

NATURAL ARRANGEMENT OF PLANTS.

CLASS I. DICOTYLEDONOUS PLANTS.

THIS is the most extensive class in the vegetable kingdom, and derives its name from the fact that the *seeds* are composed of two, or more, lobes, called *cotyledons*, which enclose the *plumule*, or embryo of the future plant. As germination commences, the plumule lengthens downwards into a root, called, in its early stage, a *radicle*: at the same time the upper extremity lengthens into a *stem*, which is composed of *bark*, *woody fibre*, *spiral vessels*, *cellular tissue*, and a central column of *pith*. The stem increases in diameter by deposits beneath the bark, but *outside* the existing fibre. Hence, the plants belonging to this class are called EXOGENOUS (increasing by additions on the outside). In all trees and shrubs of this class the wood is arranged in concentric layers, the hardest part being nearest the pith. The *leaves* are reticulated, or furnished with a net-work of veins. The *flowers* are furnished with stamens and

B

pistils ; 5 or 4, or some multiple of 5 or 4, being the predominating number of the parts of fructification.

SUB-CLASS I.

THALAMIFLORÆ.

Flowers furnished with calyx and corolla ; *petals* distinct, inserted into the receptacle or *thalamus* ; *stamens* springing from below the base of the ovary.

NATURAL ORDER I.

RANUNCULACEÆ.—THE CROWFOOT TRIBE.

Sepals generally 5 ; *petals* 5 or more, frequently irregular in form ; *stamens* indefinite in number, inserted on the receptacle ; *ovaries* generally numerous ; *fruit* consisting of several one or many-seeded carpels ; in *Actæa*, a berry.—An extensive tribe of plants, inhabiting for the most part the temperate regions of the globe. All the British species are herbaceous, leaves generally much divided, and flowers showy ; sepals and petals often running into one another, and sometimes extended into spurs. Most of them possess acrid and poisonous properties if taken into the stomach, and not a few produce wounds if applied to the skin. Some species were formerly used in medicine, and the extract of Monkshood is still employed to relieve pain in affections of the nerves. The Hellebore was held in high repute among the ancients, as a specific for madness : the garden-flower known by the familiar name of Christmas Rose belongs to this family. *Ranunculus sceleratus* is one of the most generally diffused plants, being as common in America, and on the banks of the Ganges, as it is in our own marshes.

CROWFOOT TRIBE.

3

* *Carpels one-seeded.*

1. CLÉMATIS (Traveller's Joy).—*Sepals* 4—6, resembling petals; *corolla* wanting; *carpels* terminated by a long feathery tail. (Name from the Greek, *cléma*, a vine-shoot.)

2. THALICTRUM (Meadow Rue).—*Sepals* 4—5; *corolla* wanting; *carpels* without tails. (Name from the Greek, *thallo*, to flourish.)

3. ANEMÓNE (Wind-flower).—*Sepals* and *petals* alike, 5—15; *involucre* of 3 cut leaves, distant from the flower. (Name from the Greek, *anemos*, the wind, from the exposed place of growth.)

4. ADÓNIS (Pheasant's Eye).—*Sepals* 5; *petals* 5—10, without a nectary at the base; *carpels* without tails. (Name from *Adonis*, a youth who was killed by a wild boar, and whose blood is fabled to have stained flowers.)

5. RANÚNCULUS (Crowfoot, Buttercup, Lesser Celandine, &c.).—*Sepals* 5 (rarely 3); *petals* 5 (rarely numerous), with a nectary at the base. (Name from the Latin, *rana*, a frog, an animal which frequents the kind of places where these plants grow.)

6. MYOSÚRUS (Mouse-tail).—*Sepals* 5, prolonged at the base into a spur; *petals* 5; *carpels* crowded into a lengthened spike. (Name, Greek for a mouse's tail.)

** *Carpels many-seeded.*

7. TROLLIUS (Globe-flower).—*Sepals* about 15, resembling petals; *petals* 5 or more, small, narrow. (Name said to be derived from an old German word, signifying a *globe*.)

8. CALTHA (Marsh Marigold).—*Sepals* and *petals* alike, 5 or more. (Name from the Greek, *cátathus*, a cup, which its flowers resemble.)

9. HELLÉBORUS (Hellebore). *Sepals* 5, petal-like, per-

sistent ; *petals* small, tubular ; *carpels* 3—10. (Name from the Greek, *helein*, to injure, and *bóra*, food.)

10. AQUILÉGIA (Columbine). *Sepals* 5, petal-like, soon falling off ; *petals* 5, tubular, gaping upwards, and terminating below in a curved, horn-shaped spur ; *carpels* 5. (Name from the Latin, *aquila*, an eagle, to the claws of which its nectaries bear a fancied resemblance.)

11. DELPHÍNIUM (Larkspur).—*Sepals* 5, petal-like, soon falling off, the upper one helmet-shaped, with a long spur at the base ; *petals* 4, the two upper on long stalks, and concealed in the spurred sepal ; *carpels* 3—5. (Name from *delphin*, a dolphin, to which animal the upper leaf bears a fancied resemblance.)

12. ACONITUM (Monk's-hood).—*Sepals* 5, petal-like, the upper one helmet-shaped but not spurred ; *nectaries*, 2, stalked, tubular at the extremity, and concealed beneath the helmet-shaped sepal ; *carpels* 3—5. (Name of uncertain origin.)

13. ACTÆA (Bane-berry). *Sepals* 4, soon falling off ; *petals* 4 ; *fruit* a many-seeded berry. (Name from the Greek, *acté*, the elder, from the similarity of the leaves of the two plants.)

14. PÆONIA (Peony).—*Sepals* 5, unequal ; *petals* 5—10 ; *carpels* 2—5, with fleshy stigmas formed of two plates. (Name from *Pæon*, a Greek physician, who is said to have cured wounds with it.)

1. CLÉMATIS.

1. *C. Vitalba* (Traveller's Joy).—The only British species. A common hedge-shrub, where limestone or chalk enters largely into the composition of the soil, climbing other shrubs by the help of its twisting leaf stalks ; well distinguished in summer by its numerous greenish-white flowers, and in autumn and winter rendered yet more conspicuous by its tufts of feathered seed-vessels. It received its name from "decking and

CROWFOOT TRIBE.

5



CLEMATIS (*Traveller's Joy*).

adorning waies and hedges where people travel."—
 Fl. May, June. Perennial.

2. THALICTRUM (Meadow Rue).



THALICTRUM ALPINUM (*Meadow Rue*).

1. *T. alpinum* (Alpine Meadow Rue). — *Stem* unbranched; *flowers* in a simple terminal cluster, drooping when fully expanded. — A graceful little plant, from 4 to 6 inches high, common on the mountains of Scotland and Wales. — Fl. June, July. Perennial.

2. *T. minus* (Lesser Meadow Rue). — *Stem* zigzag, branched; *leaves* thrice pinnate; *leaflets* three-cleft, glaucous; *flowers* on slender stalks, drooping. — In limestone and chalky pastures, or

on banks of shell-sand, among bushes; 1—2 feet high. Often detected, like the following, by its conspicuous yellow stamens. — Fl. June, July. Perennial.

3. *T. flavum* (Yellow Meadow Rue). — *Stem* erect, branched; *leaves* twice pinnate; *flowers* crowded, erect. — Not uncommon about the banks of ditches and rivers; 3—4 feet high. — Fl. June, July. Perennial.

CROWFOOT TRIBE.

7

3. *A. NEMORÓSA* (*Wood Anemone*).

1. *A. nemorosa* (*Wood Anemone*, *Wind-flower*).—*Flower* drooping; *sepals* or *petals* 6; *carpels* without tails.—This is one of our most beautiful spring flowers, adorning our upland woods at the season when primroses and violets are in perfection. The petals and

sepals are generally white, but not unfrequently tinged with pink externally; more rarely they are of a delicate sky-blue, both within and without.—Fl. March—May. Perennial.

2. *A. pulsatilla* (Pasque-flower).—*Flower* slightly drooping; *sepals* or *petals* 6; *carpels* with feathery tails.—In high chalky pastures, not nearly so common as the last. The flowers are of a violet blue, and appear about the season of Easter (*Pâques*), from which the plant derives its name.—Fl. April, May. Perennial.

* Two other species of Anemone are described by British botanists, *A. apennina* and *A. ranunculoides*, but they are doubtful natives, and rarely met with. The former has blue flowers, of 12 or more *petals* or *sepals*, and the latter has yellow flowers.

4. ADÓNIS (Pheasant's Eye).

1. *A. autumnális*.—The only British species. A pretty herbaceous plant, with finely cut leaves and bright scarlet flowers, which in shape are very like buttercups. It occurs as a weed in corn-fields, but is not supposed to be a native. Fl. Sept., Oct. Annual.

5. RANUNCULUS (Buttercup, &c.)

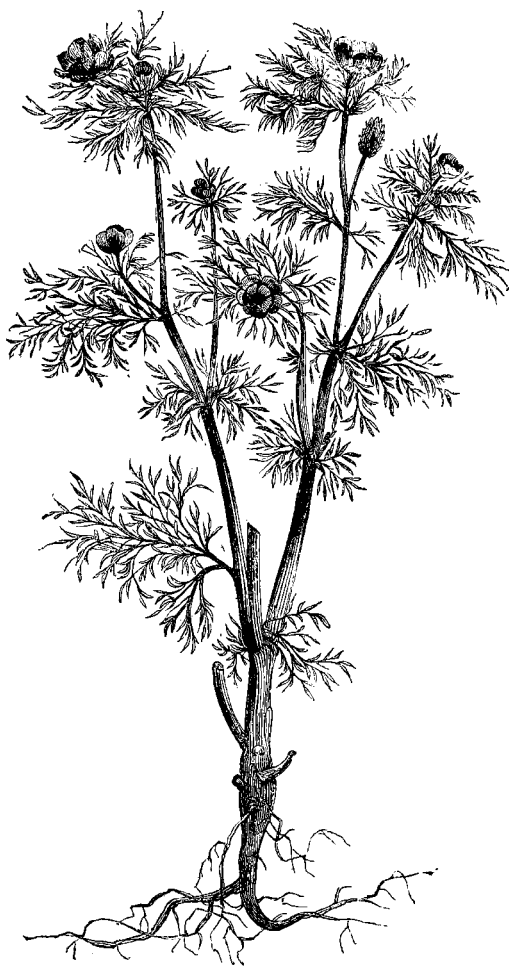
* *Flowers white.*

1. *R. aquátilis* (Water Crowfoot).—*Stem* submersed; *lower leaves* deeply cleft into hair-like segments, *upper ones* floating, three-lobed, variously cut.—A very variable plant: when growing in swiftly running water the plant is wholly composed of hair-like leaves; but when growing in stagnant water it produces flattened leaves as well, and abundance of large showy flowers.—Fl. May—July. Perennial.

2. *R. hederáceus* (Ivy-leaved Crowfoot).—*Leaves* all rounded and lobed; *petals* scarcely longer than the calyx; *stamens* 5—10.—Smaller than the last, growing either in water, or close to the water's edge.—Fl. all the summer. Perennial.

CROWFOOT TRIBE.

9



ADÓNIS (*Pheasant's Eye*).

** *Flowers yellow; leaves undivided.*

3. *R. Lingua* (Great Spear-wort).—*Leaves* narrow, tapering to a point, sessile; *stem* erect.—The largest British species, 2—4 feet high, growing in watery places.—Fl. July. Perennial.

4. *R. Flammula* (Lesser Spear-wort).—*Leaves* narrow, tapering to a point, slightly stalked; *stem* creeping at the base.—Sides of watery places, much smaller than the last; leaves sometimes clothed with silky hairs.—Fl. June—August. Perennial.



R. FIGARIA (*Lesser Celandine*).

5. *R. Ficaria* (Lesser Celandine).—*Leaves* heart-, or kidney-shaped, angular; *sepals* 3; *petals* about 9.—One of our brightest spring flowers, studding every bank with its numerous glossy star-like flowers. It is placed by some botanists in a distinct genus, when it is called *Ficaria verna*.—Fl. March—May. Perennial.