

ORDER 13. CISTACEÆ. (ROCK-ROSE FAMILY.)

Low shrubs or herbs, with regular flowers, distinct and hypogynous mostly indefinite stamens, a persistent calyx, a 1-celled 3-5-valved capsule with as many parietal placentæ borne on the middle of the valves, and orthotropous albuminous seeds. — Sepals 5; the two external much smaller, bract-like, or sometimes wanting; the three others a little twisted in the bud. Petals 3 or 5, convolute in the opposite direction from the calyx in the bud. Anthers short, innate, on slender filaments. Style single or none. Ovules few or many, on slender stalks, with the orifice at the apex. Embryo long and slender, straightish or curved, in mealy albumen; cotyledons narrow. — Leaves simple and mostly entire, the lower usually opposite, and the upper alternate. Inert plants.

1. *Helianthemum*. Petals 5, crumpled in the bud, fugacious (or none). Stigma nearly sessile. Stamens and ovules numerous in the petal-bearing flowers.
2. *Hudsonia*. Petals 5, fugacious. Stamens 9-30. Style long and slender. Pod strictly 1-celled, 2-6-seeded. Heath-like.
3. *Lechea*. Petals 3, persistent. Stamens 3-12. Style none. Pod partly 3-celled, the imperfect partitions bearing broad 2-seeded placentæ.

1. HELIANTHEMUM, Tourn. ROCK-ROSE.

Petals 5, crumpled in the bud, fugacious. Styles short or none in our species; stigma 3-lobed. Capsule strictly 1-celled. Embryo curved in the form of a hook or ring. — Flowers in most N. American species of two sorts, viz., primary or earlier ones, with large petals, indefinitely numerous stamens, and many-seeded pods; and secondary, or later ones, which are much smaller and in clusters, with small petals or none, 3-10 stamens, and much smaller 3-few-seeded pods. The yellow flowers open only once, in sunshine, and cast their petals by the next day. (Name from *ἥλιος*, the sun, and *ἄνθεμον*, flower.)

1. *H. Canadense*, Michx. (Frost-weed.) Petal-bearing flowers solitary; the small secondary flowers clustered in the axils of the leaves, nearly sessile; calyx of the large flowers hairy-pubescent, of the small ones hoary, like the stem and lower side of the lanceolate-oblong leaves. — Sandy or gravelly dry soil, Maine to Minn. and southward. June - Aug. — Stems at first simple. Corolla of the large flowers 1' wide, producing pods 3" long; pods of the smaller flowers not larger than a pin's head. A variety is more hoary, and with a stronger tendency to multiply the minute clustered flowers. Late in autumn crystals of ice shoot from the cracked bark at the root, whence the popular name.

2. *H. corymbosum*, Michx. Flowers all clustered at the summit of the stem or branches, the petal-bearing ones at length on slender stalks; calyx woolly. — Pine barrens, N. J. and southward along the coast.

2. HUDSONIA, L.

Petals 5, fugacious (lasting but a day), much larger than the calyx. Stamens 9-30. Style long and slender; stigma minute. Pod oblong, enclosed in the calyx, strictly 1-celled, with 1 or 2 seeds attached near the base of each nerve-like placenta. Embryo coiled into the form of a closed hook. — Bushy

heath-like little shrubs (seldom a foot high), covered all over with the small awl-shaped or scale-like alternate persistent downy leaves, producing numerous (small but showy) bright yellow flowers crowded along the upper part of the branches. (Named in honor of Wm. Hudson, an early English botanist.)

1. *H. ericoides*, L. Downy but greenish; leaves slender, awl-shaped, loose; flowers on slender naked stalks; ovary hairy. — Dry sandy soil near the coast, E. Maine to Va.; N. Conway, N. H. (Miss Minns.) May.

2. *H. tomentosa*, Nutt. Hoary with down; leaves oval or narrowly oblong, 1" long, close-pressed and imbricated; flowers sessile or some short-peduncled. — Sandy shores, Maine to Md., and along the Great Lakes to Minn.; rarely on banks of streams inland. May, June.

3. LÉCHEA, Kalm. PINWEED.

Petals 3, narrow, flat in the bud, not longer than the calyx, withering-persistent. Stamens 3-12. Style scarcely any; stigmas 3, plumose. Pod globular, partly 3-celled; the 3 broad and thin placentæ borne on imperfect partitions, each bearing 2 seeds on the face toward the valve; in our species the placentæ curve backward and partly enclose the seeds. Embryo straightish. — Homely perennial herbs, with very small greenish or purplish flowers, in summer. (Named in honor of John Leche, a Swedish botanist.)

* *Pubescence villous, spreading; leaves oblong; flowers very short-pedicelled in cymulose clusters.*

1. *L. major*, Michx. Stem upright (1-2° high), stout, simple, very leafy, producing slender prostrate branches from the base; leaves elliptical, mucronate-pointed, alternate and opposite or sometimes whorled; flowers densely crowded; pedicels shorter than the very small depressed-globose pod; sepals narrower than its valves. — Sterile grounds; common, especially southward.

* * *Pubescence appressed, leaves narrower; flowers paniculate.*

+ *Leaves comparatively short, broad, and thin; panicles leafy.*

2. *L. thymifolia*, Michx. Erect, about 2° high; stem-leaves oval or oblong (3-6" long), commonly somewhat hairy, some whorled or opposite, those of the rather crowded panicles more linear; pod obovate-globose, one of the narrow outer sepals often longer. (*L. Novæ-Cæsareæ*, Austin.) — Dry grounds near the coast, E. Mass. to Fla.

+ + *Leaves firmer, narrow, the cauline linear to slender-subulate; panicles more naked and racemiform.*

+ + *Fruiting calyx globular or broadly ovoid; pod rather large, nearly globose.*

3. *L. minor*, L. Rather strict, 1° high or more, usually glabrate in age; leaves of radical shoots lanceolate, rigid, 2-3" long, the cauline linear, 6-9" long; pod about 1" high. — Dry and sterile ground; common.

Var. *maritima*, Gray in herb. Stouter and more rigid; leaves of radical shoots thicker, linear, hoary, the cauline puberulent or glabrous; calyx canescent. (*L. thymifolia*, Pursh.; *L. maritima*, Leggett.) — Sandy soil near the coast, Mass. to Ga.

4. *L. tenuifolia*, Michx. Low, slender and diffuse, minutely pubescent or glabrous; leaves all small and very narrow; flowers mostly on very short

pedicels, diffusely racemose-paniculate; sepals without lateral ribs; pod ovoid globose. — Dry, sterile soil, E. Mass. to Mo., and southward.

→ → Smaller-flowered; fruiting calyx narrower; pod ellipsoidal.

5. *L. racemulosa*, Lam. Erect, soft-pubescent when young, soon nearly glabrous; leaves of radical shoots narrowly oblong, the cauline oblong-linear, 4–6" long; inflorescence loose and diffuse; fruiting calyx glabrous. — Dry and rocky soil, Long Island to Ky., and southward.

ORDER 14. VIOLACEÆ. (VIOLET FAMILY.)

Herbs, with a somewhat irregular 1-spurred corolla of 5 petals, 5 hypogynous stamens with adnate introrse anthers conniving over the pistil, and a 1-celled 3-valved pod with 3 parietal placentæ. — Sepals 5, persistent. Petals imbricated in the bud. Stamens with their short and broad filaments continued beyond the anther-cells, and often coherent with each other. Style usually club-shaped, with the simple stigma turned to one side. Valves of the capsule bearing the several-seeded placentæ on their middle; after opening, each valve as it dries folds together lengthwise firmly, projecting the seeds. Seeds anatropous, rather large, with a hard seed-coat, and a large and straight embryo nearly as long as the albumen; cotyledons flat. — Leaves alternate, with stipules. Flowers axillary, nodding. (Roots slightly acrid or emetic.)

1. *Viola*. Sepals auricled. Lower petal spurred. Stamens distinct, the 2 lower spurred.
2. *Solea*. Sepals not auricled. Petals equal in length. Stamens united into a sheath.
3. *Ionidium*. Sepals not auricled. Petals very unequal. Filaments distinct, the anthers merely connivent.

1. VIOLA, Tournef. VIOLET. HEART'S-EASE.

Sepals extended into ears at the base. Petals somewhat unequal, the lower one spurred at the base. Stamens closely surrounding the ovary, often slightly cohering with each other; the two lower bearing spurs which project into the spur of the corolla. Besides these conspicuous blossoms, which appear in spring, others are produced later (especially in the stemless species), on shorter peduncles or on runners, usually concealed under the leaves; these never open nor develop petals, but are fertilized in the bud, and are far more fruitful than the ordinary blossoms. (The ancient Latin name of the genus.)

§ 1. *Perennials; stipules never leaf-like, the lower more or less scarious.*

* *Stemless, the leaves and scapes directly from a rootstock or from runners.*

→ *Stigma large, naked, not beaked; stolons none; rootstock short and thick.*

1. *V. pedata*, L. (BIRD-FOOT V.) Nearly smooth; rootstock erect, not scaly; leaves all 3–5-divided, or the earliest only parted, the lateral divisions 2–3-parted, all linear or narrowly spatulate, sometimes 2–3-toothed or cut at the apex; flower large, 1' broad, pale or deep lilac-purple or blue. — Sandy or gravelly soil, New Eng. to Minn., and southward. — Var. *bicolor*, Pursh, a very handsome variety, with the two upper petals deep violet, and as it were velvety, occurs sparingly from Mass. to Md.; most common in Md., on shale

→ → *Stigma small, naked, often beaked or pointed.*

→ → *Rootstock fleshy and thickened, never filiform nor producing runners; flowers violet or purple (rarely white); lateral petals bearded.*

2. *V. pedatifida*, G. Don. Leaves all palmately or pedately 5–7-parted; divisions 2–3-cleft; lobes linear; otherwise like n. 3. (*V. delphinifolia*, Nutt.) — Rich prairies, or more often in dry poor land, Ill. to Kan. and Minn.

3. *V. palmata*, L. (COMMON BLUE V.) Glabrous to villous-pubescent; early leaves roundish-cordate or reniform and merely crenate, the sides rolled inward when young, the later very various, palmately or pedately or hastately lobed or parted, the segments obovate to linear. (*V. cucullata*, var. *palmata*, Gray.) — Moist or dryish, especially sterile, ground; very common.

Var. *cucullata*, Gray. Later leaves merely crenate, not lobed. (*V. cucullata*, Ait.) — Low grounds; common everywhere. Both forms are very variable in the size and shape of the leaves and sepals, and in the size and color of the flowers, which are deep or pale violet-blue or purple, sometimes white or variegated with white.

4. *V. sagittata*, Ait. (ARROW-LEAVED V.) Smoothish or hairy; leaves on short and margined, or the later often on long and naked petioles, varying from oblong-heart-shaped to halberd-shaped, arrow-shaped, oblong-lanceolate or ovate, denticulate, sometimes cut-toothed near the base, the lateral or occasionally all the (rather large purple-blue) petals bearded; spur short and thick; stigma beaked. — Dry or moist sandy places, New Eng. to Minn., and southward. Some forms pass into the last.

→ → *Rootstocks long and filiform, extensively creeping.*

= *Flowers blue or purple.*

5. *V. Selkirkii*, Pursh. (GREAT-SPURRED V.) Small and delicate; the filiform rootstock fibrose-rooted, no runners above ground; smooth, except the round-heart-shaped crenate leaves, which are minutely hairy on the upper surface and have a deep narrowed sinus; spur very large, thickened at the end, almost as long as the beardless pale violet petals. — Damp and shady soil, N. Maine to W. Mass., central N. Y., L. Superior (*Robbins*), and northward; rare. — Scapes and petioles 1–2', the leaf $\frac{1}{2}$ –1 $\frac{1}{4}$ ' long, thin; the spur 3" long. (Eu.)

6. *V. palustris*, L. (MARSH V.) Smooth; leaves round-heart shaped and kidney-form, slightly crenate; flowers (small) pale lilac with purple streaks, nearly beardless; spur very short and obtuse. — Alpine summits of the White Mountains, N. H., and high northward. June. (Eu.)

V. odorata, L. (SWEET VIOLET), cultivated in gardens, from Europe, belongs near this group, and is sparingly spontaneous in some places.

= = *Flowers white (small, short-spurred), mostly with brown-purple veins; lateral petals bearded or beardless. Species apparently confluent.*

7. *V. blanda*, Willd. (SWEET WHITE V.) Commonly glabrous; leaves round-heart-shaped or kidney-form; petals mostly beardless, the lower strongly veined. — Damp places, everywhere. Flowers faintly sweet-scented.

Var. *palustriformis*, Gray. The larger form; upper surface of the leaves sparsely and finely hairy; petals 5" long, oftener bearded, less distinctly veined. — Shaded mossy ground, N. Eng. to Del., and westward.

Var. *renifolia*, Gray. Slightly or strongly pubescent with soft spreading hairs; leaves round-reniform; petals usually beardless. (*V. renifolia*, Gray.)—Maine to Mass., western N. Y., Lake Superior, etc.

8. *V. primulæfolia*, L. (PRIMROSE-LEAVED V.) Smooth or a little pubescent; leaves oblong or ovate, abrupt or somewhat heart-shaped at the base; petals often acute, the lateral ones usually sparingly bearded.—Damp or dry soil, N. Eng. to Fla., toward the coast.

9. *V. lanceolata*, L. (LANCE-LEAVED VIOLET.) Smooth; leaves lanceolate, erect, blunt, tapering into a long-margined petiole, almost entire; petals beardless.—Damp soil; common, especially eastward.

== = Flowers yellow.

10. *V. rotundifolia*, Michx. (ROUND-LEAVED VIOLET.) Leaves round-ovate, heart-shaped, slightly crenate; lateral petals bearded and marked with brown lines; spur very short.—Cold woods, Maine to Minn., and south along the Alleghanies.—Smoothish; leaves 1' broad at flowering, increasing to 3 or 4' in the summer, then lying flat on the ground, shining above.

* * Leafy-stemmed; all perennial with short rootstocks.

+ Low, at first nearly stemless; flowers yellow; stigma concave, bearded.

11. *V. Nuttallii*, Pursh. Pubescent or nearly glabrous; leaves ovate to oblong-lanceolate, obtuse, entire or slightly crenate, decurrent on the petiole.—Central Kansas and westward.

+ + Stems erect, without root-leaves; stipules entire; spur very short; stigma beakless, pubescent.

+ + Stems naked below; flowers yellow.

12. *V. pubescens*, Ait. (DOWNY YELLOW V.) Softly pubescent (6–12' high); leaves very broadly heart-shaped, toothed, somewhat pointed; stipules ovate or ovate-lanceolate, large; lower petals veined with purple, capsule oblong to globular, glabrous or tomentose.—Woods; common.—Var. *scabriuscula*, Torr. & Gray, smaller and greener, slightly pubescent (4–10' high).—R. I. to Ky, and southwestward.

13. *V. hastata*, Michx. (HALBERD-LEAVED V.) Nearly glabrous, slender (4–10' high); stem-leaves halberd-shaped or oblong-heart-shaped, slightly serrate, acute; stipules ovate, small.—Woods, N. Ohio (near Painesville, Miss Shattuck), mountains of Penn., and southward; rare.

+ + Stems more leafy and prolonged; flowers white or purplish.

14. *V. Canadensis*, L. (CANADA V.) Upright (1–2° high); leaves heart-shaped, pointed, serrate; stipules ovate-lanceolate, entire; petals white or whitish inside, the upper ones mostly tinged with violet beneath, the lateral bearded.—Rich woods; common northward and along the Alleghanies. May–Aug.

+ + + Stems erect or spreading (at first nearly acaulescent); stipules fringe-toothed; spur oblong to cylindrical; stigma naked.

15. *V. striata*, Ait. (PALE V.) Stems angular, ascending (6–10' high); leaves heart-shaped, finely serrate, often acute; stipules oblong-lanceolate, large; spur thickish, much shorter than the cream-colored or white petals, the

lateral ones bearded, the lower striped with purplish lines; stigma beaked.—Low grounds, W. New Eng. to Minn. and Mo., and southward in the mountains. April–Oct.

16. *V. rostrata*, Pursh. (LONG-SPURRED V.) Stems ascending (3–6' high); leaves roundish-heart-shaped, serrate, the upper acute; stipules lanceolate, large; spur slender ($\frac{1}{2}$ long), longer than the pale violet beardless petals; style straight and slender; stigma terminal, beakless.—Shaded hillsides, N. New Eng. to Mich., and southward in the Alleghanies; rather rare. June, July.

17. *V. canina*, L., var. *Muhlenbergii*, Gray. (DOG V.) Low (3–8' high), mostly glabrous; stems ascending, mostly simple, from the base at length producing creeping branches; leaves heart-shaped, or the lowest kidney-form, crenate, the uppermost slightly pointed; stipules lanceolate; spur cylindrical, half the length of the light violet petals, the lateral ones slightly bearded; stigma beaked.—Damp or wet shady places; common. May–July. (Eu.)—Var. *puberula*, Watson in herb. Finely puberulent; leaves mostly ovate and acutish with a cordate base, often small; flowers small and mostly cleistogamous.—Sandy or stony shores and islands of Lakes Huron and Superior. (Robbins, Engelmann, etc.)—Var. *multicaulis*, Gray. Depressed and stoloniferous; flowers mostly cleistogamous; leaves small, suborbicular to reniform.—Ky. to Fla. and Tex.

§ 2. Leaf-bearing throughout from an annual, biennial, or sometimes short-lived perennial root; the stipules large, leaf-like and lyrate-pinnatifid.

V. tricolor, L. (PANSY. HEART'S-EASE.) Stem angled and branched; leaves roundish, or the upper oval and the lowest heart-shaped, crenate or entire; petals variable in color or variegated (yellow, whitish, violet-blue and purple);—in var. *arvensis* shorter or little longer than the calyx.—Dry or sandy soil, N. Y. to Iowa, Kan., and southward; the variety sometimes seeming like a native plant. April–Sept. (Nat. from Eu.)

2. SÒLEA, Spreng., in part. GREEN VIOLET.

Sepals not prolonged at the base. Petals nearly equal in length, but the lower one larger and gibbous or saccate at the base, more notched than the others at the apex. Stamens completely united into a sheath enclosing the ovary, and bearing a broad gland on the lower side. Style hooked at the summit.—A homely perennial herb, with stems leafy to the top, and 1–3 small greenish-white flowers in the axils, on short recurved pedicels. (Named in honor of W. Sole, author of an essay on the British Mints.)

1. *S. cóncolor*, Ging. Plant 1–2° high; leaves oblong, pointed at both ends, entire; pod 1' long.—Woods, N. Y. to Kan., and southward. June.

3. IONÍDIUM, Vent.

Sepals not prolonged at base. Petals very unequal, the two upper shorter, the lower longest and largest, concave at base, contracted in the middle. Filaments distinct, the two lower with a scale-like gland or spur at base; anthers merely connivent.—Perennials, branching and leafy, with alternate and opposite leaves, and small axillary flowers. (Name from *ion*, violet, and *idos*, appearance.)

1. *I. polygalæfolium*, Vent. Stems low, from a woody base; leaves linear to oblanceolate, or the lower obovate, entire, the stipules leaf-like or small or none; flowers solitary, nodding, 2" long, white. (*I. lineare*, Torr.) — Kan. and southwestward.

ORDER 15. CARYOPHYLLACEÆ. (PINK FAMILY.)

Herbs, with opposite entire leaves, symmetrical 4-5-merous flowers, with or without petals; the distinct stamens no more than twice the number of the sepals, either hypogynous or perigynous; styles 2-5 (or rarely united into one); seeds several or usually many, attached to the base or to the central column of the 1-celled (rarely 3-5-celled) pod, with a slender embryo coiled or curved around the outside of mealy albumen, in *Dianthus* nearly straight. — Bland herbs; the stems usually swollen at the joints; uppermost leaves rarely alternate. Leaves often united at the base. Calyx persistent. Styles stigmatic along the inside. Seeds amphitropous or campylotropous.

Tribe I. SILENEÆ. Sepals united into a tube or cup. Petals (mostly convolute in the bud) and stamens (10) borne on the stipe or stalk of the ovary, the former with slender claws, to the base of which the corresponding filaments often adhere, included in the calyx-tube. Seeds numerous. — Stipules none. Flowers often large and showy.

* Calyx with scaly bractlets or small leaves at the base. Seeds flattened on the back, attached by their face; embryo nearly straight.

1. *Dianthus*. Calyx terete, mostly cylindrical. Styles 2.
* * Calyx naked. Seeds globular or kidney-shaped; embryo curved or coiled.
2. *Gypsophila*. Calyx top-shaped or campanulate. Pod deeply 4-valved. Styles 2.
3. *Saponaria*. Calyx oblong-cylindrical, obscurely nerved, terete or 5-angled. Pod shortly 4-valved. Styles 2.
4. *Silene*. Calyx 5-toothed, 10-nerved. Styles 3.
5. *Lychnis*. Calyx 5-toothed, 10-nerved. Styles 5, rarely 4.

Tribe II. ALSINEÆ. Sepals distinct or nearly so, imbricated in the bud. Petals when present without claws, mostly imbricated, and with the stamens inserted at the base of the sessile ovary, or into a little disk. Pod splitting into valves or teeth, several-many-seeded. Stamens opposite the sepals, when not more in number. — Low herbs.

* Stipules none.

- Styles opposite the sepals, or, when fewer, opposite those which are exterior in the bud.
- Pod short, splitting into as many valves as styles; valves often bifid or 2-parted.
- 6. *Arenaria*. Petals entire. Styles usually 3. Valves of the pod entire, bifid, or 2-parted.
- 7. *Stellaria*. Petals 2-cleft or none. Styles usually 3. Valves bifid or 2-parted.
→ Pod cylindrical, dehiscent by twice as many equal teeth as styles.
- 8. *Holosteum*. Petals denticulate or notched. Styles usually 3. Seeds fixed by the face.
- 9. *Cerastium*. Petals notched or 2-cleft. Styles 5 or 4. Seeds fixed edgewise.
→ Styles alternate with the sepals. Stamens as many, or twice as many.
- 10. *Sagina*. Petals 4 or 5, entire, or none. Styles 4 or 5. Pod short, 4-5-valved.
* * Stipules present. Pod short.
- 11. *Buda*. Styles 3. Pod 3-valved. Leaves opposite.
- 12. *Spergula*. Styles 5. Valves of the pod opposite the sepals. Leaves whorled.

1. DIÁNTHUS, L. PINK. CARNATION.

Calyx cylindrical, nerved or striate, 5-toothed, subtended by 2 or more imbricated bractlets. Stamens 10. Styles 2. Pod 1-celled, 4-valved at the apex. Seeds flattish on the back; embryo scarcely curved. — Ornamental plants, of well-known aspect and value in cultivation. (Name from *Δίος*, of *Jupiter*, and *ἄνθος*, flower, i. e., Jove's own flower.)

D. ARMERIA, L. (DEPTFORD PINK.) Annual; flowers clustered; bractlets of the calyx and bracts lance-awl-form, herbaceous, downy, as long as the tube; leaves linear, hairy; petals small, rose-color with white dots, crenate. — Fields, etc., eastward. July. (Adv. from Eu.)

D. PROLIFER, L. Annual, smooth, slender; flowers clustered; bractlets ovate, dry, concealing the calyx; leaves few, narrow, linear, erect; petals small, pink. — N. J. and E. Penn. (Adv. from Eu.)

D. DELTOIDES, L. (MAIDEN PINK.) Perennial; leaves short, narrowly lanceolate, downy and roughish; flowers solitary; bracts ovate, half as long as the tube; petals rose-color or white, toothed. — Mich., L. H. Bailey. (Nat. from Eu.)

D. BARBATUS, L. (SWEET WILLIAM.) Perennial; flowers fascicled; leaves large, lanceolate; bracts filiform-attenuate, equalling the calyx. — Sparingly spontaneous. (Adv. from Eu.)

2. GYPSÓPHILA, L.

Calyx narrowly top-shaped or campanulate, 5-nerved, 5-toothed, naked at base. Petals not crowned. Stamens 10. Styles 2. Pod 1-celled, 4-valved at the apex, sessile. — Slender glaucous annuals or perennials, with numerous small flowers. (Name from *γύψος*, gypsum, and *φιλεῖν*, to love.)

G. MURALIS, L. Annual, much branched; leaves very narrowly linear; flowers on slender pedicels, solitary in the forks; calyx turbinate, the teeth short, obtuse; petals purplish, crenate or emarginate. — Sparingly naturalized. (Nat. from Eu.)

3. SAPONÁRIA, L.

Calyx narrowly ovoid or oblong, 5-toothed, obscurely nerved, naked. Stamens 10. Styles 2. Pod 1-celled, or incompletely 2-4-celled at base, 4-toothed at the apex. — Coarse annuals or perennial, with large flowers. (Name from *sapo*, soap, the mucilaginous juice forming a lather with water.)

S. OFFICINALIS, L. (SOAPWORT. BOUNCING BET.) Flowers in corymb clusters; calyx terete; petals crowned with an appendage at the top of the claw; leaves oval-lanceolate. — Roadsides, etc. July-Sept. — A stout perennial, with large rose-colored flowers, commonly double. (Adv. from Eu.)

S. VACCARIA, L. Annual, glabrous; flowers in corymb cymes; calyx 5-angled, enlarged and wing-angled in fruit; petals pale red, not crowned; leaves ovate-lanceolate. (*Vaccaria vulgaris*, Host.) — Occasionally spontaneous. (Adv. from Eu.)

4. SILÈNE, L. CATCHFLY. CAMPION.

Calyx 5-toothed, 10-many-nerved, naked at the base. Stamens 10. Styles 3, rarely 4. Pod 1-celled, sometimes 3-celled at least at the base, opening by 3 or 6 teeth at the apex. — Flowers solitary or in cymes. Petals mostly crowned with a scale at the base of the blade. (Name from *σάλας*, saliva, from the viscid exudation on the stems and calyx of many species. The English name *Catchfly* alludes to the same peculiarity.)

* Dwarf, alpine, tufted, smooth, perennial; flowering shoots 1-flowered.

1. *S. acaulis*, L. (MOSS CAMPION.) Tufted like a moss (1-2' high); leaves linear, crowded; flowers almost sessile, or rarely on a naked peduncle;

petals purple or rarely white, notched or entire, crowned.—Alpine summits of the White Mountains, N. H. July. (Eu.)

* * Calyx bladderly-inflated; perennial; flowers panicled, white, in summer.

2. *S. stellata*, Ait. (STARRY CAMPION.) Leaves in whorls of 4, ovate-lanceolate, taper-pointed; calyx bell-shaped; petals cut into a fringe, crownless.—Wooded banks, R. I. to Minn., and southward.—Stem 3° high, with a large and open pyramidal panicle. Corolla $\frac{1}{2}$ broad.

3. *S. nivea*, Oth. Leaves opposite, lanceolate or oblong, taper-pointed; calyx oblong; petals wedge-form, 2-cleft, minutely crowned.—Penn. to Iowa and Minn.; rare.—Stem 1–2° high, almost smooth. Flowers few, larger than in the last.

S. cucubalus, Wibel. (BLADDER CAMPION.) Glaucous; leaves opposite, ovate-lanceolate; calyx globular, much inflated, elegantly veined; petals 2-cleft, nearly crownless. (S. inflata, Smith.)—Fields and roadsides, E. New Eng. to Ill.—A foot high. Flowers loosely cymose. (Nat. from Eu.)

* * * Calyx elongated or club-shaped, not inflated except by the enlarging pod; flowers cymose or clustered; perennial, pubescent with viscid hairs, especially the calyx; petals crowned, red or rose-color.

4. *S. pennsylvanica*, Michx. (WILD PINK.) Stems low (4–8'); root-leaves narrowly spatulate, nearly glabrous, tapering into hairy petioles; stem-leaves (2 or 3 pairs) lanceolate; flowers clustered, short-stalked; calyx club-shaped; petals wedge-form, slightly notched and eroded, pink.—Gravelly places, E. New Eng. to N. Y., Ky., and southward. April–June.

5. *S. virginica*, L. (FIRE PINK. CATCHFLY.) Stems slender (1–2° high); leaves thin, spatulate, or the upper oblong-lanceolate; flowers few and loosely cymose, peduncled; calyx oblong-cylindrical, soon obconical; petals oblong, 2-cleft, deep crimson; the limb 1' long.—Open woods, western N. Y. to Minn., and southward. June–Aug.

6. *S. regia*, Sims. (ROYAL CATCHFLY.) Stem roughish, erect (3–4° high); leaves thickish, ovate-lanceolate, acute; flowers numerous, short-stalked, in clusters, forming a strict panicle; calyx ovoid-club-shaped in fruit; petals spatulate-lanceolate, mostly undivided, deep scarlet.—Prairies, Ohio to Mo., and southward. July.

7. *S. rotundifolia*, Nutt. (ROUND-LEAVED CATCHFLY.) Viscid-hairy; stems weak, branched, decumbent (2° long); leaves thin, round, abruptly pointed, the lower obovate; flowers few, loosely cymose, stalked; calyx elongated; petals 2-cleft and cut-toothed, deep scarlet.—Shaded banks of the Ohio, and in Ky. June–Aug.—Leaves and flowers large.

* * * Calyx not inflated, except by the enlarging pod; annuals.

+ Glabrous, a portion of each joint of the stem glutinous; flowers pink.

8. *S. antirrhina*, L. (SLEEPY C.) Stem slender (8–30' high); leaves lanceolate or linear; flowers small, paniculate; calyx ovoid; petals obcordate, crowned, opening transiently in sunshine.—Dry soil; common in waste places. June–Sept.

S. arméria, L. (SWEET-WILLIAM CATCHFLY.) Glaucous; leaves ovate-lanceolate; flowers in flat cymes, open in sunshine; calyx club-shaped; petals notched, crowned with awl-shaped scales.—Escaped from gardens; rare. (Adv. from Eu.)

+ + Viscid-pubescent; flowers white or nearly so, opening at night, sweet-scented.

S. nocturna, L. (NIGHT C.) Leaves short, the lower spatulate, the upper linear; flowers small, alternate in a 1-sided spike; petals 2-parted.—Introduced sparingly in Pa., according to Schweinitz. (Adv. from Eu.)

S. noctiflora, L. (NIGHT-FLOWERING C.) Viscid-hairy, tall (1–3° high); lower leaves large and spatulate, the upper lanceolate; flowers few, peduncled; calyx-tube elongated (over 1' long), soon ovoid, with awl-shaped teeth; petals rather large, 2-parted, crowned.—Cultivated grounds.

5. LÝCHNIS, Tourn. COCKLE.

Styles 5, rarely 4, and pod opening by as many or twice as many teeth; otherwise nearly as in *Silene*. Calyx in one species with leaf-like lobes. (Ancient Greek name for a scarlet or flame-colored species, from *λύχνος*, a light or lamp.)

L. vespertina, Sibth. (EVENING L.) Biennial, usually dioecious, viscid-pubescent, in foliage, etc., like *Silene noctiflora*; but 5 styles, calyx much shorter (7–9" long), with lance-linear teeth, and flowers white or pinkish, opening at evening.—Cult. or waste grounds; scarce. (Adv. from Eu.)

L. diurna, Sibth. (RED LÝCHNIS.) Resembling *L. vespertina*, but less viscid, the calyx usually shorter (4–6" long), and the flowers red, opening in the morning.—Rarely spontaneous. (Adv. from Eu.)

L. githago, Lam. (CORN COCKLE.) Annual, clothed with long soft appressed hairs; flowers long-peduncled; calyx-lobes similar to the long and linear leaves, surpassing the broad and crownless purple-red petals, falling off in fruit. (*Agrostemma githago*, L.)—In wheat-fields. (Adv. from Eu.)

L. flos-cuculi, L. (RAGGED ROBIN.) Perennial, erect, slightly downy below, viscid above; leaves narrowly lanceolate; flowers in loose panicles; calyx short, glabrous; petals red, 4-lobed, lobes linear.—Moist or marshy places; New Eng. and N. Y. (Adv. from Eu.)

6. ARENARIA, L. SANDWORT.

Sepals 5. Petals 5, entire, sometimes barely notched, rarely wanting. Stamens 10. Styles 3, rarely more or fewer, opposite as many sepals. Pod short, splitting into as many or twice as many valves as there are styles, few-many-seeded.—Low, usually tufted herbs, with sessile exstipulate leaves and small white flowers. (Name from *arena*, sand, in which many of the species grow.)—The following sections are by many botanists taken for genera.

§ 1. *ARENARIA* proper. Pod splitting wholly or part-way down into 3 or at length into 6 valves; seeds many, naked at the hilum.

A. serpyllifolia, L. (THYME-LEAVED SANDWORT.) Diffusely branched, roughish (2–6' high); leaves ovate, acute, small; cymes leafy; sepals lanceolate, pointed, 3–5-nerved, about equalling the petals and 6-toothed pod.—A low annual; sandy waste places. June–Aug. (Nat. from Eu.)

§ 2. *ALSINE*. Pod splitting to the base into 3 entire valves; seeds many, usually rough, naked at the hilum; flowers solitary and terminal or cymose; root in our species perennial, except in n. 4.

* Leaves small, rigid, awl-shaped or bristle-shaped.

1. *A. caroliniana*, Walt. (PINE-BARREN S.) Densely tufted from a deep perpendicular root; leaves closely imbricated, but spreading, awl-shaped, short, channelled; branches naked and minutely glandular above, several-flowered; sepals obtuse, ovate, shorter than the pod. (*A. squarrosa*, Michx.)—In pure sand, S. New York, N. J., and southward along the coast. May–July.

2. *A. michauxii*, Hook. f. Erect, or usually diffusely spreading from a small root, smooth; leaves slender, between awl-shaped and bristle-form, with

many others clustered in the axils; cyme diffuse, naked, many-flowered; *sepals pointed, 3-ribbed, ovate, as long as the pod.* (*A. stricta*, Michx.)—Rocks and dry wooded banks, Vt. and Penn. to Minn., Mo., and southwestward. July.

3. *A. verna*, L. Dwarf, alpine, densely matted, glabrous or (var. *hirta*) somewhat pubescent, 1-3' high; leaves narrowly linear or awl-shaped; flowers loosely cymose; sepals lanceolate, pointed, 3-nerved, shorter than the pod.—Smuggler's Notch, Vt. (*Pringle*); north and westward. (Eu.)

* * Leaves soft and herbaceous, filiform-linear; petals retuse or notched.

4. *A. patula*, Michx. Diffusely branched from the slender root; stems filiform (6-10' long); branches of the cyme diverging; peduncles long; sepals lanceolate, acuminate, 3-5-nerved. (*A. Pitcheri*, Nutt.)—S. W. Va. to Ky., Ill., Kan., and southward.

5. *A. Grœnlândica*, Spreng. (MOUNTAIN S.) Densely tufted from slender roots, smooth; flowering stems filiform, erect (2-4' high), few-flowered; sepals oblong, obtuse, nerveless.—Summit of the Shawangunk, Catskill, and Adirondack Mountains, N. Y., of the higher mountains of New Eng., and northward; alpine or subalpine. At Bath, Maine, on river-banks near the sea, and near Middletown, Ct. June-Aug.—Leaves and peduncles 3-6" long; flowers large in proportion.

§ 3. *MEHRINGIA*. Parts of the flower sometimes in fours; pod as in § 1, but the young ovary 3-celled; seeds rather few, smooth, with a thickish appendage (strophiole) at the hilum; perennials, with flaccid broadish leaves.

6. *A. lateriflora*, L. Sparingly branched, erect, minutely pubescent; leaves oval or oblong, obtuse ($\frac{1}{2}$ -1' long); peduncles 2- (rarely 3-4) flowered, soon becoming lateral; sepals oblong, obtuse.—Gravelly shores, etc., New Eng. to Penn., Mo., Minn., and northward. May, June. (Eu.)

§ 4. *AMMADENIA*. Styles, cells of the ovary, and valves of the fleshy pod 3, rarely 4 or 5; seeds few, smooth, short-beaked at the naked hilum; disk under the ovary more prominent than usual, glandular, 10-lobed; flowers almost sessile in the axils, sometimes diœcious or polygamous; root perennial.

7. *A. peplodes*, L. Stems (simple or forking from long rootstocks, 6-10' high) and ovate partly-clasping leaves (8-10" long) very fleshy. (*Honkenya peplodes*, Ehrh.)—Sands of the sea-shore, N. J. to Maine and northward. June. (Eu.)

7. *STELLARIA*, L. CHICKWEED. STARWORT.

Sepals 4-5. Petals 4-5, deeply 2-cleft, sometimes none. Stamens 8, 10, or fewer. Styles 3, rarely 4 or 5, opposite as many sepals. Pod ovoid, 1-celled, opening by twice as many valves as there are styles, several-many-seeded. Seeds naked.—Flowers (white) solitary or cymose, terminal, or appearing lateral by the prolongation of the stem from the upper axils. (Name from *stella*, a star, in allusion to the star-shaped flowers.)

* Stems spreading, flaccid, marked longitudinally with one or two pubescent lines; leaves ovate or oblong, $\frac{1}{2}$ -2 $\frac{1}{2}$ ' long.

S. MEDIA, Smith. (COMMON CHICKWEED.) Annual or nearly so; lower leaves on hairy petioles; petals shorter than the calyx, 2-parted, stamens 3-10.—Everywhere in damp grounds. (Nat. from Eu.)

1. *S. pùbera*, Michx. (GREAT CHICKWEED.) Root perennial; leaves all sessile; petals longer than the calyx, deeply 2-cleft; stamens 10.—Shaded rocks, Penn. to Ind., and southward. May.

* * Stems erect or spreading; wholly glabrous perennials, with sessile and narrow or small leaves; stamens usually 10, perigynous.

+ Scaly-bracted; petals 2-parted, equalling or surpassing the calyx.

2. *S. longifolia*, Muhl. (LONG-LEAVED STITCHWORT.) Stem erect, weak, often with rough angles (8-18' high); leaves linear, acutish at both ends, spreading; cymes naked and at length lateral, peduncled, many-flowered, the slender pedicels spreading; petals 2-parted, longer than the calyx; seeds smooth.—Grassy places; common, especially northward. June, July. (Eu.)

3. *S. longipes*, Goldie. (LONG-STALKED S.) Shining or somewhat glaucous, very smooth; leaves ascending, lanceolate or linear-lanceolate, acute, broadest at the base, rather rigid; cyme terminal, few-flowered, the long pedicels strictly erect; petals longer than the calyx; seeds smooth.—Maine to Minn., rare; common farther north. (Eu.)

S. GRAMINEA, L. Resembling the last; leaves linear-lanceolate, broadest above the base; pedicels widely spreading; seeds strongly but minutely rugose.—Becoming rather frequent. (Int. from Eu.)

4. *S. uliginosa*, Murr. (SWAMP S.) Stems weak, decumbent or diffuse, at length prolonged, leaving the naked and usually sessile cymes lateral; leaves lanceolate or oblong, veiny; petals and ripe pods as long as the calyx; seeds roughened.—Swamps and rills, Md. to N. Eng., and northward; rare. (Eu.)

+ Flowers terminal or in the forks of the stem or of leafy branches; bracts foliaceous; petals 2-parted, small or often none; styles 3-4; pod longer than the calyx.

5. *S. crassifolia*, Ehrh. Stems diffuse or erect, flaccid; leaves rather fleshy, varying from linear-lanceolate to oblong; petals longer than the calyx, or wanting; seeds rugose-roughened.—Springy places, eastern Ky. (*Short*), Ringwood, Ill. (*Vasey*), and northward. April-June. (Eu.)

6. *S. borealis*, Bigel. (NORTHERN S.) Stems erect or spreading, flaccid, many times forked, at length resolved into a leafy cyme; leaves varying from broadly lanceolate to ovate-oblong; petals 2-5, shorter than the calyx, or oftener none; sepals acute; styles usually 4; seeds smooth.—Shaded or wet places, R. I. to Minn., and northward. June-Aug.—Var. *ALPÉSTRIS* has the later flowers more cymose, and their bracts small and partly scarious, also the seeds obscurely reticulated or roughish.—Lake Superior, *Dr. Robbins*. (Eu.)

7. *S. humifusa*, Rottb. Spreading or creeping; stems or branches (2' high) 1-3-flowered; leaves fleshy, ovate or oblong (2-3" long); petals a little longer than the calyx; seeds smooth.—Northern border of Maine on the St. John's (*G. L. Goodale*), and high northward. June. (Eu.)

8. *HOLÓSTEUM*, L. JAGGED CHICKWEED.

Sepals 5. Petals 5, usually jagged or denticulate at the point. Stamens 3-5, rarely 10. Styles mostly 3. Pod ovoid, 1-celled, many-seeded, opening at the top by 6 teeth. Seeds rough, flattened on the back, attached by the inner face.—Annuals or biennials, with several (white) flowers in an umbel.

borne on a long terminal peduncle. (Name composed of *ἄλος*, *all*, and *δασύον*, *bone*, by antiphrasis, these plants being soft and tender.)

H. UMBELLATUM, L. Leaves oblong; peduncle and upper part of the stem glandular-pubescent; pedicels reflexed after flowering. — Hills around Lancaster, Penn., Prof. Porter, and Morris Co., N. J., C. F. Austin. (Nat. from Eu.)

✓ **9. CERASTIUM**, L. MOUSE-EAR CHICKWEED.

Sepals 5, rarely 4. Petals as many, 2-lobed or cleft, rarely entire. Stamens twice as many, or fewer. Styles equal in number to the sepals and opposite them. Pod 1-celled, usually elongated, membranaceous, opening at the apex by twice as many teeth as there were styles, many-seeded. Seeds rough. — Flowers white, in terminal cymes. Our species have the petals 2-cleft or obcordate, the parts of the flower always in fives, and the exserted pods more or less curved. (Name from *κέρας*, a horn, alluding to the shape of the pod in many species.)

C. VISCOSUM, L. (MOUSE-EAR CHICKWEED.) Annual, hairy and rather clammy, nearly erect (4-9' high); leaves ovate or obovate to oblong-spatulate; bracts herbaceous; flowers small in close clusters at first; pedicels even in fruit not longer than the acute sepals; petals shorter than the calyx. (*C. vulgatum*, L. *Herb.*, and *Man.* The names of this and the next were transposed in the Linnaean herbarium, which has caused much confusion. They are here applied as originally by Linnaeus, and by many recent botanists. Others substitute for this the later name, *C. glomeratum*, Thuill.) — Grassy places, eastward and southward; not common. May-July. — Stamens often 5. (Nat. from Eu.)

C. VULGATUM, L. (LARGER M.) Perennial; stems clammy-hairy, spreading (6-15' long); leaves oblong; upper bracts scarious-margined; flowers larger (sepals 2-3" long), at first clustered, the fruiting pedicels longer, the earlier ones mostly much longer than the obtuse sepals; petals equalling the calyx. (*C. viscosum*, L. *Herb.*, and *Man.* *C. triviale*, Link.) — Fields and copses; common, perhaps indigenous. May-July. (Nat. from Eu.)

1. **C. nutans**, Raf. Annual, very clammy-pubescent; stems erect, slender, grooved, diffusely branched (6-20' high); cyme loose and open, many-flowered; leaves oblong-lanceolate, acute, the lowest spatulate; peduncles mostly elongated; petals longer than the calyx; pods nodding on the stalks, curved upward, thrice the length of the calyx. — Moist places, Vt. to Minn., and southward. May-July.

2. **C. arvense**, L. (FIELD CHICKWEED.) Perennial; stems ascending or erect, tufted, downy or nearly smooth, slender (4-8' high), naked and few-several-flowered at the summit; leaves linear or narrowly lanceolate; petals obcordate, more than twice the length of the calyx; pods scarcely longer than the calyx. — Dry or rocky places. May-July. (Eu.)

Var. **oblongifolium**, Holl. & Britt. Usually taller, pubescent; leaves narrowly or broadly oblong or oblong-lanceolate; pod about twice longer than the calyx. (*C. oblongifolium*, Torr.) — Rocky places, N. Y. to Minn., and southward. — Var. **villosum**, Holl. & Britt. Similar but densely villous-pubescent, and the leaves lanceolate to ovate-lanceolate. — E. Penn.

10. SAGINA, L. PEARLWORT.

Sepals 4 or 5. Petals 4 or 5, undivided, or often none. Stamens as many as the sepals, rarely twice as many. Styles as many as the sepals and alternate with them. Pod many-seeded, 4-5-valved to the base; valves opposite

the sepals. — Little, matted herbs, with thread-like or awl-shaped leaves, no stipules, and small flowers terminating the stems or branches; in summer. (Name from *sagina*, fattening; previously applied to the spurry.)

* Parts of the flower in fours, rarely with some few in fives.

1. **S. procumbens**, L. Annual or perennial, depressed or spreading on the ground, glabrous; leaves linear-thread-shaped; apex of the peduncle often hooked soon after flowering; petals shorter than the broadly ovate obtuse sepals, sometimes none. — Springy places and damp rocks, coast of Maine to Penn. (Eu.)

2. **S. apétala**, L. Annual, erect or ascending; leaves ciliate at base or glabrous; petals none or very small; peduncles always erect. — Dry soil, Mass. to Penn.; scarce, seemingly native? (Eu.)

* * Parts of the flower in fives, the stamens not rarely 10.

3. **S. decumbens**, Torr. & Gray. Annual, ascending; the peduncles and calyx with the margins of the upper leaves at first glandular-pubescent; leaves short, often bristly-tipped, not fascicled in the axils; peduncles slender; petals equalling or shorter than the calyx; pod oblong-ovate, nearly twice longer than the acutish sepals. (*S. subulata*, Man., not Wimm.) — E. Mass., to Ill., Mo., and southward. — Var. **SMITHII**, a slender form, apetalous, at least in the later flowers. — Near Philadelphia, in waste ground, and in sandy fields at Somers' Point, N. J., C. E. Smith. Seeds minutely roughened.

4. **S. nodosa**, Fenzl. Perennial, tufted, glabrous, or glandular above; stems ascending (3-5' high); lower leaves thread-form, the upper short and awl-shaped, with minute ones fascicled in their axils so that the branchlets appear knotty, petals much longer than the calyx. — Wet sandy soil, along the coast of Maine and N. H., also Lake Superior, and northward. (Eu.)

11. BÛDA, Adans. SAND-SPURRY.

Sepals 5, entire. Stamens 2-10. Styles and valves of the many-seeded pod 3, very rarely 5, when the valves alternate with the sepals! Embryo not coiled into a complete ring. — Low herbs, mostly on or near the sea-coast, with filiform or linear somewhat fleshy opposite leaves, and smaller ones often clustered in the axils; stipules scaly-membranaceous; flowering all summer. (Named probably for the city so called.) — Genus also known as *TISSA*, Adans., *SPERGULARIA*, Presl, and *LEPIGONUM*, Wahlb. The species are very variously understood by European botanists, and are much confused, as well as the synonymy. Our forms are annual, or at the most biennial.

1. **B. rubra**, Dumort. Nearly glabrous, the summit of the prostrate or ascending slender stems, peduncles, and sepals usually glandular-pubescent; leaves linear, flat, scarcely fleshy; stipules lanceolate, entire or cleft; pedicels longer than the bracts; pods and pink-red corolla small (1½"), hardly equalling or exceeding the calyx; seeds rough with projecting points, semi-obovate or gibbous-wedge-shaped, wingless. (*Spergularia rubra*, Presl.) — Dry sandy soil, New Eng. to Va., along and near the coast, but rarely maritime. (Eu.)

2. **B. marina**, Dumort. More decidedly fleshy than the preceding, erect or ascending, usually pubescent, with ovate stipules, terete leaves, and pedicels 2-4" long; sepals usually becoming 2-2½" long, little shorter than the

pod; petals pale; seeds obovate-rounded and roughened with points, wingless or narrow-winged. (*Spergularia salina*, Presl. *Tissa marina*, Britt.) — Brackish sands, etc., coast of N. Eng. to Va., and southward. A form with smooth seeds is var. *LEIOSPERMA*, N. E. Brown. (S. media, Presl.) (Eu.)

Var. (?) *minor*, Watson. Small, ascending or decumbent; flowers smaller, on shorter pedicels (rarely 2" long), the sepals and pod 1-1½" long; seeds wingless, usually papillose. — Coast of N. H. and Mass.

3. *B. borealis*, Watson. Diffusely branched, glabrous; pedicels usually 2-4" long; petals white; pod ovate, 2" long, about twice longer than the sepals; seeds usually wingless, smooth or nearly so. (*Tissa salina*, Britt.) — On the coast, E. Maine to Labrador.

12. SPÉRGULA, L. SPURREY.

Stamens 5 or 10. Styles 5. The 5 valves of the pod opposite the sepals. Embryo spirally annular. Leaves in whorls. Otherwise as in Buda. (Name from *spargo*, to scatter, from the seeds.)

S. ARVENSIS, L. (CORN SPURREY.) Annual; leaves numerous in the whorls, thread-shaped (1-2' long); stipules minute; flowers white, in a stalked paniced cyme; seeds rough. — Grain-fields. (Adv. from Eu.)

✓ ORDER 16. PORTULACÆÆ. (PURSLANE FAMILY.)

Herbs, with succulent leaves, and regular but unsymmetrical flowers, viz., sepals fewer than the petals; the stamens opposite the petals when of the same number, but often indefinite; otherwise nearly as Chickweeds. — Sepals 2. Petals 5, or sometimes none. Stamens mostly 5-20. Styles 2-8, united below, or distinct, stigmatic along the inside. Pod 1-celled, with few or many campylotropous seeds rising on stalks from the base. Embryo curved around mealy albumen. — Insuper and innocent herbs, with entire leaves. Corolla opening only in sunshine, mostly ephemeral, then shrivelling.

1. *Portulaca*. Stamens 7-20, on the partly adherent calyx. Pod opening by a lid.
2. *Talinum*. Stamens more numerous than the petals, hypogynous. Calyx deciduous. Pod many-seeded.
3. *Claytonia*. Stamens as many as the hypogynous petals, and attached to their base. Calyx persistent. Pod 3-6-seeded.

1. PORTULACA, Tourn. PURSLANE.

Calyx 2-cleft; the tube cohering with the ovary below. Petals 5, rarely 6, inserted on the calyx with the 7-20 stamens, fugacious. Style mostly 3-8-parted. Pod 1-celled, globular, many-seeded, opening transversely, the upper part (with the upper part of the calyx) separating as a lid. — Fleshy annuals, with mostly scattered leaves. (An old Latin name, of unknown meaning.)

P. OLERACEA, L. (COMMON PURSLANE.) Prostrate, very smooth; leaves obovate or wedge-form; flowers sessile (opening only in sunny mornings); sepals keeled; petals pale yellow; stamens 7-12; style deeply 5-6-parted; flower-bud flat and acute. — Cultivated and waste grounds; common. Seemingly indigenous west and southwestward. (Nat. from Eu.)

1. *P. retusa*, Engelm. Leaves often retuse; calyx-lobes obtuse in the bud; petals small or minute; style shorter, 3-4-cleft; seeds larger, sharply

tuberculate; otherwise like the last. — Ark. to Tex. and westward; reported from Kan., Iowa, and Minn.

2. *P. pilosa*, L. Ascending or spreading, copiously hairy in the axils; leaves linear-subulate, nearly terete, 3-6" long; petals red or purple. — Kan. to Tex., etc.

2. TALINUM, Adans.

Sepals 2, distinct and free, deciduous. Petals 5, ephemeral. Stamens 10-30. Style 3-lobed at the apex. Pod 3-celled at the base when young, 3-valved, with many seeds on a globular stalked placenta. (Derivation obscure.)

1. *T. teretifolium*, Pursh. Perennial; leafy stems low, tuberous at base; leaves linear, cylindrical; peduncle long (3-6') and naked, bearing an open cyme of pink flowers (¾' broad); stamens 15-20. — Serpentine rocks, Penn., to Ind., Minn., and southward. June-Aug.

3. CLAYTONIA, Gronov. SPRING-BEAUTY.

Sepals 2, ovate, free, persistent. Stamens 5, adhering to the short claws of the petals. Style 3-cleft at the apex. Pod 1-celled, 3-valved, 3-6-seeded. — Our two species are perennials, sending up simple stems in early spring from a small deep tuber, bearing a pair of opposite leaves, and a loose raceme of pretty flowers. Corolla rose-color with deeper veins, opening for more than one day! (Named in honor of Dr John Clayton, one of our earliest botanists, who contributed to Gronovius the materials for the Flora Virginica.)

1. *C. Virginica*, L. Leaves linear-lanceolate, elongated (3-6' long). — Moist open woods; common, especially westward and southward.

2. *C. Caroliniæna*, Michx. Flowers rather smaller and fewer; leaves spatulate-oblong or oval-lanceolate (1-2' long). — Maine to Minn., and southward along the Alleghanies.

ORDER 17. ELATINACEÆ. (WATER-WORT FAMILY.)

Little marsh annuals, with membranaceous stipules between the opposite dotless leaves, minute axillary flowers like those of the Chickweeds, but the pod 2-5-celled, and the seeds as in St. John's-wort. The principal genus is

1. ELATINE, L. WATER-WORT.

Sepals 2-4, persistent. Petals 2-4, hypogynous. Stamens as many, rarely twice as many, as the petals. Styles, or sessile capitate stigmas, 2-4. Pod membranaceous, globose, 2-4-celled, several-many-seeded, 2-4-valved; the partitions left attached to the axis, or evanescent. Seeds cylindrical, straightish or curved, marked by both longitudinal and transverse lines. — Dwarf glabrous plants, usually rooting at the nodes, aquatic or terrestrial. (A Greek name for some obscure herb.)

1. *E. Americana*, Arn. Tufted, 1' high; leaves obovate, obtuse, 1-3" long; flowers sessile, rarely opening in the aquatic form; sepals, petals, stamens, and stigmas 2, rarely 3; seeds 5 or 6 in each cell, rising from the base, marked by 9 or 10 longitudinal lines and 20-30 crossbars. — Margin of ponds,