. 1884, *Marcus E. Jones*, 1881, *G. R. Vasey*, March, 1885, *Asa Gray*. NEW MEXICO: 1851–52, *C. Wright*, no. 1566, in part.

CRYPTANTHA BARBIGERA (Gray) Greene, var. **inops** (Brandege), comb. nov.—*Krynitzkia barbigera* Gray, var. *inops* Brandege, Zoe, v. 228 (Sept. 1906). Mrs. Brandege on one of her labels has rightly cited as synonyms of the above variety, *C. nevadensis* Nels. & Kenn. and *C. arenicola* Heller, published two and three months later respectively. The very slender acuminate nutlet is the principal character of the variety. The muriculations, especially near the tip of the fruit, are often very sharp. A specimen collected by Dr. Gray in the Grand Cañon in 1885 and included by him in the species must now be referred to the variety.