

## SIGNS USED IN THIS WORK.

°, ', ". The sign of degrees (°) is used for feet; of minutes ('), for inches; of seconds ("), for lines,—the line being the twelfth part of an inch, and very nearly equivalent to two millimetres.

μ. In microscopic measurements, the conventional sign for the micromillimetre or the one-thousandth part of a millimetre = one two-thousandth part of a line.

♂ Bearing only stamens or antheridia.

♀ Pistillate or bearing archegonia.

? A mark of doubt.

! A mark of affirmation or authentication.

Figures or words separated by a short dash (—) indicate the extremes of variation, as "5–10" long, few—many-flowered," i. e. varying from 5 to 10 lines in length, and with from few to many flowers.

## BOTANY

OF THE

## NORTHERN UNITED STATES.

### SERIES I.

#### PHÆNOGAMOUS OR FLOWERING PLANTS.

VEGETABLES bearing proper flowers, that is, having stamens and pistils, and producing seeds, which contain an embryo.

#### CLASS I. DICOTYLEDONOUS OR EXOGENOUS PLANTS.

Stems formed of bark, wood, and pith; the wood forming a layer between the other two, increasing, when the stem continues from year to year, by the annual addition of a new layer to the outside, next the bark. Leaves netted-veined. Embryo with a pair of opposite cotyledons, or rarely several in a whorl. Flowers having their parts usually in fives or fours.

#### SUBCLASS I. ANGIOSPERMÆ.

Pistil consisting of a closed ovary, which contains the ovules and forms the fruit. Cotyledons only two.



## DIVISION I. POLYPETALOUS EXOGENOUS PLANTS.

Floral envelopes consisting of both calyx and corolla; the petals not united with each other. (Several genera or species belonging to Polypetalous Orders are destitute of petals, or have them more or less united.)

## ORDER I. RANUNCULACEÆ. (CROWFOOT FAMILY.)

*Herbs or some woody plants, with a colorless and usually acrid juice, polypetalous, or apetalous with the calyx often colored like a corolla, hypogynous; the sepals, petals, numerous stamens, and many or few (rarely single) pistils all distinct and unconnected.*—Flowers regular or irregular. Sepals 3–15. Petals 3–15, or wanting. Stamens indefinite, rarely few. Fruits either dry pods, or seed-like (achenes), or berries. Seeds anatropous (when solitary and suspended the raphé dorsal), with hard albumen and a minute embryo.—Leaves often dissected, their stalks dilated at the base, sometimes with stipule-like appendages. (A large family, including some acrid-narcotic poisons.)

## Synopsis of the Genera.

**Tribe I. CLEMATIDÆ.** Sepals normally 4, petal-like, valvate in the bud, or with the edges bent inward. Petals none, or small. Achenes numerous, tailed with the feathery or hairy styles. Seed suspended.—Leaves all opposite.

1. **Clematis.** Climbing by the leafstalks, or erect herbs.

**Tribe II. ANEMONIDÆ.** Sepals 3–20, often petal-like, imbricated in the bud. Stamens mostly numerous. Achenes numerous or several, in a head or spike.—Herbs, never climbing; leaves alternate, or radical, the upper sometimes opposite or whorled.

\* Petals none (rarely some staminodia). Seed suspended.

+ All but the lower leaves opposite or whorled. Peduncles 1-flowered.

2. **Anemone.** Involucre leaf-like, remote from the flower. Leaves compound or dissected. Pistils very many.

3. **Hepatica.** Involucre close to the flower, of 3 oval bracts, calyx-like. Leaves radical, simple and lobed. Pistils several.

4. **Anemone.** Stigma terminal, broad and flat. Radical leaves and involucre compound. Peduncles umbellate. Achenes 4–15, many-ribbed.

+ Leaves alternate, compound. Flowers panicled, often diœcious.

5. **Thalictrum.** Sepals usually 4, petal-like or greenish. Achenes few.

\*\* Petals none. Sepals 3–5, caducous. Seed erect. Leaves alternate.

6. **Trautvetteria.** Achenes numerous, inflated, 4-angled. Flowers corymbose. Filaments white, clavate.

\*\*\* Petals evident. Sepals usually 5. Achenes many.

7. **Adonis.** Sepals and petals (5–16, crimson or scarlet) flat, unappendaged. Seed suspended.

8. **Myosurus.** Sepals spurred. Petals 5, white. Achenes in a long spike. Scapes 1-flowered. Seed suspended.

9. **Ranunculus.** Petals 5, yellow or white, with a scale or gland at base. Achenes capitate. Seed erect.

**Tribe III. HELLEBOREÆ.** Sepals imbricated in the bud, rarely persistent, petal-like. Petals often nectariferous or reduced to staminodia or none. Pods (follicles) or berries (in n. 20, 21) few, rarely single, few-many-seeded.—Leaves alternate.

\* Ovules and commonly seeds more than one pair. Herbs.

+ Flowers regular, not racemose. Petals inconspicuous nectaries or slender or none. Sepals tardily deciduous.

10. **Isopyrum.** Petals none. Sepals broad, white. Pods few. Leaves compound.

11. **Caltha.** Petals none. Sepals broad, yellow. Leaves kidney-shaped, undivided.

12. **Trollius.** Petals 5–20, narrow, pitted above the base. Pods sessile. Leaves palmately lobed.

13. **Coptis.** Petals 5–6, small, hollowed at apex, white. Pods long-stalked. Leaves radical, trifoliate.

14. **Helleborus.** Petals small, tubular, 2-lipped. Sepals 5, broad, persistent and turning green. Pods sessile.

15. **Eranthis.** Petals small 2-lipped nectaries. Sepals 5–8, narrow, deciduous. Flower solitary, involucre.

+ Sepals and large spur-shaped petals regular, each 5.

16. **Aquilegia.** Pistils 5, with slender styles. Leaves ternately compound.

+ Flowers unsymmetrical and irregular. Sepals 5.

17. **Delphinium.** Upper sepal spurred. Petals 4, of two forms; the upper pair with long spurs, enclosed in the spur of the calyx.

18. **Aconitum.** Upper sepal hooded, covering the two long-clawed small petals.

+ Flowers regular, racemose. Sepals caducous. Petals very small, stamen-like, or none. Leaves decompound.

19. **Cimicifuga.** Flowers in long often paniculate racemes. Pistils 1–8, becoming many-seeded pods.

20. **Actæa.** Flowers in a single short raceme. Pistil single, forming a many-seeded berry.

\*\* Ovules a single pair. Flowers regular. Roots yellow and bitter.

21. **Hydrastis.** Flowers solitary. Sepals 3, petal-like, caducous. Petals none. Stamens numerous. Pistils several, becoming 2-seeded berries. Leaves simple, lobed.

22. **Xanthorrhiza.** Flowers in compound racemes. Sepals 5. Petals 5, small, 2-lobed, with claws. Stamens 5–10. Pods 1-seeded. Shrub with pinnate leaves.

## 1. CLÉMATIS, L. VIRGIN'S-BOWER.

Sepals 4, or rarely more, colored, the valvate margins turned inward in the bud. Petals none or small. Achenes numerous in a head, bearing the persistent styles as naked, hairy, or plumose tails.—Perennial herbs or vines, mostly a little woody, and climbing by the bending or clasping of the leafstalks, rarely low and erect. Leaves opposite. (Κλημάτις, a name of Dioscorides for a climbing plant with long and lithe branches.)

§ 1. FLÁMMULA. *Flowers cymose-paniculate, rather small, in our species diœcious. Sepals petaloid, whitish, spreading, thin. Petals none. Anthers short, blunt.*

1. **C. Virginiana**, L. (COMMON VIRGIN'S-BOWER.) Smooth; leaves bearing 3 ovate acute leaflets, which are cut or lobed, and somewhat heart-shaped at the base; tails of the fruit plumose.—River-banks, etc., common; climbing over shrubs. July, August.

2. **C. ligusticifolia**, Nutt. Very similar, but the leaves 5-foliate or quinate-ternate.—Long Pine, Neb., and west to the Pacific.



§ 2. **VIÓRNA**. Flowers large, solitary on long peduncles, usually nodding. Sepals thick, erect and connivent at base, mostly dull purple. Petals none. Anthers linear.

+ Stems climbing; leaves pinnate; calyx (and foliage) glabrous or puberulent.

3. **C. Viórna**, L. (LEATHER-FLOWER.) Calyx ovate and at length bell-shaped; the purplish sepals (1' long) very thick and leathery, wholly connivent or only the tips recurved; long tails of the fruit very plumose; leaflets 3-7, ovate or oblong, sometimes slightly cordate, 2-3-lobed or entire; uppermost leaves often simple. — Rich soil, Penn. to Mo., and southward. May-Aug.

4. **C. Pitcheri**, Torr. & Gray. Calyx bell-shaped; the dull purplish sepals with narrow and slightly margined recurved points; tails of the fruit filiform and naked or shortly villous; leaflets 3-9, ovate or somewhat cordate, entire or 3-lobed, much reticulated; uppermost leaves often simple. — S. Ind. to Kan., and Tex. June.

5. **C. crispa**, L. Calyx cylindraceous below, the upper half of the bluish-purple sepals (1-2' long) dilated and widely spreading, with broad and wavy thin margins; tails of the fruit silky or glabrate; leaflets 5-9, thin, varying from ovate or cordate to lanceolate, entire or 3-5-parted. (*C. cylindrica*, Sims.) — Va. near Norfolk, and southward. May-Aug.

+ + Low and erect, mostly simple; flowers solitary, terminal; leaves sessile or nearly so, undivided, strongly reticulated.

6. **C. ochroleuca**, Ait. Leaves ovate, entire or sometimes 3-lobed, silky beneath; peduncles long; tails of the fruit very plumose. — Copses, Long Island to Penn. and Ga.; rare. May.

7. **C. Fremónti**, Watson. Leaves crowded, thick, often coarsely toothed, sparingly villous-tomentose; peduncles very short; tails villous or glabrate, not plumose. — Mo. and Kan.

§ 3. **ATRÁGENE**. Some of the outer filaments enlarged and more or less petaloid; peduncles bearing single large flowers; the thin sepals widely spreading.

8. **C. verticillaris**, DC. Woody-stemmed climber, almost glabrous; leaves trifoliate, with slender common and partial petioles; leaflets ovate or slightly heart-shaped, pointed, entire, or sparingly toothed or lobed; flower bluish-purple, 2-3' across; tails of the fruit plumose. — Rocky places in mountainous districts, Maine and W. New Eng. to Va., Minn., and northwestward; rare. May. — A pair of leaves with a peduncle between them, developed in spring from each of the opposite buds, gives the appearance of a whorl, whence the specific name.

## 2. ANEMONE, Tourn. ANÉMONE. WIND-FLOWER.

Sepals few or many, petal-like. Petals none, or in n. 1 resembling abortive stamens. Achenes pointed or tailed, flattened, not ribbed. Seed suspended. — Perennial herbs with radical leaves; those of the stem 2 or 3 together, opposite or whorled, and forming an involucre remote from the flower; peduncles 1-flowered, solitary or umbellate. (The ancient Greek and Latin name, from *ἀνέμων*, to be shaken by the wind.)

§ 1. **PULSATILLA**. Carpels numerous in a head, with long hairy styles which in fruit form feathery tails, as in *Clematis*; flower large, usually with some minute or indistinct gland-like abortive stamens answering to petals.

1. **A. patens**, L., var. **Nuttalliana**, Gray. (PASQUE-FLOWER.) Villous with long silky hairs; peduncle solitary; flower erect, developed before the leaves, which are ternately divided, the lateral divisions 2-parted, the middle one stalked and 3-parted, the segments deeply once or twice cleft into narrowly linear and acute lobes; lobes of the sessile involucre like those of the leaves, at the base all united into a shallow cup; sepals 5-7, purplish or whitish (1-1½' long), spreading when in full anthesis. — Prairies, Ill. and Mo., thence northward and westward. March-April. — A span high. Tail of carpels 2' long. (Eu., Siberia.)

§ 2. **ANEMONE** proper. Styles short, not plumose. Stamindia none.

\* Achenes densely long-woolly, compressed; involucre far below the flower.

+ Stem single, from a small tuber; sepals 10-20; style filiform.

2. **A. Caroliniána**, Walt. Stem 3-6' high; root-leaves once or twice 3-parted or cleft; involucre 3-parted, its wedge-shaped divisions 3-cleft; sepals 10-20, oblong-linear, purple or whitish; head of fruit oblong. — Ill. to Neb. and southward. May.

+ + Stems several; sepals 5-8; style filiform.

3. **A. parviflora**, Michx. Stem 3-12' high from a slender rootstock, 1-flowered; root-leaves 3-parted, their broadly wedge-shaped divisions crenate-incised or lobed; involucre 2-3-leaved; sepals 5 or 6, oval, white; head of fruit globular. — Lake Superior, northward and westward. May, June.

4. **A. multifida**, Poir. Stems from a branching caudex, silky-hairy (6-12' high); principal involucre 2-3-leaved, bearing one naked and one or two 2-leaved peduncles; leaves of the involucre short-petioled, similar to the root-leaves, twice or thrice 3-parted and cleft, their divisions linear; sepals obtuse, red, sometimes greenish-yellow or whitish; head of fruit spherical or oval. — Rocks, etc., N. E. Maine to Lake Superior, north and westward; rare. June.

+ + + Taller, commonly branching above or producing two or more peduncles; involucral leaves long-petioled; sepals 5-8, silky or downy beneath (4-6" long), oval or oblong; style subulate.

5. **A. cylindrica**, Gray. (LONG-FRUITED A.) Slender (2° high), silky-pubescent; flowers 2-6, on very long upright naked peduncles; involucral leaves twice or thrice as many as the peduncles, 3-divided; their divisions wedge-lanceolate, the lateral 2-parted, the middle 3-cleft; lobes cut and toothed at the apex; sepals 5, rather obtuse, greenish-white; head of fruit cylindrical (1' long). — Dry woods, N. Eng. to Mo., and northwestward. May. — Peduncles 7-12' long, all from the same involucre and naked throughout, or one involucellate in the middle.

6. **A. Virginiana**, L. More loosely pubescent or glabrate; involucral leaves 3, 3-parted; their divisions ovate-lanceolate, pointed, not serrate, the lateral 2-parted, the middle 3-cleft; peduncles elongated, the earliest naked, the others with a 2-leaved involucel at the middle, repeatedly proliferous; sepals 5,



acute, greenish (in one variety white and obtuse); head of fruit oval or oblong. — Woods and meadows; common. June–August. — Plant 2–3° high; the upright peduncles 6–12' long.

\* \* Achenes naked, orbicular, compressed, wing-margined; sepals 5, obovate; involucre sessile.

7. *A. Pennsylvanica*, L. Hairy, rather low; primary involucre 3-leaved, bearing a naked peduncle, and soon a pair of branches or peduncles with a 2-leaved involucre at the middle, which branch similarly in turn; their leaves broadly wedge-shaped, 3-cleft, cut and toothed; radical leaves 5–7-parted or cleft; sepals white (6–9' long); head of fruit spherical. — W. New Eng. to Penn., Ill., and northwestward. June–Aug.

\* \* \* Achenes rather few, nearly naked, ovate-oblong; stems slender, 1-flowered; leaves radical.

8. *A. nemorosa*, L. (WIND-FLOWER. WOOD A.) Low, smoothish; stem perfectly simple, from a filiform rootstock; involucre of 3 long-petioled trifoliate leaves, their leaflets wedge-shaped or oblong, and toothed or cut, or the lateral ones (var. *QUINQUEFOLIA*) 2-parted; a similar radical leaf in sterile plants solitary from the rootstock; peduncle not longer than the involucre; sepals 4–7, oval, white, sometimes blue, or tinged with purple outside; carpels only 15–20, oblong, with a hooked beak. — Margin of woods. April, May. — A delicate vernal species; the flower 1' broad. (Eu.)

9. *A. nudicaulis*, Gray. Glabrous; rootstock filiform; radical leaves reniform, 3-parted, the divisions broadly cuneate with rounded crenate-incised or -lobed summit; involucre of a single similar petiolate leaf or wanting; achenes glabrous, tipped with a slender-subulate hooked style. — North shore of Lake Superior near Sand Bay, Minn., in bogs. (Joseph C. Jones.) Imperfectly known.

### 3. HEPÁTICA, Dill. LIVER-LEAF. HEPATICA.

Involucre simple and 3-leaved, very close to the flower, so as to resemble a calyx; otherwise as in *Anemone*. — Leaves all radical, heart-shaped and 3-lobed, thickish and persistent through the winter, the new ones appearing later than the flowers, which are single, on hairy scapes. (Name from a fancied resemblance to the liver in the shape of the leaves.)

1. *H. triloba*, Chaix. Leaves with 3 ovate obtuse or rounded lobes; those of the involucre also obtuse; sepals 6–12, blue, purplish, or nearly white; achenes several, in a small loose head, ovate-oblong, pointed, hairy. — Woods; common from the Atlantic to Mo., Minn., and northward; flowering soon after the snow leaves the ground in spring. (Eu.)

2. *H. acutiloba*, DC. Leaves with 3 ovate and pointed lobes, or sometimes 5-lobed; those of the involucre acute or acutish. — Passes into the other and has the same range.

### 4. ANEMONÉLLA, Spach.

Involucre compound, at the base of an umbel of flowers. Sepals 5–10, white and conspicuous. Petals none. Achenes 4–15, ovoid, terete, strongly 8–10-ribbed, sessile. Stigma terminal, broad and depressed. — Low glabrous perennial; leaves all radical, compound.

1. *A. thalictroides*, Spach. (RUE-ANEMONE.) Stem and slender petiole of radical leaf (a span high) rising from a cluster of thickened tuberous roots; leaves 2–3-ternately compound; leaflets roundish, somewhat 3-lobed at the end, cordate at the base, long-petiolulate, those of the 2–3-leaved 1–2-ternate involucre similar; flowers several in an umbel; sepals oval ( $\frac{1}{2}$ ' long, rarely pinkish), not early deciduous. (*Thalictrum anemonoides*, Michx.) — Woods, common, flowering in early spring with *Anemone nemorosa*, and considerably resembling it. Rarely the sepals are 3-lobed like the leaflets.

### 5. THALÍCTRUM, Tourn. MEADOW-RUE.

Sepals 4–5, petal-like or greenish, usually caducous. Petals none. Achenes 4–15, grooved or ribbed, or else inflated. Stigma unilateral. Seed suspended. — Perennials, with alternate 2–3-ternately compound leaves, the divisions and the leaflets stalked; petioles dilated at base. Flowers in corymbs or panicles, often polygamous or dioecious. (Derivation obscure.)

\* Flowers dioecious or sometimes polygamous, in ample panicles; filaments slender; stigmas elongated, linear or subulate; achenes sessile or short-stipitate, ovoid, pointed, strongly several-angled and grooved.

1. *T. didicum*, L. (EARLY MEADOW-RUE.) Smooth and pale or glaucous, 1–2° high; leaves (2–3) all with general petioles; leaflets drooping, rounded and 3–7-lobed; flowers purplish and greenish, dioecious; the yellowish anthers linear, mucronate, drooping on fine capillary filaments. — Rocky woods, etc.; common. April, May.

2. *T. polygamum*, Muhl. (TALL M.) Smooth, not glandular, 4–8° high; stem-leaves sessile; leaflets rather firm, roundish to oblong, commonly with mucronate lobes or tips, sometimes puberulent beneath; panicles very compound; flowers white, the fertile ones with some stamens; anthers not drooping, small, oblong, blunt, the mostly white filaments decidedly thickened upwards. (T. Cornuti, Man., not L.) — Wet meadows and along rivulets, N. Eng. to Ohio and southward; common. July–Sept.

3. *T. purpurascens*, L. (PURPLISH M.) Stem (2–4° high) usually purplish; stem-leaves sessile or nearly so; leaflets more veiny and reticulated beneath, with or without gland-tipped or glandless hairs or waxy atoms; panicles compound; flowers (sepals, filaments, etc.) greenish and purplish, dioecious; anthers linear or oblong-linear, mucronulate, drooping on capillary filaments occasionally broadened at the summit. — Dry uplands and rocky hills, S. New Eng. to Minn., and southward. May, June.

\* \* Flowers all perfect, corymbd; the filaments strongly club-shaped or inflated under the small and short anther; stigma short; achenes gibbous, long-stipitate.

4. *T. clavatum*, DC. Size and appearance of n. 1; leaves only twice ternate; flowers white, fewer; achenes 5–10, flat, somewhat crescent-shaped, tapering into the slender stipe. — Mountains of Va. and southward. June.

### 6. TRAUTVETTERIA, Fisch. & Mey. FALSE BUGBANE.

Sepals 3–5, usually 4, concave, petal-like, very caducous. Petals none. Achenes numerous, capitate, membranaceous, compressed 4-angled and inflated. Seed erect. — A perennial herb, with alternate palmately-lobed leaves, and corymbose white flowers. (For Prof. Trautvetter, a Russian botanist.)



1. **T. palmata**, Fisch. & Mey. Stems 2-3° high; root-leaves large, 5-11-lobed, the lobes toothed and cut. — Moist ground along streamlets, Md. to S. Ind., and south to Ga.

#### 7. ADONIS, Dill.

Sepals and petals (5-16) flat, unappendaged, deciduous. Achenes numerous, in a head, rugose-reticulated. Seed suspended. — Herbs with finely dissected alternate leaves and showy flowers. (*Adonis*, a favorite of Venus, after his death changed into a flower.)

**A. autumnalis**, L. A low leafy annual, with scarlet or crimson flowers, darker in the centre. — Sparingly naturalized from Europe.

#### 8. MYOSURUS, Dill. MOUSE-TAIL.

Sepals 5, spurred at the base. Petals 5, small and narrow, raised on a slender claw, at the summit of which is a nectariferous hollow. Stamens 5-20. Achenes numerous, somewhat 3-sided, crowded on a very long and slender spike-like receptacle (whence the name, from *mūs*, a mouse, and *οὐρά*, a tail), the seed suspended. — Little annuals, with tufted narrowly linear-spatulate root-leaves, and naked 1-flowered scapes. Flowers small, greenish.

1. **M. minimus**, L. Fruiting spike 1-2' long; achenes quadrate, blunt. — Alluvial ground, Ill. and Ky., thence south and west. (Eu.)

#### 9. RANUNCULUS, Tourm. CROWFOOT. BUTTERCUP.

Sepals 5. Petals 5, flat, with a little pit or scale at the base inside. Achenes numerous, in a head, mostly flattened, pointed; the seed erect. — Annuals or perennials; stem-leaves alternate. Flowers solitary or somewhat corymbed, yellow, rarely white. (Sepals and petals rarely only 3, the latter often more than 5. Stamens occasionally few.) — (A Latin name for a little frog; applied by Pliny to these plants, the aquatic species growing where frogs abound.)

**R. ficaria**, L. (representing the § *Ficaria*), which has tuberous-thickened roots, Caltha-like leaves, and scape-like peduncles bearing a 3-sepalous and 8-9-petalous yellow flower, has been found as an escape from gardens about New York and Philadelphia.

§ 1. **BATRACHIUM**. Petals with a spot or naked pit at base, white, or only the claw yellow; achenes marginless, transversely wrinkled; aquatic or sub-aquatic perennials, with the immersed foliage repeatedly dissected (mostly by threes) into capillary divisions; peduncles 1-flowered, opposite the leaves.

\* Receptacle hairy.

1. **R. circinatus**, Sibth. (STIFF WATER-CROWFOOT.) Leaves all under water and sessile, with broad conspicuous stipules, the divisions and subdivisions short, spreading in one roundish plane, rigid, not collapsing when withdrawn from the water. (*R. divaricatus*, Man., not Schrank.) — Ponds and slow streams, Maine and Vt., to Iowa, north and westward, much rarer than the next. June-Aug. (Eu.)

2. **R. aquatilis**, L., var. *trichophyllus*, Gray. (COMMON WHITE WATER-CROWFOOT.) Leaves all under water and mostly petioled, their capillary divisions and subdivisions rather long and soft, usually collapsing more or less when withdrawn from the water; petiole rather narrowly dilated. — Com-

mon, especially in slow-flowing waters, the eastern form with more soft and flaccid leaves. June-Aug. (Eu.)

Var. *cæspitosus*, DC. A dwarf terrestrial form, rooting at the nodes, the small leaves somewhat fleshy, with broader rigid divisions. — S. Ill. (Schneck), and westward.

\* \* Receptacle glabrous; no submersed leaves.

**R. hederaceus**, L. Rooting freely in shallow water; leaves all reniform, angulate-lobed. — Fresh-water marshes at Norfolk, Va. (Nat. from Eu.)

2. **HALODES**. Petals yellow, with nectariferous pit and scale; carpels thin-walled, striate, in an oblong head; scape; spreading by runners.

3. **R. cymbalaria**, Pursh. (SEA-SIDE CROWFOOT.) Glabrous; scapes 1-6' high, 1-7-flowered; leaves clustered at the root and on the joints of the long rooting runners, roundish-heart-shaped or kidney-shaped, crenate, rather fleshy, long-petioled; petals 5-8. — Sandy shores, from New Jersey northward, and along the Great Lakes to Ill., Kan. and westward; also at salt springs. June-Aug.

§ 3. **RANUNCULUS** proper. Petals with a little scale at the base, yellow; achenes nerveless.

\* Achenes smooth; mostly perennial.

+ Aquatic; immersed leaves filiformly dissected, as in § *Batrachium*.

4. **R. multifidus**, Pursh. (YELLOW WATER-CROWFOOT.) Stems floating or immersed, with the leaves all repeatedly 3-forked into long filiform divisions, or sometimes creeping in the mud (perennial by rooting from the nodes, if at all); emerged leaves with shorter and linear or wedge-shaped divisions, or else kidney-shaped and sparingly lobed or toothed; petals 5-8, deep bright yellow, 4-6" long, much larger than the calyx; carpels in a round head, pointed with a straight beak. — E. New Eng. to S. Penn., Mo., and northward. May-July. — Out of water it is often pubescent, especially in

Var. *terrestris*, Gray. Stem rooting in the mud or ascending from the base; leaves all smaller, coarsely dissected, round-reniform in outline; flowers and fruit twice or thrice smaller. — N. Ohio to N. Ill., Minn., and westward.

+ + Terrestrial but growing in very wet places, glabrous or nearly so; leaves entire or barely toothed, all or else all but the lowest lanceolate or linear; carpels forming a globular head. (SPEARWORT.)

5. **R. ámbigens**, Watson. (WATER PLANTAIN SPEARWORT.) Stems ascending (1-2° high), often rooting from the lower joints; leaves lanceolate or the lowest oblong, mostly denticulate (3-5' long), contracted into a margined half-clasping petiole; petals 5-7, bright yellow, oblong (2-3" long); carpels flattened, large (1" long), pointed with a long narrow-subulate beak. (*R. alismæfolius*, Man., not Gey.) — N. Eng. to Ont., Minn. and southward; common, especially at the north. June-Aug.

6. **R. flammula**, L. (SMALLER SPEARWORT.) Stem reclining or ascending, rooting below, leaves lanceolate or linear, or the lowest ovate-oblong to lanceolate, entire or nearly so, mostly petioled (1-2' long); petals 5-7, much longer than the calyx, bright yellow, carpels small, flattish but turgid, mucronate with a short abrupt point. — Only a small form (var. *inter-*



MÉDIUS) met with in this country (shore of L. Ontario, and northward), a span high, with flowers 3-5" in diameter, passing into

Var. *réptans*, E. Meyer. (CREEPING S.) Small, slender, the *filiform* creeping stems rooting at all the joints; leaves linear, spatulate, or oblong ( $\frac{1}{2}$ -1' long); flowers small. — Gravelly or sandy banks; Newf. to Penn., north and westward. June-Sept. (Eu.)

7. *R. oblongifolius*, Ell. Usually annual; stem erect or ascending, often pubescent below, slender (1-2° high), diffusely branched above and many-flowered; leaves serrate or denticulate, lower long-petioled, ovate or oblong ( $\frac{1}{2}$ -1½' long), uppermost linear; flowers 3-5" broad; petals 5, bright yellow, 1-3" long; carpels minute, almost globular, the small style deciduous. — Wet prairies, Ill., Mo., and in S. States. June.

8. *R. pusillus*, Poir. Stem ascending, weak, loosely branching (6-18' long); leaves entire or obscurely denticulate, the lowest round-ovate or heart-shaped ( $\frac{1}{2}$ ' long), long-petioled, the upper oblong or lanceolate (1-1½' long); flowers very small; petals 1-5, yellowish; stamens 3-10; carpels very turgid, smooth or slightly papillose, tipped with a minute sessile stigma. — Wet places, S. New York, and southward along the coast. June-Aug.

+ + + Terrestrial, but often in wet places; leaves mostly cleft or divided.

+ + Root-leaves not divided to the very base; achenes marginless.

9. *R. affinis*, R. Br. Somewhat hairy or glabrous; low or slender, 1° high or less; leaves pedately cleft, the cauline with linear or narrow oblanceolate divisions; petals light yellow, 3-4" long or smaller; heads oblong; achenes turgid, with small and mostly recurved style, pubescent or glabrous. — And var. *VALIDUS*, Gray, stouter and with more fleshy leaves, the lower mostly undivided and roundish, cordate, truncate or cuneate at base, coarsely crenate or more or less cleft. — Minn., Iowa, north and westward.

10. *R. rhomboideus*, Goldie. Low (3-8' high), hairy; root-leaves roundish or rhombic-ovate, rarely subcordate, toothed or crenate; lowest stem-leaves similar or 3-5-lobed, the upper 3-5-parted, almost sessile, the lobes linear; carpels orbicular with a minute beak, in a globose head; petals large, deep yellow. — Prairies, Mich. to N. Ill., Minn., and northward. April, May.

11. *R. abortivus*, L. (SMALL-FLOWERED C.) Biennial, glabrous, branching, 6'-2° high; primary root-leaves round heart-shaped or kidney-form, barely crenate, the succeeding often 3-lobed or 3-parted; those of the stem and branches 3-5-parted or divided, subsessile, the divisions oblong or narrowly wedge-form, mostly toothed; head globose; carpels mucronate, with a minute curved beak; petals pale yellow, shorter than the small reflexed calyx. — Shady hillsides and along brooks, common. April-June.

Var. *micranthus*, Gray. Pubescent, roots often fusiform-thickened; root-leaves seldom at all heart-shaped, some 3-parted or 3-divided; peduncles more slender and carpels fewer. — E. Mass. to Ill., Minn., and westward.

12. *R. sceleratus*, L. (CURSED C.) Annual, glabrous; root-leaves 3-lobed, rounded; lower stem-leaves 3-parted, the lobes obtusely cut and toothed, the uppermost almost sessile, with the lobes oblong-linear and nearly entire; carpels barely mucronulate, very numerous, in oblong or cylindrical

heads; petals scarcely exceeding the calyx. — Wet ditches; appearing as if introduced. June-Aug. — Stem thick and hollow, 1° high; juice acrid and blistering; leaves thickish; flowers small, pale yellow. (Eu.)

+ + + Leaves variously cleft or divided; achenes in globular heads (except n. 17), compressed, with an evident firm margin; hirsute or pubescent.

= Achenes with long recurved beak; root-leaves rarely divided.

13. *R. recurvatus*, Poir. (HOOKED C.) Hirsute, 1-2° high; leaves of the root and stem nearly alike, long-petioled, deeply 3-cleft, large; the lobes broadly wedge-shaped, 2-3-cleft, cut and toothed toward the apex; petals shorter than the reflexed calyx, pale. — Woods, common. May, June.

= = Style long and attenuate, stigmatose at the tip, persistent or the upper part usually deciduous; early root-leaves only 3-parted, the later 3-5-foliate; petals bright yellow.

14. *R. fasciculâris*, Muhl. (EARLY C.) Low, ascending, 5-9' high, pubescent with close-pressed silky hairs; root a cluster of thickened fleshy fibres; radical leaves appearing pinnate, the long-stalked terminal division remote from the sessile lateral ones, itself 3-5-divided or parted and 3-5-cleft, the lobes oblong or linear; petals often 6 or 7, spatulate-oblong, twice the length of the spreading calyx; carpels scarcely margined, tipped with a slender straight or rather curved beak. — Dry or moist hills. April, May.

15. *R. septentrionalis*, Poir. Low, hairy or nearly glabrous; stems ascending, or in wet ground some of them procumbent or forming long runners; leaves 3-divided, the divisions all stalked (or at least the terminal one), broadly wedge-shaped or ovate, unequally 3-cleft or parted and variously cut, never pinnately compound; petals obovate, much larger than the spreading calyx; carpels strongly margined, pointed by a stout straightish beak. (R. repens, of Manual, mainly.) — Moist or shady places, etc., May-Aug. — Extremely variable in size and foliage, commencing to flower by upright stems in spring before any long runners are formed.

= = = Style subulate, stigmatose along the inner margin, mostly persistent.

16. *R. repens*, L. In habit and foliage closely similar to the last species; leaves frequently white-variegated or spotted; commencing to flower somewhat later. — In low grounds; generally in waste grounds near the coast and probably introduced from Europe, but indigenous westward.

17. *R. Pennsylvanicus*, L. f. (BRISTLY C.) Stout and erect from a usually annual root, hirsute with widely spreading bristly hairs, leafy to the top, 1-2° high; leaves all ternately divided or compound, the stalked leaflets unequally 3-cleft, sharply cut and toothed, acute; flowers inconspicuous; calyx reflexed; head of carpels oblong. — Wet places, common. June-Aug.

18. *R. hispidus*, Hook. (not Michx. or DC.). Resembling the last, but the ascending or reclining stems few-leaved, rarely if ever rooting, not always hirsute; petals (about 3" long) surpassing the hardly reflexed and soon deciduous calyx; achenes with a stout straight beak, in a globose or oval head. — On the northern shore of Lake Superior, and north and westward; probably in N. Minn.



✓ **R. bulbosus**, L. (Bulbous C. or Buttercups.) Hairy; stem erect from a bulb-like base, 1° high; radical leaves 3-divided; the lateral divisions sessile, the terminal stalked and 3-parted, all wedge-shaped, cleft and toothed; peduncles furrowed; petals round, wedge-shaped at base; calyx reflexed; carpels tipped with a very short beak. — Fields; very abundant only in E. New England; rare westward. May–July. — Leaves appearing as if pinnate. Petals often 6 or 7, deep glossy yellow, the corolla more than an inch broad. (Nat. from Eu.)

**R. acris**, L. (Tall C. or Buttercups.) Hairy; stem erect (2–3° high); leaves 3-divided; the divisions all sessile and 3-cleft or parted, their segments cut into lanceolate or linear crowded lobes; peduncles not furrowed; petals obovate, much longer than the spreading calyx. — Fields; common, especially eastward. June–Aug. — Flower nearly as large as the last, but not so deep yellow. — The *Buttercups* are avoided by cattle, on account of their very acrid or even blistering juice, which property, however, is dissipated in drying when these plants are cut with hay. (Nat. from Eu.)

\*\* Achenes beset with rough points or small prickles; annuals.

**R. muricatus**, L. Nearly glabrous; lower leaves roundish or reniform, 3-lobed, coarsely crenate; the upper 3-cleft, wedge-form at the base; petals longer than the calyx; carpels flat, spiny-tuberculate on the sides, strongly beaked, surrounded with a wide and sharp smooth margin. — Eastern Virginia and southward. (Nat. from Eu.)

**R. parviflorus**, L. Hairy, slender and diffuse; lower leaves roundish-cordate, 3-cleft, coarsely toothed or cut; the upper 3–5-parted; petals not longer than the calyx; carpels minutely hispid and rough, beaked, narrowly margined. — Norfolk, Va., and southward. (Nat. from Eu.)

## 10. ISOPYRUM, L.

Sepals 5, petal-like, deciduous. Petals 5, minute, wanting in the American species. Stamens 10–40. Pistils 3–6 or more, pointed with the styles. Pods ovate or oblong, 2–several-seeded. — Slender smooth perennial herbs, with 2–3-ternately compound leaves; the leaflets 2–3-lobed. Flowers axillary and terminal, white. (From *ισόπυρον*, the ancient name of a *Fumaria*.)

1. **I. biternatum**, Torr. & Gray. Petals none; filaments white, club-shaped; pistils 3–6 (commonly 4), divaricate in fruit, 2–3-seeded; seeds smooth. — Moist shady places, Ohio to Minn. and southward. May. — Fibres of the root thickened here and there into little tubers. Aspect and size of the plant much as in *Anemonella*.

## 11. CÁLTHA, L. MARSH MARIGOLD.

Sepals 5–9, petal-like. Petals none. Pistils 5–10, with scarcely any styles. Pods (follicles) compressed, spreading, many-seeded. — Glabrous perennials, with round and heart-shaped or kidney-form, large, undivided leaves. (An ancient Latin name for the common Marigold.)

1. **C. palustris**, L. Stem hollow, furrowed; leaves round or kidney-shaped, either crenate or dentate or nearly entire; sepals broadly oval (bright yellow). — Swamps and wet meadows, common northward. April, May. — Often called incorrectly *Cowslips*; used as a pot-herb in spring, when coming into flower. *C. flabellifolia*, Pursh, is a weak slender form, with open-veniform leaves and smaller flowers (1' broad or less), occurring in cold mountain springs, N. Y. to Md. (Eu.)

## 12. TRÓLLIUS, L. GLOBE-FLOWER.

Sepals 5–15, petal-like. Petals numerous, small, 1-lipped, the concavity near the base. Stamens and pistils numerous. Pods 9 or more, sessile, many-seeded. — Smooth perennials with palmately parted and cut leaves, like *Ranunculus*, and large solitary terminal flowers. (Name thought to be derived from the old German word *troll*, a globe, or something round.)

1. **T. laxus**, Salisb. (SPREADING GLOBE-FLOWER.) Leaves 5–7-parted; sepals 5–6, spreading; petals 15–25, inconspicuous, much shorter than the stamens. — Deep swamps, N. H. to Del. and Mich. May. — Flowers twice the size of the common Buttercup; the sepals spreading, so that the name is not appropriate, as it is to the *European Globe-flower* of the gardens, nor is the blossom showy, being pale greenish-yellow, or nearly white.

## 13. CÓPTIS, Salisb. GOLDTHREAD.

Sepals 5–7, petal-like, deciduous. Petals 5–7, small, club-shaped, hollow at the apex. Stamens 15–25. Pistils 3–7, on slender stalks. Pods divergent, membranaceous, pointed with the style, 4–8-seeded. — Low smooth perennials, with ternately divided root-leaves, and small white flowers on scapes. (Name from *κόπτω*, to cut, alluding to the divided leaves.)

1. **C. trifolia**, Salisb. (THREE-LEAVED GOLDTHREAD.) Leaflets 3, obovate-wedge-form, sharply toothed, obscurely 3-lobed, scape 1-flowered. — Bogs, abundant northward; extending south to Maryland along the mountains, and west to Iowa. May. — Root of long, bright yellow, bitter fibres. Leaves evergreen, shining. Scape naked, slender, 3–5' high. (Eu.)

## 14. HELLÉBORUS, Tourn. HELLEBORE.

Sepals 5, petal-like or greenish, persistent. Petals 8–10, very small, tubular, 2-lipped. Pistils 3–10, sessile, forming coriaceous many-seeded pods. — Perennial herbs, with ample palmate or pedate leaves, and large, solitary, nodding, early vernal flowers. (An ancient name of unknown meaning.)

**H. viridis**, L. (GREEN HELLEBORE.) Root-leaves glabrous, pedate; calyx spreading, greenish. — Has been found wild on Long Island, in Penn., and W. Va. (Adv. from Eu.)

## 15. ERÁNTHIS, Salisb. WINTER ACONITE.

Sepals 5–8, petal-like, deciduous. Petals small 2-lipped nectaries. Carpels few, stipitate, several-seeded. — Perennial herbs, with palmately multifid radical leaves, the scape bearing a single large yellow flower surrounded by an involucre of a single leaf. (Name from *ἔρπ*, spring, and *ἄνθος*, flower.)

**E. hyemalis**, Salisb. Dwarf; flowers cup-shaped, 1½' in diameter; petals shorter than the stamens. — Near Philadelphia. (Adv. from Eu.)

## 16. AQUILÉGIA, Tourn. COLUMBINE.

Sepals 5, regular, colored like the petals. Petals 5, all alike, with a short spreading lip, produced backward into large hollow spurs, much longer than the calyx. Pistils 5, with slender styles. Pods erect, many-seeded. — Perennials, with 2–3-ternately compound leaves, the leaflets lobed. Flowers large and showy, terminating the branches. (Name from *aquileus*, water-drawing.)



1. *A. Canadensis*, L. (WILD COLUMBINE.) Spurs nearly straight; stamens and styles longer than the ovate sepals. — Rocks, common. April–June. — Flowers 2' long, scarlet, yellow inside (or rarely all over), nodding, so that the spurs turn upward, but the stalk becomes upright in fruit.

2. *A. brevistyla*, Hook. Flowers small, blue or purplish or nearly white; spurs incurved. — Red River valley, N. D.; Rocky Mts., northward.

*A. vulgaris*, L., the common GARDEN COLUMBINE, of Europe, with hooked spurs, is beginning to escape from cultivation in some places.

### 17. DELPHINIUM, Tourn. LARKSPUR.

Sepals 5, irregular, petal-like; the upper one prolonged into a spur at the base. Petals 4, irregular, the upper pair continued backward into long spurs which are enclosed in the spur of the calyx, the lower pair with short claws; rarely only 2, united into one. Pistils 1–5, forming many-seeded pods in fruit. — Leaves palmately divided or cut. Flowers in terminal racemes. (Name from *Delphin*, in allusion to the shape of the flower, which is sometimes not unlike the classical figures of the dolphin.)

\* Perennials, indigenous; pistils 3.

1. *D. exaltatum*, Ait. (TALL LARKSPUR.) Stem slender, 2–5° high; leaves deeply 3–5-cleft, the divisions narrow wedge-form, diverging, 3-cleft at the apex, acute; racemes wand-like, panicle, many-flowered; flowers purplish-blue, downy; spur straight; pods erect. — Rich soil, Penn. to Minn. and southward. July.

2. *D. tricorne*, Michx. (DWARF L.) Leaves deeply 5-parted, their divisions unequally 3–5-cleft; the lobes linear, acutish; raceme few-flowered, loose; spur straightish, ascending; pods strongly diverging. — W. Penn. to Minn. and southward. April, May. — Root a tuberous cluster. Stem simple, 6'–3° high. Flowers bright blue, sometimes white, occasionally numerous.

3. *D. azureum*, Michx. Leaves deeply 3–5-parted, the divisions 2–3 times cleft; the lobes all narrowly linear; raceme strict; spur ascending, usually curved upward; pods erect. — Wisc. to the Dakotas and southward. May, June. — Stem 1–2° high, slender, often softly pubescent. Flowers sky-blue or whitish.

\* \* Annual, introduced; petals 2, united into one body; pistil single.

*D. Consolida*, L. (FIELD L.) Leaves dissected into narrow linear lobes; inflorescence loosely paniculate; pedicels shorter than the bracts; pod glabrous. — Old grain-fields, Penn. and Va.; also sparingly along roadsides farther north. (Nat. from Eu.)

*D. Ajacis*, L. Flowers more numerous and spicately racemose; pods pubescent. — Sparingly escaped from gardens in E. Atlantic States. (Nat. from Eu.)

### 18. ACONITUM, Tourn. ACONITE. MONKSHOOD. WOLFSBANE.

Sepals 5, petal-like, very irregular; the upper one (helmet) hooded or helmet-shaped, larger than the others. Petals 2 (the 3 lower wanting entirely, or very minute rudiments among the stamens), consisting of small spur-shaped bodies raised on long claws and concealed under the helmet. Pistils 3–5. Pods several-seeded. Seed-coat usually wrinkled or scaly. — Perennials, with

palmately cleft or dissected leaves, and showy flowers in racemes or panicles. (The ancient Greek and Latin name, of uncertain origin.)

1. *A. Noveboracense*, Gray. Erect from tuberous-thickened roots, 2° high, leafy, the summit and strict loosely flowered raceme pubescent; leaves rather deeply parted, the broadly cuneate divisions 3-cleft and incised; flowers blue, the helmet gibbous-obovate with broad rounded summit and short descending beak. — Chenango and Orange Cos., N. Y.

2. *A. uncinatum*, L. (WILD MONKSHOOD.) Glabrous; stem slender, from tuberous-thickened roots, erect, but weak and disposed to climb; leaves firm, deeply 3–5-lobed, petioled, the lobes ovate-lanceolate, coarsely toothed; flowers blue; helmet erect, obtusely conical, compressed, slightly beaked in front. — Rich shady soil along streams, Penn., and southward in the mountains; Wisc. June–Aug.

3. *A. reclinatum*, Gray. (TRAILING WOLFSBANE.) Glabrous; stems trailing (3–8° long); leaves deeply 3–7-cleft, petioled, the lower orbicular in outline; the divisions wedge-form, incised, often 2–3-lobed; flowers white, in very loose panicles; helmet soon horizontal, elongated-conical, with a straight beak in front. — Cheat Mountain, Va., and southward in the Alleghanies. Aug. — Lower leaves 5–6' wide. Flowers 9" long, nearly glabrous.

### 19. CIMICIFUGA, L. BUGBANE.

Sepals 4 or 5, falling off soon after the flower expands. Petals, or rather transformed stamens, 1–8, small, on claws, 2-horned at the apex. Stamens as in Actæa. Pistils 1–8, forming dry dehiscent pods in fruit. — Perennials, with 2–3-ternately-divided leaves, the leaflets cut-serrate, and white flowers in elongated wand-like racemes. (Name from *cimex*, a bug, and *fugo*, to drive away.)

§ 1. *CIMICIFUGA* proper. Pistils 3–8, stipitate; seeds flattened laterally, covered with chaffy scales, in one row in the membranaceous pods; style awl-shaped; stigma minute.

1. *C. Americana*, Michx. (AMERICAN BUGBANE.) Stem 2–4° high; racemes slender, panicle, ovaries mostly 5, glabrous; pods flattened, veiny, 6–8-seeded. — Mountains of S. Penn. and southward. Aug.–Sept.

§ 2. *MACRÔTYS*. Pistil solitary, sometimes 2–3, sessile; seeds smooth, flattened and packed horizontally in the pod in two rows, as in Actæa; stigma broad and flat.

2. *C. racemosa*, Nutt. (BLACK SNAKEROOT. BLACK COHOSH.) Stem 3–8° high, from a thick knotted rootstock; racemes in fruit becoming 1–3° long; pods ovoid. — Rich woods, Maine to Wisc., and southward. July. — Var. *dissecta*, Gray. Leaves irregularly pinnately decomposed, the rather small leaflets incised. — Centerville, Del. (Commons.)

### 20. ACTÆA, L. BANEERRY. COHOSH.

Sepals 4 or 5, falling off when the flower expands. Petals 4–10, small, flat, spatulate, on slender claws. Stamens numerous, with slender white filaments. Pistil single; stigma sessile, depressed, 2-lobed. Fruit a many-seeded berry.



Seeds smooth, flattened, and packed horizontally in 2 rows. — Perennials, with ample 2-3-ternately compound leaves, the ovate leaflets sharply cleft and toothed, and a short and thick terminal raceme of white flowers. (From *actæa*, ancient names of the elder, transferred by Linnaeus.)

1. *A. spicata*, L., var. *rubra*, Ait. (RED BANEERRY.) Raceme ovate; petals rhombic-spatulate, much shorter than the stamens; pedicels slender; berries cherry-red, or sometimes white, oval. — Rich woods, common, especially northward. April, May. — Plant 2° high. (Eu.)

2. *A. alba*, Bigel. (WHITE BANEERRY.) Leaflets more incised and sharply toothed; raceme oblong; petals slender, mostly truncate at the end, appearing to be transformed stamens; pedicels thickened in fruit, as large as the peduncle and red, the globular-oval berries white. — Rich woods, flowering a week or two later than the other, and more common westward and southward. — White berries rarely occur with slender pedicels, also red berries with thick pedicels; but these are perhaps the result of crossing.

## 21. HYDRÁSTIS, Ellis. ORANGE-ROOT. YELLOW PUCCOON.

Sepals 3, petal-like, falling away when the flower opens. Petals none. Pistils 12 or more in a head, 2-ovuled; stigma flat, 2-lipped. Ovaries becoming a head of crimson 1-2-seeded berries in fruit. — A low perennial herb, sending up in early spring, from a thick and knotted yellow rootstock, a single radical leaf and a simple hairy stem, which is 2-leaved near the summit and terminated by a single greenish-white flower. (Name unmeaning.)

1. *H. Canadensis*, L. (GOLDEN SEAL, etc.) Leaves rounded, heart-shaped at the base, 5-7-lobed, doubly serrate, veiny, when full grown in summer 4-9' wide. — Rich woods, N. Y. to Minn., and southward.

## 22. XANTHORRHIZA, Marshall. SHRUB YELLOW-ROOT.

Sepals 5, regular, spreading, deciduous. Petals 5, much smaller than the sepals, concave and obscurely 2-lobed, raised on a claw. Stamens 5 to 10. Pistils 5-15, with 2 pendulous ovules. Pods 1-seeded, oblong, the short style becoming dorsal. — A low shrubby plant; the bark and long roots deep yellow and bitter. Flowers polygamous, brown purple, in compound drooping racemes, appearing along with the 1-2-pinnate leaves from large terminal buds in early spring. (Name compounded of *ξανθός*, yellow, and *ρίζα*, root.)

1. *X. apiifolia*, L'Her. Stems clustered, 1-2° high; leaflets cleft and toothed. — Shady banks of streams, Penn. to S. W. New York and Ky., and south in the mountains. The rootstocks of this, and also of the last plant, were used as a yellow dye by the aborigines.

*NIGELLA DAMASCENA*, L., the FENNEL-FLOWER, which offers a remarkable exception in having the pistils partly united into a compound ovary, so as to form a several-celled capsule, grows nearly spontaneously around gardens.

## ORDER 2. MAGNOLIACEÆ. (MAGNOLIA FAMILY.)

Trees or shrubs, with the leaf-buds covered by membranous stipules, polypetalous, hypogynous, polyandrous, polygynous; the calyx and corolla colored alike, in three or more rows of three, and imbricated (rarely convolute) in the bud. — Sepals and petals deciduous. Anthers adnate. Pistils many, mostly packed together and covering the prolonged receptacle, cohering with each other, and in fruit forming a sort of fleshy or dry cone. Seeds 1 or 2 in each carpel, anatropous; albumen fleshy; embryo minute. — Leaves alternate, not toothed, marked with minute transparent dots, feather-veined. Flowers single, large. Bark aromatic and bitter.

### 1. MAGNOLIA, L.

Sepals 3. Petals 6-9. Stamens imbricated, with very short filaments, and long anthers opening inward. Pistils coherent, forming a fleshy and rather woody cone-like red fruit; each carpel at maturity opening on the back, from which the 1 or 2 berry-like seeds hang by an extensile thread composed of unrolled spiral vessels. Inner seed-coat bony. — Buds conical, the coverings formed of the successive pairs of stipules, each pair enveloping the leaf next above, which is folded lengthwise and applied straight against the side of the next stipular sheath, and so on. (Named after Magnol, Professor of Botany at Montpellier in the 17th century.)

\* Leaves all scattered along the branches; leaf-buds silky.

1. *M. glauca*, L. (SMALL OR LAUREL MAGNOLIA. SWEET BAY.) Leaves oval to broadly lanceolate, 3-6' long, obtuse, glaucous beneath; flower globular, white, 2' long, very fragrant; petals broad; cone of fruit small, oblong. — Swamps, from near Cape Ann and N. Y. southward, near the coast; in Penn. as far west as Cumberland Co. June-Aug. — Shrub 4-20° high, with thickish leaves, which farther south are evergreen.

2. *M. acuminata*, L. (CUCUMBER-TREE.) Leaves thin, oblong, pointed, green and a little pubescent beneath, 5-10' long; flower oblong bell-shaped, glaucous-green tinged with yellow, 2' long; cone of fruit 2-3' long, cylindrical. — Rich woods, western N. Y. to Ill., and southward. May, June. — Tree 60-90° high. Fruit when young slightly resembling a small cucumber, whence the common name.

3. *M. macrophylla*, Michx. (GREAT-LEAVED MAGNOLIA.) Leaves obovate-oblong, cordate at the narrowed base, pubescent and white beneath; flower open bell-shaped, white, with a purple spot at base; petals ovate, 6' long; cone of fruit ovoid. — S. E. Ky. and southward. May, June. — Tree 20-40° high. Leaves 1-3° long, somewhat clustered on the flowering branches.

\* \* Leaves crowded on the summit of the flowering branches in an umbrella-like circle; leaf-buds glabrous; flowers white, slightly scented.

4. *M. Umbrella*, Lam. (UMBRELLA-TREE.) Leaves obovate-lanceolate, pointed at both ends, soon glabrous, 1-2° long; petals obovate-oblong, 4-5' long. — S. Penn. to Ky. and southward. May. — A small tree. Fruit rose-color, 4-5' long, ovoid-oblong.