

**THE NORTH AMERICAN
SILENEAE
AND POLYCARPEAE.
PP.124-155**

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The North American Sileneae and Polycarpeae. pp.124-155 by B. L. Robinson

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CONTRIBUTIONS FROM THE GRAY HERBARIUM
OF HARVARD UNIVERSITY.

NEW SERIES, No. V.

THE NORTH AMERICAN SILENEÆ AND
POLYCARPEÆ.

Benjamin Lincoln
BY B. I. ROBINSON.

FROM THE PROCEEDINGS OF THE AMERICAN ACADEMY OF ARTS AND SCIENCES,
VOL. XXVIII.

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IX.

CONTRIBUTIONS FROM THE GRAY HERBARIUM OF HARVARD
UNIVERSITY, NEW SERIES.V.—THE NORTH AMERICAN SILENEÆ AND
POLYCARPEÆ.

BY B. L. ROBINSON.

Presented April 12, 1898.

THE following study of the *Sileneæ* and *Polycarpeæ* is preliminary to treatment of these tribes of the *Caryophyllaceæ* in the "Synoptical Flora of North America." The object of the present publication is chiefly to secure aid through criticisms, and to call attention to such species, especially in the genera *Silene* and *Lychnis* as are still imperfectly known, so that if possible more complete material of them may be secured before final revision for the first volume of the Synoptical Flora. Specimens of these groups, especially puzzling forms from the West and Northwest, together with notes concerning any points not properly covered by the following descriptions, will be gratefully received by the author, who here cordially acknowledges the valuable assistance already rendered him in his work by the late Dr. George Vasey and Dr. J. N. Rose, of the Department of Agriculture; Prof. N. L. Britton of Columbia College; Mr. and Mrs. T. S. Brandegee and Miss Alice Eastwood, of the California Academy of Sciences; Prof. John Macoun, of the Canadian Geological Survey; Mr. John H. Redfield, of the Philadelphia Academy of Natural Sciences; Mr. John Donnell Smith, and others, whose names are mentioned in the text. In the enumeration of synonyms and the citation of literature Dr. Sereno Watson's "Bibliographical Index" has been a most useful guide; so far as possible, however, all references to literature as well as points of synonymy, from whatever source, have been subjected to careful verification.

CARYOPHYLLACEÆ, TRIBE I. SILENEÆ. Sepals united into a 4-5-toothed or lobed tube or cup. Petals unguiculate and often scale-bearing at the junction of the blade and claw, borne together with

the stamens upon the stipe of the ovary. Stipules none. Flowers usually showy, perfect or not infrequently polygamous.

* Calyx subtended by 1-several pairs of bractlets: flowers solitary or often aggregated in close heads: seeds flattened and attached by the face: embryo nearly straight.

1. *Dianthus*. Calyx tubular, 5-toothed, finely many-striate. Petals 5, with long claws; the blade entire, emarginate, or several-toothed. Stamens 10. Styles 2. Capsule 1-celled, dehiscent by 4 valves. Leaves narrow, often connate by narrow scarious membranes. Flowers commonly showy.

2. *Tunica*. Calyx turbinata or cylindrical, obtusely toothed, distinctly 5-ribbed, or sometimes 15-ribbed. Petals 5. Stamens 10. Styles 2. Flowers considerably smaller and habit more slender than in *Dianthus*.

** Calycine bractlets none: seeds laterally attached: embryo curved.

+ Styles 2: capsule 4-toothed or valved: introduced plants.

3. *Gypsophila*. Calyx turbinata, tubular or campanulate, 5-toothed, herbaceous only in the middle of the segments, the intermediate parts being scarious. Petals 5. Stamens 10. Flowers mostly small, paniculate or scattered, rarely aggregated. Capsule rather deeply 4-valved.

4. *Saponaria*. Calyx tubular or ovoid, 5-toothed, terete with numerous faint veins, or conspicuously 5-angled. Flowers showy. Petals 5. Stamens 10. Capsule dehiscent at the apex by 4 short teeth.

-- Styles normally 3; capsule opening by 3 or 6 teeth: calyx commonly 10-nerved, rarely α -nerved.

5. *Silene*. Calyx 5-toothed, campanulate, subcylindric or turbinata, either inflated or becoming distended by the maturing capsule, 10- α -nerved. Petals usually appendaged at the summit of the claw; the blade variously toothed or divided, rarely entire. Stamens 10. Styles 3 (very rarely 4). Stipe of the ovary commonly developed. The capsule 1-celled or somewhat 3-celled at the base. Flowers solitary, racemose, or cymose-paniculate.

+ + Styles 5 (rarely 4), alternating with the petals when of the same number: calyx teeth short, not foliaceous.

6. *Lychnis*. Calyx ovoid, obovate, or clavate, 5-toothed, 10-nerved, inflated or not. Petals with or without appendages; the blade entire, emarginate, bifid or variously cleft. Stamens 10. Ovary 1-celled, or divided at the base into 5 (rarely 4) partial cells. Capsule dehiscent by as many or twice as many teeth as there are styles.

← ← ← Styles 5, opposite the petals: calyx teeth conspicuously prolonged into foliaceous appendages.

7 *Agrostemma*. Calyx ovoid, with 10 strong ribs; the elongated teeth in our introduced species an inch or more in length, exceeding the 5 large unappendaged petals. Stamens 10. Capsule 1-celled. Leaves linear.

TRIBE II. ALSINEÆ. Sepals free or nearly so. Petals not distinctly unguiculate, never appendaged. Styles 2-5, distinct to the base. — Including genera 8-14; to be published at an early date.

TRIBE III. POLYCARPEÆ. Sepals free or somewhat united at the base. Petals commonly small, not distinctly unguiculate, borne together with the stamens upon an hypogynous or slightly perigynous disk. Style simple below, 3- or more rarely 2-branched above. The stigmas rarely sessile on the ovary.

* Petals 2-5-parted.

15 *Drymaria*. Sepals 5, often scarious-margined. Petals 5. Stamens 3-5, slightly perigynous. Ovary 1-celled, several-many-ovuled. Capsule 3-valved. Flowers small, greenish white. Leaves flat, though often narrow, opposite or pseudoverticillate. Stipules small, free, scarious or bristle-formed, sometimes fugacious.

* * Petals entire, denticulate, or none.

— Cauline leaves numerous, flat, not linear-setaceous.

16. *Polycarpon*. Sepals 5, more or less carinate, entire, scarious-margined. Petals 5, small, shorter than the sepals, sometimes emarginate. Stamens 3-5. Ovary 1-celled. Capsule 3-valved, several-seeded. Seeds ovoid with the embryo but little curved.

← ← Cauline leaves setaceous.

17. *Loefflingia*. Sepals 5, carinate and produced to rather rigid setaceous tips; the three outer ones commonly bearing a setaceous tooth on each side. Petals 3-5, small or none. Stamens 3(-5?). Ovary 1-celled, several-seeded, triangular. Capsule 3-valved. Seeds oblong, attached laterally near the base. Embryo somewhat curved. Cotyledons accumbent.

← ← ← Leaves forming a radical rosette; the cauline minute or obsolete; basal stipules lacerate.

18. *Stipulicida*. Sepals 5, distinct, somewhat rigid, obtuse, emarginate, scarious-margined. Petals 5, entire, narrowly oblong, gradually contracted below, hypogynous. Stamens 5. Capsule ovate-globose, 3-valved, many-seeded.

1. **DIANTHUS, L. PINK, CARNATION.** (*Δία* and *ἄθος*, flower of Jove.) — Chiefly natives of S. Europe and N. Africa, deservedly popular in cultivation. — Gen. n. 364; DC. Prodr. i. 355; Reichb. Icon. Fl. Germ. vi. t. 248-268; Benth. & Hook. Gen. i. 144. — Several species tend to escape and have become more or less naturalized. One variety only is indigenous to this continent.

* Indigenous in the extreme Northwest.

D. alpinus, L. Low caespitose perennial with numerous ascending 1-flowered stems: bracts 2-6, erect or somewhat spreading. — Spec. 412; Regel, Ost-Sib. i. 284. — (Eur., Siberia.) Very variable and according to Regel passing into the following.

Var. repens, REGEL. Root single, vertical or descending, not repent: stems procumbent, much branched from near the base: branches simple, ascending, 3-6 inches in height, most often 1-flowered: leaves linear or linear-lanceolate, 8-16 lines long, glabrous, slightly fleshy: involucrel scales a single pair, narrowly ovate, acuminate, nearly equalling the calyx, the attenuated tips slightly spreading: calyx somewhat inflated, 6 lines long: corolla purple, about 7 lines broad, glabrous, the obovate blade erose-dentate. — Regel, l. c. 286. *D. repens*, Willd. Spec. ii. 681; Cham. et Schlecht. Linnæa, i. 37; Torr. & Gray, Fl. i. 195; Seem. Bot. Herald, 27, t. iv. — Northern and western coast of Alaska. (Siberia.)

** Adventive from Europe and more or less established in various localities in the Eastern and Middle States.

— Bractlets short, half the length of the calyx: flowers solitary.

D. DELTOIDES, L. (MALDEN PINK.) Perennial: stems decumbent, ascending, a foot in height, very leafy below: leaves short, lanceolate, a line wide, the lower obtusish, the uppermost acute: calyx long, tubular: petals narrow, pink or white. — Spec. 411; Eng. Bot. i. t. 61; Gray's Man. ed. 6, 83. — Occasionally found escaped from gardens, New England to Michigan.

— Bractlets narrow, attenuate, equalling or exceeding the calyx: flowers clustered.

D. BARBATUS, L. (SWEET WILLIAM.) A smooth perennial, 1-2 feet in height: stems simple, bearing the flowers in dense cymose fascicles: leaves lanceolate, large for the genus, 1½-3 inches long, a fourth as wide, minutely roughened on the edges: bractlets filiform from a lanceolate base: blade of petals triangular-obovate, toothed, red, purple or white, often variegated in cultivation. — Spec. 409; Reichb. Icon. Fl. Germ. vi. t. 248. — Long cultivated and occasionally spontaneous about old gardens.

D. ARMERIA, L. (DEPTFORD PINK.) Annual, 1-2 feet high, covered with a fine grayish pubescence: stems branching and bearing several 2-4-flowered fascicles: bracts subulate, attenuate, villous: flowers scentless: calyx slender, tubular, 7-8 lines long, the teeth very sharp: petals roseate, spotted with white; the blade elliptical, crenate-dentate. — Spec. 410; Pursh, Fl. 314; Bigel. Fl. Bost. 108; Torr. Fl. N. & Mid. St. 447; Torr. & Gray, Fl. i. 195. *D. armerioides*, Raf. in Desv. Journ. Bot. 1814, 269; Précis des Deconv. 36. *Atocion armerioides*, Raf. Antikon Bot. 29. *D. Carolinianus*, Walt. Car. 140, referred here by Sprengel, Syst. ii. 375, was without doubt founded upon error. Torrey & Gray, Fl. i. 676, state that Walter's own specimen was *Dodecatheon Meadia*. — Fields and pine woods, Eastern States from Maine (Portland Catalogue) to Maryland; Lansing, Michigan, *L. H. Bailey*; fl. June and July. Autumnal flowers in October noted by *L. F. Ward*.

— — — Bractlets broad, scarious, concealing the calyx.

D. PROLIFER, L. Annual, a foot or two in height: stems wiry: leaves narrow, minutely scabrous, acute: heads terminal, 2-several-flowered, enclosed in thin dry ovate obtusish mucronate imbricated bractlets: flowers expanding one at a time, ephemeral: calyx tubular; the veins faint, collected into five groups: petals small, notched, pink or red. — Spec. 410; Eng. Bot. xiv. t. 256. *Tunica prolifera*, Scop. Fl. Carn. ed. 2, i. 299. — New Jersey, *Durand*; Eastern Pennsylvania, *Smith, Porter*; Suffolk Co., N. Y., *Hollick*; fl. all summer. This species, especially in its calyx, forms a transition to the next genus.

2. TUNICA, Scop. (*Tunica*, a tunic, probably in reference to the close involucre.) Slender wiry-stemmed herbs with small mostly linear leaves. Flowers terminal, solitary or fascicled in small heads. — Fl. Carn. ed. 2, i. 298; Benth. & Hook. Gen. i. 145; Williams, Journ. of Bot. xix. 193 (1890). — Old World plants represented in America by a single species recently introduced.

T. SAXIFRAGA, Scop. Smooth: stems numerous, slender, branching, curved ascending: leaves small, linear, acute, less than half a line in width: the lower internodes very short: flowers small, numerous, terminal, solitary: bractlets 2 pairs, scarious except in the middle, acute, considerably shorter than the calyx: petals notched, pale purple; the blade a line in length. — Scop. l. c. i. 300; Reichb. Icon. Fl. Germ. vi. t. 246. — Roadsides near London, Ontario, *Burgess*. (Adventive from Europe.)

3. GYPSOPHILA, L. (*γύψος*, gypsum, and *φιλῆν*, to love, from a supposed preference for soil rich in gypsum.) — Old World

herbs of graceful habit, mostly natives of Southern Europe and Western Asia. Several species are cultivated for ornament; the following are sparingly naturalized. — Gen. ed. 4, n. 498; DC. Prodr. i. 351 in part; Reichb. l. c. vi. t. 239–242; Benth. & Hook. Gen. i. 146; Williams, Journ. of Bot. xviii. 321.

G. MURALIS, L. Low, annual, with the habit of *Arenaria*: leaves small, linear, acute: flowers scattered in the forks of the branches: pedicels filiform, two or three times as long as the calyx: petals pink with darker veins, emarginate, 2–3 lines in length. — Amœn. Acad. iii. 24; Spec. ed. 3, 583; Fl. Dan. viii. t. 1268. — Ballast and roadsides, New Jersey, *Brown*; Montague, Mass., *Churchill*; Wethersfield, Conn., *Wright*; London, Canada, *Dearness*. Introduced (N. and Mid. Europe and Siberia).

G. PANICULATA, L. l. c. Perennial, glabrous and somewhat glaucous, 2 feet or more in height: leaves lanceolate, acute, 1–1½ inches in length: flowers very numerous in a compound panicle: segments of the calyx with conspicuous white scarious margins: petals scarcely exceeding the sepals: capsule nearly spherical. — Reichb. l. c. vi. t. 242. — Doubtfully established, Emerson, Manitoba, *Fowler*. (Adventive from Europe.)

4. *SAPONARIA*, L. SOAPWORT. (From *sapo*, soap; *S. officinalis* having been used as a substitute for soap, the juice being capable of forming a lather.) — A genus of the Old World including plants of diverse habit. Two rather coarse species belonging to different sections of the genus are spontaneous in America. — Gen. n. 365; DC. Prodr. i. 365; Benth. & Hook. Gen. i. 146.

S. VACCARIA, L. A smooth annual with ovate or oblong-lanceolate, sessile and somewhat connate leaves: flowers in a broad flat corymb; calyx ovoid, with 5 sharp herbaceous angles, the intervening parts being white and scarious: corolla rose-colored, destitute of appendages. — Spec. 409; Bot. Mag. t. 2290; Torr. & Gray, Fl. i. 195; also variously referred by authors to *Gypsophila*, *Lychnis*, or more often regarded as an independent genus, *Vaccaria*. — Railway ballast and cultivated ground, frequent and sometimes troublesome in wheatfields westward, where it bears the name of "cockle." July–August. (Introduced from Europe.)

S. OFFICINALIS, L. (SOAPWORT, BOUNCING BET.) Perennial, smooth, 1½–2 feet high: leaves ovate-lanceolate, acute, 3-ribbed, 2–3 inches long, narrowed at the base; inflorescence terminal, somewhat pyramidal, the flowers clustered at the ends of short branches: calyx tubular, terete: petals appendaged at the junction of the claw and the