

SYNOPTICAL

FLORA OF NORTH AMERICA:

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VOL. II. — PART I.

GAMOPETALÆ AFTER COMPOSITÆ.

SECOND EDITION.

Published by the Smithsonian Institution, Washington.

NEW YORK:

IVISON, BLAKEMAN, TAYLOR, AND COMPANY.

LONDON: WM. WESLEY, 28 ESSEX ST., STRAND,
AND TRÜBNER & CO.

LEIPSIC: OSWALD WEIGEL.

JANUARY, 1886.

= = Perennial, many-stemmed from a strong root, less hispid with incumbent bristles and canescent with strigose-sericeous pubescence, at least the leaves.

K. sericea, GRAY, l. c., is *E. glomeratum*, var. *humile*, Gray, p. 196. Nutlets oblong-ovate, somewhat rugose-tuberculate on the back.

✚ ✚ Long-flowered, the corolla-tube longer than the calyx and its own limb, with faucial crests elongated and exserted: heterogone-dimorphous, sericeous-canescens, perennial. Vide p. 197.

K. fulvocanescens, GRAY, l. c. 280, is *E. fulvocanescens*, Gray, p. 197.

K. leucophæa, GRAY, l. c., is *E. leucophæum*, A. DC., p. 197, with syn., &c. The remarkably long corollas are really yellow, and the polished ovate-triquetrous nutlets are peculiar, rendering this an anomalous species.

12. **PLAGIOBÓTHRYS**, Fischer & Meyer, extended. (Πλάγιος, sideways, βόθρος, pit or hollow; so the name should have been written *Plagiobothrus*.) — Western American annuals, low, commonly diffuse, with small and short-pedicellate or sessile flowers; the short corolla white: nutlets rugose or roughened, rarely smooth, ventrally carinate above the insertion, which is median or supra-basal, or rarely supra-median, only one or two commonly maturing, and then succumbent-horizontal upon the globular or depressed gynobase, tardily detached, leaving a kind of caruncle at the insertion (either projecting and solid or else annular and hollow), and corresponding depressed concavities on the gynobase. — Gray, Proc. Am. Acad. xx. 281. *Plagiobothrys*, Fischer & Meyer, Ind. Sem. Hort. Petrop. ii. (1855) 46, & A. DC. Prodr. x. 134, a single species. *Eritrichium* § *Plagiobothrys*, Gray, Proc. Am. Acad. x. 57, & xvii. 226.

§ 1. Ambiguous species: gynobase ovate-pyramidal, commonly bearing all four nutlets, and when they are detached deeply 4-sulcate, or as it were 4-lobed by protuberant thickening between the imbedded bases of the nutlets, leaving ovate-oblong or narrower depressions: nutlets tuberculate-roughened, incurved, carinate on the back; the caruncle longitudinal, narrow, and confluent with the ventral keel above: coarse and comparatively robust plants, erect or merely spreading, 8 or 10 inches high, unusually hispid for the genus; the inflorescence evolute in fruit into mostly bractless racemiform spikes: calyx lax in fruit.

P. Kingii, GRAY. Hirsute and somewhat hispid: radical leaves spatulate; upper cauline oblong or lanceolate, half-inch long: corolla 3 or 4 lines in diameter (the largest of the genus): fructiferous calyx 2 or 3 lines long, its lobes linear-lanceolate: nutlets roughened with rather acute and scattered papillæ. — Proc. Am. Acad. xx. 281. *Eritrichium Kingii*, Watson, Bot. King Exp. 243, t. 23; also p. 192, in part. — Truckee Pass, Nevada, Watson, in flower, and in same district by Mrs. Layne-Curran, in fruit. (The narrower-leaved and smaller-flowered specimens of Lemmon, without fruit, are wholly uncertain.)

P. Jonesii. Hispid with long and widely spreading and pungent bristles, divergently branching: leaves narrowly lanceolate, inch or two long (truly radical ones not seen): limb of corolla only a line or so in diameter: fructiferous calyx 3 or 4 lines long, divided to the base into narrowly linear sepals: nutlets (a line and a half long) densely tuberculate with mostly obtuse papillæ. — S. E. California on the Colorado near The Needles, M. E. Jones, 1884.

§ 2. Genuine species: gynobase subglobose or merely convex, with orbicular depressions left by the fall of the nutlets: these crustaceous or nearly so, very seldom more than one or two ripening, therefore horizontally incumbent at maturity, the caruncle short and broad, not stipitiform: slender or diffuse plants,

little or not at all hispid, or papillose-hispidulous on some of the lower leaves: small-flowered.

* Typical, with an annular caruncle merely bordering a deep circular excavation, which is a kind of false umbilicus: this suggested the name for the genus.

P. rufescens, FISCHER & MEYER, l. c. Often a foot high, with slender stems from the tuft of spatulate-lanceolate radical leaves, only the young hirsute pubescence of the inflorescence and calyx rufescent: spikes elongated and sparsely flowered at maturity, naked, or with a leaf or two at base: fructiferous calyx lax, 3 lines long, of linear-lanceolate nearly distinct sepals: nutlets (a line long) little incurved, broadly ovate and short-acuminate, rather ob-compressed, lightly carinate on the back and margined, reticulate-rugose and muriculate, the circular carunculate-bordered ventral pit about half a line in diameter. — Gray, Proc. Am. Acad. xx. 282. *Myosotis alba*, Colla (Pl. Bertero, 88), fide A. DC. *M. fulva*, Hook. & Arn. Bot. Beech. 38, not of 369. *Eritrichium fulvum*, A. DC. Prodr. x. 132; Gray, Proc. Am. Acad. xvii. 226. — W. California, from near the Oregon line, *Howell*, to Colusa and El Dorado Co., *Mrs. Layne-Curran*, and Sacramento Co., *Nevin*, perhaps not very uncommon, and perchance introduced (from Chili).

* * Solid-carunculate, that is, the caruncle of the more incurved and ventrally concave nutlets forming a broadish (commonly transverse) wen-shaped or short tongue-shaped caruncle: gynobase small and depressed.

+ Mature nutlets abruptly contracted at base and apex, so as to become cruciately 4-lobed, vitreous-crustaceous and more or less lucid, transversely lineate-rugose on the back with straight and broadish wrinkles separated by very narrow impressed lines, and running from the low median crest to the somewhat crested margins: calyx deeply 5-cleft, persistent, or at length imperfectly circumscissile: lobes broadly lanceolate, villous with rufescent or soon pale or fulvous pubescence: plants small and erect, a span high or little more.

P. tenellus, GRAY, l. c., is *Eritrichium tenellum*, p. 192, with syn. and habitat. Nutlets a line long, muriculate-roughened. Herbage gives a violet stain to paper. — Extends from Brit. Columbia and W. Idaho to S. California.

P. Shasténsis, GREENE. Perhaps only a larger-flowered form of the foregoing, with calyx (3 lines long) more closed over the fruit, and nutlets (a line and a half long) smooth or barely the margins muriculate-roughened. — Gray, l. c. 284.

+ + Nutlets broadly ovate and not at all cruciform,

+ + Vitreous-crustaceous but rather dull, lineate-rugose in the manner of the preceding, but the flatter back hardly at all carinate: calyx not circumscissile: plant diffusely procumbent, hispidulous, with short oblong leaves which commonly extend through the irregular spikes.

P. Torrèyi, GRAY, l. c., is *Eritrichium Torreji*, p. 192. Herbage gives an abundant violet stain to paper.

+ + Nutlets opaque, not vitreous nor much indurated, the back slightly carinate, rugose with sparse and somewhat reticulated lines, which are elevated above the general surface, this often minutely granulate.

= Calyx divided to near the base: spikes irregular or simple, commonly leafy below: limb of corolla only a line or two in diameter: plants diffusely branched from the base, a span to a foot high.

P. Arizónicus, GREENE. Hirsute or even hispid with widely spreading hairs, not canescent: leaves mostly oblong-lanceolate: fructiferous calyx not over 2 lines long, usually connivent over the acutely rugose and sparingly roughened nutlets, at length circumscissile at base. — Gray, l. c. *Eritrichium canescens*, var. *Arizonicum*, Gray, Proc. Am. Acad. xvii. 227. — Common in Arizona, S. Utah, and adjacent parts of California, *Palmer*, *Greene*, *Lemmon*, *Parish*, *Pringle*.

Var. Catalinénsis has fructiferous calyx open and the broader lobes somewhat accrescent; also duller as well as rougher nutlets — Santa Catalina Island, off Los Angeles, California, *Lyon*.

P. canescens, BENTH., is *Eritrichium canescens*, p. 192. Villous-pubescent and somewhat cinereous or canescent, especially the calyx, which when young may be fulvous or even somewhat rufescent: this 2 or 3 lines long in fruit, loosely erect or sometimes more open

and accrescent, persistent, rarely disposed to be circumscissile at base : nutlets with obtuser wrinkles. — Common in California from Sacramento southward, first coll. by *Hartweg*.

= = Calyx cleft only to the middle, silky-villous, rufescent only when young, soon fulvous or whitish, only a line and a half long ; in fruit little accrescent, connivent over the nutlets, soon circumscissile, leaving a persistent base which surrounds the lower half of the nutlets : plants erect and slender, sometimes attaining 2 feet in height : fruiting spikes slender, elongated and sparsely flowered, simple or geminate, or as if paniculate, bractless : pubescence of the herbage soft and minute, or soft-hirsute or hispidulous on the lower leaves.

P. nothofúlvus, GRAY, l. c. 285. *Myosotis fulva*, Hook. Fl., in part, & Bot. Beech. 369, only. *Eritrichium fulvum*, A. DC., l. c. as to Calif. pl. ; Gray, Proc. Am. Acad. x. 57, & p. 192, in part. *E. nothofulvum*, Gray, Proc. Am. Acad. xvii. 227. *Bothriospermum* spec., Benth. Pl. Hartw. no. 1873. — Common from Washington Terr. to S. California.

§ 3. Stipitate-fruited species : nutlets straightish but very oblique, carinate on the back ; caruncle continuous with the ventral crest, projecting into a short indurated stipe : otherwise much as § 2.

P. ursínus, GRAY, l. c. 285. Habit rather of *P. Torreyi*, but imparting no violet stain to paper, depressed and tufted, very leafy, hirsute and hispid with short bristles : leaves short, spatulate or upper lanceolate ; uppermost oblong, accompanying the clustered or at length more scattered flowers and equalling or surpassing them : corolla very small, hardly exceeding the calyx : lobes of the latter in fruit only a line long, lanceolate : nutlets delicately rugose-reticulate, smooth, the caruncle little projecting. — *Echidiocarya ursina*, Gray, Proc. Am. Acad. xix. 90. — S. California, in Bear Valley of the San Bernardino Mountains, *Parish*. Adj. Lower California, *Orcutt*.

P. Coóperi, GRAY, l. c. Diffusely branched from the base, with sparsely-leaved ascending flowering stems a span to a foot long, more slender, hispidulous : leaves spatulate-linear to oblong-lanceolate : spikes at length sparsely flowered, sparingly bracteate or above bractless : corolla more conspicuous, with limb 2 or 3 lines broad : nutlets more trigonous and reticulate-rugose, dentate-muriculate on the reticulations : caruncle more stalk-like and porrect. — *Echidiocarya Californica*, Gray, Proc. Am. Acad. xii. 164, & p. 199. — Lower California, from San Diego to San Bernardino and southward, first coll. by *Dr. Cooper*.

§ 4. HYP SOÚLA. Nutlets (as the name denotes) inserted by a high scar, i. e. between the middle and the apex, ovoid, obliquely incumbent, little obcompressed but rather turgid, nearly straight, rounded laterally, neither rugose nor muricate, ventrally carinate only above the round scar, which is attached to the depressed gynobase by a small and soft (when dry rather fragile) false caruncle : coarse and rough-hispid low annuals, much branched ; with oblong or lanceolate leaves, the upper subtending and equalling or exceeding the flower-clusters, which apparently never extend into naked spikes ; the 5-parted calyx open in fruit. — § *Anomali*, Gray, Proc. Am. Acad. xx. 286. Almost congeneric with *Microula* of Tibet.

P. híspidus, GRAY, l. c. Half a foot high : lower leaves linear-spatulate, upper oblong : nutlets turgid, acute at apex, obscurely carinate on the back, opaque, papillose-granulate, the scar hardly above the middle. — Truckee, on the eastern border of California, *Mrs. Layne-Curran*.

P. glomerátus, GRAY, l. c. Stouter : leaves mostly ovate-oblong : nutlets larger (a line and a half long), less turgid, more oval and obtuse, flatter and not carinate on the back, smooth and somewhat shining, but with obscurely undulate-rugulose surface, the scar between the middle and the apex. — Western part of Nevada, between Carson and Virginia City, *Mrs. Layne-Curran*.