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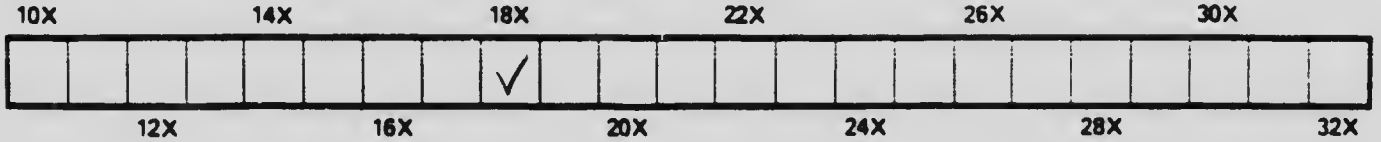

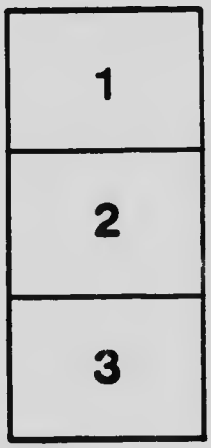

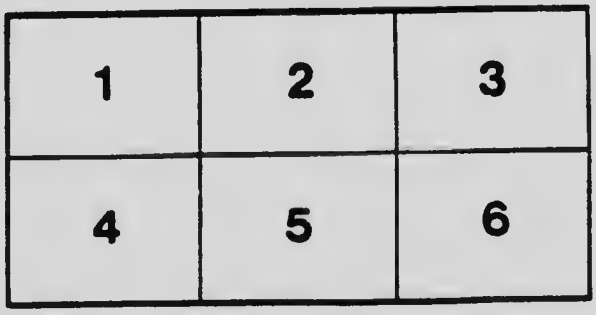

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OUR EARLY WILD FLOWERS

Skunk-Cabbage. *Spathyèma fœtida*

OUR EARLY WILD FLOWERS

A STUDY OF THE HERBACEOUS PLANTS BLOOMING IN EARLY SPRING IN THE NORTHERN STATES AND CANADA

By HARRIET L. KEELER

ILLUSTRATED BY MARY KEFFER AND ELOISE F. LUQUER

TORONTO
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PUBLISHERS

Spathyo *ida*

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TO

THE MEMORY OF

BERTHA KEFFER

THIS VOLUME

IS DEDICATED

CONTENTS

INTRODUCTION

In any study of a flora it is important that the limits of the floral region are clearly defined. By Early Wild Flowers is meant that group of herbaceous plants that finds its most congenial home in a region roughly defined as extending between parallels forty and fifty degrees of north latitude and westward from the Atlantic coast to the Mississippi Valley at about meridian ninety-five degrees. West of this boundary, the mid-continental plants appear in numbers, and south of it the plants of Southern type are abundant. This floral region also extends southward along the Appalachian range as far as the Carolinas and Georgia; northern Ohio occupies a central position in this region and, as a consequence, possesses almost the entire flora. It is not meant that these plants are limited to this area, they frequently appear out of bounds, but this is their chosen habitat. The list includes those only that are habitually in bloom during the months of March, April, and May. Many of them, of course, are in bloom during June—nature indulges in no fast-and-hard lines—but none belong to the group of early bloomers; they are not the flowers of early spring unless blooming abundantly at some time during these three months.

It is popularly supposed that the character of the

spring greatly influences the opening of the flowers; but really this influence is much less than one might think it would be; the spring flowers are very much like the spring birds, they appear when they are due with very little regard to the immediate weather; they obey the summons of the sun. They may not come so abundantly, but they come on time. By April 20, in the Middle West, the earliest flowers are past and the full flora well under way. In New England the season is later.

In round numbers, our early spring flowers number about one hundred and thirty plants. Most of them are native, not to exceed twenty have come to us from Europe. More than half are purely forest plants, nurslings of the woodlands and found nowhere else. They developed in the unbroken forests of this country, and although a few can adapt themselves to the conditions of open, sunny fields, many cannot and when brought into contact with civilization they disappear. Because of their natural environment they possess certain marked characteristics. Most of them are either bulbous, tuberous, or possess fleshy root-stocks; that is, they have stored in their roots or underground stems sufficient food to enable the plant to bloom before the leaves are in working order; in short, the chief duty of the leaves is to prepare food for the next year. Moreover, they bloom in the forest before the trees are in full leaf; it is their only chance to get direct sunlight and they make the most of it. It is a case of then or never. As a matter of fact, they do not like, and few can endure, direct summer sunshine; they are plants of the shade. Lastly, they lie down to their winter sleep, wrapped in the blanket of leaves

which the forest strews over them before the snow falls, thus giving them air and relieving them of the dense pressure of the snow. The few foreign plants which are found among our early bloomers are in the main perennials, or what may be called winter annuals—plants whose seedlings get such a start in the fall that they are able to respond to the first warmth of the sun and swing into the race at once. It is superfluous to state that in the language of this world they are known as weeds. Examples are Chickweed, Dandelion, Dead-Nettle, and Red Sorrel.

The first flower of the Northern spring is curious and interesting, but little known and rarely seen, for its chosen home is the swamp and its time of bloom the sunny days of February and March. Its name, too, is against it. Skunk-Cabbage is neither euphonious nor pleasantly suggestive, and *Spathyema fœtidus* is long and cumbersome. As all the odds are on the other side, it will doubtless remain as it now is, practically unknown, nevertheless its pre-eminence in point of time cannot be disputed. The first spring flower that is generally known in New England and the Middle West, is the Hepatica, which in early April, carpets ravines and open sunny woods with a mass of color—pale blue, soft pink, white, and tinted lavender. This is one of our few spring flowers abundant enough to produce color effects. Closely following the Hepatica and so nearly together that no real precedence can be established among them are: Bloodroot, Spring-Beauty, Dwarf Ginseng, Adder's-Tongue, Dentaria, Meadow-Rue, Anemone, Saxifrage, and in northern Ohio, Harbinger-of-Spring. Trailing Arbutus is placed by New England writers in the earliest group, but it

is not among the first in the Middle West nor in the Mountains of Virginia, where it is exceedingly abundant.

One-third of the number are white or but slightly tinted; one-fourth yellow of various degrees of paleness; the others are divided mostly among the blues and pinks; a few greens, one red; a few red purples complete the list. The colors are as one would expect them to be—pale. As there are few brilliant colors, so is there very little fragrance; the characteristic of our early wild flowers is delicacy. They are as wild as the Indian and as shy as the deer. They must, of course, die with our forests; but there is no reason why they might not be coaxed back into our parks. If a bit of woodland were left absolutely untouched, the leaves never raked from under the trees, since it is that more than anything else which kills the little beauties, there is no reason why they should not grow and flourish even within city precincts. Certainly every nature-lover would rejoice to know that our native flowers were protected and preserved from destruction.

It is hoped this book will commend itself:

To the many teachers who are expected to name at sight every spring blossom brought to them by childish hands.

To amateur botanists who wish to check their lists of the flora of their home region.

To all lovers of the springtime who also love the native wild flowers of our woods and fields.

The books of reference for the botanical descriptions are Gray's "Manual of Botany," 7th edition, and Britton's "Manual of the Flora of the Northern States

and Canada." Thanks are due to Miss Myrta L. Jones and to Mr. Carl T. Robertson for the lists of flowering plants recorded. The photographs are mainly the work of Mr. Carl Krebs, of Cleveland.

LISTS OF FLOWERING PLANTS

The following lists of plants in bloom gathered in the immediate neighborhood of Cleveland, Ohio, give a fair accounting of the flowers ordinarily found the last of April in that region. The first is a list gathered on April 26, 1893, by a party of flower-lovers, and numbers thirty-five:

Jack-in-the-Pulpit	*Arisæma triphyllum.*
Perfoliate Bellwort	*Uvularia perfoliata.*
Grape-Hyacinth	*Muscari botryoides.*
Great White Trillium	*Trillium grandiflorum.*
Red Trillium	*Trillium erectum.*
Wild Ginger	*Asarum Canadense.*
Spring-Beauty	*Claytonia Virginica.*
Chickweed	*Stellaria media.*
Wood-Anemone	*Anemone nemorosa*, var. *quinquefolia.*
Rue-Anemone	*Syndesmon thalictroides.*
Meadow-Rue	*Thalictrum dioicum.*
Blue Cohosh	*Caulophyllum thalictroides.*
Bloodroot	*Sanguinaria Canadensis.*
Dutchman's-Breeches	*Bicuculla cucularia.*
Squirrel-Corn	*Bicuculla Canadensis.*
Spring-Cress	*Cardamine rhomboidea*, var. *purpurea.*
Cut-Leaved Dentaria	*Dentaria laciniata.*
Two-Leaved Dentaria	*Dentaria diphylla.*
Mitella	*Mitella diphylla.*
Mitella	*Mitella nuda.*
Tiarella	*Tiarella cordifolia.*
Wild Strawberry	*Fragaria Virginica.*
Mountain-Strawberry	*Fragaria Americana.*
Potentilla	*Potentilla Canadensis.*

Wild Geranium	*Geranium maculatum.*
Common Blue Violet	*Viola palmata*, var. *cucullata.*
Downy Yellow Violet	*Viola pubescens.*
Long-Spurred Violet	*Viola rostrata.*
Cream Violet	*Viola striata.*
Trailing Arbutus	*Epigæa repens.*
Wild Phlox	*Phlox divaricata.*
Wood Betony	*Pedicularis Canadensis.*
Dwarf Everlasting	*Antennaria plantaginifolia.*
Dandelion	*Taraxacum taraxacum.*
Field Horsetail	*Equisetum arvense.*

The flowers of the second list were gathered April 28, 1915, by a gentleman who is a journalist and a flower-lover:

Jack-in-the-Pulpit	*Arisæma triphyllum.*
Perfoliate Bellwort	*Uvularia perfoliata.*
Grape-Hyacinth	*Muscari botryoides.*
Great White Trillium	*Trillium grandiflorum.*
Red Trillium	*Trillium erectum.*
Adder's-Tongue	*Erythronium Americanum.*
Wild Ginger	*Asarum Canadense.*
Spring-Beauty	*Claytonia Virginica.*
Chickweed	*Stellaria media.*
Hepatica	*Hepatica acutiloba.*
Wood-Anemone	*Anemone nemorosa*, var. *quinquefolia.*
Early Meadow-Rue	*Thalictrum dioicum.*
Bulbous Buttercup	*Ranunculus bulbosus.*
Swamp-Buttercup.	*Ranunculus septentrionalis.*
Early Buttercup	*Ranunculus fascicularis.*
Blue Cohosh	*Caulophyllum thalictroides.*
Bloodroot	*Sanguinaria Canadensis.*
Dutchman's-Breeches	*Bicuculla Canadensis.*
Spring-Cress	*Cardamine rhomboidea.*
Purple Cress	*Cardamine rhomboidea*, var. *purpurea.*
Cut-Leaved Dentaria	*Dentaria laciniata.*
Shepherd's-Purse	*Capsella bursa-pastoris.*
Mitella	*Mitella diphylla.*
Wild Strawberry	*Fragaria Virginica.*

Potentilla	*Potentilla Canadensis.*
Common Blue Violet	*Viola palmata*, var. *cucullata.*
Downy Yellow Violet	*Viola pubescens.*
Long-Spurred Violet	*Viola rostrata.*
Sweet White Violet	*Viola blanda.*
Ground-Nut	*Aralia trifolia.*
Periwinkle	*Vinca minor.*
Wild Phlox	*Phlox divaricata.*
Greek Valerian	*Polemonium reptans.*
Gill-over-the-Ground	*Glecoma hederacea.*
Bluets	*Houstonia cærulea.*
Dwarf Everlasting	*Antennaria plantaginifolia.*
Dandelion	*Taraxacum.*
Field Horsetail	*Equisetum arvense.*

On May 5, just a week later, eleven were added to the list, making a total of forty-nine:

Flower-of-May	*Maianthemum Canadense.*
Solomon's-Seal	*Polygonatum biflorum.*
Smilicina	*Smilicina racemosa.*
Disporum	*Disporum lanuginosum.*
Two-Leaved Dentaria	*Dentaria diphyllum.*
Tiarella	*Tiarella cordifolia.*
Bedstraw	*Galium aparine.*
Yellow Rocket	*Barbarea vulgaris.*
Canada Violet	*Viola Canadensis.*
Wild Geranium	*Geranium maculatum.*
Wild Sarsaparilla	*Aralia nudicaulis.*

These lists, by no means, present all the plants in bloom at the time, but simply those within easy reach of Cleveland, certainly not more than ten miles away from the centre of the city, and gathered by amateurs.

GENERA AND SPECIES

MONOCOTYLEDONS

GENERA AND SPECIES

DICOTYLEDONS

GENERA AND SPECIES

GENERA AND SPECIES

GENERA AND SPECIES

GENERA AND SPECIES

ILLUSTRATIONS

COLOR PLATES

FROM WATER-COLORS BY ELOISE P. LUQUER

HALF-TONE PLATES

ILLUSTRATIONS IN TEXT

ILLUSTRATIONS

OUR EARLY WILD FLOWERS

When the hounds of spring are on winter's traces
The mother of months in meadow and plain,
Fills the hollows and windy places
With laughter of leaves and ripple of rain.

—"Atlanta's Chorus," SWINBURNE.

ARÀCEÆ—ARUM FAMILY

SKUNK-CABBAGE

Symplocárpus fœtidus. Spathyèma fœtida

Symplocárpus, a coalescing fruit. *Spathyèma*, Greek, referring to the spathe.

Early perennial herb with strong, fetid odor; found in swamps, beside brooks, and on wet hillsides. Nova Scotia to North Carolina, west to Minnesota and Iowa. Common in northern Ohio. February–April.

Rootstock.—Very thick, bearing many coarse, fibrous roots in whorls.

Leaves.—All basal, cordate, veiny, often two feet long and a foot wide, clustered, entire at margin, and acute at apex; petioles with deep grooves. Preceded in earliest spring by a purple, mottled spathe and hidden flowers. Spathe from three to six inches high.

Flowers.—Many, small, inconspicuous, greenish yellow to dull purple; packed closely on a fleshy spike called spadix which is hidden within a swollen, shell-shaped, mottled spathe close to the ground.

Calyx.—Of four hooded sepals.

Corolla.—Wanting.

Stamens.—Four, opposite the sepals; anthers conspicuous, extrorse.

Pistil.—Ovary one-celled, with angled and awl-shaped style.

Fruit.—An oval mass filled with berries, which become bright scarlet.

Pollinated by small flies and honey-bees.

Such buoyant faith has the Skunk-Cabbage, it never entirely loses sight of spring but exerts some spell over its muddy bed, whereby you may see that there at least it has already come in November.—KIRKHAM.

April 6, 1853.

On the edge of the meadow the air resounds with the hum of the honey-bees, attracted by the flower of the Skunk-Cabbage. I heard the fine, sharp hum of the honey-bees before I thought of them. It was surprising to see them directed by their instincts to these localities, while the earth has still but a wintry aspect, buzz around some obscure spathe close to the ground, and, well knowing what they are about, alight and enter. . . . I watched many when they entered and when they came out, and all had little yellow pellets of pollen at their thighs.—THOREAU.

The first flower of our northern spring appears not infrequently in February, always in March; it has no great beauty that one should desire it, but is unusual in form and interesting in character. As soon as the surface of its boggy home is softened by the spring sunshine sufficiently to permit, a thick, fleshy, shell-shaped body, which the books call a spathe, pushes its pointed nose out of the ground, and soon rises to the height of three or four inches, spotted and striped with purple and yellow and green. This is not the flower, but the protector of the flowers. They are within, packed close upon a finger-like body called a spadix.

Most flowers have characteristic plans for securing cross-fertilization by the visits of flies, bees, butterflies, or moths, and Skunk-Cabbage is no exception. It is astonishing when snow is still on the ground here and there, that so much insect life can be abroad, yet certain small flies are really abundant; for all nature sleeps with one eye open. These fly about in the

Skunk-Cabbage at Home. *Spathyèma fœtida*

sunshine and, led either by the odor of the flowers or seeking the shelter of the fleshy tent, they enter and, crawling up, are covered with the abundant pollen; then entering another spathe, they leave some of this pollen upon the receptive stigmas. Sometimes honey-bees visit the plant, but its chief reliance seems to be upon the small flies.

Müller in his studies of the Skunk-Cabbage states that as the flowers open the temperature rises and so these little tents are not only shelter houses but places of actual warmth for the small flies which frequent them.

After the flowering time is over the compactly coiled, pointed spike of leaves unfolds. The plant is regarded by farmers as something of a menace, for cattle in early spring, longing for something green, will frequently eat these leaves, which are acrid and poisonous. A common country name for the plant is Bear Weed, so called because bears were supposed to eat it when just awakened from their winter sleep, but it must be a hot morsel even for a bear.

The fruit ripens in September. By this time the thick spathe has decayed and fallen away, and the spadix has now become a large ball of bright-red berries, each about the size of a pea. This is found upon the ground close to the base of the leaves.

Two facts explain the Skunk-Cabbage's ability to swing into the race so early in the spring. The first is its enormous root development; the second because the flower is so well started in the fall; sometimes the thick, pointed spathes may be found pushing up into the light in November.

GOLDEN-CLUB

Orόntium aquáticum

Perennial, aquatic herb found in shallow ponds, standing water, and swamps, preferably those accessible to tidewater. New England to the Gulf States, mostly near the coast. Not in Ohio. April, May.

Golden-Club. *Orόntium aquáticum*

Rootstock.—Thick, fleshy.

Leaves.—All from the root, long-petioled, oblong-elliptic, nerved without distinct midvein, dull green above, pale underneath, five to twelve inches long, narrowed or partly furled at the base, floating or erect.

Scape.—Six to twenty inches tall, slender, terete, flattened just below the flowering club, closely covered by a short sheath at base.

Flowers.—Minute, bright yellow, perfect, crowded on a spadix one to two inches long, which becomes greatly thickened in fruit; the lower flowers with six concave sepals and six stamens, the upper ones with four; odor unpleasant.

Calyx.—Four to six scale-like, yellow sepals.

Corolla.—Wanting.

Stamens.—Four to six, with linear filaments and small anthers.

Pistil.—Ovary partly imbedded in the spadix, one-celled; stigma sessile.

Fruit.—A single seed, surrounded by a loose, green cover; the whole called a utricle.

The Golden-Club, found in shallow water, is blood brother both to the Skunk-Cabbage and to Jack-in-the-Pulpit, but its habitat is not so extended as theirs. It dwells in New England and southward along the coast. So far as I know, it rarely crosses the Alleghanies and is not found in the Middle West.

The enclosing and protecting spathe, which is a marked characteristic of the Arums, in the Golden-Club has virtually disappeared, becoming a mere leaflet on the flower-stem. The summit of the flower-stem becomes a golden-yellow spadix, crowded with tiny blossoms each with six sepals, six golden stamens, and a pistil. The long-petioled, oblong leaves mostly float, though sometimes they stand erect.

JACK-IN-THE-PULPIT. INDIAN-TURNIP

Arisæma triphýllum

Arisæma, from *aris*, a kind of arum and *aima*, blood; alluding to the spotted leaves of some species of the genus.

Perennial herb with an acrid corm, sending up a simple scape sheathed with the petioles of the compound, veiny leaves. Rich woods. Nova Scotia to Florida, west to Minnesota and Kansas. Abundant in northern Oh April, May.

Corm.—Violently acrid, fiery to the taste, turnip-shaped, bearing many fibrous roots.

Scape.—Simple, twelve to eighteen inches high.

Leaves.—Mostly two, divided into three elliptic ' ovate, pointed, veiny leaflets.

Flowers.—Monœcious or diœcious, small; both sterile and fertile borne on a spadix, with a hooded spathe, green, or green and purple, striped.

ARUM FAMILY

Spadix.—Smooth, club-shaped, pale green, much shorter than the spathe and bearing the tiny flowers about its base. When a spadix bears both kinds of flowers at the same time the sterile flowers are above the fertile; each sterile flower of a cluster consists of four anthers, opening by chinks at the top. There is neither calyx nor corolla. The fertile flowers are at the base of the spadix, and consist each of a one-celled ovary, tipped with a depressed stigma.

Fruit.—Ball-like cluster of bright scarlet berries.

Pollinated by small flies, gnats, and beetles. Nectar-bearing.

"Jack-in-the-Pulpit preaches to-day,
Under the green trees, just over the way;
Squirrel and Song-Sparrow high on their perch,
Hear the sweet lily-bells ringing to church.

"Come, hear what his reverence rises to say,
In his low-painted pulpit, this calm Sabbath day.
Fair is the canopy over him seen
Pencilled by nature's hand, black, brown, and green.
Green is his surplice, green are his bands;
In his queer little pulpit the little priest stands.

"So much for the preacher, the sermon comes next—
Shall we tell how he preached it, and where was his text?
Alas! like too many grown-up folks who play
At worship in churches man-builded to-day,
We heard not the preacher expound or discuss;
But we looked at the people, and they looked at us.

"We saw all their dresses, their colors, and shapes,
The trim of their bonnets, the cut of their capes;
We heard the wind-organ, the bee, and the bird,
But of Jack-in-the-Pulpit we heard not a word."

—Clara Smith.

The fancy of calling this flower Jack-in-the-Pulpit seems to have arisen from a resemblance between the

green canopy which waves over the club-like spadix and the ancient sounding-board formerly placed over pulpits; for Jack is standing within a deep, leaf-like cornu-

Jack-in-the-Pulpit. *Arisæma triphýllum*

copia whose broad, tapering tip is gracefully curved over his head.

Jack-in-the-Pulpit is a near relation of the Calla-Lily, as a study of the two flowers will show. The club within the protecting and enfolding leaf bears all the flowers of the plant and there are very many. The sterile and the fertile blossoms are in two separate groups—

sometimes on different plants, but when on the same plant the sterile, that is, the stamens which bear the pollen, are grouped toward the top of the club. They seem to be mere projections almost white in color, bearing four purplish, cup-like anthers filled with white pollen. Below them are the pistillate blossoms gathered around the base of the club, and these are tiny, round, greenish bodies, packed close, and each with a purple stigma.

As time passes, the pollen is scattered. The waving hood disappears, the round, green bodies enlarge, and finally in September one comes upon a ball of brilliant scarlet berries, borne at the summit of a stiff, drying stem, the contribution of Jack to the world. However, at the base of this drying stem, whose work is done, lies, deep in the soil, the corm, where the food is stored which shall send up another Jack in the coming spring. There is a tradition that this solid corm was used as food by the Indians, which gave the plant the name of Indian-Turnip. It must have been a hot morsel, if not a dangerous one, though it is said that the character of the turnip is softened somewhat by boiling, but it could never be very appetizing. This plant has two anchors to windward, a corm, and a ball of seeds, so that the race may continue in the land.

The English Jack is called Cuckoo-Pint and is the flower Jean Ingelow means in her Songs of Seven:

> "O Cuckoo-Pint, toll me the purple clapper,
> That hangs in your clear green bell."

The varying color of the spathes are by some authorities supposed to indicate differences in the flowers, the dark spathes indicating pistillate and the light ones

staminate flowers. This certainly does not hold true in all cases but it seems to be true in the majority. A second report is that the blossoms of the one-leaved stems are mainly staminate and those of the two-leaved mainly pistillate. All of this emphasizes the fact that there is much undiscovered country very near us.

MELANTHÀCEÆ—BUNCH-FLOWER FAMILY

LARGE-FLOWERED BELLWORT. PERFOLIATE BELLWORT

Uvulària grandiflôra

Uvulària, from *uvula*, a palate, in allusion to the hanging flowers.

An erect, forked herb, perennial by rootstocks. Rich open woods. New England to Minnesota, south to Georgia and Tennessee. Frequent in northern Ohio. April, May.

Rootstock.—Short, with fleshy roots.

Stem.—Leafy, smooth, pale green, terete, one to two feet high, forked above the middle, bearing solitary terminal flowers, and usually a single leaf below the fork.

Leaves.—Alternate, oblong or ovate-lanceolate, acute at the apex, smooth-margined, perfoliate, parallel-veined, two to four inches long, pubescent beneath.

Flowers.—Yellow, lily-like, drooping, solitary, often hidden by the leaves, rarely two together, fragrant.

Perianth.—Sepals and petals indistinguishable, six in number, an inch to an inch and a half long, lanceolate, pointed at apex, smooth within, nectar-bearing.

Stamens.—Six, short, slightly adhering to the base of the perianth segments, longer than the styles; anthers linear, opening laterally.

Pistil.—One; ovary three-lobed, three-celled; style three-cleft.

Fruit.—Capsule, three-lobed and three-angled, cut off at the top. Seeds few in each cell.

Pollinated by bees and flies. Nectar-bearing.

Large-Flowered Bellwort. *Uvulària grandiflòra*

There are in our northern woods and among the early flowers three slender, shining, leafy plants twelve to twenty-four inches high, very similar in general appearance, yet with sufficient specific differences to make their selection and grouping a pleasure to the amateur. These are the Bellworts, growing usually in companies, recognized by their forking stems, their

pale green, shining leaves whose veins run parallel, and when in bloom marked by their straw-colored or pale yellow, somewhat hidden, lily flowers. These vary from an inch to an inch and a half in length, have six sepal-petals indistinguishable from one another, six stamens, and a pistil.

The Large-Flowered Bellwort is the first to bloom in northern Ohio although it is not so abundant as either of the others. Its flower-bell is the largest of the three and the yellowest; it often measures an inch and a half in length; its ordinary rating of blossom is one to a stem. All the fertile stems fork above the middle and ordinarily bear one leaf below the fork, though sometimes this leaf is wanting. The leaves entirely surround the stem, giving the effect of being strung upon it.

PERFOLIATE BELLWORT. STRAW BELL

Uvulària perfoliàta

Erect, forked herb, perennial by rootstocks. Rich, moist woods and thickets. New England and Ontario to Minnesota and south to Florida and Mississippi. Frequent in northern Ohio. May, June.

Rootstock.—Short, with fleshy roots.

Stem.—Leafy, smooth, pale green, ten to twenty inches high, terete, forked above the middle, bearing solitary terminal flowers, and one to three leaves below the fork.

Leaves.—Alternate, oblong, or ovate-lanceolate, acute at the apex, smooth-margined, perfoliate, parallel-veined, two to four inches long, with more or less of bloom.

Flowers.—Pale yellow, lily-like, drooping, solitary on terminal peduncles, often hidden by the leaves, rarely

two together, fragrant; an inch or an inch and a quarter long.

Perianth.—Sepals and petals indistinguishable, pale yellow, six in number, three-fourths to an inch or more long, spatulate-lanceolate, pointed at apex, slightly swollen at base with a deep honey-bearing groove which is bordered on each side by a ridge.

Stamens.—Six, short, slightly adhering to the base of the perianth segments; anthers linear, opening laterally.

Pistil.—One; ovary three-lobed, three-celled; style three-cleft.

Fruit.—Capsule, three-lobed, and three-angled, cut off at the top; with concave sides and grooved angles. Seeds few in each cell.

Pollinated by bees and flies. Nectar-bearing.

Fruit of Perfoliate Bellwort. *Uvularia perfoliata*

The smaller form of the Perfoliate Bellwort is the more abundant one. Its stem is leafy and forks just above the middle; below the fork are usually three leaves, though sometimes fewer. The stem is round and smooth, the leaves are rather thin, oblong, pointed and entirely surround the stalk so that apparently the stem grows through them. The edges are entire. The solitary, pale-yellow lily hangs like a pendant from the end of the drooping branch, and is often hidden among the crowded overhanging leaves. Each pendant lily has six sepal-petals, all alike in form and

color. They have nectaries at the base, are rough within, and the tips spread and curve outward more than do those of the Large-Flowered Bellwort. The two are frequently found together, but this is a trifle later in bloom and more abundant.

Sessile Bellwort. *Uvulària sessifòlia*

SESSILE BELLWORT. WILD OATS

Uvulària sessifòlia. Oakesia sessifòlia

Oakesia, in honor of William Oakes, a New England botanist.

Perennial by rootstocks. Rich open woods and thickets. New Brunswick and Ontario to Minnesota and southward to Florida and Arkansas. Abundant in northern Ohio. May, June.

Rootstock.—Slender, creeping.

Stem.—Leafy, ten to twelve inches high, curving, angled, forking above the middle, bearing one or two almost terminal flowers.

Leaves.—Alternate, lance-oblong, acute at each end, glaucous beneath, sessile or partly clasping, rough on the margin, parallel-veined, one or two below the fork.

Flowers.—Pale yellow, lily-like, drooping, solitary on terminal peduncles, often hidden by the growth of the

leaves, and often appearing opposite to the leaves by the growth of the branches; three-fourths to an inch long.

Perianth.—Sepals and petals indistinguishable, six in number, three-fourths to an inch long, gibbous without, with ridges within.

Stamens.—Six, short, slightly adhering to the base of the perianth segments; anthers linear, opening laterally.

Pistil.—One; ovary three-celled, three-angled; style three-cleft.

Fruit.—Capsule, elliptical, pointed at each end, winged, opening rather late. Seeds globose.

Pollinated by flies and bees. Nectar-bearing.

"O the lights of earth and heaven
Growing day by day;
O the winds among the grasses,—
Showers along the mountain passes;
O the shy, straw-colored bell
In the shadow of the dell;
Heir to all the early freedom
Of the May!"

—DORA R. GOODALE.

A rather more common species than either of the Perfoliate Bellworts, flowering at the same time and having its stemless, pale-green, rough-edged, long-pointed, oval leaves set close upon the stalk and not pierced by it. This stalk rises about twelve inches and bears one or two leaves below the fork. The drooping flowers are three-fourths to an inch long, are cream-colored or greenish yellow, and followed by a shapely three-angled seed-pod somewhat resembling in shape a beechnut.

One or two flowers hang at first from the ends of the branches, but as the branches lengthen they later seem to be opposite the leaves. The leaves at the top of the stem look crowded and dishevelled, and the charm of the plant lies largely in its graceful curves.

LILIÀCEÆ—LILY FAMILY

FAUN LILY. DOG'S-TOOTH VIOLET. ADDER'S-TONGUE

Erythrònium Americànum

Erythrònium, the Greek name for the purple-flowered European species.

Perennial, growing in beds and patches in rich, moist open woods. New Brunswick to Florida, west to Minnesota and Arkansas. Abundant in northern Ohio. April, May.

Root.— [illegible]s, from a corm deep in the ground.

Scape [illegible] to nine inches high, one-flowered, sheathed by two [illegible]ining leaves, tapering into petioles.

Leaves.—Elliptical-lanceolate, smooth, shining, pale green, mottled with purplish, irregular patches.

Flowers.—Lily-shaped, solitary, nodding, pale yellow; of three sepals that look like petals, and three petals—all very much alike, together called perianth.

Stamens.—Six, filaments yellow, with broad bases and tapering to a point where the anthers join them; anthers yellow or red.

Pistil.—Pale green, somewhat three-sided; style long.

Fruit.—A plump, triangular capsule which splits into three sections when ripe; seeds many, crescent-shaped.

Pollinated by small bees, butterflies, and flies; also capable of self-fertilization. Nectar-bearing.

This little spring lily of the woodlands is a fascinating plant. Its leaves of pale, shining green, mottled

with brownish purple often closely cover large, irregular areas in the open woods. Each nodding lily stands up between a pair of erect and pointed leaves, and in a large bed only a few of the plants produce flowers.

Adder's-Tongue. *Erythrònium Americànum*

This lily is one of the earliest examples that April gives us of a flower in whose description we use the word perianth. Perianth means primarily the floral envelopes, whether calyx or corolla or both, but technically is applied to such flowers as the lily and the tulip, whose calyx and corolla are so similar in form and color that the early botanists were in doubt whether the floral envelope was all calyx or all corolla, and so compromised on the word perianth, which means both together. It is now clear that the outer three are calyx and the inner three corolla, but the old name is convenient and remains in use.

Studying our lily closely, we see that the three sepals are a little thicker in texture and brownish yellow outside; inside they are a pure yellow with a darker line where they join the stem. The three petals

are pure yellow, paler outside than in, with dark spots near the heart of the flower where they join the stem; each has upon either side a tiny, ear-shaped lobe. The flower is extremely sensitive to the sunlight, expands in its warmth and nearly closes at night.

The secret of these beds of Adder's-Tongues lies in the manner of the plant's reproduction. It has two ways of spreading: one by means of seeds, and the other through corms. Deep underground, at the base of the long, slender stem, lies the corm, about the size of a small hickory-nut or a large pea. A corm is the swollen base of a stem and is bulb-like in form but is solid, not made of layers like a bulb. It is a storehouse for plant food and also a means of spreading the species, for from each corm there grow little corms called cormels and each one of these produces a separate plant, and as a result these are all crowded together.

John Burroughs, writing of the Adder's-Tongue as he found it in grass-covered meadows, called attention to the brittle white threads which appear among the plants and sometimes above the ground. These he found were connected with the immature corms from which they penetrate the soil in various directions. A careful study has been made of the plant, and it is now known that these white threads are smooth, scaleless, subterranean runners, heavily charged with starch and that the tip encloses a bud which will in time become a corm. The corms formed at the end of the runner will send up a single leaf and will then send out more runners, and so the process is repeated until a very considerable bed is formed. It requires four years to develop a blooming corm, and the corm does

not always bloom even at the end of four years. This accounts for the many sterile, one-leaved plants compared to the few two-leaved, blooming plants that are to be found in every bed.

The name Dog's-tooth Violet is foolish and inappropriate. Adder's-Tongue is unpleasantly suggestive. John Burroughs's suggestion of Faun Lily is excellent and should be adopted. The spotted leaves and the spotted faun both suggest the northern woods.

A plant similar in habit and aspect, *Erythrònium álbidum*, bearing pale lavender flowers, yellowish within at base, is rare in the Eastern States but frequent in northern Ohio and westward. Its specific name, *albidum*, so far as I know, is misapplied if it is understood as white.

EASTERN CAMASS. WILD HYACINTH

Camássia fráseri. Scílla fráseri. Quamásia hyacinthina

Derived from the native Indian name, quamash or camass.

Perennial. Rich alluvial soil, meadows, banks of streams, prairies. Pennsylvania to Minnesota, southward to Georgia and Kansas. Frequent in northern Ohio. April, May.

Bulb.—Coated, oval, one to two inches long, dark in color.

Leaves.—Narrow, keeled, shorter than the flowering scape.

Scape.—One to two feet high, bearing a long loose raceme of pale violet-blue flowers with bracts longer than the pedicels.

Flowers.—Perianth of six, equal, narrow, oblong divisions, widely spreading, half an inch or more in length, borne in a simple raceme, on jointed pedicels.

Wild Hyacinth. *Quamàsia hyacinthina*

Stamens.—Six, filaments threadlike, inserted at the base of the perianth divisions.

Pistil.—One; style threadlike; stigma three-lobed.

Capsule.—Triangular-globose, three-celled; seeds black, roundish.

Camàssia is a plant of the Middle West especially. It is found in northern Ohio among the high grass in low alluvial meadows, often giving in May a tint of

pale violet-blue to considerable areas. The flowering raceme is frequently six to eight inches long and suggests the Hyacinth, whence its common name. The plant arises from a coated bulb.

GRAPE-HYACINTH

Muscâri botryoïdes

Muscâri, from the musky scent of one species of the genus.

One of the early flowering, bulbous perennials of country gardens which has escaped into lawns and fields. Naturalized from Europe. March, April.

Grape-Hyacinth. *Muscâri botryoïdes*

Leaves.—Basal, linear.

Flowers.—Violet-blue to pure blue, borne in a dense raceme on a naked scape, four to six inches high.

Perianth.—Globular or urn-shaped, constricted at mouth; violet-blue, white at the mouth, six-toothed.

Stamens.—Six.

Pistil.—Ovary three-celled, forming a triangular three-celled capsule.

This is a hardy little bulbous plant from central Europe, common in gardens from which it has in many places escaped to the fields. Several species are in cultivation, but the one that everybody knows is *Muscâri botryoïdes*, which means, like a bunch of grapes.

CONVALLARIÀCEÆ—LILY-OF-THE-VALLEY FAMILY

YELLOW CLINTONIA

Clintònia boreàlis

Named in honor of Governor DeWitt Clinton of New York.

Perennial. In moist woods and thickets, especially in evergreen woods. Newfoundland, Ontario, and Minnesota, south to North Carolina and Wisconsin. Rare in northern Ohio. May, June.

Rootstock.—Slender.

Scape.—Six to sixteen inches high, rising from a group of broad, petioled, sheathing, basal leaves, and bearing two to six flowers.

Leaves.—Two to five, clustered, broad, oblong or obovate, parallel-veined, thin, dark, glossy, acute or acuminate at apex, sheathing at the base.

Flowers.—Small lilies, pale yellow, greenish on the outside, less than an inch long, three to six, nodding on slender pedicels from the summit of a leafless scape.

Perianth.—Six sepal-petals, alike and not distinguishable.

Stamens.—Six, slightly attached to the petals.

Pistil.—Ovary two-celled; style slender.

Fruit.—Oval blue berries, on upright stems.

Take for example the Clintonia, solitary amidst fallen spruce logs on the mountain slope. Imagine it transferred to a trim

garden! If you have really seen that flower of the solitudes, you have seen the mossy rock overhanging it, the spruce cones lying thick about, sniffed the balsam, and heard the veery on the mountain.—KIRKHAM.

Noticeably a lily, the handsome shining leaves and clustered, pale lemon-yellow flowers of Clintonia abound in the cool woods of the north. When one has failed to find it in the spring, its cluster of two to four parallel-veined leaves surrounding a stem bearing three to four blue balls, make it noticeable and attractive in midsummer.

Yellow Clintonia. *Clintonia borealis*

The slender flowering stalk rises from six to fifteen inches high and bears from three to six nodding, greenish yellow, small lilies, arranged in a loose terminal cluster. Three sepals and three petals, all alike, six stamens, and a pistil complete the floral outfit.

Though the flowers nod, the large berries stand erect, and as they begin to ripen they turn a beautiful blue which darkens as they grow older.

The plant was named in honor of DeWitt Clinton, governor of New York, who, besides being a man of affairs, was an enthusiastic amateur botanist.

SMILICINA. FALSE SOLOMON'S-SEAL. WILD SPIKENARD

Smilicina racemòsa. Vàgnera racemòsa

Smilicina, a diminutive of Smilax. *Vàgnera*, in honor of Wagner.

Perennial herb of moist woods and thickets. Nova Scotia to Georgia and westward to Missouri and British America. Abundant in northern Ohio. April, May.

Rootstock.—Thick, fleshy, creeping.

Stem.—One to three feet high, smooth, leafy, usually curving, somewhat angled.

Leaves.—Many on the stem, alternate, oblong-lanceolate or oval, pointed, strongly ribbed; margins entire, hairy.

Flowers.—Small, white, fragrant, borne in a terminal, panicled raceme.

Perianth.—Six-parted, spreading; segments oblong.

Stamens.—Six, inserted at the base of the perianth divisions; filaments slender; anthers introrse.

Pistil.—One; ovary three-celled; stigma three-grooved.

Fruit.—A bunch of pale-red berries, specked with purple, abundant in the early autumn, aromatic in taste.

Pollinated by bees, flies, and beetles.

The leafy stems of Smilicina are found standing in groups and bunches at the edge of the open wood in early May, some in bloom and all prepared to bloom. The stems rise from one to three feet, bearing many bright-green, shining, parallel-veined leaves arranged alternately and at the summit appears a loose pyramidal spike of small white flowers, not unlike the inflorescence of *Spirea Japonica*. Though the flower-cluster is attractive and beautiful, the graceful po-

and curve of the leafy stem constitute the chief charm of the plant. Each tiny flower of the cluster has six white sepals, six stamens, and a pistil. In midsummer a cluster of speckled, pale-red aromatic berries crowns the stem and invites the birds.

The two common names, False Solomon's-Seal and Wild Spikenard, which the plant has acquired have little significance and no beauty. Furthermore, there is an objection to characterizing anything which is as true and beautiful as this plant as false. Smilicina has no especial significance: the name is a diminutive of Smilax, but it is pleasant to the ear and comes easily on the tongue, and there seems no reason why it may not be accepted as the common name.

Three-leaved Solomon's-Seal, *Vagnera trifòlia*, rises from a slender rootstock a stem six to sixteen inches high, bearing generally three oblong, parallel-veined leaves, sessile, and sheathing at base. Flowers borne in a short raceme with recurved, six-parted perianth, six stamens, one ovary and style. Berries dark red. Found in wet, boggy woods from Maine to Pennsylvania, west to Michigan.

FLOWER-OF-MAY. WILD LILY-OF-THE-VALLEY

Maiánthemum Canadénse. Smilicìna Canadénsis. Unifòlium Canadénse

Maiánthemum, from *Maius*, May, and *anthemum*, flower.

Perennial. Open woods and thickets. Newfoundland to the Northwest Territory, south to North Carolina, west to Iowa and South Dakota. Frequent in northern Ohio. May.

LILY-OF-THE-VALLEY FAMILY

Rootstock.—Slender.

Stems.—Slender, usually two-leaved, sometimes with but one, rarely with three; three to six inches high, often zigzag.

Leaves.—Broad oval, cordate, sessile or short-petioled, parallel-veined, shining; fertile stem has two leaves, the sterile but one.

Flower-of-May. *Maianthemum Canadense*

Flowers.—Small, white, in a terminal, many-flowered raceme, slightly fragrant.

Perianth.—Of four separate, spreading segments, finally reflexed.

Stamens.—Four, inserted at the base of the segments; filaments threadlike; anthers introrse.

Pistil.—Ovary two-celled; style two-lobed.

Fruit.—Small, globular berry, pale red, speckled.

The Flower-of-May appears in open, sunny woodlands where the soil is thin and composed largely of leaf-mould, and gathers about the trunks of trees or upon the few inches of soil above rocks. It rejoices in companionship and makes great beds of shining leaves, the flowering plants having two, the sterile but one. These leaves have a certain likeness to those of Smilicina and of Solomon's-Seal but are shorter, more rounded, and heart-shaped at base. The two-leaved stem bears a terminal raceme of feathery white flowers, made on the plan of four.

A bed in full bloom makes a fretwork of white upon a carpet of shining green. The blossoms are in full glory in middle and later May. In autumn the same green carpet is dotted with clusters of small, pale-red, speckled berries.

DOWNY DISPORUM

Prosártes lanuginòsa. Dispòrum lanuginòsum

From the Greek *prosartao*, to hang upon; in allusion to the suspended ovules. *Disporum*, two-seeded, because of the two ovules in each cell of the ovary.

Perennial. Moist, rich woods. Ontario to Washington, south to New York and Tennessee. Frequent in northern Ohio. April, May.

Rootstock.—Slender, creeping; with tufts of fibrous roots.

Stem.—Twelve to eighteen inches high, sheathed below; the upper part unequally twice or thrice forked; downy.

Leaves.—Alternate, sessile, one and a half to three inches long, marked with three to five parallel veins, ovate-oblong or lanceolate, acuminate, minutely downy beneath, rounded at base, entire or slightly ruffled at margin.

Flowers.—Yellowish green, at first bell-like, later spreading; one or two at the end of the branches.

Perianth.—Six divisions; each division linear-lanceolate, a little broadened in the middle, with a nectar-bearing pit at the base.

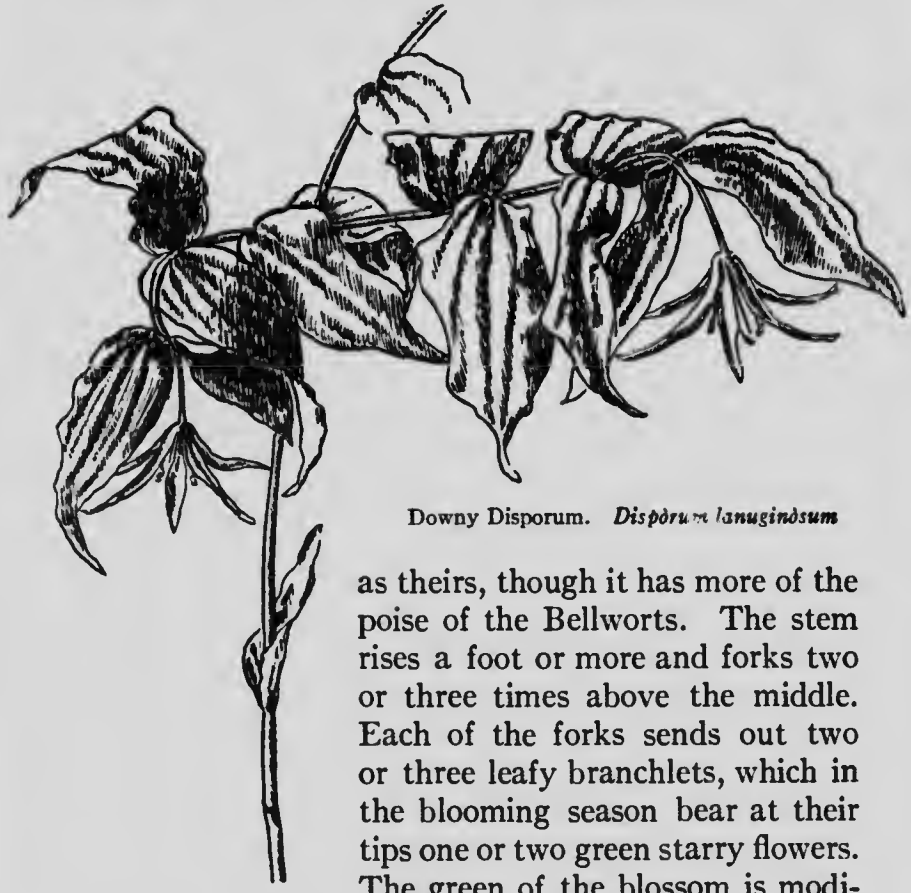
Stamens.—Six, inserted at the base of the perianth, half the length of the flower; filaments threadlike; anthers greenish, extrorse.

Pistil.—Ovary three-celled; style slender, three-cleft.

Fruit.—A red berry, long oval or oblong.

LILY-OF-THE-VALLEY FAMILY

This is a plant without a common name. It is found in company with the Bellworts, Smilicina, and Solomon's-Seal; its leaf is of the same general character



Downy Disporum. *Disporum lanuginosum*

as theirs, though it has more of the poise of the Bellworts. The stem rises a foot or more and forks two or three times above the middle. Each of the forks sends out two or three leafy branchlets, which in the blooming season bear at their tips one or two green starry flowers. The green of the blossom is modified by yellow, but it is green; it begins as a bell and ends as a six-pointed star. There are six stamens with greenish yellow anthers and a green style with a three-lobed stigma. The plant is so often mistaken for its neighbors that it is virtually unknown, even to frequent visitors of the wildwood. It may be dis-

tinguished from the Twisted Stalk by its flowers, which are terminal, while those of Twisted Stalk appear in the axils of the leaves.

In autumn, if all has gone well, one or two bright-red berries hang on slender stems at the tip of the flowering branchlets.

SOLOMON'S-SEAL

Polygonàtum biflòrum. Salomònia biflòra

Polygonàtum, the ancient name; composed of *polus*, many, and *gonu*, knee; alluding to the numerous joints of the rootstock.

Perennial. Rich woods and shaded hillsides. New Brunswick, Ontario, and Minnesota, southward to the Carolinas, west to Kansas and Nebraska. Abundant in northern Ohio. April–June.

Rootstock.—Horizontal, thick, jointed, plainly showing the growth of each year.

Stem.—Simple, one to three feet high, smooth, leafy, curving.

Leaves.—Alternate, oblong, pointed, nearly sessile or half-clasping, parallel-veined, two to four inches long.

Flowers.—Yellowish green bells, in pairs along the stem from the axils of the leaves.

Perianth.—A six-lobed tube, lobes acute, not spreading.

Stamens.—Six, inserted on the perianth tube; anthers introrse.

Pistil.—One; ovary three-celled; stigma obscurely three-lobed.

Fruit.—Berry the size of a pea; dark blue or nearly black, with a bloom.

Pollinated by flies and bees.

Solomon's-Seal is an extremely pretty and graceful plant, growing in company with Smilicina in woods and thickets. From a many-jointed, thick rootstock a single, graceful, curved stem arises each spring and bears a row of green flower-bells, nodding in pairs at

Solomon's-Seal. *Polygonàtum biflòrum*

the axil of the leaves, looking like a row of tassels. After fruiting this stem withers away, leaving a round scar on the rootstock whose outlines suggested to the fanciful man who named the genus the seal of Israel's king. One may know the age of a root by its scars, as the age of a tree by its rings. The fruit at first is

a green berry with a whitish bloom; finally it becomes pulpy, blue-black in color, and about the size of a pea.

Great Solomon's-Seal, *Polygonàtum gigantèum*, with much the same range as *biflòrum;* grows in moist woods and along shaded streams. Normally, it is a much taller plant but very similar in general appearance.

INDIAN CUCUMBER-ROOT

Medèola Virginiàna

Medèola, from Medea, the name of a sorceress; because the plant was thought to possess great medicinal virtues.

Perennial. Moist woods and shady places in rich soil. Nova Scotia to Ontario and Minnesota, south to Florida and Tennessee. Frequent in northern Ohio. May, June.

Rootstock.—White, one to two inches long, fleshy.

Stem.—Twelve to eighteen inches high, at first brownish with cottony wool.

Leaves.—In two whorls, the lower above the middle of the stem consisting of six to eight oblong, lanceolate, acuminate leaves, which are often stained with crimson when the plant is in fruit.

Flowers.—Terminal, three to six on pedicels about half an inch long,

Indian Cucumber-Root. *Medèola Virginiàna*

arising from the centre of the upper whorl, and recurved between the leaves.

Perianth.—Pale greenish yellow; six-parted; divisions oblong, obtuse, revolute.

Stamens.—Six, inserted on the base of the perianth; filaments slender; anthers obtuse.

Pistil.—Ovary three-celled; styles three, sometimes four, purple, longer than the stamens.

Fruit.—Dark purple, globose berry.

The appearance of this plant is *sui generis;* once seen it cannot be mistaken for any other. A simple, slender, erect stem, bearing two whorls of leaves and in the blooming season three or more greenish, starry flowers at its very tip, later a little group of dark purple berries, each on a slender stem. The horizontal, club-shaped rootstock is white, crisp, and juicy, and tastes not unlike cucumbers, whence its common name. Its medicinal properties were greatly overrated, and the plant is now considered valueless in the *materia medica.*

GREAT WHITE TRILLIUM

Trillium grandiflorum

Trillium, from *triplum*, triple, all the parts being in threes.

Perennial. Moist, rich open woods. Nova Scotia to Minnesota and Missouri, southward to North Carolina. Abundant in northern Ohio. April, May.

Rootstock.—Large, vertical, with a few coarse roots.

Stem.—Stout and simple, bearing at its summit a whorl of three rather large leaves and a large terminal flower.

Leaves.—Rhombic-ovate or rhombic-oval, acuminate, more or less ribbed, net-veined, one and a half to four

Great White Trillium. *Trillium grandiflòrum*

inches wide, sessile, in a whorl of three at the summit of the stem.

Flower.—White, terminal on a pedicel erect or ascending, two and a half to four inches across.

Calyx.—Sepals three, lanceolate, spreading, persistent.

Corolla.—Petals three, obovate or oblanceolate, white, larger than the sepals, withering, often turning pink with age; margins slightly ruffled.

Stamens.—Six, borne around the pistil; filaments short; anthers linear, yellow, the cells opening down the margins.

Pistil.—One; ovary three-celled; with three slender styles, stigmatic down the inner side.

Fruit.—Globose berry, black, six-angled, three-celled, many-seeded.

Pollinated by flies, bees, and butterflies.

The Great White Trillium may be considered the favorite wild flower of northern Ohio. For many persons no other wild flower exists, and this appears so abundantly, grows so luxuriantly, lasts so long, and is so beautiful that it fully justifies the high esteem in which it is held. In open untouched woods its white lilies light up acre upon acre during the pleasant days of May.

Looking straight into the flower one sees a six-pointed star, three pointed green sepals, and three pointed white petals with slightly ruffled edges. The flower-stem wishes to bend a little.

Where the plant grows by the acre it matters little how many are picked, but every lover of Trilliums ought to know the conditions of Trillium life.

In the first place, each plant has one large, vertical, tuberous rootstock with a few fibrous roots. In this rootstock is stored the food that will sustain the next

year's plant. This food is made by the leaves during their active life, which extends from early spring, to midsummer. Now, the only connection that roots and rootstock possess with the working leaves is through the stem, which at the same time bears the flower. When the flower is picked the working leaves are also picked and all means of communication with the upper light and air are cut off. It is probable that a vigorous rootstock may send up another stem with working leaves, or the work halts imperfectly done. Every real lover of Trilliums picks sparingly. By midsummer the tops die and the plants are at rest for the year.

The *tri* in the name Trillium means three, and in its structure the plant faithfully follows the rule of three throughout. Even the green leaves are in a cluster of three on the summit of the stalk, and in their midst is the one large flower, with three sepals, three petals, six stamens, and three pistils united to form one. The old English name of Trillium was Wake-Robin, because in England the flower and the bird appear at the same time, but here our robin comes long before the Trillium rises in the sunny woodlands.

Abnormal forms of the flower are not rare, in which the calyx and sometimes the petals are changed to leaves, or the parts of the flower increased in number. Frequently the flower turns pink with age; rarely the flower comes pink from the bud.

ILL-SCENTED TRILLIUM. WAKE-ROBIN

Trillium créctum

Perennial. Moist open woods. Nova Scotia to Minnesota and Manitoba, southward to North Carolina and Tennessee. Common in northern Ohio. April, May.

Rootstock.—Thick, fleshy, bearing coarse rootlets.

Stem.—Stout, twelve to eighteen inches high, green, often stained with reddish brown.

Leaves.—Broadly rhombic, three to six inches long and often quite as broad, acuminate at apex and narrowed at the base, ribbed and netted-veined, sessile.

Flowers.—Dull madder-red, rarely whitish or pinkish; on a pedicel one to three inches long, more or less declined; ill-scented.

Calyx.—Sepals three, lanceolate, acuminate, spreading, persistent.

Corolla.—Petals ovate to lanceolate, three-fourths to an inch and a half long, rich madder-red.

Stamens.—Six; borne around the pistil, with short filaments and long brownish red anthers, which open down the margins.

Pistil.—One, brownish red; ovary six-angled; stigmas three, sessile, recurved, stigmatic down the inner side.

Fruit.—Ovate berry, one-half to an inch long.

Pollinated by flies and beetles.

The Ill-Scented Trillium evidently relies upon odor to attract its insect friends. Like all the Trilliums, it offers pollen in abundance but no nectar. The blossom has the distinction of being one of the few early woodland flowers of deep, rich color, its dark red becoming even darker by comparison with the paler

growth which surrounds it. The plant gives the impression of strength and vigor; its leaves are large and veiny, the stem strong, sometimes tinged with red; the flow[illegible]edicel either erect or inclined. It is one

Painted Trillium. *Trillium undulàtum*

of our wildlings that could easily be transferred to the garden.

The Red Trillium is found frequently with the White, but is more abundant eastward than in the Ohio valley.

The Painted Trillium, *Trillium undulàtum*, is a very beautiful species found in cold, damp woods. Its long, white, wavy-edged petals are more or less flushed or striped with red. The plant reaches the height of eighteen inches, and possesses all the family characters

Ill-Scented Trillium. *Trillium erectum*

of the Trilliums; a tuberous rootstock, a single stem, three leaves, and a solitary blossom. Fruit a red berry.

There are other Trilliums which are in the main western and southwestern forms, found in Pennsylvania and Ohio and ranging to Minnesota, Kentucky, and Arkansas. One of the most interesting is the Dwarf White or Snow Trillium, *Trillium nivàle*, a tiny creature standing from two to five inches high. Its flowers are unmistakable White Trilliums, but they do not open very wide and are more protected by the leaves than is common. The bloom continues from March until May. The Sessile Trillium, *Trillium sessile* bears a flower very like that of the Ill-Scented, but differs in that it sits directly among the leaves with little if any flower-stem.

Trillium cernuum, the Nodding Trillium, bears a white-and-pink flower, wide open and nodding on its stem. It is found in rich woods throughout the range.

SMILÀCEÆ—SMILAX FAMILY

UPRIGHT SMILAX

Smilax ecirrhàta

An ancient Greek name.

An herbaceous Smilax, in open woods and thickets; of western and southern range. Found in northern Ohio. May.

Rootstock.—Large, tuberous.

Stem.—Annual, smooth, simple, erect, one to two feet high, unarmed.

Leaves.—Alternate, several-nerved, often grouped at the summit of a stem, ovate, rounded or cordate at base, more or less pubescent beneath; lower leaves reduced to scales; tendrils usually in the axils of the upper leaves.

Flowers.—Diœcious, yellowish green; borne in many-flowered umbels in the axils of the leaves or scales. Staminate flowers without an ovary and with four to six stamens. Pistillate flowers often a little smaller than the staminate with a few aborted stamens and a three-celled ovary. The perianth is six-cleft.

Fruit.—A bluish black berry the size of a pea.

The woods and thickets of the north are full of the vines of the Greenbriers, woody climbers, which make their way upward from the dense lower growth to the light and air of the lower tree tops by means of coiling tendrils, developed from the petioles which seize and hold, so enabling the plants to climb upward inch by

inch until the goal is reached. Most of them are covered more or less densely with prickles, whence comes their botanical name, Smilax, scraper. The Sarsaparilla of commerce is a Smilax, and the Smilaxes were formerly called Sarsaparillas.

Upright Smilax. *Smilax ecirrhàta*

The earliest bloomer of the genus here at the north was by the early botanists regarded simply as an unstable variation of *Smilax herbàcea*, the Carrion-Flower, which differs from its brothers in at least one important particular; it is an herb and not a woody vine. The fetid odor of the blossoms gives it its common name. Later botanists have divided the species, and the Upright Smilax is the form that sends up in

early May an erect, smooth, unbranched stem, one to two feet high, mostly destitute of tendrils and what there are belonging to the upper leaves. In the axils of the leaves are umbels of yellowish green six-lobed florets, each umbel containing from twenty to thirty of these. The plant is dicœcious, and these florets are either staminate without pistils or pistillate without stamens. In September the fertile stem is burdened with the weight of its bluish black berries in many-fruited umbels.

ORCHIDÀCEÆ—ORCHID FAMILY

MOCCASIN-FLOWER. PINK LADY'S-SLIPPER

Cypripèdium acaùle

Cypripèdium, from *Cypris*, Venus, and *pedion*, sock or buskin, that is, Venus's slipper.

Perennial. A remarkably beautiful flower blooming in sandy or rocky woods. Newfoundland to Manitoba, southward to Tennessee and North Carolina. The State flower of Minnesota. Rare in northern Ohio. May, June.

Root.—Fleshy, in fibrous tufts.

Scape.—Downy, two-leaved at base, eight to twelve inches high, one-flowered, with a green bract at the top.

Leaves.—Two, basal, six to eight inches long, oval, slightly hairy, many-ribbed.

Flowers.—Fragrant, pink, rarely white, large, showy, drooping from the summit of the scape.

Sepals.—Three, lanceolate, elongated, pointed, spreading, greenish purple; two of these united into one under the lip.

Petals.—Three; two of these narrower and longer than the sepals; the third, called the *lip*, is an inflated sac, often two inches long, slit down the middle and folded inwardly above, pink veined with darker pink; upper part of interior crested with long white hairs.

Stamens.—United with the style into an unsymmetrical declined column bearing an anther on either side and a dilated, triangular, petal-like, sterile stamen above, arching over the broad concave stigma.

Pollinated by bees. Nectar-bearing.

ORCHID FAMILY

The Orchids are a group of perennial herbs with corms or bulbs or tuberous rootstock, more or less sheathing leaves, and very irregular flowers. In fact, the Orchid family is the most peculiar in the vegetable world in the structure as well as the shape of its flowers. Of the six floral leaves that every Orchid flower possesses the three outer may be considered sepals, the inner three petals, of which one is always peculiar in shape. This one is considered a petal, though it may be in the form of a pouch or a cornucopia or a fringed banner or a broad platform, but it is always unusual. Technically, it is called the lip of the flower, thus leaving but two ordinary petals in the usual descriptions. In the case of all the Lady's-Slippers this lip becomes a pouch.

The arrangement of parts makes it virtually impossible for the flower to be fertilized by its own pollen. The stamens and petals are united into a single organ called the column, which projects forward from the stem into the open space at the top and within the lip. The stamens lie back of the stigma in such a position that the pollen could not, except by help of insects, be transferred from one to the other.

The large lip is opened with a narrow slit down in front, and the edges of the opening are turned inward. This forms a veritable trap, easy to get into but quite difficult to get out of, at least by the same door. The bee easily enters this open door into the sac. Once in and satisfied with honey she looks for a way out. She finds a way finally, but not the way she came in. At the top of the flower, on either side of the column, she finds a passage into the open air just wide enough to push through. In doing this she brushes against

Moccasin-Flower. *Cypripèdium acaûle*

the sticky pollen mass of the open anthers and carries away some of it upon her hairy sides. If she enters another flower and in due time gets out as before, she will be very likely to leave some pollen on the stigmatic surface of that flower.

This contrivance for cross-fertilization is so elaborate that observers tell us it often defeats its own ends and the plants are chiefly propagated by the root.

The Moccasin-Flower or Pink Lady's-Slipper is one of the earliest and most beautiful of the genus. It is the State flower of Minnesota. In early May in rich woodlands the flowering stem may be found rising between two large, thick, pointed leaves and bearing at its summit a great pink pouch curiously veined and crossed with darker lines; the one noticeable petal attended by variously pointed and twisted sepals and petals, all disregarded for the magnificence of the one. In short, it is a most gorgeous flower and one wonders

"What potent blood hath modest May"

to be able to produce such a one in our northern woods.

HAIRY LADY'S-SLIPPER. YELLOW LADY'S-SLIPPER

Cypripèdium pubéscens

Perennial. Bogs and moist, hilly woods and thickets. Nova Scotia to Ontario and Minnesota, south to Alabama and Nebraska. Frequent in northern Ohio. May–July.

Roots.—Fleshy, fibrous.

Scape.—Hairy, leafy, one to two feet high, one-flowered.

Leaves.—Alternate, oval, pointed, three to five inches long, parallel-veined.

ORCHID FAMILY

Flowers.—Solitary, pale yellow, large, showy, at the top of a leafy stem.

Sepals.—Three, two united, greenish or yellowish, striped with purple or dull red, very long, narrow.

Petals.—Two, brown, narrow, twisting; the third, the lip, an inflated sac, pale yellow streaked with purple lines, one to two inches long, white hairs within.

Stamens.—United with the style into an unsymmetrical declined column bearing an anther on either side, and a dilated, triangular, petal-like, sterile stamen above, arching over the broad concave stigma.

Pollinated by bees. Nectar-bearing.

"There's a belted bee in the orchid's cup,
He's taking his tithes from his tenantry;
And never a care in the world knows he,
Wise bee!

"But the golden dust of the stamen's store
Is left at each orchid's open door;
A part of the flower's plan is he
As he takes tithes of his tenantry."

This is the earliest Lady's-Slipper where *Cypripèdium acaùle* does not grow. The beautiful yellow blossoms swing with an outward poise at the top of a leafy stem, solitary but sufficient. The interior of the pouch secretes nectar; the opening is to admit the bee, and the inflected edge forces it to crawl out near one of the anthers, where it meets the glutinous pollen. Entering another pouch, it leaves some of the pollen on the stigma as it escapes. The blossom is an enticing trap for bees small enough to enter and vigorous enough to escape. The lure and the trap and the way of escape are all prearranged—and the result is cross-fertilization, the production of innumerable seeds, and

Yellow Lady's Slipper. *Cypripidium pubescens*

the certainty that more orchids will arise in the woods. But if the bee does not come, the lure and the trap and the way are all in vain.

SHOWY ORCHIS

Órchis spectábilis. Galeórchis spectábilis

Órchis is the ancient name, of unknown meaning.

Perennial. One of the most charming of woodland flowers found in rich, moist woods. New Brunswick to Ontario, southward to Georgia, Kentucky, and Nebraska. Frequent in northern Ohio. April, May.

Roots.—Fleshy, fibrous.

Scape.—Angled, few-flowered, four to eight inches high; bracts leaf-like, lanceolate.

Leaves.—Two, rarely three, oblong-obovate, shining, three to six inches long, parallel-veined.

Flowers.—Showy, pink and white, in a few-flowered spike; *lip* turned downward, coalescing with base of column, spurred below; anther cells near together and parallel; sepals and petals all lightly unite to form the upper hood, pink-purple; the ovate, undivided lip is white.

This is the first orchid of the year; very charming and very beautiful. It dwells of choice in rich, moist open woods, growing from four to twelve inches high. The single, thick, fleshy stem springs from between a pair of shining, broadly oval leaves narrowed into a groove at the base. From three to six fragrant, inch-long flowers are clustered on the stalk, each with a clasping bract, forming a short, loose terminal spike. The small sepals and petals look much alike and together form a pink-tinted and white-pointed hood,

beneath which the spreading white lip is prolonged into a blunt spur. The flower-stem is noticeably twisted and the roots are fleshy-fibred.

The domestic economy of the orchid differs so greatly from that of other flowers that with other flowers in

Showy Orchis. *Orchis spectabilis*

mind one is puzzled at first to understand what the orchid is doing. Ordinary flowers bear their pollen at the summit of their stamens with a view of powdering anything winged within reach. But the orchid hides its pollen in two long, deep pockets which botanists regard as one great double anther, and instead of being loose so as to scatter easily it is tied into lumps by elastic cords, so the messenger who carries must take all or none. Other flowers place their stigmas

at the end of the style and hold this up so all can see; the stigma of the orchid is a glutinous patch on the blossom's face. The object of all this is cross-fertilization under highly specialized conditions. The orchid is incapable of self-fertilization and unless the wandering insect appears at the right time and place the ovules remain sterile and never develop into seeds. Moreover, the seeds germinate most deliberately and this also tends to limit the number of plants.

ARISTOLOCHIÂCEÆ—BIRTHWORT FAMILY

WILD GINGER

Âsarum Canadénse

Âsarum, an ancient name of obscure derivation.

A stemless perennial, found in rich, moist woods, where often it forms large beds of bright-green, velvety leaves.

Wild Ginger. *Âsarum Canadénse*

New Brunswick to Manitoba, south to North Carolina and west to Missouri and Kansas. Abundant in northern Ohio. April–June.

Rootstock.— Aromatic, creeping, bearing two or three scales, then one or two kidney-shaped leaves, then on with more scales and more leaves.

Leaves.—Shining, covered with soft hairs, broad, kidney-shaped, on long, hairy petioles, usually in pairs with the flower between.

Calyx.—Slightly angular, bell-shaped, hairy, thick, and fleshy, with three dark, reddish purple lobes, pointed and reflexed; the calyx tube grown fast to the ovary.

Corolla.—Wanting.

Stamens.—Twelve; filaments slender; anthers short.

Pistil.—With a six-celled ovary, and surmounted with six thick, radiating stigmas.

Fruit.—Fleshy, globular capsule; seeds large.

Pollinated by small flies. Stigma matures before the anthers.

In rich, moist woods one often comes upon beds of shining, velvety, kidney-shaped leaves that carpet the forest floor with a covering of rare and unusual beauty. If it is April an investigation will disclose that in the main these leaves are standing up in pairs and between them, close to the ground, so hidden under dry leaves that one must fairly dig it out, is a small, dark flower-bell on a short stem, its parts so grown together that the blossom seems almost solid. As a rule, the one thing a plant flaunts before all the world is a flower, but Wild Ginger reverses this, hides its blossom and instead of seeking sunlight puts it in the shade, almost in the dark. The probable explanation is that the flies that fertilize it live in semidarkness.

All parts of the plant have a decided ginger taste.

POLYGONÀCEÆ—BUCKWHEAT FAMILY

FIELD-SORREL. RED SORREL. SHEEP-SORREL

Rùmex acetosélla

Rùmex, the ancient Latin name, of unknown etymology.

Field-Sorrel. *Rùmex acetosélla*

Perennial by running root-stock. Naturalized from Europe. Easily recognized by its arrow-shaped leaves. Abundant everywhere. May, June.

Stems.—Six to twelve inches high, slender and branched above, angular and furrowed, tufted.

Leaves.—Basal leaves lanceolate-hastate, one to two inches long, on long petioles, agreeably acid. Upper stem-leaves greatly reduced, nearly linear and without ears.

Flowers.—Dicœcious, that is, of two kinds, staminate and pistillate; small, crowded in paniculate racemes; yellowish red and reddish purple, borne in whorls along the flowering stems.

Calyx.—Of six sepals; three outer spreading, three inner larger and continuing to grow after flowering and so protecting the akene.

Corolla.—Wanting.

Stamens.—Six, borne at the base of the calyx, exserted.

Pistil.—One, with three styles.

Fruit.—Akene, granular, surrounded by the calyx.

Pollinated by bumblebees, honey-bees, and small butterflies.

This weed can be found in fence corners or hugging close to the foundation of a building and sometimes taking entire possession of a neglected field. Its basal, arrow-headed leaves, pleasantly acid to the taste, mark it unmistakably.

This is the plant whose blossoms often cover large areas with a reddish yellow, misty cloud about the last of May, only to disappear after ripening thousands of seeds to come up the following spring. Each tiny spire is small and inconspicuous, but sorrel stands by sorrel until the total makes myriads and the field glows in red or reddish gold with almost a metallic reflection. The plant is not long-lived, will easily die out, and cultivation drives it away.

PORTULACÀCEÆ—PURSLANE FAMILY

SPRING-BEAUTY

Claytònia Virgìnica

Claytònia, in honor of Doctor John Clayton, a Virginian botanist.

Perennial. In thin moist woods. Nova Scotia to the Northwest Territory, southward to Georgia and Texas. Abundant in northern Ohio. March–May.

Spring-Beauty. *Claytònia Virgìnica*

Stem.—Simple, from a small, deep tuber, often reclining, frequently stained with red.

Leaves.—Two, opposite, long and narro

Flowers.—Pink with deeper pink veins, growing in a loose raceme, opening a few at a time, one-half to three-fourths of an inch across; pedicels slender, at length recurved.

Calyx.—Of two sepals, ovate, persistent.

Corolla.—Of five petals, slightly united at the base, and notched at the apex.

Stamens.—Five, attached at the base of the petals; filaments white.

Pistil.—One, with style three-cleft at the apex.

Pod.—One-celled, three-valved, three to six-seeded.

Pollinated by bees, flies, and butterflies. Anthers mature before the stigma.

> "Where the fire had smoked and smouldered,
> Saw the earliest flower of Spring-time,
> Saw the beauty of the Spring-time,
> Saw the Miskodeed in blossom."
>
> —"Hiawatha," LONGFELLOW.

The Spring-Beauty grows in moist and sunny places in the open wood, generally in colonies scattered over a considerable area. The single stalk springs from a small, deeply seated, tuberous root, is pale green, often stained with red. The leaves are two, long, narrow, fleshy, with a distinct midrib, entire margin, and pointed at base and apex.

The blossoms are borne on the stem in a one-sided raceme, are white or pale pink with darker pink veinings and less than an inch across when fully expanded. They open fully only in the sunlight, and if the day is cloudy the corolla closes.

Because the flowers appear in a raceme, the plant has a longer period of bloom than the Hepatica whose flowers are solitary; that is, a single plant of Spring-Beauty will produce perhaps ten or twelve blossoms during the season, but not more than three or four are perfect at any one time, and this greatly extends the flowering period.

Carolina Spring-Beauty, *Claytònia Caroliniàna*, is found in damp woods, not abundantly throughout the range of *Virgínica*. The chief specific difference lies in the broader leaves and fewer flowers. The period of bloom extends from March to May. Reported in northern Ohio.

CARYOPHYLLÀCEÆ—PINK FAMILY

COMMON CHICKWEED

Stellària mèdia. Alsine mèdia

Stellària, from *stella,* a star, in allusion to the star-shaped flowers. *Alsine,* Greek for grove, the habitat of some species.

Annual. Naturalized from Europe. Everywhere in damp ground. April–December.

Stem.—Weak, branching, procumbent or ascending.

Leaves.—Ovate or oval, small, opposite on the stem, sessile or petioled, acute, rarely obtuse.

Flowers.—Small, white, solitary or slightly clustered.

Calyx.—Sepals five, oblong, longer than the petals.

Corolla.—Petals five, two-cleft, shorter than the sepals.

Stamens.—Two to ten, inserted around the pistil.

Pistil.—Ovary one-celled; styles three.

Fruit.—Ovoid capsule, several-seeded.

March 21, 1853.

The *Stellaria media* is fairly in bloom in Mr. C.'s garden. This, then, is our earliest flower, though it has been introduced. It may blossom under favorable circumstances in warmer weather than usual any time in the winter. It has been so much opened that you could easily count its petals any month the past winter and plainly blossoms with the first pleasant weather that brings the robins.—THOREAU.

The Chickweed is our one plant hardy enough to live and bloom th[illegible]hout a northern winter. It

probably could not do this in New England, possibly not in New York, but on the southern shore of Lake Erie during those winters that not infrequently occur, when no ice is gathered from the lake, it grows and blooms all winter long in protected places.

Because of this hardiness its distribution is world-wide. A very striking story to illustrate this is told by Sir Joseph Hooker, who says: "Upon one occasion, landing on a small uninhabited island, nearly at the antipodes, the first evidence I met with of its having been previously visited by man was the English Chickweed, and this I traced to a mound that marked the grave of a British sailor, which was covered with the plant, doubtless the offspring of seed that had adhered to the spade with which the grave had been dug."

Common Chickweed.
Stellaria media

The blossom is very small and under a glass extremely pretty. The five sepals form a very perfect star; the petals are curiously two-cleft, making five look like ten, these are rounded at the apex and shorter than the sepals. The stamens are a variable number; when things are going well with the plant there are sure to be five and maybe more, but in late autumn or early winter the pinched little blossom may afford only two.

The Chickweed is an example of that meekness that inherits the earth. It does what it can, it lives where it must. A blossom usually terminates the stem and

from the axils of the newest leaves spring branches with a flower at the end of each branch. It produces abundant seed in winter and this proves it capable of self-fertilization. One of the best things about the plant is that canary-birds love it.

When September comes the Chickweed often forms a soft green carpet that mitigates if it does not hide the desolation of the kitchen-garden, and transforms the unsightly home of the early potato and the sweet corn by a covering of tender green, which, upon examination, is seen to be dotted with minute, starry white blossoms.

RANUNCULÀCEÆ—CROWFOOT FAMILY

HYDRASTIS. GOLDEN SEAL

Hydrâstis Canadénsis

Perennial. Rich woods. New York to Minnesota and southward. Frequent in northern Ohio. April, [illegible].

Rootstock.—Thick, knotted, yellow, about two inches long, with many long, fibrous roots; juices bitter.

Flower-stem.—Simple, hairy, two-leaved, bearing a single greenish-white flower.

Leaves.—Basal leaf long-petioled, rounded, heart-shaped at base, five to seven-lobed, doubly serrate, veiny; when full grown in summer, four to nine inches wide; stem-leaves two, borne at the summit of the stem.

Flowers.—Greenish white, sepals dropping early so as to leave the flower chiefly a mass of stamens.

Calyx.—Three sepals, petal-like, falling when the flower opens.

Corolla.—Wanting.

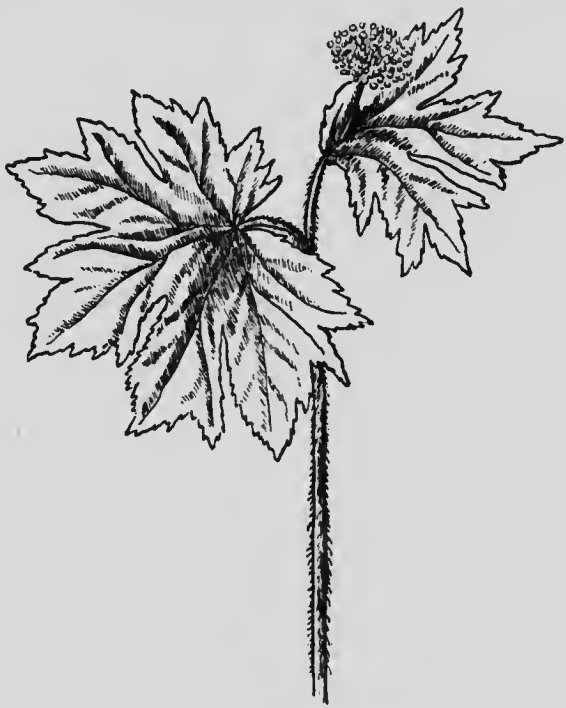
Stamens.—Many.

Pistil.—Twelve or more carpels in a head.

Fruit.—A head of small, crimson, fleshy carpels, looking like a red raspberry.

This is a plant that ordinary observers would call rare, and, as a matter of fact, is not often seen, principally because there is so little to see. A low perennial herb with a stout, strongly rooted rootstock, golden yellow when broken, sends up in the spring a

slender stem about a foot high, which bears one or two alternate five to seven-lobed leaves and a large basal leaf of similar general outline. At the summit of this stem is a single greenish white flower, which is



Golden Seal. *Hydrástis Canadénsis*

destitute of a corolla and can boast of only three whitish sepals that fall promptly as the flower opens. So all that one sees is a two-leaved stem surmounted by a cluster of stamens and pistils, and naturally it is neglected. The fruit is somewhat pulpy when ripe and in general appearance suggests a small red raspberry.

The plant grows in shaded ravines and is native to the rich woods of the Appalachian region, the Ohio

valley, and northward to southern Wisconsin. It has long been used in medicine, and in recent years to an increasing degree, so that its cultivation is now widely practised in small gardens. It requires a loose, loamy, shaded soil, a moist and cool location. When dried for commercial use the rootlets should be very carefully handled, for apart from the rootstock they have not as great commercial value as when not separated.

COWSLIP. MARSH-MARIGOLD

Cáltha palústris

Cáltha is the Latin name of the Marigold.

A low, bunched, perennial plant, common in marshes and wet places, blooming in early spring and bearing clusters of brilliant yellow flowers of the buttercup type. Newfoundland to the Rocky Mountains, south to Iowa and South Carolina. Common in northern Ohio. April, May.

Stems.—Stout, smooth, succulent, hollow, one to two feet high, branched at the top.

Leaves.—Basal leaves on long, broad petioles, heart-shaped or kidney-shaped, entire or crenate, broader than long; stem-leaves short-petioled or sessile. Often used as a pot-herb.

Flowers.—Of buttercup type, brilliant yellow, borne in few-flowered clusters, either terminal or axillary.

Calyx.—Of five to nine, broad, oval sepals that look like petals, brilliant yellow, imbricated in bud.

Corollá.—Wanting.

Stamens.—Many; both filaments and anthers bright yellow.

Pistil.—Five to ten carpels, ripening into many-seeded follicles.

Pollinated by flies and bees. Nectar-bearing. Anthers and stigmas mature at the same time.

Cáltha palústris is not a Marigold, and still less is it a Cowslip, but both names designate it. The Indian name Onondaga, "it blooms in the swamps," is best of all if we could only make up our minds to use it. The English species has the pretty name King-Cup, but, though celebrated in English verse, it seems never to have come overseas to us.

Marsh-Marigold. *Cáltha palústris*

This early plant, growing along the wet borders of streams and marshes, is an example of vigorous, healthy growth; its stout, succulent stem, its large green leaves, and, above all, its golden flowers distinguish it among all the surrounding vegetation.

These vary from one and a half to two inches across and grow in loose few-flowered clusters. The blossoms are gloriously yellow, there are no dark lines guiding to nectar, sometimes a greenish cast overshadows the flower, but usually its yellow is undimmed. The nec-

tar lies open so that the flies and bees find it without any especial directions. Although the anthers and stigmas mature at the same time, the anthers open outwardly and the outermost ones, farthest from the stigmas, open first, so that the insects seeking nectar scramble over the open ones and bear the pollen to the waiting stigmas.

T. W. Higginson writes in *Outdoor Studies:* "One afternoon last spring I had been walking through a copse of young white birches—their leaves scarce yet apparent—over a ground delicate with Wood-Anemones, moist and mottled with Dog's-Tooth Violet leaves and spangled with the clusters of Claytonia or Spring-Beauty. All this was floored with last year's faded foliage, giving a singular bareness and whiteness to the foreground. Suddenly, as if entering a cavern, I stepped through the edge of all this into a dark little amphitheatre beneath a hemlock grove, where the afternoon sunlight struck broadly through the trees upon a tiny stream and a miniature swamp—this last being intensely and luridly green, yet overlaid with the pale gray of last year's weeds, and absolutely flaming with the gayest yellow light from great clumps of Cowslips. The illumination seemed perfectly weird and dazzling; the spirit of the place appeared live, mild, fantastic, almost human. Now open your Tennyson and read: 'The wild Marsh-Marigold shines like fire in swamps and hollows gray.' "

ACTÆA. WHITE BANEBERRY

Actæa álba

Actæa, an ancient name of the Elder, transferred to this plant by Linnæus.

Perennial. Open woods. Nova Scotia, west to Minnesota, south to Georgia and Louisiana. Common in northern Ohio. April–June.

Stem.—Erect, one to two feet high.

Leaves.—Petioled, large, ternately compound, leaflets ovate, deeply cut and sharply toothed, terminal one obovate.

Flowers.—Small, white, in oblong terminal racemes.

Calyx.—Sepals three to five, petaloid, falling when the flower expands.

Corolla.—Petals four to ten, white, narrow, on slender claws.

Stamens.—Many; filaments white; anthers yellow.

Pistil.—One; stigma sessile, two-lobed.

Fruit.—Many-seeded berry, globular, white with a black eye, borne on a thickened red pedicel.

Pollinated by small bees. Not nectar-bearing. Stigmas mature before the anthers.

In a damp, shaded ravine or on a wooded hillside where the undergrowth is open one often finds in early May the compound leaves and fluffy flower-cluster of the White Baneberry.

Each tiny flower as it begins life has four to five petal-like sepals, but drops them as the flower opens, leaving as a residue from four to ten blunt, narrow, white petals, which soon take themselves away, so

that at the end many white, fine, yellow-tipped stamens and a single pistil do duty as the flower. Inevitably this confuses the amateur botanist who does

White Baneberry. *Actæa alba*

not suspect that so much of the blossom has departed.

The flowers are borne on short stems which grow out from the main stem at right angles, and open almost together along the upper part of a pale-green stalk. The flower-cluster is not very showy, rather

delicate in fact, but very pretty and feathery. The flower-stem unites with the main stalk at the junction of the leaf-stems.

In September the fruit is very noticeable in the form of a loose, stiff raceme of pure white berries, each with a little black eye and borne on thickened red pedicels. The effect is unusual and quite worthy the children's name—Dolls' Eyes.

The Red Baneberry, *Actæa rùbra*, is a form very like White Baneberry but of more northern range. The general character of the two plants is very similar, but the fruit of the Red Baneberry is a thick cluster of red oval berries upon slender pedicels. The blooming season is considerably later.

WILD COLUMBINE. HONEYSUCKLE

Aquilègia Canadênsis

Perennial. Sunny, rocky slopes and ledges, sides of ravines, something of a cliff-dweller. Nova Scotia to the Northwest Territory, south to Florida and Texas. Frequent in northern Ohio. April–July.

Stems.—Twelve to eighteen inches high, loosely branching, more or less tinged with purple.

Leaves.—Twice or thrice compound. The basal leaves are borne on long slender stems that arise directly from the root and in spring form thick, rounded tufts; each leaflet has three or more lobes with irregular, rounded notches; the upper leaflets are variously shaped, generally rounded.

Flowers.—Irregular, solitary, nodding, scarlet with yellow linings, both terminal and axillary.

Calyx.—Five ovate sepals, colored like the petals.

Corolla.—Of five petals, each a slender tube, tapering to a thickened rounded point, forming the upright and nearly straight spurs.

Stamens.—Many, yellow-tipped, projecting.

Pistil.—Five carpels, slender, projecting; forming erect pods when mature; seeds black, smooth, shining.

Pollinated by bumblebees and humming-birds. Nectar-bearing. Stamens mature before the stigmas.

Wild Columbine. *Aquilègia Canadénsis*

The Columbine dwells of choice on sunny, rocky slopes in open woods where the soil is sparse and well drained. It often prospers with hardly sufficient earth to cover its roots. The form of the flower is unique and exquisitely beautiful. The petals are lengthened into hollow spurs in shape like trumpets with a drop of nectar in each of the closed ends. The sepals are the petal-like leaves between the trumpets and of the same color. The flowers nod and the stamens protrude like a golden tassel. The pollen of the outer row ripens while the inner row is still undeveloped, and so these act as a sheath for the stigmas. After all the stamens have discharged their pollen, the styles awaken from their sleep, lengthen, the feathery stigmas open and, curving, place themselves at the

entrance of each cornucopia while the flower continues its honey call to the bee. After the stigmas are fertilized the blossom fades, the nodding stem becomes erect, and the group of seed-pods mature erect and rigid at the summit of a stiff and straightened stalk.

Both the common and the botanical name of the Columbine are puzzles; they seem so entirely without rhyme or reason. Columbine is apparently derived from *columba*, a dove, and *Aquilègia* from *aquila*, an eagle; but it requires a great deal of imagination to see any appropriateness in either. If we take *Aquilègia* as Water-Bearer, the case is no easier. Resemblance of the petals when looked at from a certain angle to the heads of pigeons around a dish, which was a favorite device of ancient artists, may perhaps explain the *columba*. This likeness is more apparent in the case of the European species, *Aquilègia vulgàris*, than in our native forms. Whatever the name, the flower has long been a favorite. It is found as a border upon an illuminated manuscript of the fifteenth century, and was at one time combined with the red rose as a badge of the royal house of Lancaster. The Wild Columbine was sent to Hampton Court during the reign of Charles I.

English Columbine from an Angle which Gives the Doves

An old play of Chapman's (1600) shows the Columbine as an emblem of ingratitude:

"What's that, a Columbine?
No, that thankless flower grows not in my garden."

It is also one of Ophelia's flowers:

"There's fennel for you and columbines."

ANEMONE. WINDFLOWER

Anemòne quinquefòlia. Anemòne nemoròsa, var. *quinquefòlia*

Perennial. Margins of woods and thickets, in the sun and yet somewhat shaded. Nova Scotia to Ontario and Minnesota, west to the Rocky Mountains, south to Georgia. Abundant in northern Ohio. April, May.

Rootstock.—Slender, horizontal.

Flower-stem.—Five to twelve inches high, bearing a whorl of three involucral leaves.

Leaves.—Stem-leaves three-parted, the wedge-shaped divisions lobed and toothed, or the lateral ones deeply two-parted; basal leaves long-petioled, appearing later than the flowering stem, five-parted, the divisions oblong, wedge-shaped, toothed.

Flowers.—White or slightly tinted at the edges, an inch across, solitary at the summit of the flowering stem.

Calyx.—Five to nine petal-like sepals.

Corolla.—Wanting.

Stamens.—Many; anthers cream color.

Pistil.—Fifteen to twenty carpels in a bunch, each oblong with a hooked beak.

Pollinated by bees and flies. Capable of self-fertilization.

"Within the woods
Whose young and half-transparent leaves scarce cast a shade,
Gay circles of Anemones dance on their stalks."

—BRYANT.

These Anemones are commonly found in colonies along the margins of open woods where the soil is light and partly shaded. They are often clustered about old stumps. The beautiful, delicate blossoms on slender, wiry stems bend and sway and yield and come to the passing breeze, so that they are not inappropriately named. The flowers have no true petals. The flower-bud nods and its outer surface is flushed with pink, but when fully open a white star faces the sun. Many stamens with cream-colored anthers are clustered about the central group of small green pistils in the centre of the flower-cup. The effect of the plant as a whole is enchanting, and is only surpassed in delicacy and beauty by its blood-brother, the Rue-Anemone.

The blossoms stand up well in the sunshine but droop in more or less discouraged fashion at night or during cloudy weather. For some reason not clear to us the Anemone appealed greatly to the ancients; it was sacred to Anemos, the wind-god of the Greeks, and they believed that without his especial favor it could not open. The Greek poets also tell us that Anemone originated from the tears dropped by Venus as she grieved in the forest over the death of Adonis. We are also told that the Romans believed that Anemone possessed a mystic charm to ward off fever, and in this faith they sought the flower and wore it much in the same spirit that we seek and wear the four-leaf clover. The Latin name is *Anemòne*, but the English form is Anémone.

Anemone. *Anemône memorôsa*, var. *quinquefôlia*
Potentilla. *Potentilla Canadénsis*

AMERICAN PASQUE-FLOWER

Anemòne pàtens, var. *Nuttalliàna*. *Pulsatilla hirtissima*

Perennial. In dry soil, prairies. Illinois to the Northwest Territory, Nebraska, and Texas. Absent from northern Ohio. March, April.

Rootstock.—Thick.

Scape.—Six to twelve inches high, with a three-leaved involucre and solitary terminal flower.

Leaves.—Much divided into narrow, linear, acute lobes; the basal on slender petioles, those of the involucre sessile, and erect or ascending.

Flowers.—Large, white or tinged with purple, two to three inches across.

Calyx.—Five to ten petaloid sepals, white or pale bluish purple.

Corolla.—Wanting.

Stamens.—Many; inner stamens with anthers, outer stamens often sterile.

Pistil.—Many carpels in a head, each with a long, hairy style.

Fruit.—A head of akenes, each with a long, persistent, feathery plume, made by the growing style.

Pasque-Flower. *Pulsatilla hirtissima*
After Gray's "Genera Plantæ Americæ"

A Western Anemone of exquisite beauty, opening its starry flowers very early in the spring, and later in

fruit showing heads of silky akenes resembling those of some species of Clematis.

Pasque is a name for Easter, and Pasque-Flower means Easter-Flower. In Minnesota the Pasque-Flower is known to the children as the first flower to bloom in early spring. It is not really the first, several open earlier, but this is the one that attracts popular attention.

MEADOW RUE ANEMONE

Anemonélla thalictroìdes. Syndêsmon thalictroìdes

Syndêsmon, Greek, bound together, the plant uniting many of the characters of *Anemòne* and *Thalictrum*.

Perennial. In rich woods and borders of thickets. Maine to Minnesota and Kansas. Abundant in northern Ohio. March–June.

Roots.—Fleshy, tuberous.

Flowering stem.—Slender, smooth, six to twelve inches high.

Leaves.—Basal leaves twice compounded in threes; stem-leaves three in a whorl, forming an involucre, two consisting of three rounded, scalloped, petioled leaflets; sometimes the third has but a single leaflet.

Flowers.—Three to six, slender pedicelled, white flowers, one-half to three-fourths of an inch across, at the summit of the stem.

Calyx.—Of six to ten sepals, white or slightly flushed with purple, resembling petals.

Corolla.—Wanting.

Stamens.—Many; filaments threadlike; anthers oblong.

Pistil.—Compound; carpels six to ten; style none; stigma simple.

Fruit.—Akenes, pointed, deeply grooved.

Meadow Rue Anemone. *Syndêsmon thalictroides*

The Rue-Anemone comes a little earlier than *Anemòne quinquefòlia* and bears a more delicate flower; perhaps the delicacy of its leaves adds to its charm. These resemble those of the Meadow-Rue and give the common name to the plant. It likes moist woods and flowers abundantly throughout May. The flowers appear in a little umbel of two or three blossoms, surrounded by an involucre of what is apparently a loose whorl of long-petioled, three-lobed leaflets. The centre flower opens first. This plant was formerly given in the botanies as *Anemòne thalictroìdes;* afterward it appeared as *Thalictrum anemonoìdes;* finally it got the name *Anemonélla thalictroìdes*, which, however, it seems to have lost, and in the late botanies it stands as *Syndésmon thalictroìdes*. The explanation of all these changes lies in the fact that the plant so resembles both *Anemòne* and *Thalictrum* in its specific characters that botanists name it according to their personal views.

FALSE RUE-ANEMONE. ISOPYRUM

Isopỳrum biternàtum

Perennial. Moist woods and thickets. Ontario to Minnesota, south to Florida and Texas. Rare in northern Ohio. May.

Root.—Fibrous and beari[illegible] all tubers.

Stem.—Erect, slender, branching above.

Leaves.—Basal leaves ternately compound, long-petioled; the ultimate segments obovate, obtuse, lobed, or divided; stem-leaves similar but sessile or short-petioled.

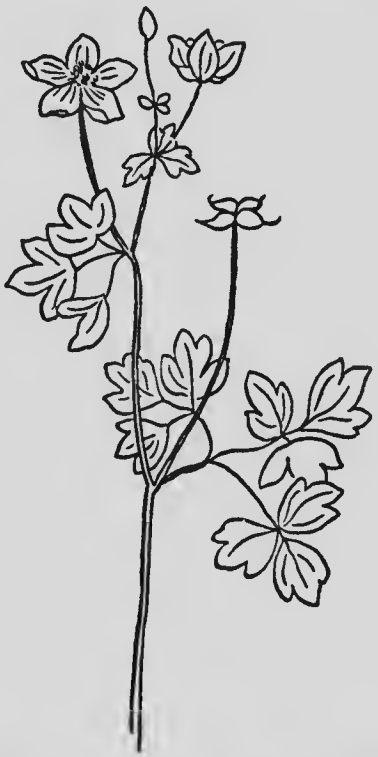
Flowers.—Several, white, terminal and axillary, one-half to three-fourths of an inch across.

Corolla.—Wanting.

Calyx.—Of five petaloid sepals, oblong, acute, or obtuse.

Stamens.—Many.

Pistil.—Of many carpels, forming a head of follicles in fruit; each follicle many-seeded and long-beaked.



False Rue-Anemone. *Isopyrum biternatum*
After Gray's "Genera Plantæ Americæ"

Isopyrum so greatly resembles Meadow Rue Anemone that it is sometimes called False Rue-Anemone, but the little plant is quite worthy a name of its

own. Its botanic name is of Greek derivation, but without significance so far as we know.

HEPATICA. LIVERLEAF

Hepática acutíloba. Hepática trilòba

Hepática, liver, referring to the shape of the leaf.

Low, stemless perennial. Native to the open woods of the northern parts of America, Europe, and Asia. Grows in tufts, with many fibrous roots. Abundant in northern Ohio. March, April.

Scapes.—Four to six inches high, downy.

Leaves.—Hairy at first, appearing after the flowers, all from the root, long-petioled, thick, evergreen, three-lobed, reniform.

Flowers.—Blue, lavender, white, pale pink, borne singly on an erect scape; with three involucral leaves a quarter of an inch below the blossoms, looking like a calyx.

Corolla.—Wanting.

Calyx.—Sepals petal-like, five to eight, oblong, obtuse.

Stamens.—Many, with greenish white anthers and abundant pollen.

Pistil.—Many carpels varying in number from six to twenty-four, one-celled, one-ovuled.

Fruit.—Akenes, short-beaked, hairy.

Pollinated by bees and flies.

"I, country born and bred, know where to find,
Some blooms that make the season suit the mind,
An' seem to metch the doubtin' bluebird's notes,—
Half vent'rin' liverworts in furry coats."

—"The Biglow Papers," LOWELL.

CROWFOOT FAMILY

This is the first spring flower that people ordinarily see. The Skunk-Cabbage is indeed earlier, but it is coarse, ill-smelling, and little known, while the Hepatica is delicate, beautiful, and everywhere recognized. The blossoms appear in warm, sheltered places in March and are abundant in sunny ravines and hollows in early April. They precede the new leaves by some weeks, the rusty old ones being obliged to do duty as foliage while the plant is in bloom. The early bloom is due to the fact that the flower-buds are started in the fall and carefully protected, wrapped away from harm at the very centre of the plant. In addition, the dry leaves of autumn sift over and upon the plant and make so fitting a blanket that when the snows come the little creature is housed dry and warm for the winter, ready to answer the call of the sun as soon as the snows melt. The date of its bloom is the date of the melted snow and the first warm drying days and varies as these vary. Stems and bracts and flower-buds are covered with soft, white, silky hairs in order to protect the blossom from too rapid changes of temperature.

Hepatica. *Hepática acutíloba*

The flowers vary in color from pale blue to pure white, shading to lavender and soft pink, and the flower-stems come out of the ground in little tufts, one root frequently producing ten to thirty individual blossoms.

This blossom is wonderfully sturdy. It opens at the regulation time, and though afterward the winds blow, the frost comes, or April snow falls thick and fast, it is all one to the little creature, for the tinted sepals then close about the stamens and pistils, the three-leaved involucre enfolds them all, each tiny blossom bows its head to the storm and waits till the clouds roll by. Cradled in the arms of arctic snows for innumerable ages, the plant has acquired a hardiness out of all proportion to its apparent delicacy. The centre of the flower is greenish white. The many stamens have greenish white anthers; they stand around the little green pistils at the centre of the flower. Each pistil holds up a tiny, curved, whitish stigma.

The Hepatica is so adapted to the shade that it will not live in full sunlight. The leaves which have passed the winter under the snow are rich purple beneath and brown and mottled greenish above. The new leaves come forth in the spring before the leaves of the trees create too much shade. In the fall, after the trees are bare, the leaves again become active.

Two species grow side by side in our Northern States, *Hepática triloba*, sometimes called the Round-Leaved Hepatica because the leaf-lobes are rounded; and *Hepática acutíloba*, because the leaf-lobes are pointed. The first is more abundant in the Eastern States, the second is the prevailing form in Ohio and westward; in other respects the two are one.

CROWFOOT FAMILY

The names Hepatica and Liverwort hark back to the age of the simpler and echo the doctrine of signatures. In mediæval medical practice it was believed that every disease could be cured by some plant; moreover, that this plant was indicated by a real or fancied resemblance between a given part and the organ diseased. As the leaf of the Hepatica is three-lobed it suggested the liver; thence the plant was considered a specific for diseases of that organ.

EARLY MEADOW-RUE

Thalictrum dioicum

Thalictrum—derivation unknown.

Perennial. Noticeable for its tufts of beautiful fern-like leaves. In rich, open woods. Labrador to Alabama, west to Minnesota and Missouri. Abundant in northern Ohio. April, May.

Stem.—Branching, one to two feet high.

Stem-leaves.—Alternate, twice to thrice compound; the leaflets slightly drooping, rounded; margins somewhat scalloped; petioles dilated at base; basal leaves the same.

Flowers.—Diœcious. Staminate flowers are clusters of drooping tassels of slender filaments, bearing anthers full of pollen; each flower has four or five greenish sepals, but no corolla and no pistil. Pistillate flowers are upon a different plant and these consist of clusters of pistils grouped four or more together; each flower has four or five greenish sepals, but no corolla and no stamens.

Fruit.—Pistils ripen into ovoid, pointed akenes.

Pollinated chiefly by the wind.

The Early Meadow-Rue loves to place itself along a woodland path; possibly the bit of sunshine permitted

by the path is the reason; at any rate, the plant adorns the open way when permitted. Its graceful foliage is its greatest charm; the leaves are twice or thrice compound, suggesting the spray of the Maidenhair fern. The stems stand in tufts or bunches, and after a rain the leaves, silvery with drops of water, possess an exquisite beauty. The species is dioecious, that is, the stamens and pistils are borne on different individuals; consequently there are two kinds of blossoms.

Early Meadow-Rue. *Thalictrum dioicum*

In early April the staminate plant sends up a stem that at the summit divides and subdivides, bearing numbers of tiny, nodding, greenish yellow tassels, shedding pollen in abundance. Each tassel consists of four green sepals, with many yellowish drooping anthers on hair-like filaments. The pistillate flowers are likewise clustered at the summit of a stem and each consists of four to fifteen carpels, but they are stiff and have not the careless grace of their brothers.

TUFTED BUTTERCUP. EARLY BUTTERCUP

Ranúnculus fasciculàris

Ranúnculus, a little frog, because some species live near water.

Perennial. Open woods and rocky hillsides. New England, Ontario, Manitoba, south to North Carolina and Texas. Common in northern Ohio. April, May.

Leaf of Early Buttercup. *Ranúnculus fasciculàris*

Roots.—Thickened, fleshy-fibred.

Stems.—Downy, generally low, six to twelve inches high.

Leaves.—Dark green, long-petioled, cleft into three to five divisions; divisions stalked (especially the terminal one), deeply lobed, and cleft; lobes oblong or linear.

Flowers.—Deep yellow, about an inch across.

Calyx.—Sepals five, spreading.

Corolla.—Saucer-shaped, of five obovate petals much longer than the sepals; each petal with a nectar-bearing pit and a scale at the base.

Stamens.—Many, yellow.

Pistil.—Many carpels, scarcely margined, tipped with a slender beak.

Fruit.—Globular head of akenes; akenes flat, slightly ma[illegible]ed.

[illegible]ir[illegible]ed by flies. Nectar-bearing. Stamens mature before the stigmas.

This is our earliest Buttercup—a fine, silky-haired woodland species growing from six to twelve inches high and blooming in dry open woods among the early spring flowers.

So early a Buttercup possesses a personal charm, as if in its own person it represented the coming summer, as indeed it does. The leaves and stems rise from fleshy roots, which explains their ability to swing into the race so early.

SWAMP-BUTTERCUP. MARSH-BUTTERCUP

Ranúnculus septentrionàlis

Perennial. Low, swampy, moist, and shaded places. New Brunswick to Manitoba, south to Georgia and Kentucky. Frequent in northern Ohio. April–July.

Roots.—Fibrous.

Stems.—One to three feet high, thick, hollow, generally smooth, sometimes downy, usually tall and branching, the later branches sometimes procumbent and rooting at the nodes.

Leaves.—Frequently mottled; lower leaves raised well out of marsh or water on long petioles; mostly three-cleft, the divisions cut into broad, wedge-like lobes, variously toothed.

Flowers.—Satin yellow, an inch across.

Calyx.—Sepals five, spreading.

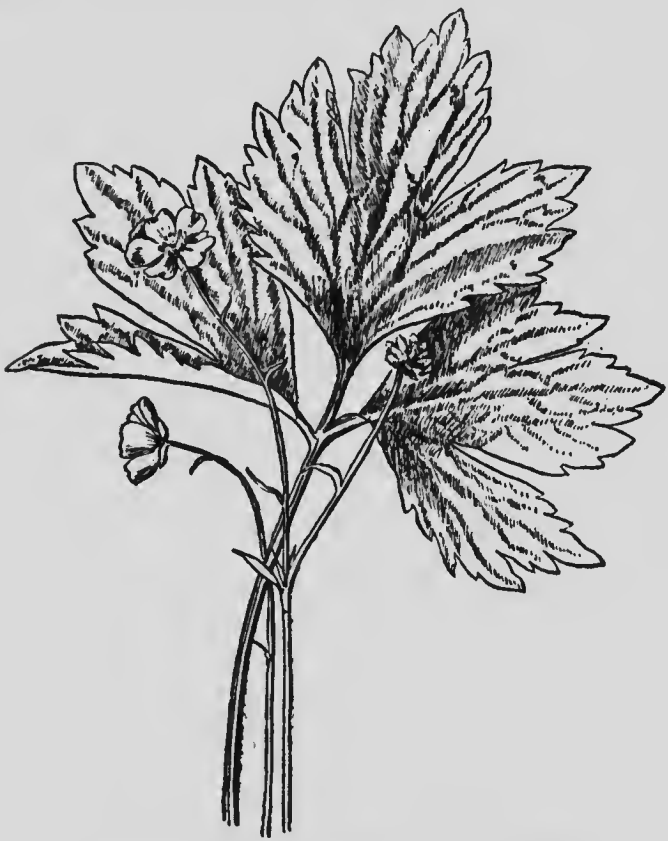
Corolla.—Saucer-shaped, of five petals; each obovate twice the length of the sepals, with a nectar-bearing pit, and a scale at the base; the petals do not overlap one another.

Stamens.—Many, yellow.

Pistil.—Many carpels, strongly margined, tipped by a stout beak.

Fruit.—Globular head of akenes; akenes flat, strongly margined.

Pollinated by flies and small bees. Nectar-bearing. Stamens mature before the stigmas.



Swamp-Buttercup. *Ranúnculus septentrionàlis*

This is one of the early Buttercups, to be looked for in wet and marshy places, where it frequently covers considerable areas. It blooms sparingly, which, with its surroundings, adds to its attractiveness; the yellow of the blossom is brilliant but paler than most

of the Buttercups. The stem may be found standing up or lying down; if erect, it rises two or three feet; if reclining, it hugs the earth and roots at the joints, in this way making beds; in any case, the leaves are lifted on long petioles out of the wet.

KIDNEY-LEAVED CROWFOOT. SMALL-FLOWERED BUTTERCUP

Ranúnculus abortìvus

Biennial. Shady hillsides, along brooks, in open woods. Newfoundland, Labrador, Nova Scotia to Manitoba, south to Florida, Arkansas, and Colorado. Common in northern Ohio. April–June.

Roots.—Thick-tufted fibres.

Stem.—Smooth, branching, about a foot high.

Leaves.—First basal leaves one or two inches in diameter, long-petioled, bright green, kidney-shaped or round heart-shaped; the succeeding ones often three-lobed or three-parted; stem-leaves three to five-parted, nearly sessile, divisions oblong or wedge-form, mostly toothed.

Small-Flowered Buttercup. *Ranúnculus abortivus*

Flowers.—Small, yellow, with globular centres, more green than yellow.

Calyx.—Sepals five, ovate, obtuse, somewhat yellowish, and reflexed.

Corolla.—Petals five, small, pale yellow, with scale at base, shorter than the sepals.

Stamens.—Many.

Pistil.—Many carpels, each tipped with minute curved beak.

Fruit.—Globular head of akenes.

Pollinated by bees and flies. Nectar-bearing.

The Small-Flowered Buttercup is abundant in northern Ohio. Its first primary leaves are round, heart-shaped, or kidney-shaped. Those that come later are often three-parted. The petals are small, so that the effect of the flower is very little yellow corolla and a great deal of green calyx and green centre. Indeed, the blossom does not look very much like a Buttercup, and, compared with the well-known Buttercups, bright and yellow, this little green ball with five yellow tips seems scarcely worthy of the name; yet it is a true Ranunculus, and is underfoot everywhere in moist open woods, making great root masses as well as tufts of stems.

The Bulbous Buttercup, *Ranúnculus bulbòsus*, is also an April bloomer. It is a species whose stem is bulbous-thickened at base, which gives it its common name. The leaves are three-divided and the segments variously cut and lobed. The flower is about three-fourths of an inch across and bright yellow. The plant is not native but came to us from Europe.

BERBERIDÀCEÆ—BARBERRY FAMILY

MAY-APPLE. WILD MANDRAKE

Podophýllum peltàtum

Podophýllum, from *pous*, foot, and *phyllon*, leaf, probably referring to the stout stems; duck-foot leaf is the probable meaning.

Perennial. Growing in beds and patches in open woods and fields. Nova Scotia to Ontario and Minnesota, southward to Florida, Louisiana, and Texas. Abundant in northern Ohio. May.

Rootstock.—Thick, horizontal, poisonous.

Stem.—Erect, twelve to eighteen inches high, bearing one or two leaves; one-leaved stems are barren; rising from the ground like a folded umbrella; two-leaved stems bear a single flower.

Leaves.—Basal leaves centrally peltate, from four to ten inches across, long-petioled, five to seven-lobed; lobes oblong, rather wedge-shaped, two-cleft, and dentate at apex.

Flowers.—Saucer-shaped, cream-white, nodding, borne in the fork between the two leaves, one and a half to two inches across.

Calyx.—Sepals six, falling as the flower opens.

Corolla.—Petals six to nine, cream-white, concave, obovate.

Stamens.—Twelve to eighteen; anthers linear, opening lengthwise.

Pistil.—One; ovary ovoid; stigma large, thick, sessile.

Fruit.—Large, fleshy berry, one to two inches long, yellowish, egg-shaped, many-seeded.

Fertilized by bumblebees.

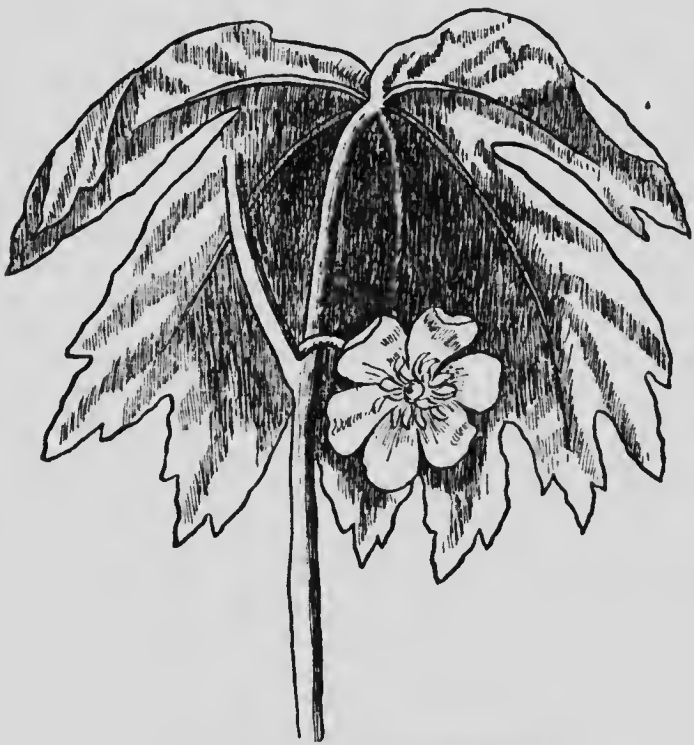
Our May-Apple is not the Mandrake of the ancient world. It bears the same name, but it is not the same thing. The ancient Mandrake, if tradition and folklore be true, was a distinctly unpleasant plant, able to blast its disturber with madness. It belonged to the family of the Deadly Nightshade and is said to have been indigenous in Palestine, Syria, and Greece. Shakespeare thus refers to it:

> "Would curses kill as doth the Mandrake's groan,
> I would invent as bitter-searching terms,
> As curst, as harsh, and horrible to hear."
> —"Second Henry VI."

> "And shrieks, like Mandrakes torn out of the earth,
> That living mortals, hearing them, run mad."
> —"Romeo and Juliet."

Our Mandrake, however, is altogether quiet and harmless; it grows in open places where there is sun, yet not too much; prefers meadows and pastures bordering woodlands. The plants coming up in the spring suggest little umbrellas, each wrapped in an enfolding case. Later the case slips off and the leaves open and spread. In every colony are two kinds of plants—the single-leaved and the two-leaved. The single-leaved are sterile, the two-leaved are the ones that bear the blossoms. The blossom appears at the fork of the stem, solitary, nodding, waxen, and is carefully protected against direct sunlight by the two sheltering leaves; indeed, one must look for it to find

it. This blossom is often two inches across, though usually an inch and a half; the green sepals fall as the petals expand; the white rounded petals are usually six, three outside and three within. The stamens are



Wild Mandrake. *Podophýllum peltàtum*

yellow; there is an abundance of pollen but no nectar. The seed-vessel at the centre is large, crowned with a ruffled stigma, and in time develops into the wild fruit known as the May-Apple eaten by children. Though the May-Apple is edible, the Mandrake root is poisonous, and from it is obtained the drug known in *materia medica* as podophyllum.

BARBERRY FAMILY

When any plant occurs naturally in beds it is always of interest to inquire why. The chances are that there is some agency at work more efficient than the ordinary individual possesses. In the Mandrake's case it comes out that each plant has a running underground stem, straight and brown, throwing out at intervals of a few inches rosettes of stout white roots from which spring the leaf-bearing stems. These beds in open fields are curiously circular and their limits strictly defined. This is so marked a characteristic that a mandrake-bed can be recognized almost as far as it can be seen. In the open woods this law seems not to hold, though everywhere the plant is gregarious.

JEFFERSONIA. TWINLEAF

Jeffersònia diphýlla

Named in honor of Thomas Jefferson.

Perennial. In moist open woods. Western New York to Wisconsin, and south to Virginia and Tennessee. Found in northern Ohio. April, May.

Rootstock.—Thick, horizontal, fleshy, with many fibrous roots.

Leaves.—All basal, forming a tuft, long-petioled, parted into two leaflets, which when fully grown are three to four inches long and two inches wide; ovate, entire, or obscurely toothed or sinuate.

Flowers.—Solitary, white, with the general appearance of Bloodroot, borne on a scape six to eight inches high.

Calyx.—Of four sepals, falling as the flower opens.

Corolla.—Of eight oblong petals, white, longer than the sepals.

Stamens.—Eight, shorter than the petals, opposite them; anthers extrorse.

Pistil.—One; ovary one-celled; stigma peltate.

Fruit.—Capsule obovoid, opening with a lid, called a pyxis; seeds many, crowded.

Jeffersonia is a smooth, perennial herb with matted fibrous roots, long-petioled root-leaves that are parted into two half-ovate leaflets, and bears in early April white flowers very similar to those of Bloodroot. It is a plant of the Middle West, is not reported east of the Hudson valley and is to be looked for on calcareous soil; consequently it is not very well known, nor is it in its habitat very abundant, though it is not rare.

Twinleaf. *Jeffersònia diphýlla*
After Gray's "Genera Plantæ Americæ"

Its botanical name is in honor of Thomas Jefferson, but its common name, Twinleaf, is due to the fact that the leaf is parted into two similar leaflets. From its supposed medicinal qualities it is sometimes called Rheumatism-Root. The fruit of Jeffersonia is

what the botanists call a pyxis, that is, a round box full of seeds, which when ripe has a lid which turns back and lets them out.

BLUE COHOSH. PAPPOOSE-ROOT

Caulophýllum thalictroìdes

Caulophýllum, Greek, stem-leaf, the stem seeming to form a stalk for the great leaf.

A smooth, perennial herb that comes up in early spring a dark purplish color, fading to green. Rich open woods. New Brunswick to Minnesota, south to the Carolinas and Missouri. Common in northern Ohio. April, May.

Blue Cohosh. *Caulophýllum thalictroìdes*

Rootstock.—Thickened, matted.

Stem.—Erect, smooth, at first purplish, covered with a bloom, one to three feet high, with two or three sheathing scales at the base, a large, ternately compound leaf near the summit and generally a smaller similar one near the base of the inflorescence.

Leaves.—Large, ternately compound, divisions long-petioled, the ultimate segments thin, oval, oblong or obovate, three to five-lobed near the apex.

Flowers.—Borne in a loose, open, terminal

cluster of yellowish purple flowers, one-half to three-fourths of an inch across.

Calyx.—Of six sepals, with three or four small bracts at the base.

Corolla.—Of six small, thick, hooded petals.

Stamens.—Six; anthers oblong.

Pistil.—One; style short; stigma minute.

Fruit.—Large, globose seeds resembling berries, blue with a bloom, borne on stout stalks a quarter of an inch long.

The first appearance of the Blue Cohosh is somewhat forbidding, for the whole plant comes up a dark purplish green covered with a whitish bloom and so unlike any of its neighbors that the first impression of it is that it must be poisonous. When it gets well above ground, however, it loses its unpleasant aspect and becomes a pretty plant. The color of the flower is dull, one may call it greenish yellow or yellowish purple, but the fruit is a bright-blue berry, on a short, thick fruit-stalk. The fruit resembles a drupe but really is a naked seed with the outer coat fleshy. Originally there are two seeds in the developing ovary. As these grow they burst their covering, which soon withers away, and they continue their growth as naked seeds. Usually one gets the better of his brother and finishes the race alone, plump, round, and blue.

PAPAVERÀCEÆ—POPPY FAMILY

SANGUINARIA. BLOODROOT

Sanguinària Canadênsis

Sanguinària, from the red juice of the rootstock.

Perennial. In rich open woodlands. One of the very earliest spring flowers, appearing long before the leaves of trees or shrubs. Nova Scotia to Ontario and Nebraska, southward to Florida and Arkansas. Abundant in northern Ohio. March-May.

Rootstock.—Thick, charged with orange-red juice, which is both acrid and astringent.

Scape.—Smooth, naked, one-flowered.

Leaves.—Radical, rounded, palmately lobed, heart-shaped at base, enfolding the flower-bud.

Flowers.—White, solitary, an inch to an inch and a half across.

Calyx.—Of two sepals, which fall when the flower expands.

Corolla.—Of eight to twelve, snowy white petals, long, narrow, and tapering at either end.

Stamens.—Many, often twenty-four; anthers brilliant yellow, with whitish filaments.

Pistil.—One; stigma large, yellow, set directly on the ovary.

Fruit.—Oblong, pointed pod, with many yellowish or brown seeds.

Pollinated by bees and flies. Stigma matures before the anthers.

Bloodroot. *Sanguinària Canadénsis*

SANGUINARIA

"Bloodroots whose rolled-up leaves ef you oncurl,
Each on em's cradle to a baby pearl."

—LOWELL.

Hepatica and Bloodroot are like the dewdrops of early morning which disappear before the sun. They can be found just once in the year; after that they appear no more. These are the delicate children of April; May is their foster-mother. Contact with them is like the glimpse of a *spirituelle* face.—KIRKHAM.

The Bloodroot appears only a little later and often with the Hepatica in rich moist woods, borders of meadows, and fence corners. From the terminal buds of its thickened underground stem there arises in very early spring a flower-stalk bearing, as a rule, a single blossom. The starry flower of snowy whiteness with a heart of gold emerges from the ground as a bud carefully wrapped in a protecting leaf. In full bloom it offers pollen to the hungry bees but no nectar. The two sepals which enclose the bud fall as the flower opens, thus showing its relationship to the poppy. The fragile blossoms are elusive; when in full bloom the petals fall so readily that with a touch the stem stands naked. The leaf is especially beautiful; at first pale green with a network of pinkish veins and lobed edges, late in the season it increases greatly in size, becoming one of the most beautiful leaves on the forest floor. The orange-red juice of the plant was one of the vegetable dyes much used by the Indians; the root was also one of their medicines used especially for coughs and colds.

GREATER CELANDINE

Chelidònium màjus

From *chelidon*, a swallow, because it appeared at the time the swallows came.

Perennial. Naturalized from Europe. Dry waste land, roadsides, near dwellings. Throughout New England and the Middle West. Frequent in northern Ohio. April–September.

Celandine. *Chelidònium màjus*

Stem.—Weak, one to two feet high, branching, slightly hairy, containing bright-orange, acrid, juice.

Leaves.—Thin, four to eight inches long, deeply cleft into five, irregular, oval lobes, the terminal one the largest.

Flowers.—Lusterless yellow, one-half an inch across, on slender pedicels, in a small, umbel-like cluster.

Sepals.—Two, falling early.

Petals.—Four, rounded.

Stamens.—Many, yellow.

Pistil.—One, maturing into a long capsule tipped with style and stigma.

The Celandine is a loose, branching herb sprawling along roadsides and waste places, and on the site of old buildings. The pale-green stalk has a whitish

bloom and grows from one to two feet high. It is weak and brittle and filled with copious, orange-colored, acrid juice that stains everything it touches. The flowers are half an inch or more across, and are borne in small, loose clusters on slender stems. The four petals are pure yellow and without lustre. The buds nod, though the flower stands erect; two yellowish sepals fall as the flower opens. The leaf is compound, deeply cleft into five or more leaflets; the under-surface has a whitish bloom, is strongly ribbed and veined.

The seed-pod is slender and often two inches long; it is two-parted and splits upward from the bottom when ripe.

FUMARIÀCEÆ—FUMITORY FAMILY

DICENTRA. DUTCHMAN'S-BREECHES. WHITE HEARTS

Dicéntra cucullària. Bicucúlla cucullària

Dicéntra, double spur; from *dis*, twice, and *kentron*, a spur.

Low, stemless perennial. In rich open woods, ravines, and on hillsides. Nova Scotia to Minnesota and Washington, southward to North Carolina, Nebraska, and Missouri. Abundant in ravines of northern Ohio. April, May.

Root.—Composed of a large number of small tubers closely clustered together and having the appearance of a scaly bulb.

Scape.—Five to ten inches high, bearing a simple raceme of flowers.

Leaves.—Delicate, grayish green, thrice compound, finely cut, borne on long, slender stems which rise from the root.

Flowers.—Borne in a nodding raceme on a scape, irregular, white, tipped with pale yellow.

Calyx.—Of two small, scale-like sepals.

Corolla.—Four petals in two pairs, somewhat cohering, forming a heart-shaped, flattened, irregular flower; the outer pair of petals extended into two divergent spurs; the small inner petals united above and protecting the slightly protruding stamens.

Stamens.—Six, in two sets; filaments slightly united in each set.

Pistil.—One; style slender; stigma two-lobed.
Fruit.—Long, slender pod; ten to twenty seeds.

Pollinated by bumblebees and bee-like flies. Nectar-bearing. Anthers mature before the stigmas.

The forest floor of spring possesses nothing more exquisite and delightful than the foliage of the two Dicentras, which are alike in leaf, though differing in root and blossom. The plants grow in tufts and bunches and so form beds often covering a considerable area. All the leaves come directly from the root and not from stems. These are rather large, thrice compound, and so finely cut again and again that they present a spray-like, feathery appearance. These plants love the woods, and by spreading their green leaves before the trees are in leaf they have the spring sunshine, so they can do their work early, mature their seeds, store food in their roots for the leaves and blossoms of next year, and by midsummer they have retired from the field.

Single Flower of Dutchman's-Breeches. *Dicéntra cucullària*

Dutchman's-Breeches, *Dicéntra cucullària*, is, if there is any difference at all, the prevailing western form. In northern Ohio both species occur, frequently together, but in any colony one species is always the more common; they never seem to share the space equally. *Cucullària* is the wide-legged type, white with yellow tips, not fragrant, and the little legs are nectar pockets formed by two petals. Opposite these two petals are two others more or less spoon-shaped, with the spoon bowls united to protect the anthers

and stigmas. There are two tiny, scale-like sepals. The seed-capsule is a long pod with a slender, pointed end, and opens lengthwise.

DICENTRA. SQUIRREL-CORN

Dicentra Canadénsis. Bicucúlla Canadénsis

Low, stemless perennial. Rich open woods, especially northward. Nova Scotia to Minnesota and Washington, southward to North Carolina. Abundant in the ravines of northern Ohio. April, May.

Roots.—Subterranean shoots bear scattered grain-like tubers resembling yellow peas.

Scape.—Five to ten inches high, bearing a simple raceme of flowers.

Leaves.—Delicate, grayish green, thrice compound, finely cut, borne on long, slender stems which rise from the root.

Flowers.—Borne in a nodding raceme on a scape five to ten inches high, irregular, white, tipped with greenish rose color, and slightly fragrant.

Calyx.—Of two small, scale-like sepals.

Corolla.—Four petals in two pairs, somewhat cohering into a flattened, heart-shaped, irregular flower; the outer pair of petals extended into two short and rounded spurs; the crested inner petals project conspicuously and protect the slightly protruding stamens.

Stamens.—Six, in two sets; filaments of each set slightly united.

Pistil.—One; style slender; stigma two-lobed.

Fruit.—Long, slender pod; ten to twenty seeds.

Pollinated by bumblebees and bee-like flies. Nectar-bearing. Anthers mature before the stigmas.

Squirrel-Corn at Home. *Dicéntra Canadénsis*

Squirrel-Corn is very like its blood-brother *Dicéntra cucullària*. The plants are similar in general habit and appearance; the flowers of *Dicéntra Canadénsis* have more rounded spurs and possess a faint fragrance. The common name emphasizes the little round tubers found at the root. Both are plants of exquisite beauty, native to northern woodlands, but the destruction of our forests seals their fate, for they are wildlings and disappear before the advance of civilization.

Pale Corydalis. *Corýdalis sempérvirens*

PALE OR PINK CORYDALIS

Corýdalis sempérvirens. Corýdalis glaùca. Capnoìdes sempérvirens

The ancient Greek name, from *korydalos*, the lark, because the spur is crested.

Perennial. Rocky cliffs in moist and open woods. Nova Scotia to Alaska, south to North Carolina, west to Minnesota. Rare in northern Ohio. April–September.

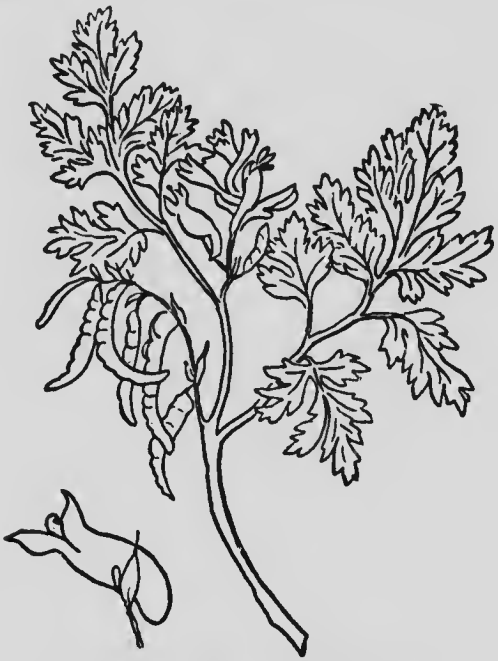
Stem.—One to two feet high, pale green with whitish bloom.

Leaves.—Grayish green, delicate, compounded of three to five deeply cleft leaflets with their margins unevenly lobed and scalloped.

Flowers.—Pale pink and white, tipped with yellow, one-half to three-fourths of an inch long, few in number, borne in loose terminal racemes.

Calyx.—Two sepals, small and scale-like.

Corolla.—Irregular, of two pairs of converging petals; one of the outer pair is formed into a short and rounded bag-like spur; the inner pair are very narrow and keeled at the back.



Golden Corydalis. *Corydalis aurea*
After Gray's "Genera Plantæ Americæ"

Stamens.—Six, in two sets of three each, opposite the outer petals; the middle is two-celled; the lateral ones one-celled.

Pistil.—One; style persistent.

Fruit.—Very narrow straight pod, one to two inches long.

Pollinated by bees. Nectar-bearing.

Pale Corydalis loves a cool, moist home; it ranges across the continent within the Dominion of Canada,

comes down into New England, and wanders along the mountain tops to North Carolina. The blossoms are odd, little, pink sacs with yellow mouths, hanging upside down along the tip of a slender stem.

Their appearance makes clear their family relationship; they are cousins of the Dicentras but seem to possess only part of the family equipment; in fact each looks like a flower cut in half. The general effect of the plant is extreme delicacy.

The Golden Corydalis, *Corȳdalis aurèa*, blooms earlier than the pink species and is a denizen of rocky woodland banks, and ranges from Quebec to the Mackenzie River and as far south as Wisconsin and Pennsylvania. It is reported from northern Ohio, but is rare. The flowers are golden yellow and the outer petals ridged on the back. The seed-pods look beaded, not erect and straight like those of its pink sister. The blooming period extends from March to May.

CRUCÍFERÆ—MUSTARD FAMILY

PURPLE SPRING-CRESS

Cardámine purpùrea. Cardámine rhomboìdea, var. *purpùrea*

Perennial. Rich soil in open woods and along streams in ravines. Quebec to the Canadian Rockies, New England, south to Maryland and west to Wisconsin. Abundant in northern Ohio. March, April.

Rootstock.—Bearing small tubers.

Stems.—Erect, four to six inches high, smooth, slightly hairy, bearing a terminal raceme of rose-purple flowers.

Stem-leaves.—Ovate, rhombic, or lanceolate, toothed or entire; root-leaves rounded, on long petioles, often heart-shaped, sparingly toothed.

Flowers.—Purplish pink, of the type called crucifer, borne in a loose terminal raceme.

Calyx.—Four sepals.

Corolla.—Four purplish pink petals, opposite each other in pairs forming a cross, with short claws.

Stamens.—Six, two shorter than the other four.

Pistil.—One; ovary two-celled, with a two-lobed style.

Fruit.—Very slender pods, tipped with style.

Pollinated by small bees. Nectar-bearing.

All the Cresses belong to the Mustard family, whose Latin name, *Crucíferæ*, means cross-bearers. This by no means implies martyrdom—far from it; the crucifers are an exceedingly prosperous folk, surpassed by few

in their ability to possess the earth, for the family has learned to do team-work, to produce many pods on a stem and many seeds in a pod. It has also developed a pungent and biting juice to warn off the premises marauding worms and caterpillars.

The flowers of the family, big or little, are practically alike. The petals are arranged in the form of a Greek cross, that is, all the arms are of equal length. The six stamens are in two sets, four long and two short. The fruit is a pod, not like the pod of a pea or bean, but a pod with a thin membrane running lengthwise, dividing it into two divisions, each having a row of seeds.

Purple Spring Cress. *Cardámine purpùrea*

The Purple Cress was long considered a variety of the White Cress, *Cardámine rhomboìdea*. The specific differences between them are not many. The Purple Cress is a smaller plant, blooms earlier, and has a more northward range. Its blossoms are pale purple-pink, those of *Cardámine rhomboìdea* are white and often a little larger; otherwise the plants are alike. It is abundant in northern Ohio and appears shortly after and often with the Hepatica. Our native *Cardámine*

may be distinguished from the Dentarias with which it is usually found, chiefly by its leafy stem and the varying forms of its leaves, which may be lanceolate, rhomboid, or ovate, but simple, not compound. The leaves of the Dentarias as well as the introduced *Cardámine praténsis* are compound.

CUCKOO-FLOWER. MEADOW BITTER CRESS

Cardámine praténsis

Perennial. In low rich land. Naturalized from Europe. Labrador to New Jersey, west to British Columbia and Minnesota. Probably not in northern Ohio. April, May.

Roots.—Fibrous.

Stems.—Slender and smooth, eight to twenty inches high.

Leaves.—Pinnately divided; divisions three to seven pairs and an odd one.

Flowers.—White or rose-color, crucifers, half an inch long, in a loose raceme.

Pods. Linear, straight.

Pollinated by bees, flies, butterflies. Nectar-bearing.

> "When daisies pied and violets blue
> And Lady-Smocks all silver white,
> And Cuckoo buds of yellow hue
> Do paint the meadows with delight."
> —"Love's Labor's Lost," SHAKESPEARE.

Cardámine praténsis is our naturalized Bitter Cress, the Lady-Smock of Shakespeare. It came by way of the Atlantic seaports, in ballast or seed-grain, and seem

to have made its way westward to the Pacific coast. In general appearance it is the same as our native Cresses but has perhaps a larger and more showy flower. The light, graceful growth and the finely divided foliage give the plant a distinct charm. In ancient times it was considered a valuable remedy in heart-disease, so Linnæus gave it the name *Cardámine*, signifying heart-strengthening. Its showy flower and abundant nectar invite many insect visitors.

CUT-LEAVED DENTARIA. PEPPER-ROOT

Dentária laciniata

Perennial. Moist ground in open woods. Nova Scotia, Ontario, Minnesota, southward to the Carolinas, Louisiana, and Kansas. Abundant in northern Ohio. April, May.

Rootstock.—Edible, not toothed, rather constricted in places, suggesting a string of beads, deeper seated than that of the Crinkle-Root.

Stem-leaves.—Borne on the stem in a whorl of three, compounded of three leaflets; leaflets cut and toothed, the side ones deeply cut, so that apparently there are five leaflets; root-leaves late in appearing, similar to the stem-leaves.

Flower.—White or pale rose-pink, of the type called cruciform, half an inch across, borne in a loose terminal cluster.

Calyx.—Sepals four, the two outer narrow.

Corolla.—Petals four, white or pink, arranged in the form of a cross, with short claws.

Stamens.—Six, two shorter than the others, which are of the same height.

Pistil.—One; ovary two-celled; style slender.

Fruit.—Pod, linear, two-celled, about an inch long, tipped with the slender style.

Pollinated by bees and flies. Nectar-bearing.

The rootstock of the Pepper-Root is just as edible as that of the Crinkle-Root, but it lies deeper in the ground, and as the root-leaves follow the flowering stems rather than precede them, they do not appear early enough to locate the plant.

The crucifer flowers are white or pale rose-pink; borne in a loose raceme at the summit of an unbranched stem. The plant dwells by preference in moist open places and begins its blooming season in April. It bears its stem-leaves in whorls of threes, and these are so cut and slashed and cut again that sometimes the entire leaf is simply a matter of lines and gashes.

The two Dentarias are very much alike, have about the same range, are early bloomers, forest-born, do their work early in the season, either passing away or overwhelmed by later growth. The rootstocks are of the same general nature; the flowers are the same. One species bears its stem-leaves in twos, the other in threes. They are lovely and united in life, and disappear to be welcomed again the succeeding spring.

CRINKLE-ROOT. TWO-LEAVED DENTARIA

Dentària diphýlla

Name from *dens*, tooth, referring to the root.

Perennial. Rich leaf-mould in open woods, sometimes in thickets and meadows. Nova Scotia, Ontario, Minnesota, southward to the Carolinas and Kentucky. Frequent in northern Ohio. April, May.

Cut-Leaved Dentaria. *Dentària laciniàta*

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Rootstock.—Long, horizontal, fleshy, crinkled, branched and toothed, five to ten inches long, crisp, edible.

Stem.—Stout, smooth, ten to twelve inches high.

Stem-leaves.—Two, opposite or nearly so, compounded of three ovate, toothed leaflets; leaflets coarsely toothed; leaves from the rootstock broader, on long petioles.

Two-Leaved Dentaria. *Dentaria diphylla*

Flowers.—White, of the type called crucifer, about half an inch across, in a loose, terminal cluster.

Calyx.—Sepals, four, the two outer narrow.

Corolla.—Petals, four, much longer than the sepals, white, in opposite pairs forming a cross; each petal with a short claw.

Stamens.—Six, two shorter than the others, which are of the same height.

Pistil.—One; ovary two-celled; style slender.

Fruit.—Pod, linear, two-celled, about an inch long, tipped with the slender style.

Pollinated by small bees. Nectar-bearing.

Crinkle-Root, as this plant is known to country children, possesses a long, edible rootstock, crisp and peppery and well worth the trouble of digging it up. The leaves rising from the rootstock stand up on long petioles, and are compounded of three broad, ovate, toothed leaflets. There are two similar leaves on the flowering stem nearly opposite one another.

This is one of our early bloomers, found in company with the Anemones and Bloodroots, and following the Hepatica. The flower is a white cross, the inflorescence a terminal raceme, the fruit a flat pod. While the plants do not exactly grow in beds, there are many together, so that one might say they grow in communities.

YELLOW ROCKET. WINTER-CRESS

Barbarèa vulgàris

Barbarèa, because anciently called the Herb of St. Barbara.

An early blooming biennial. Naturalized from Europe. Sunny places in low grounds and margins of runlets. Labrador to New York, south to Virginia and westward. Abundant in northern Ohio. April, May.

Stems.—About two feet high, growing in tufts, branched, leafy, bearing many racemes of yellow flowers.

Leaves.—Lower leaves lyrate; the terminal division round and usually large; the lateral divisions in pairs varying from one to four, or rarely wanting; upper leaves obovate, cut, toothed, or pinnatifid at the base.

Flowers.—Yellow crucifers, in showy panicled racemes. Pods erect or slightly spreading, obtusely four-angled.

This is the first of our yellow Mustards. It is found in the fields, where it marks the course of a tiny runlet or gathers round a bit of lowland in pasture or meadow; its presence is sunshine. Each plant consists of a bunch of erect, leafy stems a foot high or more, branching into flower-stems, each crowned with a loose spike of little yellow flowers, looking not unlike yellow Sweet Alyssum. The bloom is profuse, and the blooming season lasts well through May. A trail of seed-pods is left in the wake of the little crucifers as they continue to bloom along the lengthening stem. The lower flowers open while the top of the cluster is closely packed with short, narrow buds. By June the yellow is past, the brownish green has come, and the plant is swallowed up by the surrounding foliage and summer growth. Gray reports it as apparently introduced, but indigenous from Lake Superior northward and westward. It is one of our most attractive early flowers and is known as Yellow Rocket, Winter-Cress, Wild Mustard, and Herb of St. Barbara.

Yellow Rocket. *Barbarèa vulgàris*

VERNAL WHITLOW-GRASS

Drâba vérna

Whitlow-Grass. *Drâba vérna*

Annual or biennial. Naturalized from Europe. Waste-lands, sandy fields, and roadsides, from Atlantic coast to the Mississippi. February–May.

Stem.—One to five inches high.

Leaves.—About an inch long, in a tuft or rosette on the ground, oblong or spatulate, covered with stiff hairs.

Flowers.—Small white crucifers at the summit of the flowering stem; petals are two-cleft and so destroy the cross-like effect; pods vary from round-oval to oblong-lanceolate.

Pollinated by bees; also practises self-pollination. Nectar-bearing.

A small, insignificant plant, its rosettes of small leaves trodden upon and unnoticed.

LYRE-LEAVED ROCK-CRESS

Árabis lyráta

Perennial or biennial. Sandy or rocky places. Ontario to Manitoba, south to Virginia, Tennessee, and Missouri. Found in northern Ohio. April, May.

Stem.—Erect, slender, smooth, or pubescent, one or several rising from a rosette of spreading leaves.

Leaves.—Basal leaves lyrate, spatulate, or oblanceolate, more or less toothed, three-fourths to two inches long; stem-leaves spatulate or linear, one-half to one inch long.

Flowers.—White crucifers, rather large; petals much longer than the calyx; pods one-half to an inch long, linear, nerved.

The Lyre-Leaved Rock-Cress appears on sandy hillsides in sunny places. The little rosette from which the stems arise is about from three to four inches across and made of many small, deeply cut, obovate leaves. The stems vary in number from one to four and bear at their summit a cluster of white flowers rather large for the type. The raceme lengthens as the flowers appear, after the fashion of *Cruciferæ*, and a trail of slender pods soon follows.

Lyre-Leaved Rock-Cress.
Arabis lyrata

SHEPHERD'S-PURSE

Capsélla búrsa-pastòris. Búrsa búrsa-pastòris

Capsélla, a diminutive of *capsa*, a box.

Winter annual. Naturalized from Europe. Waste places, roadsides. World-wide. April–November.

Root.—Strikes deep into the ground.

Stem.—Six to eighteen inches high.

Root-leaves.—Clustered in a rosette, incised or toothed.
Stem-leaves.—Arrow-shaped, sessile, partly clasping.

Shepherd's-Purse.
Capsella bursa-pastoris

Flowers.—Small white crucifers in a long, loose raceme at the summit of the flower-stem; stem lengthens as flowers bloom.

Fruit.—Triangular pod, somewhat heart-shaped.

Pollinated by flies; also capable of self-fertilization.

Shepherd's-Purse is a winter annual; that is, the seedlings come up in the autumn, brave the winter, and so are able to bloom in early spring. The plant shares with the Chickweed and the Dandelion the distinction of blooming late into the year. The Shepherd's-Purse blooms in April, and may often be found in fair condition in mild Decembers. The reason that a single stalk can thus grow and bloom for months together is due to the fact that all the blossoms are borne from the side of the stem and that the growing point at the summit never bears a blossom and can thus grow on indefinitely.

Its tiny flowers have all the characteristics of the Mustard family and its stem and leaves the pungent mustard taste. The common name is suggested by the little flat, triangular seed-pods.

The plant is known among the English peasantry as Pickpocket and Pickpurse, because it sows itself and as a weed robs the farmer.

SAXIFRAGÀCEÆ—SAXIFRAGE FAMILY

EARLY SAXIFRAGE

Saxífraga Virginiénsis

Name from *saxum*, a rock, and *frango*, to break, referring to the habit of several species of growing upon rocks.

Perennial. Exposed rocks and dry hillsides. New Brunswick, Ontario, and Minnesota, south to Georgia and Tennessee. Common in northern Ohio. March–May.

Stem.—Four to twelve inches high, naked, with sticky hairs.

Leaves.—Rather thick, obovate, or spatulate, dentate or crenate, with margined petioles; basal leaves clustered.

Flowers.—White, small, clustered, spreading into a loose panicle.

Calyx.—Five-cleft; tube free from the ovary.

Corolla.—Of five petals.

Stamens.—Ten, inserted with the petals.

Pistil.—One, with two styles.

Fruit.—Purplish-brown pods, many-seeded; seeds small.

Pollinated by flies and bees. Nectar-bearing. Anthers mature before the stigma.

In the chosen haunts of the Early Saxifrage, by the middle of April, the ground is literally covered with little green rosettes of thick, obovate leaves, and right in the centre are the clustered buds of the coming flowers. As soon as the white petals show themselves

the stems begin to lengthen, and by the time these are fully open they stand six to ten inches high. When developed the flowers are in a flattish cluster, each having a five-cleft calyx, five petals, ten stamens, and two styles.

The plant has a threatening name for so harmless an individual, as Saxifrage is literally rock-breaker, a name referring to the habit of many of the species of rooting in the clefts of rocks.

GOLDEN SAXIFRAGE

Chrysosplénium Americànum

Name compounded of *chrysos*, golden, and *splen*, the spleen; probably from some reputed medicinal qualities.

Perennial. Native. An inconspicuous, early blooming plant, growing in cold, wet places. Nova Scotia to Georgia and west to Minnesota. Found in northern Ohio. March–May.

Stems.—Slender, decumbent, and forking.

Leaves.—Principally opposite, roundish or heart-shaped, obscurely crenate.

Flowers.—Inconspicuous, greenish, tinged with yellow or purple.

Calyx.—Tube coherent with the ovary; lobes four to five, yellow within.

Corolla.—Wanting.

Stamens.—Eight to ten, very short, inserted on a conspicuous disk.

Pistil.—One; styles two.

Fruit.—Many-seeded capsule.

Early Saxifrage. *Saxifraga Virginiensis*

March 30, 1856. Walden Pond.

In this warm recess at the head of a meadow, though the rest is covered with snow a foot or more in depth, I was surprised to see the Skunk-Cabbage, with its great spear-heads, open and ready to blossom, and the *Caltha palustris* bud, which shows yellowish, and the Golden Saxifrage green and abundant, all surrounded and hemmed in by snow, which has covered the ground since Christmas.—THOREAU.

A low, insignificant plant with a forking stem, roundish, fine-scalloped leaves, and small yellowish or purplish green flowers with orange anthers.

MITELLA. BISHOP'S-CAP

Mitélla diphýlla

Mitélla, diminutive of *mitra*, a cap, alluding to the form of the young pod.

Perennial. A low, slender plant, with round, heart-shaped leaves, found in rich woods. New England to North Carolina, west to Minnesota and Missouri. Abundant in Ohio. April, May.

Rootstock.—Horizontal, with runners.

Stem.—Six to twelve inches high, bearing two opposite leaves.

Leaves.—Basal leaves heart-shaped, acute or acuminate, three to five-lobed, dentate, rough, usually with scattered hairs on both sides; stem-leaves very similar but smaller.

Flowers.—Small, white, in a slender raceme four to eight inches long.

Calyx.—Bell-like, growing to the base of ovary, five-lobed.

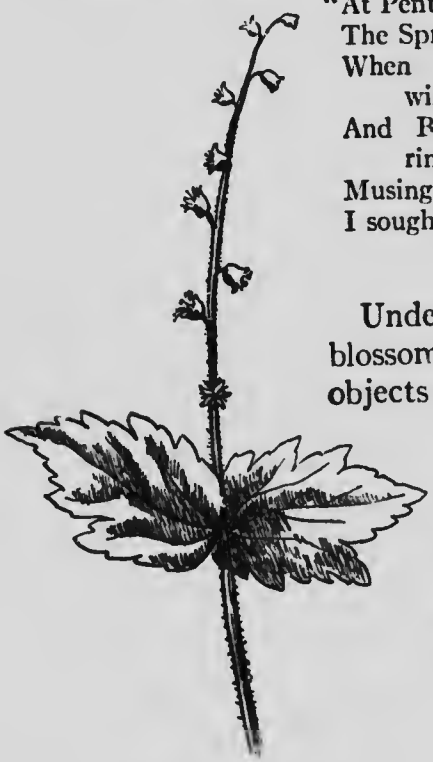
Corolla.—Of five delicate white petals, deeply cut.

Stamens.—Ten; filaments short.

Pistil.—One; ovary one-celled; styles two.

Fruit.—Capsule flattish, one-celled, two-valved at the apex, many-seeded.

Pollinated by bees.



Mitella. *Mitella diphylla*

"At Pentecost which brings
The Spring, clothed like a bride,
When nestling buds unfold their wings,
And Bishop's Caps have golden rings,—
Musing upon many things,
I sought the woodlands wide."
—LONGFELLOW.

Under a glass the starry blossoms of the Mitella become objects of wonderful beauty; in fact they suggest the delicate crystals of snow. They appear early, but as the flowers are borne in a long raceme the period of bloom extends over nearly a month. Gray gives the Mitella to May, but in northern Ohio it is very sure to appear in April. The name Bishop's-Cap refers to the shape of the pods and is simply a translation of the Latin name. *Mitella nuda* is rare in northern Ohio; its flowers are greenish and the stem leafless; the basal leaves heart-shaped with margins crenate rather than serrate.

TIARELLA. FALSE MITREWORT. FOAM-FLOWER

Tiarélla cordifólia

Tiarélla, diminutive from *tiara*, a turban, from the form of the pistil, which is similar to that of Mitella, to which the name Mitrewort, properly belongs.

Perennial. Found in colonies on wooded hillsides, bearing in early May dense masses of feathery white flowers. Nova Scotia, Ontario, and Minnesota, south to Georgia. Abundant in northern Ohio. April, May.

Rootstock.—Horizontal running.

Stem.—Six to twelve inches high, usually leafless, hairy, sometimes bearing two leaves.

Leaves.—Heart-shaped, sharply lobed and toothed, sparsely hairy above, downy beneath, long-petioled from the rootstock.

Flowers.—Small, white, loosely clustered in terminal, feathery spikes.

Calyx.—Bell-shaped, white, five-parted.

Corolla.—Petals five, white, clawed, pointed-oblong.

Stamens.—Ten, long, slender, orange-tipped.

Pistil.—One; ovary one-celled; styles two.

Fruit.—Capsule, one-celled, two-valved; seeds few, smooth.

Pollinated by bees.

A single Tiarella by itself is an exceedingly beautiful plant but it also grows in mass sufficiently to make an impression by numbers. The many long-petioled, heart-shaped leaves spring from the horizontal rootstock or from the runners tha the plant sends out. Any plant that develops runners forms beds. By

middle April or early May this lush, green border of the woodlands becomes a mass of stems six to twelve inches high, each bearing at its summit a crowded raceme of white, five-pointed, starry flowers.

Both Mitella and Tiarella are named from the peculiar shape of the pod or pistil, which in each resembles a mitre, or bishop's cap. The two plants are usually found together, but the Tiarella blooms a little later than the other and is the more conspicuous of the two.

Tiarella at Home. *Tiarélla cordifòlia*

ROSÀCEÆ—ROSE FAMILY

WILD STRAWBERRY

Fragària Virginiàna

Name from the fragrance of the fruit.

Stemless perennial. Forming little dark green tufts in scattered patches in fields, pastures, and along roadsides. Nova Scotia to the Dakotas, and south to Florida and Louisiana. April–June, often in October.

Roots.—Fibrous, sending out many runners, which root at their tips or nodes.

Scapes.—Hairy, two to four inches high, bearing several flowers at the summit on short pedicels.

Leaves.—Basal, compound; leaflets three, obovate, wedge-shaped, coarsely serrate.

Flowers.—White, rose-shaped, three-fourths of an inch across.

Calyx.—Five sepals, alternate with five bracts, which show between the petals.

Corolla.—Petals five, rounded, short-clawed.

Stamens.—Many, orange-yellow.

Pistils.—Many, forming a green, cone-shaped centre.

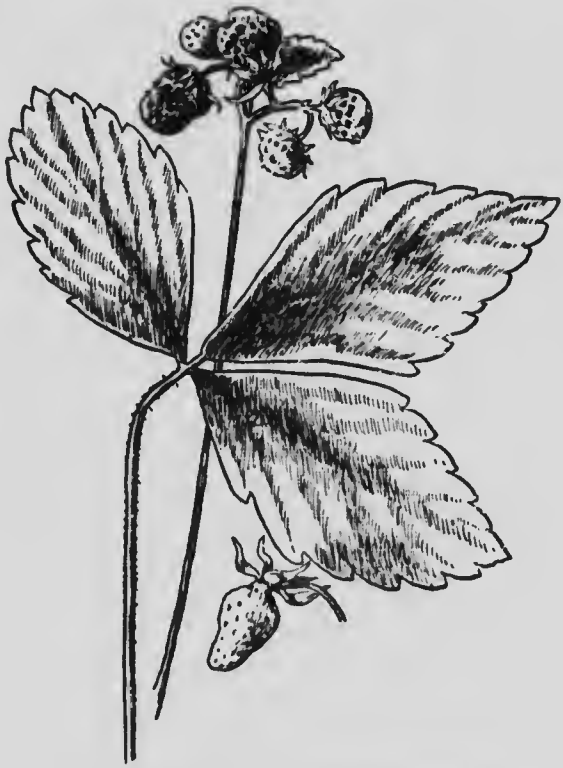
Fruit.—Composed of an enlarged receptacle, or top of the flower-stem, which becomes pulpy and scarlet, bearing the minute dry akenes scattered over its surface.

"Doubtless God could have made a better berry than the strawberry, but doubtless God never did."—IZAAK WALTON.

"My lord of Ely, when I was last in Holborn I saw good strawberries in your garden there."—"Henry V," SHAKESPEARE.

ROSE FAMILY

In earliest Anglo-Saxon this plant was called streowberie, and later straberry from the peculiarity of its straying runners, lying as if strewn on the ground; possibly that is the origin of the English name.



Wild Strawberry. *Fragaria Virginiana*

Among the blossoms of our open fields one of the prettiest is that of the Wild Strawberry; little white roses set among shining green leaves close to the ground. Each little blossom has five rounded white petals, many orange-yellow stamens, and a green heart. The Wild Strawberry blossoms are usually perfect, that is,

have both stamens and pistils, but the blossoms of the cultivated Strawberry frequently have pistils and stamens in different flowers.

To a botanist the fruit of the Strawberry is not a berry, that definition being limited to fruits having a juicy pulp and containing many seeds, like the currant or the grape. The body of the Strawberry is the enlarged top of the flower-stem, and this bears the seeds of the plant in shallow pits on its surface. These seeds are so small that we do not notice them when eating the fruit, but each one is a tiny nut, almond-shaped and containing within its shell the seed which will produce future plants.

The northern Wild Strawberry, *Fragària Americàna*, frequently appears at the edge of woods and in rocky places. This is the more delicate species, the leaves thinner and lighter, and the cluster of flowers rises above the leaves. The fruit is slender and pointed, often with a neck, and of most delicious flavor; the seed-like akenes apparently stick to the surface of the the berry, and are not sunk in the pits.

Frequent in northern Ohio, but not abundant.

POTENTILLA. FIVE-FINGERS

Potentilla Canadénsis

Potentilla, from *potens*, powerful, because some members of the species have medicinal value.

Perennial. Roadsides and fields, growing in mats and patches; common and variable; produces summer runners. Nova Scotia, New England, south to Georgia, west to Minnesota and Indian Territory. Abundant in northern Ohio. April–September.

ROSE FAMILY

Roots.—Fibrous, sending out summer runners that root at the tip.

Stem.—Slender, with silky hairs, at first decumbent or prostrate, afterward frequently erect.

Potentilla. *Potentilla Canadensis*

Leaves.—Petioled, compound, really three-parted, but apparently five-parted because the lateral leaflets are cleft; leaflets serrate, pointed.

Flowers.—Yellow, solitary, on slender stems, borne in the axils of the leaves.

Calyx.—Deeply five-cleft with bracts between the teeth, thus appearing ten-cleft.

Corolla.—Of five broad, rounded petals, notched at the apex and showing the hairy green calyx.

Stamens.—Many; filaments slender; anthers small.

Pistils.—Many, forming a dense little bunch of green in the centre of the flower.

Fruit.—A head of akenes.

In fields and on roadsides in April and May one finds beds of Potentilla which are dotted over with bright, uplooking yellow flowers—"luikin oot o' their leaves like wee sons of the sun." The flowers suggest yellow Wild Strawberry blossoms; the two appear about the same time, and frequently the beds are side by side, sometimes intermixed. Structurally, there is not much difference between a Potentilla and a Strawberry blossom, but practically there is a great

deal, for one produces a strawberry and the other does not.

Later in the summer there are fewer blossoms, but the inquiring tips of the little runners are very much in evidence. The name Five-Fingers was suggested by the shape of the leaf, which has five leaflets standing out like the fingers of a hand. These leaves are among the last to disappear in the woodlands under the blankets of November.

PAPILIONÀCEÆ—PEA FAMILY

WHITE CLOVER

Trifòlium rèpens

Trifòlium, three-leaved.

Low, creeping perennial. Fields, roadsides, lawns, everywhere. America, Europe, Asia. April–November.

Stem.—Creeping and spreading by runners, rooting at the nodes or joints.

Leaves.—On long petioles, compound, of three leaflets; occasionally a leaf is found bearing four or more. A four-leaf clover is always accepted as a token of good luck. Leaflets rounded oval, obovate or obcordate; margins obscurely toothed, and surfaces usually marked with a grayish green triangular band, the angle of which points to the apex.

Flowers.—In heads, cream-white, frequently pinkish.

Calyx.—Small, five-parted, pale green.

Corolla.—Five papilionaceous petals united into a tube; as they fade they become brown, turn downward, separating the head into two parts, the active and the faded, until finally all are reflexed and the seeds ripen.

Stamens.—Ten, diadelphous, that is, in two brotherhoods; one with nine filaments united, one with filament separate from the others.

Pistil.—One.

Fruit.—A four-seeded pod.

Pollinated by honey-bees. Nectar-bearing.

The White Clover is the low Clover that creeps over the lawns, that comes up in the flower-beds, that makes close, thick patches by the roadsides, and in climates too warm for grass is often used as a dooryard cover. It was long believed to be an immigrant from Europe but is now considered one of the few species whose habitat is world-wide, a native of Europe, Asia, and America.

White Clover Leaves at Night.
Trifolium repens

The plant is a low, creeping perennial that makes its way by runners that root along the surface of the ground. This rooting stem sends up leaves upon long petioles, and also slender flower-stems, each of which bears one flower-head of white florets. These florets are fragrant, full of nectar which can be reached by the honey-bee, and White Clover honey is one of the choicest brands in the market.

The heads are never pretty because the lower florets open first and are successively reflexed, so that during the flowering period the heads appear horizontally divided between the withering and the opening florets.

The leaf of the White Clover may well challenge attention because of the interesting and independent way that the leaflets behave when night comes on. To observe this sleep movement select any White Clover leaf having an upright petiole and with the three leaflets expanded horizontally. As the evening comes

on the two side leaflets will be seen to twist and approach each other until their upper surfaces come into contact. At the same time they bend downward. The terminal leaflet merely rises up without any twisting and bends over until it rests on and forms a roof over the edges of the two united lateral leaflets. When this movement is complete the terminal leaflet stands at night horizontally with its lower surface fully exposed. Leaves vary somewhat, but this is the typical arrangement.

Charles Darwin, writing upon this subject, says: "The fact that the leaves of many plants place themselves at night in widely different positions from what they hold during the day, but with the one point in common that their upper surfaces avoid facing the zenith, often with the additional fact that they come into close contact with opposite leaves or leaflets, clearly indicates, as it seems to me, that the object gained is the protection of the upper surfaces from being chilled at night by radiation. There is nothing improbable in the upper surface needing protection more than the lower, as they differ in structure."

The flowers of all the Clovers are papilionaceous, but, crowded as they are in heads, the petals have grown together and become tubular.

The generic name *Trifòlium* alludes to the three-parted compound leaf which is characteristic of the genus. The name Clover is thought to have been derived from the Latin *clava*, meaning club in connection with the mythical three-headed club of Hercules which the Clover leaf is supposed to resemble. The clubs on playing-cards are believed to have originated from the Clover leaf. Among the common names of

this plant in England are Sheep's Gowan, Honeystalks, and Shamrock.

Belief in the magical and mystical power of certain leaves and plants is very wide-spread and appears in proverbs and jingles, of which the following is an example:

"Find even Ash or four-leaved Clover
You will see your true love
Before the day is over."

RED CLOVER

Trifolium pratense

Short-lived perennial. Introduced from Europe. Everywhere. The State flower of Vermont. April–November.

Stem.—Coarse, leafy, branching, more or less hairy, six inches to two feet high, growing in tufts.

Leaves.—Compound, of three leaflets; leaflets oval or obovate, often notched at the apex and narrowed at the base, where they unite at the same point; margins entire, and surface marked with whitish triangular spots; the joints are sheathed with a pair of bristly, pointed stipules.

Flowers.—In heads, rose-purple, fading with age.

Calyx.—Persistent, five-cleft, the teeth like bristles.

Corolla.—Papilionaceous, elongated, tubular, the petals having grown together.

Stamens.—Ten; nine with filaments united, one more or or less separate.

Pistil.—One, producing a small pod.

Pollinated by bumblebees. Nectar-bearing.

"I wonder what the Clover thinks?
Intimate friend of Bobolinks,
Lover of Daisies slim and white,
Waltzer with Buttercups at night;

"Comrade of winds, beloved of sun,
Kissed by the dewdrops one by one;
Prophet of Good-luck mystery
By sign of four which few may see;
Symbol of nature's magic zone,
One out of three and three in one.

"Sweet by the roadsides, sweet by rills,
Sweet in the meadows, sweet on hills,
Sweet in its white, sweet in its red—
Oh, half its sweet cannot be said;
Sweet in its every living breath,
Sweetest, perhaps, at last in death.

"Oh, who knows what the Clover thinks?
No one! Unless the Bobolinks!"

—HELEN HUNT.

The Red Clover is the common Clover that every one knows, grown everywhere throughout the north for hay and pasturage. It is so common that we are likely to disregard its beauty, but a bouquet of Clover blossoms is one of the most beautiful of the wild.

The plant was long believed to be a biennial, but is now known to be a short-lived perennial. At what time it came into general cultivation in this country is not definitely known, but records show that there were fields of it prior to the American Revolution. The blossom is fragrant and the corolla tubes full of nectar, but only the bumblebee has a proboscis long enough to reach this. The honey-bees have grown wise enough to bite through the corolla to reach the nectar, but they do not in this way pollinate the flower. The bumblebee, going from Clover head to Clover head, gets her velvety body sprinkled thickly

with golden dust. In reaching the nectar, which lies down deep in the long purple tubes, she crawls all over the blossom head and some of the pollen which has clung to her breast and legs is sure to be left upon the stigmas. She has also brushed against the anthers and taken a fresh supply of pollen with which she may fly to another Clover head. Deprived of her visits, the Red Clover would not set a single seed, for the blossom tubes are too deep for the little honey-bee.

Leaf of Red Clover. *Trifolium pratense*

The history of Australia's experience with Red Clover is both interesting and illuminating: Clover seed was sent to Australia; it did well there but failed absolutely to produce seed. This continued until some one suggested it might be well to import a number of bumblebees, which was done, and the blossoms, then being fertilized, produced seed. This is one of the most direct proofs of the dependence of plants upon insects and the interrelations of the two.

Our cultivated fields give no more beautiful sight than the Red Clover in bloom, and those who as children sucked the nectar stored in the slender, tubular florets can sympathize with James Whitcomb Riley when he asks:

"What is the lily, and all of the rest
Of the flowers to a man with a heart in his breast,
That was dipped brimmin' full of the honey and dew,
Of the sweet clover blossoms his babyhood knew?"

As a crop to plough under Red Clover is valuable at the north because of its deep root system and its power of fixing the nitrogen of the air through the bacteria in the nodules borne by the roots.

ALSIKE CLOVER

Trifolium hybridum

Perennial. Becoming common. Fields and roadsides.

Stems.—Erect or ascending, not rooting at the nodes.

Leaves.—Long-petioled, compound, of three leaflets; leaflets short-stalked, obovate, narrowed at the base, slightly serrate.

Flowers.—In heads, pink and white, reflexed with age.

Calyx.—Persistent, five-cleft.

Corolla.—Papilionaceous, tubular, the petals having grown together.

Stamens.—Ten; nine with filaments united, one more or less separate.

Pistil.—One, producing a two to four-seeded pod.

Pollinated by bees. Nectar-bearing.

The Alsike Clover is comparatively a recent arrival; its origin is shown by its name; it is a hybrid; Alsike is the name of a parish in Sweden, and the clover is often called Swedish Clover. Its stem system is a delicate form of that of the Red Clover; its flower-heads resemble those of the White Clover. The plant was introduced as a field crop and in moist, cool soils is

valuable as such, but evidently the newcomer has found America congenial and it has moved to the by-ways and the highways, adorns the curb in our northern cities, clings to the borders of fields, and is altogether lovely and delightful.

The leaves are the typical Clover leaf with long stalks, and the leaflets are obovate and unmarked. The heads are loose little balls, the florets rose-colored or rose and white, sweet-scented and rich in honey. The florets wither, become brown, and turn downward after fertilization in the same way as those of the White Clover.

Alsike Clover. *Trifolium hybridum*

A little later come the Hop-Clovers—low, straggling creatures with small heads of yellow florets; also the Rabbit's-Foot with soft and silky grayish heads, and the Buffalo Clover, red and white.

CAROLINA VETCH

Vicia Caroliniana

A climbing perennial. River banks and cliffs. Ontario and New York, west to Minnesota and Kansas, south to Georgia. Frequent in northern Ohio. April, May.

Stem.—Two to three feet long, smooth, four-square.

Leaves.—Alternate, short-petioled, three to four inches long, pinnately compound, terminating in a long undivided tendril; leaflets ten to twenty, alternate, linear, oval,

Carolina Vetch. *Vicia Caroliniana*

oblong and elliptical, obtuse or emarginate, sometimes acute and mucronate, five-eighths to three-fourths of an inch long.

Stipules.—Linear or oblong, entire, a fourth of an inch in length.

Flowers.—Papilionaceous, white, keel tipped with blue, half an inch long, borne in eight to twenty-flowered racemes, which appear in the axils of the leaves.

Calyx.—Five-toothed; teeth very short.

Corolla.—Irregular whitish wings adhering to the middle of the keel; keel tipped with blue.

Stamens.—Diadelphous, nine and one.

Pistil.—Ovary long, slender; style threadlike.

Fruit.—A many-seeded pod.

Carolina Vetch is a plant that climbs up the river banks and upon the sides of cliffs by means of a long tendril with which every leaf is supplied. This tendril [illegible] two to four inches long, so flexible that a breath [illegible] will sway it about, with a tip armed with a [illegible]ook, so that it can lay hold of any irregularity and afterward curl around and make the attachment permanent.

GERANIÀCEÆ—GERANIUM FAMILY

WILD GERANIUM. SPOTTED CRANE'S-BILL. ALUM-ROOT

Gerànium maculàtum

Gerànium, a crane, from the long beak of the fruiting capsule.

Perennial. Open woods and fields. Newfoundland to Manitoba, south to Georgia, Alabama, and Kansas. Abundant in northern Ohio. April–July.

Root.—Somewhat woody, with astringent juices, used medicinally.

Stem.—Erect, hairy, usually forking above, one to two feet high.

Leaves.—Basal leaves with long petioles, about five-parted, the wedge-shaped divisions lobed and variously toothed and cleft; stem-leaves two, similar to the basal ones, both hairy, and more or less mottled with paler green.

Flowers.—Pale rose-purple, rather large, an inch or more across.

Calyx.—Sepals five, ovate-lanceolate, somewhat hairy.

Corolla.—Petals five, rose-purple, distinctly veined, obovate, with a small dense tuft of hairs on the inside of the claw.

Stamens.—Ten stamens in two sets, which mature at different times, all inserted with the petals.

Pistil.—Ovary five-lobed, five-celled, placed around the base of an elongated axis; five styles cohering with the axis, free at the summit.

Fruit.—Five carpels, dry, slender, long-tailed by the persistent style divisions and separating from the axis by the curling back of the style from the base, which ejects the seeds some distance from the plant.

Pollinated by bees and butterflies. **Nectar-bearing.** Stamens mature before the stigmas.

"Wildwood Geraniums
All in their best,
Languidly leaning
In purple gauze dressed."
—CLARA SMITH.

The Wild Geranium is really a sturdy plant, but the wide-spread, five-petalled blossom is delicate both in texture and appearance. The petals open an exquisite rose-purple; the ten stamens reclining upon their breast await the summons of life; in the centre the style stands as a thick column. As soon as the corolla is fully opened five stamens raise themselves around the style, and one after another the anthers open and pour out their pollen. After these the other five arise, pour out their pollen, and then, the anthers' service being ended, they wither and pass away. The insect visitors of this period eat nectar and carry away pollen.

In the meantime the petals continue their honey call to the bees and the pistil awakens. The central column opens its five arms and the stigmas stand out like rays, ready to brush off and retain upon their sticky surface any pollen a nectar-seeking bee may have gathered upon her hairy coat. The life of the flower is usually two or three days; the first day the insects get pollen, which they carry to older blossoms;

the second day, seeking nectar, they bring to the receptive stigmas the pollen they have brushed from a younger flower. If the weather is warm and sunny this process may be accomplished in less than two days; if the weather is cold and the day gloomy the life of the blossom is prolonged. It is clear that the blossom has passed beyond the power of self-fertilization and awaits the insect guests as long as it can.

The mechanism by which the slender capsule distributes its seeds is most interesting. It is this capsule that gives the common name to the plant, since it bears a superficial resemblance to a crane's head with its long bill. This resemblance was seen by Dioscorides nearly two thousand years ago, and it is to him we are indebted for the suggestion. This capsule belongs to the class we call explosive fruits, those that throw their seeds some distance from the parent plant. It is worth while to notice how this is done by our wild-wood Geranium. A central axis grows up from the stalk through the styles, the capsule made up of five parts grows out with it. When the seeds are ripe and all is ready, suddenly the parts of the capsule give way at the base and coil outward with force, ejecting their seeds. All Wild Geraniums scatter their seeds in this way. If one wishes to see this process go on at leisure, gather a stem with ripe fruit early in the morning, place it in a vase in the sun. It will soon become dry, and eventually the fruit will snap and crack, and as the carpels curl up the seeds will fly out.

Wild Geranium *Geránium maculátum*
False Solomon's Seal. *Uvularia racemósa*
Smooth Solomon's Seal. *Polygonátum commutátum*, very similar to *Polygonátum biflórum* but blooming later

OXALIDÀCEÆ—WOOD-SORREL FAMILY

YELLOW WOOD-SORREL

Óxalis stricta. *Óxalis corniculàta*, var. *stricta*

Name from *oxus*, sour, in allusion to the taste of the foliage.

Annual or perennial by subterranean shoots. Naturalized from Europe. Roadsides, fence corners, and waste places. Everywhere. May–October.

Root.—Fibrous, sending out underground stolons which run to a considerable distance and throw up new plants.

Stem.—Pale green, at first erect, leafy, branching, finally spreading or prostrate, six to twelve inches high.

Leaves.—Compound, of three heart-shaped leaflets meeting at the point.

Flowers.—Bright yellow, in a three to five-flowered, loose cluster at the head of the stalk, open only in sunlight.

Calyx.—Sepals five, lanceolate, persistent.

Corolla.—Petals five, bright yellow, commonly reddish at the base, spreading, longer than the sepals.

Stamens.—Ten; filaments broad, somewhat united at the base.

Pistil.—Ovary five-celled; styles five.

Fruit.—Capsule, five-celled, slender; seeds many.

This is one of our most persistent bloomers. It begins in May and never stops until late September;

often continues well into October. The plant is everywhere, always coming up in flower-beds. The branching stem frequently gets more than a foot high, is leafy, and the foliage a pleasant acid to the taste.

Yellow Wood-Sorrel. *Óxalis stricta*

The leaf is compounded of three broad, heart-shaped leaflets with their points united at the tip of the slender leaf-stem. These droop and fold together at night or when it rains. The bright golden flowers rise with the sun and set with it. They are happy only in sunshine. The plant is variable.

POLYGALÀCEÆ—MILKWORT FAMILY

FRINGED POLYGALA. FLOWERING WINTERGREEN

Polýgala paucifòlia

An old name composed of *polus*, much, and *gala*, milk, from a fancied property of its increasing this secretion.

Perennial. A delicate plant with very handsome rose-colored flowers, found in open woods, fields, and meadows of light sandy soils. Maine to Minnesota and south along the Alleghanies. Appears in northern Ohio. May–September.

Rootstock.—Slender, tortuous.

Stems.—Three to six inches high; upper part leafy, lower part bearing small ovate, leafy scales; these stems rise from prostrate or subterranean shoots which bear concealed fertile flowers.

Leaves.—Four to five upon a stem, petioled, alternate, ovate, entire, about an inch long and half an inch wide.

Flowers.—Showy, rose-purple, irregular, one to three upon each stem. The plant also produces cleistogamous flowers.

Calyx.—Of five irregular sepals, three exterior and smaller, the two inner ones larger, colored like petals and called wings.

Corolla.—Of three petals, the middle one keel-shaped and fringe-crested, the two side ones oblong, concave, and united to the keel the greater part of their length.

Stamens.—Six; filaments more or less united into a tube; anthers two-lipped, opening by a terminal pore.

MILKWORT FAMILY

Pistil.—Ovary two-celled; style long and somewhat curved.

Fruit.—A small, flat, two-seeded pod; the seeds are appendaged with two or three awl-shaped lobes.

Pollinated by bees and bee-like flies. Nectar-bearing.

The Polygala blossom is beautiful in form and color, but very puzzling in structure. This is due to the fact that the five sepals are neither symmetrical in shape nor alike in color. Three are greenish and of sepal-like character, two drop their sepal look, become larger than the others and rose-colored—in short, group themselves with the petals and apparently become corolla.

Fringed Polygala. *Polýgala paucifólia*

The three petals also are unsymmetrical—more or less grown together, and the middle one develops a keel and a crest which is beautifully fringed. In color the flower is rose or rarely pure white. Probably there is no flowering plant, whatever color its corolla may normally be, that does not at some time develop an albino.

Professor William W. Bailey reports this as one of the abundant May blossoms of New England, found in

low thickets and borders of woods. John Burroughs also writes: "I must not forget to mention that delicate and lovely flower of May, the Fringed Polygala. It is rather a shy flower, and is not found in every wood. One day we went up and down through the woods looking for it—woods of mingled oak, chestnut, pine, and hemlock—and were about giving it up when suddenly we came upon a gay company of them beside an old wood road. It was as if a flock of small rose-purple butterflies had alighted there on the ground before us. The whole plant has a singularly fresh and tender aspect. Its foliage is of a slightly purple tinge and of very delicate texture. Not the least interesting feature about the plant is the concealed fertile flower which it bears on a subterranean stem."

Frances M. Abbott, writing of Concord, Massachusetts, says: "The flower of this month that seems particularly characteristic is the Fringed Polygala, that glows among the Star-Flowers, Bunchberries, and Claytonias, which carpet nearly all our woods." The common names given to the plant, Gay-Wings, May-Wings, Bird-on-the-Wing, are each and every one a caress as well as recognition of the airy-winged suggestion of the blossom. The size, form, and purplish tinge of the leaves resemble young Wintergreen leaves, and for this reason the plant is called Flowering Wintergreen.

EUPHORBIÀCEÆ—SPURGE FAMILY

CYPRESS-SPURGE

Euphórbia cyparissias

Euphórbia, an ancient name, in honor of Euphorbus, King Juba's physician.

Perennial. Naturalized from Europe and escaped from gardens and old graveyards; grows in patches. Throughout northeastern United States and west to Kansas. Common in northern Ohio. April, May.

Rootstock.—Horizontal, creeping.

Stems.—Clustered in large patches, five to twelve inches high, somewhat branching, topped by many-rayed umbels of greenish-yellow flowers, very leafy, milky.

Leaves.—Many and crowded, pale green, linear; margins strengthened; half to three-fourths of an inch long, irregularly alternate upon the stem.

Flower cluster.—Umbel, greenish yellow, flat-dome-shaped.

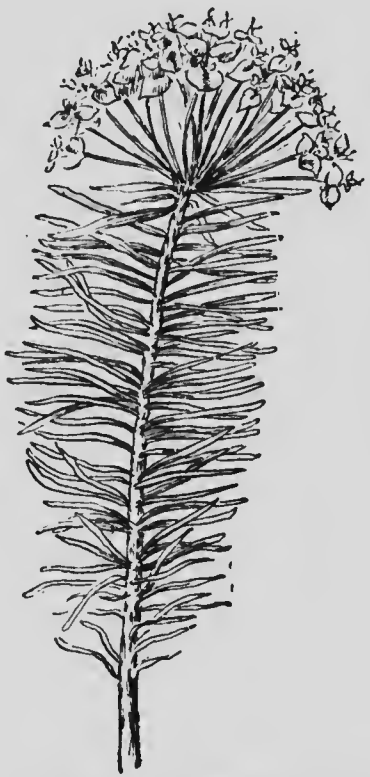
Flowers.—Insignificant; the involucre of two bracts more conspicuous than the group of pistillate and staminate florets within.

Fruit.—Capsule, globose; seeds oblong.

Pollinated by bees and butterflies.

The Cypress-Spurge usually marks the site of an old garden or has crossed the enclosure of a country churchyard. It is easily recognized as a patch of yel-

lowish green, consisting of many upright stems, very leafy, with short narrow leaves, and in May topped by small, roundish clusters of greenish-yellow blossoms.



Cypress-Spurge. *Euphórbia cyparissias*

The structure of these blossoms, like all the Euphorbias, is difficult to explain and quite as difficult to understand, but the cluster itself is ornamental, and that is not difficult to understand. The plant is equipped to be a weed, but does not seem to have gone very far in that direction.

VIOLÀCEÆ—VIOLET FAMILY

VIOLET

Viola

"Violets dim,
But sweeter than the lids of Juno's eyes
Or Cytherea's breath."
—"The Winter's Tale," SHAKESPEARE.

The Violets compose a floral family whose members vary but slightly from the type. The stems may be long or short, the colors may vary along the chord of violet-blue or orange-yellow, or the flowers may be white. The spurs may be long or short, but, after all, a Violet is a Violet and everybody knows the flower.

The Violet family of plants includes many species; the finding lists of our northern range record no less than forty-three. Of our native species, some live in woods, others in meadows, still others in moist, marshy ground. They divide naturally into two clearly defined groups: those having stems and those without stems. In the stemless group the flowers are borne on a peduncle that apparently comes directly from the root as the leaves do. In the others the flower-stalk or peduncle is borne on the plant-stem.

The corolla is irregular. There are five petals: one pair above, another pair are side petals; the lower petal is broad and gives the visiting bees and butterflies a place to rest when they are seeking nectar.

This lower petal is prolonged backward into a spur, which holds the nectar. All the Violets are nectar-bearers; all have lines more or less distinct that point to the hidden treasure. Most of them protect this nectar against crawling insects, especially ants, by tufts of hairs at the throat of the flower directly on the road to the honey.

The Violet has a calyx of five sepals, whose shape and length are one means of determining species.

There are five stamens closely surrounding the ovary in the centre of the flower, often slightly grown together, the two lower bearing spurs which project into the spur of the corolla and act as honey-glands.

The pistil is a one-celled ovary with a club-shaped style and the simple stigma turned to one side.

The seed-pod divides lengthwise into three parts with a double row of seeds in each. As the pod walls dry they contract and the seeds are pinched out one by one, sometimes sent some feet away. The Violet does what it can to give its young ones a chance.

Species of Violets are distinguished first as stemmed or stemless, bearded or beardless; then by the character of the spur, and finally by color of flower and shape of leaf.

Besides the normal blossoms which call the bee and depend upon cross-fertilization, most of the Violets have the ability to help themselves in a very unusual way, quite independent of the visits of insects. They are able to produce and do produce small hidden blossoms capable of self-fertilization, which technically are known as cleistogamous, that is, fertilized in the bud. These blossoms appear very near the ground, look like blasted buds, and are without a corolla. They

consist of a calyx, very active and vital stamens, and a pistil. They are exceedingly fertile and produce seeds during the summer, long after the normal flowers have passed.

The Violet is a classical plant and is mentioned by Homer and Virgil. It was dear to the Athenians, who deemed themselves most complimented when called violet-crowned. Ion was its Greek name, and Shakespeare, referring to Ophelia, alludes to the old tradition which said that this flower was raised from the body of Io by the agency of Diana:

> "Lay her i' the earth—
> And from her fair and unpolluted flesh
> May violets spring."

Homer writes of Violets upon the rushy banks of Medes: "Everywhere appeared meadows of softest verdure, purpled o'er with Violets. It was a scene to fill a god from heaven with wonder and delight."

Professor Meehan assures us that there is some ground for supposing that the old Latin name for this flower, *Viola*, which Linnæus adopted, is from the same root as *via*, a path or road, and refers to the fact that this flower was so often the traveller's companion beside the path as he made his way through field or forest.

COMMON BLUE VIOLET

Viòla cucullàta. Viòla palmàta, var. *cucullàta*

Perennial, stemless flowers, violet-blue. Low grounds. Common throughout the north. Abundant in northern Ohio. April, May.

Rootstock.—Short and thick.

Leaves.—Smooth, deep green, roundish, heart-shaped, crenate; the sides rolled inward when young. When full grown the petioles are three to seven inches high.

Flowers.—Deep or pale violet-blue, sometimes striped blue and white; besides the conspicuous flowers produced in the spring are others, produced later, which never open and are without petals.

Calyx.—Five sepals, extending into ears at the base.

Corolla.—Five unequal petals, the lower one spurred at the base, the lateral ones bearded.

Stamens.—Five, the two lower bearing spurs which project into the spur of the corolla; filaments short and broad, often grown together.

Pistil.—One; style club-shaped; stigma bent.

Pollinated by bumblebees or self-fertilized.

A Warrior Blossom of Blue Violet. *Viola cucullata*

This is the commonest Violet of all, best known and best loved, which sometimes covers hollows and hillocks in such clouds that:

> "One might guess
> A storm of blossoms had fallen there
> And covered the ground with a sweet excess."

Whoever, when a child, tumbled about in Violet fields, has fought many a battle royal with blue Violets. The blossoms having sturdy stems, with a curve just sufficient to grapple each other, make valiant warriors, and sometimes a hero would arise who could overthrow an entire phalanx of lesser blossoms.

The leaves are not yet mature and are more or less rolled inward at each side when the first blossoms appear. These are usually a deep violet-blue marked with hair-lines, but sometimes are pale blue, sometimes blue and white striped. The arrangement of stamens and pistil implies the coming of the bee, and when she does not come the flowers mature no seeds. Possibly more than one observer has noted that no matter how abundant may be the blue blossoms—they may fairly carpet the earth—there is no corresponding production of seed. There usually is some, but not at all what one would expect.

However, though neglected by its friend, the Blue Violet is not without resources. Many species are able to do the same thing, but the Blue Violet does it more abundantly. It produces close to the ground on short stems, often hidden under the leaves, the merest apologies for flowers—no petals, no nectar, half closed. They look like flowers that have aborted or like blasted buds, but within each are stamens and ovules. The home pollen fertilizes the pistil and soon the wretched little flower is changed into a plump, healthy capsule full of seeds. These curious blossoms are produced throughout the entire summer.

BIRD'S-FOOT VIOLET

Viòla pedàta

Perennial, stemless, flowers lilac and blue. Sandy or gravelly soil, dry fields and hillsides. Maine to Minnesota, south to Florida and Missouri. Rare in northern Ohio. April, May.

Rootstock.—Short, vertical.

Leaves.—Numerous, nearly orbicular in outline but separated into three or five divisions, and the side divisions often two to three-parted; divisions linear or narrowly spatulate, sometimes toothed or cut at the apex.

Flowers.—Large, an inch wide, pale or deep lilac, purple, or blue, rarely white. Var. *bicolor,* the two upper petals deep violet, the others paler. Occurs sparingly at the north, most common southward.

Bird's-Foot Violet. *Viòla peddta*

An exceedingly beautiful Violet, occurring sparingly throughout our northern range but common southward; in early spring it appears abundantly in the markets of Washington and Baltimore. The variety *bicolor* is strikingly handsome with the two upper petals deep violet and velvety in texture, the other petals paler blue. This is the southern form.

ARROW-LEAVED VIOLET

Viòla sagittàta

Perennial, stemless, flowers dark violet-blue, rarely white. Wet meadows and marshes. Maine to Michigan, south to Georgia and Texas. Found in northern Ohio, but not frequent. April, May.

Arrow-Leaved Violet. *Viòla sagittàta*

Rootstock.—Stout and fleshy.

Leaves.—Varying from oblong heart-shaped to halberd-shaped, arrow-shaped, oblong, lanceolate or ovate, toothed more or less; petioles varying from short and margined to long and naked.

Flowers.—Deep violet-blue with darker lines, rather large; lateral petals bearded; spur short and thick.

The Arrow-Leaved Violet may be recognized by its leaves, of which it has a variable collection, but they are so alike in their unlikeness that this is a personal characteristic; they are rarely like arrow-heads, oftener like the bowl of a teaspoon with the handle broadened at the bowl. In addition to the deep violet-blue blossoms the plant also produces cleistogamous flowers.

ROUND-LEAVED VIOLET

Viòla rotundifòlia

Perennial, stemless, flowers yellow. Deep, cold woods. Labrador, Ontario, and Minnesota, south to North Carolina. Rare in northern Ohio. April, May.

Rootstock.—Long and slender.

Leaves.—Round, ovate heart-shaped, slightly crenate, small at flowering time, afterward becoming four or five inches wide.

Flowers.—Yellow; lateral petals bearded and marked with dark lines; sepals linear-oblong, obtuse; spur very short; summer stolons bear cleistogamous flowers.

The Round-Leaved Violet is something of a recluse, dwelling in the heart of cold, deep woods, not abundant anywhere, yet not infrequent. When in bloom the heart-shaped leaves, about an inch broad, are not especially in evidence, but later in the summer the leaf becomes three or four inches wide and, lying flat on the ground, presents a shining surface that is very noticeable. The plant sends out many stolons in late summer which bear cleistogamous flowers.

SWEET WHITE VIOLET

Viola blanda

Perennial, stemless, flowers white. Swamps and moist lands. Newfoundland to British Columbia, south to North Carolina. Abundant in northern Ohio. April, May.

Rootstock.—Very slender, sending out stolons somewhat sparingly.

Leaves.—Small, light green, orbicular to kidney-shaped, heart-shaped with shallow sinus, obtuse apex, crenate.

Flowers.—White, small, slightly fragrant; sepals lanceolate, acute; cleistogamous flowers few.

This is the smallest of the Violets and also one of the earliest to bloom, a tiny creature of the spring nestling in a mossy or grassy bank. In the type the small white petals are broad and rounded, but

the type varies into varieties; one with upper petals long, narrow, and somewhat recurved, often bearded and less distinctly veined; another with broader leaves, loving woods and thickets, the white blossoms beardless and veined. All are white, all stemless, and all most attractive and beautiful.

Sweet White Violet in Variety. *Viòla blánda*

The Primrose-Leaved Violet, *Viòla primulæfòlia*, also a stemless species with the same range as *Viòla lanceolàta*, bears similar white flowers with veined petals from April to June. The leaves are oval or ovate, oblong, and at base somewhat decurrent upon the petiole.

LANCE-LEAVED VIOLET

Viòla lanceolàta

Perennial, stemless, flowers white. Damp soil along streams. Nova Scotia to Minnesota, south to Florida and Texas. Rare in northern Ohio. April–June.

Rootstock.—Long and slender, sending out stolons which root freely at the nodes.

Leaves.—Lanceolate or linear-lanceolate; the leaf-blade two to six inches long, running down upon the petiole, erect, blunt at apex, almost entire at margin.

Flowers.—White, beardless; the lower petals marked with purple lines; spur short.

This Violet is readily recognized by means of its long, narrow leaves, which gradually taper into a long, slender petiole.

The white-petaled flowers are beardless, have a short spur, and the lower petals are marked with purple lines. In summer the plant sends out many stolons that take root at short intervals and bear cleistogamous flowers. It is an eastern rather than a western form.

HALBERD-LEAVED VIOLET

Viòla hastàta

Perennial, having stems, flowers yellow. Open woods. Pennsylvania and Ohio to Georgia and Alabama. Frequent in northern Ohio. April, May.

Halberd-Leaved Violet. *Viòla hastàta*

Stem.—Rather smooth, slender, four to ten inches high.

Leaves.—Halberd-shaped or oblong, heart-shaped, slightly serrate, acute, often mottled.

Flowers.—Yellow, marked with dark lines; lateral petals bearded; sepals linear, lanceolate, acute; spur short; stipules ovate, small.

The woods of northern Ohio are given in the books as the first recorded habitat of this Violet. It is a true woodland species and is often found crowded in between the anchoring divisions of tree trunks or the exposed roots of forest trees. Its leaves are especially beautiful, a deep rich green, of thicker texture than those of other Violets, and often mottled. The flower is deep yellow with dark lines.

Downy Yellow Violet. *Viòla pubéscens*

DOWNY YELLOW VIOLET

Viòla pubéscens

Perennial, having stems, and yellow flowers. In open woods. Maine to Minnesota and Nebraska, south to Georgia and Texas. Frequent in northern Ohio. March, April.

Stem.—Simple, erect, downy.

Leaves.—Basal leaves ovate-reniform, long-petioled, early withering; stem-leaves borne near the summit, short-petioled, ovate or reniform, crenate-dentate, and softly hairy to the touch.

Flowers.—Bright yellow, veined with dull purple; the lower petal conspicuously veined; the lateral petals bearded; spur short; capsule oblong.

Pollinated by bees, flies, and butterflies. Nectar-bearing.

DOWNY YELLOW VIOLET

"When beechen buds begin to swell
And woods the bluebirds' warble know,
The yellow violet's modest bell
Peeps from the last year's leaves below."

—BRYANT.

In northern Ohio the chances are that the Downy Yellow is the first of the Violet family to make an appearance. A few stray Blue ones are likely to come about the same time, but usually a few days later. The exact order of precedence among wild flowers can never be definitely settled, as they vary in time of flowering sometimes a week or more, weather that hastens one seeming to retard another; but ordinarily the Downy Yellow is our first Violet and appears abundantly by the middle of April; also blooms in May.

Smooth Yellow Violet. *Viola scabrâscula*

In size and shape the blossom is not unlike the Common Blue. It appears solitary on a stalk springing from the fork of two leaf-stalks. The anthers and style fairly fill the throat of the flower, and the side petals, heavily bearded, compel the visiting insect to brush against both stigma and anthers when seeking the nectar stored in the spur. At first the plant is about four inches high; later in the season it becomes considerably taller.

The Smooth Yellow Violet, *Viòla scabrûscula*, with smooth, clustered stems and leaves varying from cordate-ovate to reniform, has yellow flowers about the same size as those of *Viòla pubéscens*. In some localities it blooms a little earlier. The petals are veined with purple. The spur is short and the sepals linear-lanceolate. It prefers moist woods to dry, and its range extends from Nova Scotia to Manitoba, south to Georgia and Texas. Common in northern Ohio.

CANADA VIOLET

Viòla Canadénsis

Perennial, having stems, flowers white tinged with purple. Rich woods. Newfoundland to Saskatchewan, south to North Carolina. Abundant in northern Ohio. April, May.

Stems.—Tufted, leafy, six to eighteen inches high.

Leaves.—Heart-shaped, pointed, serrate, short-petioled.

Flowers.—White with purplish tinge and purple veins; the lateral petals bearded; the long sepals tapering to sharp points; spur short; slightly fragrant.

"A violet in her greenwood bower
Where birchen boughs with hazel mingle,
May boast itself the fairest flower
In glen or copse or forest dingle."
—Sir Walter Scott.

The Canada Violet is in truth a nursling of the forest and loves the woods. Latest of Violets to bloom, at first the blooming stem is from six to twelve

inches high, but in midsummer individuals may be found in deep recesses of northern woods which have shouldered their way upward among the bushes of a thicket, resting here and clinging there until they are more than three feet high and still in bloom. The stem is slender, strong, and rather leafy; the flowers have a delicate beauty all their own, pure white, yellow-centred, marked with purple lines above, and violet-washed beneath.

Canada Violet. *Viòla Canadénsis*

CREAM VIOLET. PALE VIOLET. STRIPED VIOLET

Viòla striàta

Perennial, having stems, flowers cream-white. Moist woods and fields. New England west to Minnesota, and south to Georgia. Abundant in northern Ohio. April–October.

Stem.—Erect or spreading, tufted, smooth, six to ten inches long in late summer.

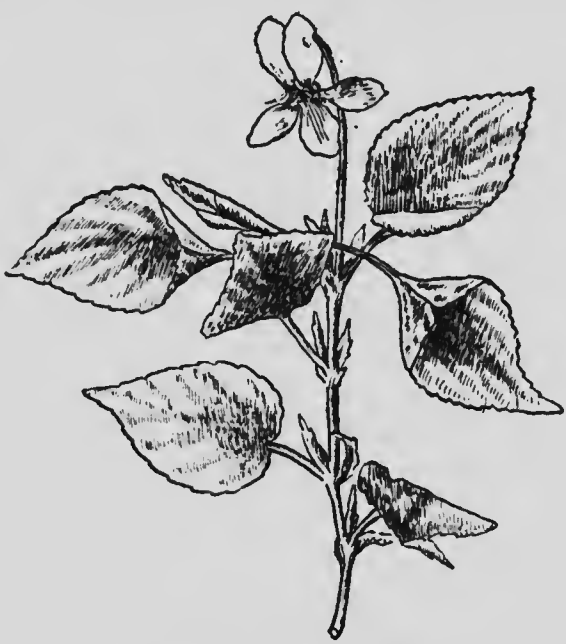
Leaves.—Numerous, heart-shaped or ovate, crenately serrate, acute or acuminate, often slightly downy above and on the veins underneath; when young, the sides curled in at the base; stipules large, oblong-lanceolate, fringe-toothed.

VIOLET FAMILY

Flowers.—Large, cream-colored, rarely white; the lateral petals conspicuously bearded; the lowest one broad and striped with purple; spur thickish, short.

Pollinated by bees and butterflies. Nectar-bearing.

Cream Violet is not as common as the Blue Violet, but where it grows it blooms almost as profusely.



Cream Violet. *Viola striata*

When the flowers first appear, the plant seems stemless, because the flower-pedicel is so long; but after the stems are apparent and the plant becomes tufted and makes beds, it will, if undisturbed, cover large areas. It also thrives in gardens and makes a beautiful border plant. The bloom begins in April, reaches perfection in May, and occurs sparingly in October.

DOG–VIOLET

Viòla canìna, var. *Mùhlenbergii*. *Viòla canìna*, var. *Labradórica*. *Viòla Labradórica*

An early, stemmed species of Blue Violet, growing in moist soil from Labrador to Minnesota, and south to the Carolinas and Kentucky. Frequent in northern Ohio. March–May.

Stems.—Tufted, smooth, leafy.

Leaves.—Slender-petioled, reniform or orbicular, cordate, rounded or acute at apex, hooded at first.

Flowers.—Vary in color from violet-blue to light blue and white; petals slightly bearded; spur short; stipules ovate-lanceolate, ciliate, entire or serrate.

Dog-Violet. *Viòla Labradórica*

This is the commonest Blue Violet of the stemmed species, found in the grass and open woods. The blossom varies; normally it is violet-blue of varying degrees of depth and more or less dark-veined; sometimes it fades to white without veins. The lateral petals are bearded and the spur slender on the type, but short and blunt in *Viòla canìna*, var. *arenària*, a variety which prefers sandy soil. The leaves are

kidney-shaped or broad heart-shaped, crenate at margin, and edged with hairs. The books differ widely in regard to the Dog-Violet; some consider its varied forms as species, others regard them merely as varieties. At any rate, this is one of our early Violets and most welcome. It is often confused with the Common Blue, but may be distinguished by the fact that the flowers grow from short, leafy stems, while the Common Blue flowers are stemless, the peduncles apparently springing from the ground, just as the leaves. The blossom comes a little earlier and is a little smaller. The white form is often abundant locally but cannot be considered common.

LONG-SPURRED VIOLET

Viòla rostràta

Perennial, having stems, flowers pale violet. Shaded hillsides and rocky woods. Quebec to Michigan, south in the mountains to Georgia. Frequent in northern Ohio. April, May.

Stems.—Numerous, erect, three to six inches high.

Leaves.—Smooth, cordate-ovate or reniform, acuminate, serrate; petioles slender.

Flowers.—Pale violet, darker veined, beardless; sepals linear-lanceolate. Spur long, slender.

The Long-Spurred Violet may be easily distinguished by its pale violet color, its striped petals, and its long, slender spur. Although the books give it a rather limited habitat, it may be considered fairly abundant in northern Ohio, although rarely found in beds.

Long-Spurred Violet. *Viòla rostràta*

ARALIÀCEÆ—GINSENG FAMILY

DWARF GINSENG. GROUNDNUT

Arâlia trifòlia. Pânax trifòlium

Perennial. Rich woods. Nova Scotia to Minnesota, south to Georgia. Common in northern Ohio. April, May.

Root.—Tuberous, deep in the ground, pungent to the taste and not aromatic.

Stem.—Four to eight inches high, bearing the flower-cluster at the summit.

Leaves.—Three, in a whorl upon the flower-stem, compound; leaflets three to five.

Flowers.—White, in a simple umbel, staminate, pistillate, or perfect.

Calyx-tube.—Coherent with the ovary.

Corolla.—Petals five, oblong.

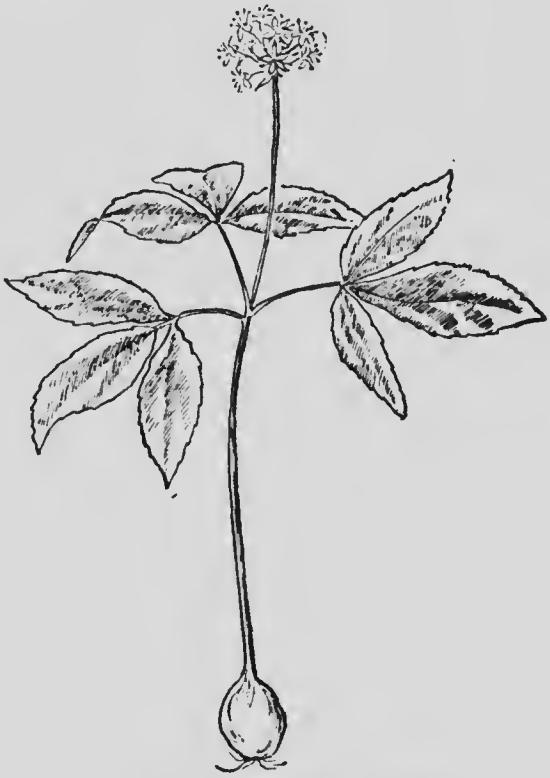
Stamens.—Five.

Pistil.—One; styles two to five, usually three.

Fruit.—Small, yellowish, berry-like drupes.

The Dwarf Ginseng usually blooms with the Harbinger-of-Spring in the open woods of northern Ohio, and is almost as delicate in appearance as its companion. Its small white flowers are clustered in feathery, fluffy balls about the size of a small marble, and each ball stands an inch or two above the whorl

of compound leaves on the flower-scape. A sweet, nut-like tuber, about half an inch in diameter, lies deep in the earth and is somewhat difficult to obtain; the stem that leads to it is so slender and delicate that it



Dwarf Ginseng. *Panax trifolium*

breaks, and the little tuber is lost. This tuber is edible, and there is a tradition that the early settlers of this country used it for food, whence the name Ground-nut. The fruit is a more or less perfect cluster of small, yellowish berries which ripen early, and the plant is soon overwhelmed by the rush of summer foliage.

WILD SARSAPARILLA

Aralia nudicaulis

Perennial. Rich, shady, moist woods. Newfoundland to Georgia, west to Colorado and Idaho. Common in northern Ohio. May–June. Entire plant aromatic.

Root.—Long, horizontal, aromatic.

Stem.—One short stem to a plant; this bears one leaf-stem and one flower-stem. The flower-stem bears from three to five, usually three, umbels of greenish white flowers; the leaf-stem one large compound leaf.

Leaf.—Long-stalked, compounded of three divisions, each of which has five leaflets, oblong-oval or ovate, serrate, pointed.

Flowers.—Small, greenish white, borne in three to five umbels at the top of the flower-stem, more or less polygamous. Umbels two or more inches across.

Calyx.—Tube, coherent with the ovary.

Petals.—Five, oblong, strongly reflexed.

Stamens.—Five, alternate with the petals, conspicuous.

Pistil.—Ovary two to five-celled; styles two to five.

Fruit.—Shining, dark-purple berries in clusters.

Pollinated by flies and bees.

Common in woods and thickets, itself always under shade, it shelters its three spreading umbels of greenish white flowers under the cover of a large, solitary, compound leaf. Its long horizontal roots are very grateful to many burrowing creatures, for they are not only near the surface, but appetizing as well. One of its country names is Rabbitroot.

In early spring the plant arises as a very short, smooth stem, which bears a tall leaf-stalk and a shorter, naked flower-stalk.

The single large leaf, of exquisite bronze tints when first it appears, is compounded of three to five ovate-toothed leaflets on each of its three divisions; later it fades to green.

The flower-stalk usually bears at its summit three crowded umbels of small greenish white flowers. The tiny five-parted flowers have their petals curved backward over the calyx, throwing the stamens into relief. The flowers are succeeded by clusters of dark-purple berries greatly loved by birds.

This is not the true Sarsaparilla of medicine, though often used as a substitute for it; that comes from a different herb, *Smilax officinàlis*, a native of Mexico and South America.

Wild Sarsaparilla. *Aralia nudicaulis*
Dwarf Ginseng. *Panax trifolium*

UMBELLÍFERÆ—CARROT FAMILY

DOWNY SWEET CICELY

Osmorrhìza brevistỳlis. Washingtónia clàytoni

Osmorrhiza, from *osme*, odor, and *rhiza*, root; the roots have a pleasant odor.

Perennial. In moist, rich woodlands. Nova Scotia to Minnesota and Dakota, south to Virginia and Tennessee. Abundant in northern Ohio. April, May.

Roots.—Fleshy, aromatic, anise-scented.

Stem.—Smooth or slightly hairy, one to three feet high; downy when young, later nearly smooth; often stained a dull purplish red.

Leaves.—Basal and lower stem-leaves compounded in threes; leaflets ovate or oblong, variously cut and toothed; veins prominent; dull green above, shining beneath.

Flowers.—Small, white, borne in compound umbels, which are opposite the leaves; these umbels have about four rays. *Involucre* of three or four narrow bracts. *Involucels* of about five lanceolate bracts. *Umbellets* three to six-flowered.

Calyx.—Minute, grown fast to ovary, without a border.

Corolla.—Petals five, oblong, point incurved.

Stamens.—Five, inserted with the petals on the disk which crowns the ovary.

Pistil.—Of two carpels; styles two.

Fruit.—Dark green or blackish, dry, bristly, slender, narrow below, rounded and cleft at summit.

CARROT FAMILY

Pollinated by flies and bees. Some flowers are perfect, others staminate. In the perfect flowers the anthers mature before the stigmas.

The delicate fern-like leaves of the Sweet Cicely in early spring carpet the forest floor in open sunny woodlands. The thick anise-scented roots are attractive to children and to rabbits, but the roots of so many of the wild *Umbelliferæ* are poisonous and children should be warned to eat none of them. The flowering umbel is small and inconspicuous, there is no appearance of a flat-topped cluster, such as usually distinguishes the family of *Umbelliferæ*. The chief beauty of the plant lies in the foliage, which, abundant in April, in May often overshadows other plants and virtually covers the forest floor.

Downy Sweet Cicely. *Osmorrhiza brevistylis*

The tiny blossom has five white petals and a very short style, which gives the plant its specific name. This character is best noted by means of a lens.

The seeds are long and slender, armed with short bristles, which enable them to cling to the passerby and so ride with two legs or four to a home.

HARBINGER-OF-SPRING. PEPPER-AND-SALT

Erigènia bulbòsa

Erigènia, Greek, born in the spring.

A low, smooth, perennial herb, found in open woods and alluvial bottom-lands. Western New York to Minnesota and Kansas, south to Maryland and Tennessee. Common in northern Ohio. March, April.

Stem.—Simple, from a deep, round tuber, three to six inches high, bearing at its summit a small compound umbel.

Leaves.—One or two, divided into three segments, which are cut and lobed and cut again.

Umbels.—Mostly compound, one to four slender rays which bear small white flowers with conspicuous dark stamens; involucre usually a single leaf.

Calyx.—Adheres to the ovary.

Petals.—Five, flat, entire, white.

Stamens.—Five, exserted; filaments white; anthers large, deep purple.

Fruit.—Nearly orbicular, notched at both ends, glabrous.

This exquisite creature, a plant of the Middle West, is fortunate both in its name and that name's significance—*Erigènia*, Born in the Spring—for it is one of the earliest to bloom as well as the smallest and most delicate of our early visitors. The reason it can do so well lies in the fact that deep in the ground is a tuber, and from this the stem forces its way upward to sun and light.

This little tuber looks not unlike a tiny potato dotted with many eyes, and by the time the flowers

appear many slender, fibrous roots have been produced. It is about the size of a hazelnut and is sunken from two to four inches beneath the surface. It sends up a simple stem which bears, usually, two compound leaves that show themselves at or a little above the surface as the bloom appears. The plant is one of the *Umbellíferæ* and its bloom is a compound umbel, of three or four small umbels. Each of these consists of four or five florets, each floret with five white petals, and less than a quarter of an inch across. The stamens are five, protruding; filaments white, and anthers dark purple. The styles are two and white. So white are the petals and so dark the anthers, that the country name, Pepper-and-Salt, is well deserved.

Harbinger-of-Spring. *Erigènia bulbòsa*

In northern Ohio the plant can be hopefully looked for in maple-sugar camps and usually blooms at the time of sugar-making. By the first of May its chosen haunts are covered with a lace-like canopy four inches from the ground, made of the spreading, delicately divided leaves, and among them are the tiny brown fruits of the carrot clan. By June its race is run, its foliage dies, and deep in the ground a bulb awaits in the darkness another spring.

SANICLE. BLACK SNAKEROOT

Sanicula Marylándica

Name said to be from *sano*, to heal.

Perennial. Borders of thickets and woodlands. Newfoundland to Alberta, south to Georgia and Tennessee, west to Minnesota and Kansas. Common in northern Ohio. May, June.

Stems.—Rather stout, one to two feet high, topped by a two to four-rayed umbel.

Stem-leaves.—Palmately three to five-lobed or parted, those from the root long-petioled; involucral leaves smaller.

Umbels.—Irregular or compound, generally few-rayed.

Flowers.—Small, greenish yellow, mostly perfect with a few staminate ones intermixed.

Fruit.—Globular, ribless, thickly covered with hooked prickles.

Pollinated by many insects. Stigmas mature before the anthers, which are imprisoned beneath the petals until all danger of self-fertilization is over. Some flowers are perfect, others staminate only.

Sanicle is difficult to analyze, as all umbel-bearing plants are, but can be easily identified notwithstanding. It grows in rich, moist woodlands, a companion of Sweet Cicely, blooms about the middle of May, ripening its fruit in July. The stem is smooth, pale green, slightly grooved, and hollow, like most of the *Umbellíferæ*. Basal leaves are mostly five-parted, the two

lower divisions deeply cleft so that the leaf seems seven-parted; stem-leaves are usually three-parted.

The tiny, pale, greenish yellow flowers are in very small clusters; the five petals of each floret are curiously

Sanicle in Fruit. *Sanicula Marylandica*

incurved toward the centre of the flower when first it opens; later they are flat. The long stamens of the sterile flowers mature early and are a conspicuous factor in the green-yellow of the flower-clusters.

The small, cone-shaped fruit or burr is densely covered with forked prickles, which seize upon the passerby and are thus transported from place to place. It goes without saying that the plant is a disagreeable weed.

GOLDEN MEADOW-PARSNIP. EARLY MEADOW-PARSNIP

Zizia aurea

Zizia, in honor of Ziz, a Rhenish botanist.

Perennial. In fields, meadows, and swamps. New Brunswick to Florida, west to Dakotas and Texas. Common in northern Ohio. April–June.

Stem.—Smooth, one to three feet high, hollow, green with brownish tinge.

Leaves.—Basal leaves long-petioled, compound in twos or threes; leaflets ovate to lanceolate, sharply serrate; upper leaves with sheathing petioles; leaflets twice or thrice-parted.

Flowers.—Brilliant yellow, in compound umbels two to three inches across; no involucre; involucels of small bracts; each tiny floret has five small petals; the shape of the little umbels is globular rather than flat; fifteen to twenty rays in each.

Involucre.—Wanting; involucels of the small umbels of several small bracts.

Calyx.—Adherent to ovary, five-toothed.

Corolla.—Petals five, bright yellow, incurved both in bud and in bloom.

Stamens.—Five.

Pistil.—Of two carpels; styles two.

Fruit.—Dry, ovoid; ribs usually winged.

The golden-yellow clusters of the Early Meadow-Parsnip often get into the race in April and are especially noticeable because of the pure brilliant yellow of the massed florets. The inflorescence is a compound umbel, that is, the flower-stems of each little cluster

of florets arise from the same point; there are usually eight to ten of these flower-stems each bearing an umbel called an umbellet. These umbellets are usually half an inch across and number about twenty

Golden Meadow-Parsnip. *Zizia aurèa*

florets, which are yellow; calyx, corolla, tiny filaments, and minute anther all yellow, and the effect is glowing. The shape of the umbel varies from a half-hemisphere to globular. At the point where the flower-stems arise there is usually, in umbelliferous plants, a group of green bracts called the involucre. In the Meadow-

Parsnip these are wanting. At the point where the tiny stems of the umbellets arise there are a few minute bracts, which form an involucel: these are present in the Meadow-Parsnip, but very small.

The stem is two to three feet high, hollow, and strong. The stem-leaves have sheathing petioles. All the leaves are twice or thrice-compound of oblong or ovate leaflets that are deeply serrate; sometimes the lateral leaflets are once-cleft.

The petals of the corolla are curiously incurved, apparently the aim being to keep the stamens in hiding until the pistil is mature and pollinated.

CORNÀCEÆ—DOGWOOD FAMILY

DWARF CORNEL. BUNCHBERRY

Córnus Canadénsis

A low, herbaceous shrub, possessing the characteristic blossoms of the Flowering Dogwood. Cool, moist woods. Newfoundland to Alaska, south to New Jersey, Ohio, Indiana, Minnesota, Colorado, and California. Rare in northern Ohio. May, June.

Rootstock.—Slender, creeping, rather woody.

Stem.—Flowering stems scaly, three to nine inches high, four-sided, and grooved.

Leaves.—Upper leaves crowded into an apparent whorl in sixes or fours, ovate or oval, entire, pointed, conspicuously veined; lower leaves scale-like.

Flowers.—Small, greenish, surrounded by a large white involucre of four ovate leaflets.

Calyx.—Tubular, minutely four-toothed.

Petals.—Four, oblong, spreading, greenish.

Stamens.—Four; filaments slender.

Pistil.—Ovary one, two-celled; style slender; stigma flat.

Fruit.—A bunch of bright-red, globular drupes.

The Bunchberry is a tiny shrub that looks like an herb, blossoms among the early flowers in the heart of the woods, carpets the forest floor of its chosen haunts with a spread of foliage during the summer, and in

Bunchberry at Home. *Córnus Canadénsis*

autumn delights the eye with its bunches of bright-red berries, which are really drupes, surmounting each slender, leafy stem. The blossom is a copy of that of the Flowering Dogwood, having a similar, great white involucre whose four leaflets look like four white petals, so that the inflorescence, which is rather unusual, looks like a single, large, white flower with a greenish centre. This greenish centre is really a bunch of tiny green tubular florets, each of which will in autumn produce a bright-scarlet berry.

ERICÀCEÆ—HEATH FAMILY

TRAILING ARBUTUS. MAYFLOWER

Epigæa rèpens

Epigæa, from *epi*, upon, and *ge*, the earth, in allusion to the habit of trailing growth.

A prostrate, slightly woody, branching shrub with alternate evergreen leaves; growing in sandy loam, mossy, rocky soil, on mountainsides, especially in the shade of pine-trees. Newfoundland to the Northwest Territory, southward to Florida, Kentucky, and Michigan. Frequent on the sides of ravines in orthern Ohio. April, May.

Stem.—Woody, prostrate and trailing, bristly with rusty hairs; the trailing branches rooting at the nodes.

Leaves.—Evergreen, often weather-worn, on short rusty, hairy petioles; alternate, oval, rounded at base and apex, smooth above, more or less hairy below.

Flowers.—Fragrant, pink fading to white, about half an inch across, in clusters of few or many from the axils of the leaves.

Calyx.—Five dry, overlapping sepals.

Corolla.—Salver-form, tube hairy inside, spreading into five equal lobes.

Stamens.—Ten, with slender filaments; anthers attached to filaments below the middle.

Pistil.—One; ovary five-celled, with erect style and a five-lobed stigma.

Fruit.—Globose, slightly five-lobed.

Pollinated by bumblebees. Nectar-bearing.

This is the famous Mayflower of New England, whose delicate beauty and delightful fragrance have given it a place not only in our literature but in our hearts. Its distribution is so extensive and a personal characteristic of forming its buds in the autumn so

Trailing Arbutus. *Epigæa rèpens*

general that there have arisen heated controversies as to the time of bloom. In the mountains of Virginia it blooms in March and April, in northern Ohio in April and May, and probably in New England its best full bloom is in May, though, undoubtedly, it sometimes blooms in April. As a matter of fact, its buds lie hidden beneath the dry leaves and protecting snow all winter long, awaiting the summons of the sun.

All in all, it is a most interesting plant and has been recognized for two centuries as one of the sweetest of spring's messengers, pushing its blossoms through and among the dry brown leaves and almost beside the lingering snow. The light-brown stems are woody and

tough, keeping close to the ground. The dull old leaves that have endured the stress of winter storms are rusty and spotted, but it is they that do duty as foliage while the flowers are blooming; the new leaves develop later.

The name Mayflower for the hawthorn, familiar in England, as its application to the historic vessel shows, was applied by the Pilgrims to this plant, whose green leaves and pink buds bore an early message of hope and courage to the far-away wanderers.

"Yet, 'God be praised,' the Pilgrim said,
Who saw the blossoms peer
Above the brown leaves, dry and dead,
'Behold our Mayflower here!

" 'God wills it, here our rest shall be,
Our years of wandering o'er;
For us the *Mayflower* of the sea
Shall spread her sails no more.'

"O sacred flowers of faith and hope,
As sweetly now as then
Ye bloom on many a birchen slope
In many a pine-dark glen."

—WHITTIER.

The Mayflower is a plant still in the state of transition. We find blossoms having both stamens and pistils, others having only stamens, still others having only pistils. These flowers are sometimes all on the same plant; sometimes all the flowers of one plant are staminate, all of another are pistillate. Moreover, the stamens and pistils vary among themselves, sometimes short pistils go with long stamens, sometimes long

pistils with short stamens. What the flower will be is a case of anybody's guess.

The cultivation of the Mayflower has often been tried but has rarely been successful. Indeed, there is a wide-spread belief that it is impossible. Doubtless it is difficult, but it is not impossible.

A recent number of *The Garden Magazine*, in its directions to gardeners, says: "Bear in mind that the Trailing Arbutus must always be lifted with its root system absolutely undisturbed. Herein lies the secret of its obstinacy. Take it up after a soaking rain with mud, stones, moss, or whatever surrounds it and carefully as possible shift it to a sheltered place and cover it from sun and wind for an entire season. An excellent plan is to lightly fit the sod into a paper pot or a strawberry-box, so that its removal may not even jar the soil about the roots. Colonies of Arbutus creep out into the open and these are most desirable for removal as they have become hardened by wind and weather."

These suggestions make it apparent that growing Arbutus is no light task. Seedlings are rare, new plants come from rooting branches that sprawl upon the ground. Probably the real difficulty lies in the fact that ordinary garden soil is not suited to it; it requires an acid soil and is intolerant of lime.

DIAPENSIÀCEÆ—DIAPENSIA FAMILY

PYXIE, FLOWERING MOSS. PINE-BARREN BEAUTY

Pyxidanthèra barbulàta

Name from *pyxis*, a small box, and *anthera*, anther; the anther opening as if by a lid.

Perennial. A small, creeping evergreen shrub, very leafy, much branched, growing in mat-like patches. Moist, sandy soil of the pine-barrens of New Jersey and North Carolina. March–May.

Root.—Long tap-root, from the centre of the matted top.

Leaves.—Moss-like, narrow, pointed, alternate, crowded and overlapping; young ones woolly at base.

Flowers.—Many, small, five-parted, white with pinkish buds, solitary and terminal.

Calyx.—Five sepals, oblong and obtuse, reddish at tip.

Corolla.—Short, bell-shaped, five-lobed; lobes ovate, erose.

Stamens.—Five, inserted on corolla, alternate with its lobes; anthers awned at base.

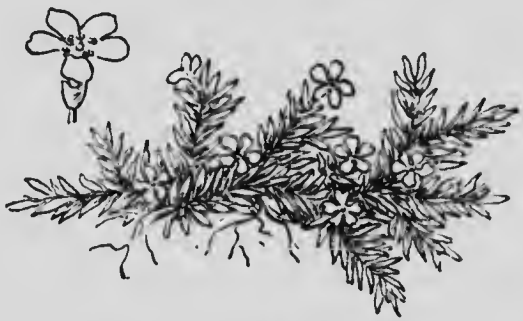
Pistil.—One, with three-celled ovary and single style.

Fruit.—Capsule, many-seeded.

Pollinated by small flies.

This is a pretty little creeping plant found native only in the pine-barrens of New Jersey and North

Carolina; a plant which creeps like a vine, looks like a moss, flowers like an herb, and is really a shrub; that is, its stems are woody. It forms small evergreen mounds resembling mossy cushions, which in early



Pyxie. *Pyxidanthèra barbulàta*

spring are sprinkled with pink buds and tiny white flowers.

The name is purely scientific but, shortened to Pyxie, irresistibly suggests the fairy wild folk to whom that name belongs and, smiling upward in the April sunshine, the tiny creature wields a marvellous charm.

The Pyxie belongs to a small and exceptionally interesting group of plants which are remarkable for their beauty, distinctiveness, and geographical distribution. They, allied to the heaths, are survivors of an ancient world and represent a vanishing race. The plant grows best in moist, sandy soil, in partial shade and soil rich in vegetable mould. The buds normally are pale pink; in full sunlight and poor soil they are darker.

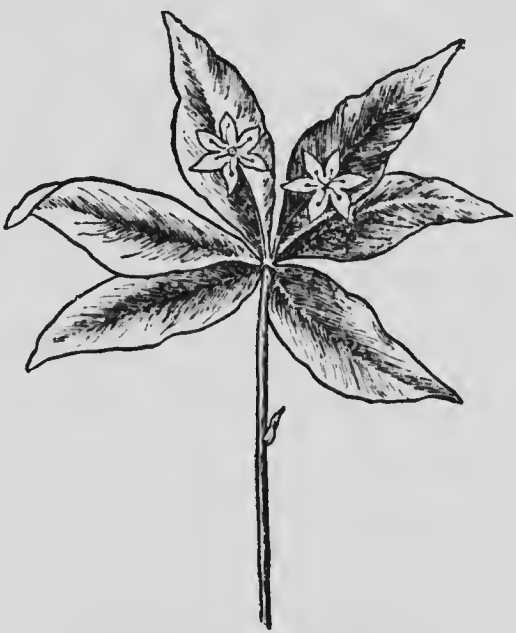
PRIMULÀCEÆ—PRIMROSE FAMILY

STAR-FLOWER

Trientàlis Americàna

Trientàlis, one-third of a foot, the usual height of the plant.

Low and smooth perennial. Moist shade of woods and thickets. Nova Scotia to Minnesota, southward to the mountains of Virginia. Rare in northern Ohio. May.



Star-Flower. *Trientàlis Americàna*

Rootstock.—Long, horizontal, slender.

Leaves.—Five to ten, in a whorl at the summit of the stem, thin, tapering at both ends, of unequal size.

Flowers.—White, solitary, star-like, on slender, wiry stems, above a whorl of leaves.

Calyx.—Sepals, five to nine-parted, usually seven-parted; divisions narrow, pointed.

Corolla.—Wheel-shaped, half an inch across, deeply cut into seven spreading segments.

Stamens.—Six to seven, with long, delicate filaments and small golden anthers.

Pistil.—One; style and stigma one.

These small, white Star-Flowers, poised above a whorl of leaves, dance in the wind with a charming lightness and grace. They produce no nectar, only pollen rewards their insect visitors. They possess one extremely interesting characteristic, the parts of the flower tend to appear in sevens—a very unusual thing. As a rule, floral parts appear in fives or threes or multiples of fives and threes, rarely in sevens.

SHOOTING-STAR

Dodecàtheon Meadia

Dodecàtheon, from *dodeka*, twelve, and *theoi*, gods; the twelve gods, a name given by Pliny to the Primrose, which was believed to be under the protection of the superior gods.

Perennial. A plant of cliffs, open woodlands and prairies. Pennsylvania to Manitoba, Georgia, California. Absent from northern Ohio, but reported from middle and southern Ohio. April, May.

Root.—Fibrous.

Leaves.—All basal, oblong or spatulate, three to twelve inches long, narrowed into petioles.

Flowers.—Purplish pink or yellowish white, the cone tipped with yellow; few or several hanging on slender, recurved pedicels in an umbel at the top of a simple scape, six to twenty inches high.

Shooting-Star. *Dodecatheon Meadia*

Calyx.—Deeply five-parted.

Corolla.—Of five narrow lobes bent backward and upward; the tube very short, thickened at throat, and marked with dark reddish purple dots.

Stamens.—Five, united into a protruding cone.

Pistil.—One, extending beyond the stamens.

Fruit.—A five-valved capsule, standing erect.

Pollinated by bumblebees and butterflies. Nectar-bearing.

This curious name of Twelve Gods has an ancient lineage but little if any application to its present wearer. Linnæus fancied he saw in the little group of unusual-shaped flowers a congress of tiny divinities seated around a miniature Olympus, and so gave to the plant the ancient name that nobody owned. The plant is chiefly of southern and western range and continental distribution.

The flowering stalk rises one to two feet from the cluster of oblong leaves which form a loose rosette. The blossoms, whose backward-turned petals suggest the ears of a frightened rabbit, are gathered in a

loose terminal arrangement and hang from slender curving stems which spring from the tip of the stalk.

There is a large group of flowers of which the potato in our fields and the tomato in our gardens are common examples, with protruding cones made up of the united stamens so arranged, apparently, that the visiting insect which seeks the honey must jar out pollen from the end of the cone and receive it upon the under side of its body, the more surely to distribute it. This stamen cone is a very marked characteristic of the blossom of the Shooting-Star.

MENYANTHÀCEÆ—BUCKBEAN FAMILY

BUCKBEAN. MARSH-TREFOIL

Menyánthes trifoliàta

The ancient name probably from *men*, month, and *anthos*, flower; some say from the length of its flowering period, which is about a month.

A perennial swamp herb, bearing in early spring sprays of beautiful white flowers and three-parted leaves. New England, Pennsylvania, and farther north and west. Not reported in Ohio. May.

Rootstock.—Thick, creeping, running horizontally a considerable distance.

Leaves.—Ternately divided, on long petioles which are sheathed at the base; leaflets oval or oblong.

Flowers.—White or slightly reddish bells, borne in a raceme on a naked scape a foot high.

Calyx.—Five-parted, shorter than the corolla.

Corolla.—Short, funnel-form, bearded within with white hairs, the border five-cleft and spreading.

Pistil.—Ovary, one-celled; style exserted, persistent; stigma two-lobed.

Fruit.—Many-seeded capsule.

Professor William W. Bailey, writing of New England flowers, reports as follows:

"A very beautiful flower, common to both hemispheres, is in the month of May often found in our swamps. It is the Buckbean or *Menyánthes*, a member of the gentian family. It has long, subaqueous root-

stocks, from which spring the long-petioled compound leaves of three leaflets. The racemed flowers are borne on naked scapes and are white or externally

Buckbean. *Menyánthes trifoliáta*

tinged with pink; within, the divisions of the corolla are closely bearded with exquisite hairs.

"The *Menyánthes* is apt to grow provokingly out of one's reach from the shore. If one has high rubber boots, it is delightful to wade in after it and to stand waist-deep amidst its waving plumes. Like some Lorelei, it has tempted many an adventurer into the water."

APOCYNÀCEÆ—DOGBANE FAMILY

VINCA. PERIWINKLE. TRAILING MYRTLE

Vinca minor

Perennial. Native to Europe and escaped from gardens; common in country gardens, cemeteries, and shady places. April–November.

Stem.—Trailing and creeping, rooting at the nodes; only the short flower-stems ascending.

Leaves.—Opposite, evergreen, shining, ovate or oblong-ovate.

Flowers.—Blue or white, salver-shaped, solitary in the axils of the leaves.

Calyx.—Tubular, five-toothed.

Corolla.—Blue or white, salver-shaped, border five-lobed; lobes almost wedge-shaped, convolute in bud; throat angled and thickened.

Stamens.—Five, inserted on the upper part or middle of the tube; filaments short; anthers bearded at the tip.

Pistil.—Of two carpels; style long, slender, supports a cup which is the stigma.

Fruit.—Two pods, each having three or four seeds; nectar-bearing.

"There sprange the violet al newe
And fresh pervenké rich of hewe."

—CHAUCER.

"Through primrose tufts, in that sweet bower
The periwinkle trailed its wreaths;
And 'tis my faith that every flower
Enjoys the air it breathes."

—WORDSWORTH.

This is the first out-of-door flower in many country gardens where bulbs have no place; and its lovely blue flowers among the clean, glossy leaves, smiling upward to the sky, have an especial charm in the early April days. Country people know the plant chiefly as Myrtle and Periwinkle; in city parks and gardens it covers the ground as Vinca; Pliny knew it in Roman times as Pervinca. Why the French call it Flower-of-Mystery is by no means clear, but the reason of the English name, Joy-of-the-Ground, is apparent to any one. The value of the plant lies chiefly in its hardy nature and trailing growth and the fact that it will flourish and make a green carpet under the cover of trees where little else will grow. So closely do the sterile creeping stems cling to the ground that the ancients named them serpents.

Periwinkle. *Vinca minor*

The calyx of the blossom is cut into five deep segments; the corolla forms a long tube below, expanding into a flat, five-lobed border above. The flower produces both pollen and nectar, but rarely any fruit; when it does it forms two little pods, each containing three or four seeds. The reliance of the plant for reproduction is in the long runners which develop roots at the nodes. It is now extensively used as a cover plant in parks for shaded places where nothing else will grow.

POLEMONIÀCEÆ—PHLOX FAMILY

PHLOX

Phlox divaricàta

Phlox, flame, is an ancient name transferred to this genus.

Perennial. Moist open woods and fields. Ontario to Minnesota, south to Florida, Kansas, and Arkansas. Abundant in northern Ohio. April, May.

Phlox. *Phlox divaricàta*

Stem.—Downy, erect or diffuse, with creeping prostrate or ascending leafy shoots.

Leaves.—Of flowering stems opposite, ovate-lanceolate or oblong, mostly acute; the uppermost almost clasping.

Flowers.—Pale lilac-purple, in loose, spreading clusters, faintly fragrant.

Calyx.—Five-toothed; teeth slender and pointed.

Corolla.—Salver-shaped, five-lobed with long tube; lobes obcordate or obovate and notched, convolute in bud.

Stamens.—Five, unequal, inserted on the corolla-tube and alternate with its lobes, included.

Pistil.—Ovary three-celled; style threadlike; stigmas three.

Fruit.—Oblong-globose capsule.

This is one of the flowers so abundant both in April and May that one scarcely knows in which month to place it. In color it varies from pale lilac to nearly white. Like all the Phloxes, its corolla is salver-shaped, this word referring to the ancient salver whose handle was a tube extending below the tray, rather than to our modern form. It is very pretty in masses, but its color is not decided enough to be effective alone, and its loose clusters look a little ragged. The Phlox Drummondii of the gardens is a Texan species, which has been developed into numerous varieties.

GROUND-PINK. MOSS-PINK

Phlox subulàta

Perennial. In dry, sandy or rocky soil, extensively cultivated as an early blooming plant. New York to Michigan, south to Florida and Kentucky. Escaped from cultivation in New England. Rare in northern Ohio, except in gardens. April, May.

Stems.—Much branched, forming mats; branches two to six inches long.

Leaves.—Crowded, awl-like, acute or acuminate, spreading.

Flowers.—Pink-purple or white, clustered at the ends of the branches.

Calyx.—Tubular, five-lobed.

Corolla.—Salver-shaped, five-lobed, tube slender; lobes slightly notched at the apex.

Stamens.—Five, inserted on the tube of the corolla and alternate with its lobes, included.

Pistil.—Ovary three-celled; style slender; stigmas three.

Fruit.—Ovoid capsule, three-celled, three-valved, several-seeded.

Moss-Pink. *Phlox subulata*

The Moss-Pink under cultivation sets the garden ablaze with brilliant bloom and lights up the desolation of early May. The depressed stems with their little sharp-pointed leaves make dense mats of moss-like foliage, and when in flower these mats are transformed into a mass of rose-purple, pink, or white, so perfectly does the bloom hide the foliage. Rocky hillsides and rocky banks are its natural home, but any light soil will serve.

POLEMONIUM. GREEK VALERIAN. JACOB'S-LADDER

Polemônium réptans

From the Greek, *polemos*, war.

Perennial. Alluvial bottoms. New York to Minnesota, south to Georgia and Kansas. Frequent in northern Ohio. April, May.

Stem.—Smooth, branching, twelve to eighteen inches high, erect or declined; often stained at base.

Leaves.—Alternate, pinnately divided, leaflets five to fifteen, opposite or irregular, ovate-lanceolate or oblong, entire, an inch or more long, acute; petiole winged.

Flowers.—Blue-violet bells in loose, few-flowered clusters, terminating the branches.

Calyx.—Bell-like, smooth, veiny, finally five-lobed.

Corolla.—Open bell, border five-lobed; lobes short, rounded.

Stamens.—Five, inserted on the tube of the corolla; declined, hairy at base.

Pistil.—Ovary three-celled; style single; stigmas three.

Greek Valerian. *Polemônium réptans*

Fruit.—Globose-oblong capsule, mostly three-seeded; seeds emit spiral threads when moistened.

By a curious interchange of terms, this plant has obtained the name of Greek Valerian, which probably

it will always retain. Jacob's-Ladder is also without significance. Polemonium is referred in the books to the Greek, *polemos*, war, explained by Pliny as given to a certain plant for the reason that two ancient kings went to war because they could not agree which of them first discovered its virtues. The Latin name, *rêptans*, suggests that it creeps—a thing it never does. The plant is a pretty little creature dwelling by choice in moist woods and by meadow runlets, but taking kindly to cultivation, and better known perhaps in the gardens than out of them. In color the flower-bells vary from bright blue to pure white, and, as the anthers are white, this gives the flower an unusual and delicate appearance. The ripe seed when moistened emits an innumerable number of spiral threads which to the naked eye appear like a thick mucus.

HYDROPHYLLÀCEÆ—WATER-LEAF FAMILY

HYDROPHYLLUM. VIRGINIA WATER-LEAF

Hydrophýllum Virgínicum

From the Greek, *hydor*, water, and *phyllon*, leaf, but the allusion is not evident.

Perennial. Moist, shady places in rich soil. From Quebec to Alaska, south to South Carolina, Kansas, and Washington. Frequent in northern Ohio. May.

Rootstocks.—Creeping, scaly.

Stems.—Slender, twelve to eighteen inches high, growing in clusters, often branched at the base.

Leaves.—Alternate; lower and basal leaves long-petioled, pinnately cut into five or seven segments which are oval or lanceolate, acute, sharply toothed or cut; upper leaves short-petioled with fewer segments.

Flowers.—Pale violet-purple or white with violet veins, borne in cymose clusters or one-sided racemes, coiled and forking.

Calyx.—Deeply five-parted, the segments narrow-lanceolate, fringed with long white hairs.

Corolla.—Tubular bell, five-lobed, with five linear honey-scales within, alternating with the lobes.

Stamens.—Five, inserted on the base of the corolla, extending far beyond the corolla; filaments white, bearded; anthers linear-oblong, dark in color.

Pistil.—One; style threadlike; stigma two-cleft.

Fruit.—Capsule, globose, size of small pea, four-seeded; only one of the seeds usually reaching perfection.

Pollinated by bees. Nectar-bearing.

Hydrophyllum is a leafy plant about a foot high, forming colonies and communities in moist, shady

Hydrophyllum. *Hydrophyllum Virginicum*

places, and blooming in May. Stems and leaves are rather smooth, but the flower-cluster fairly bristles with hairs. This cluster is a one-sided, coiled raceme which unrolls as the buds come into bloom—a kind of inflorescence called scorpoid, of which the garden gives us in the Heliotrope an excellent example.

BORAGINÀCEÆ—BORAGE FAMILY

VIRGINIA COWSLIP. BLUEBELLS. LUNGWORT

Mertènsia Virgínica

Named in honor of Mertens, a German botanist.

Perennial. In low meadows and along streams, often cultivated. Ontario to Minnesota, south to New Jersey, South Carolina, Nebraska, and Kansas. Frequent in northern Ohio. April, May.

Stem.—Smooth, pale, erect, one to two feet high.

Leaves.—Oblong or obovate, veiny, entire; the lower four to six inches long and narrowed into margined petioles.

Flowers.—Showy, clustered, pinkish purple when opening, changing later to blue.

Calyx.—Five-lobed; lobes oblong-lanceolate.

Corolla.—Cylindric, trumpet-shaped, pendent, obscurely five-lobed, throat open, often with five ridges between the stamens.

Stamens.—Five, inserted on the tube.

Pistil.—Ovary four-divided; style threadlike.

Fruit.—Four seed-like little nuts, wrinkled.

Pollinated by bees and butterflies. Nectar-bearing.

The brilliant blue blossoms of the Virginia Cowslip are very striking among their paler neighbors. The

most interesting thing about these blossoms is their marked change in color; each little bell beginning life

Bluebells. *Mertensia Virginica*

a lovely pink-purple but becoming bright blue before ending it.

Virginia Cowslip has also the distinction of being the one smooth species in a family noted for the harsh, rough, hairy, and forbidding character of stem and leaves.

LABIÀTÆ—MINT FAMILY

GROUND-IVY. GILL-OVER-THE-GROUND

Népeta glecòma. Glecòma hederàcea

Perennial. Naturalized from Europe. Found in damp or shaded places. Newfoundland, Ontario, and Minnesota, south to Georgia and Kansas. Common in northern Ohio. April–September.

Stem.—Square, creeping and trailing, leafy, often forming dense green mats.

Leaves.—Opposite, petioled, round kidney-shaped, scalloped, green throughout the winter, downy.

Flowers.—Violet-blue, two-lipped, in loose axillary clusters.

Calyx.—Tubular, obliquely five-toothed.

Corolla.—Two-lipped; upper lip is erect and notched at the middle and arches over stamens and pistil. The lower lip, violet, spotted with dark purple, is three-lobed, middle lobe largest.

Stamens.—Four, in two pairs ascending under the upper lip; the lower pair the shorter, inserted on the tube of the corolla.

Pistil.—Four-lobed; style two-lobed.

Fruit.—Four little nutlets.

Pollinated by many insects. Anthers and stamens mature at different times in most of the flowers.

In Europe, where the aromatic leaves of this little creeper were long ago used for fermenting and clarifying

Gill-over-the-Ground.
Glecòma hederàcea

beer, it is known by such names as Ale-Hoof and Gill-Ale—gill, it is said, being derived from the old French word *guiller*, to ferment or make merry. Be that as it may, the plant is an old and familar herb, formerly much used as a domestic remedy, and, like so many of those old-time remedies, probably worthless. The trailing stem grows sometimes twelve inches or more in length, with ascending branches, and, like all the mints, it is square; moreover, it roots at the joints, thus possessing an easy means of forming new plants. The leaves are soft and downy to the touch, of bitterish and aromatic taste, so that cattle avoid them. The plant often forms dense mats and its leaves are green all winter; in the spring it comes into flower pretty punctually in early April.

DEAD-NETTLE. HENBIT

Làmium amplexicaùle

Làmium, from *laimos*, throat; in allusion to the gaping corolla.

Biennial or winter annual. Naturalized from Europe. Found in cultivated grounds and waste places. Common. May–November.

Stems.—Weak, slender, slightly hairy, ascending or decumbent, four-angled.

Leaves.—Orbicular; the lowest leaves small and long-petioled; the middle leaves larger, rounded, deeply crenate or cut; the upper ones clasping.

Flowers.—Two-lipped, purplish red, borne in whorled clusters in the axils of the leaves.

Calyx.—Bell-shaped, five-toothed, hairy.

Corolla.—Slender, tubular, two-lipped, dilated at the throat; upper lip ovate or oblong, arched, narrowed at base; lower lip three-lobed, spreading; the middle lobe broad, notched at the apex, contracted at the base; the lateral lobes small at the margin of the throat.

Stamens.—Four, inserted on the corolla tube, ascending under the upper lip; anthers in pairs, two-celled; cells diverging.

Pistil.—Four-parted, producing in fruit four small nutlets.

Dead-Nettle. *Lamium amplexicaule*

The Dead-Nettles are low, spreading herbs appearing in gardens, on waste heaps, and in neglected yards. As a whole, the stems rest on the ground but the tips ascend and sometimes short stems are upright. Four species lurk about our cultivated grounds with flowers very much alike; the specific differences resting largely upon the leaves and the color of the flowers. *Lamium amplexicaule* has its upper leaves either sessile or clasping, while only the lower ones are petioled. The other species have petioled leaves, but all are orbicular and all crenate. The Red Dead-Nettle, *Lamium*

purpùreum, has purple-red flowers very like those of *L. amplexicaùle*, but its leaves are petioled; the Spotted Dead-Nettle has blotched leaves and rather larger flowers; the White Dead-Nettle has white flowers. There are other minor differences among the four, but these are sufficient to distinguish them. All bloom in early spring and continue to bloom into October, sometimes later. All are immigrants; *L. maculàtum* has escaped from gardens, the others are free-lances who came as they could and live as they must. They are not unattractive little weeds and often comfort the waste places, appearing frequently in vegetable-gardens where a crop has been harvested and the land neglected. Among them are one annual, one biennial, and two perennials.

SCROPHULARIÀCEÆ—FIGWORT FAMILY

COLLINSIA

Collinsia vérna

Collinsia, dedicated to Zaccheus Collins, botanist, of Philadelphia.

Biennial or winter annual. Moist meadows, woods, and thickets. Western New York and Pennsylvania to Wisconsin, Kentucky, and Oklahoma. Rare in northern Ohio. April–June.

Collinsia. *Collinsia vérna*

Stems.—Hoary or smooth, weak and slender, six to twenty inches high, branching.

Leaves.—Thin, opposite, the lower ovate or orbicular, obtuse, crenate or entire, slender-petioled; the middle leaves sessile or clasping, ovate or oblong, obtuse, dentate; floral leaves ovate to spatulate, mostly acute.

Flowers.—Blue and white, two-lipped; borne in about six-flowered whorls in the axils of the upper leaves.

Calyx.—Deeply five-cleft.

Corolla.—Irregular, declined, with the tube bulging at the base on the upper side, deeply two-lipped; upper

lip white or pale purple, two-cleft; the lower lip blue, three-lobed, the side lobes spreading, the middle lobe folded lengthwise to enclose four adhering stamens and one pistil; about three-fourths of an inch long.

Stamens.—Four perfect stamens, the fifth a gland-like rudiment; all inserted on the tube of the corolla.

Pistil.—One; style threadlike; stigma small.

Fruit.—A round capsule to which the enlarged calyx adheres; seeds few.

Pollinated by bees. Stamens mature pollen at different times.

Collinsia is a flower of delicate beauty, rare in northern Ohio but covering acreage in the West and Southwest when permitted so to do. It loves moist alluvial soil and is rarely found elsewhere. Its beautiful blue and white corolla is deeply two-lipped, the upper lip two-cleft with its lobes partly turned backward, the lower is three-cleft, its middle lobe sac-like and ridged, enclosing the stamens and the style.

The plant was named in honor of Zaccheus Collins, a Philadelphia botanist, and seems never to have gained a common name.

CORN SPEEDWELL

Verónica arvénsis

A winter annual. Naturalized from Europe. The earliest Speedwell. In cultivated soil, fields, woods, and waste places. Nova Scotia to Minnesota, south to Florida and Kansas. Found in northern Ohio. April–September.

Stem.—Slender, branched, diffuse, three to ten inches long.

Leaves.—Lower leaves opposite, petioled, round-ovate or subcordate, crenate or crenulate, obtuse, one-eighth to one-half an inch long. Upper leaves broad-ovate, sessile, with a short-pedicelled flower in the axil.

Flowers.—Small, pale blue, striped, solitary.

Calyx.—Four-parted.

Corolla.—Wheel-shaped, deeply four-cleft, lower division narrowest, pale blue with darker lines.

Stamens.—Two, inserted in the short tube of the corolla, flaring.

Pistil.—Ovary two-celled; style one; stigma two-lobed.

Fruit.—Obcordate capsule, two-celled, few-seeded.

Corn Speedwell.
Verónica arvénsis

Verónica arvénsis is the earliest of the Speedwell group to bloom; along its southern range it appears in February, on Capitol Hill in Washington in early March. It there makes little beds and patches, often in company with Henbit and Chickweed. After a warm rain, when the sun is shining, numberless blue eyes are open, looking upward, but if the day is gray and cold the Speedwells doze. The plant, though an annual, is able thus early to enter the race because its seedlings get so far along the previous autumn that when the first warmth of spring comes they are ready to bloom.

The plant rises two or three inches and carpets the ground by means of its prostrate and creeping stems. The leaves are roundish, rather thick in texture, with small scalloped margins. The stems and leaves are sometimes hairy and often smooth.

The flowers are pale blue, pencilled with darker lines, and are set on short peduncles springing from the axils of the upper leaves. The corolla falls quickly; it speeds too well, especially when one tries to gather it. The plant's range is world-wide and its flowering season extended.

COMMON SPEEDWELL

Verónica officinàlis

Perennial by stolons. Naturalized from Europe. Dry fields and woods. Nova Scotia to South Dakota, and south to Georgia and Tennessee. Common in northern Ohio. April–August.

Stem.—Prostrate, rooting at the nodes, rising three to ten inches, pubescent.

Leaves.—Pubescent, opposite, short-petioled or sessile, oblong or obovate, serrate, obtuse at apex, narrowed at base.

Flowers.—Small, pale blue on a lengthening narrow raceme, several flowers in bloom at one time.

Calyx.—Four-parted.

Corolla.—Wheel-shaped, four-lobed, pale blue with dark lines; the lower lobe smaller and narrower than the others.

Stamens.—Two, opposite, flaring.

Pistil.—Ovary one, two-celled; style one; stigma two-lobed.

Fruit.—Capsule obovate, compressed; seed flat.

There are many Speedwells nestling in the grass of our lawns or beside our garden walls or at the edge of cultivated fields. They seem to prefer the conditions that man makes; most of them do not wander very far

afield. Having once become acquainted with the genus, one will always recognize its members though one may find it difficult to name the exact species. All carry the family mark, tiny flowers, each a little disk cut into four lobes, the lowest lobe the smallest, and two flaring stamens.

Common Speedwell. *Verónica officinàlis*

Of the twelve species appearing in our botanies ten are indisputably citizens of the world, growing in America, Europe, and Asia. They are spring and summer bloomers.

The entire group to which this species belongs are called the Flowers of St. Veronica, through some fancied resemblance of the marks on the corolla to the human features, which tradition says were imprinted upon her handkerchief when the saint wiped the face of Christ as he was bearing the cross.

Speedwell is an old word used in bidding good-by to a friend who is going on a journey. Its meaning is the same as that of farewell. It names this tiny, elusive blossom because the pretty corolla drops so soon after it unfolds that unless one takes leave of it quickly it vanishes before one has a chance to do so.

SCARLET PAINTED-CUP

Castillĕja coccĭnea

Named for Castillejo, a Spanish botanist.

Perennial or biennial. Low, sandy ground. Maine and Ontario to Manitoba, south to the Carolinas, Kansas, and Texas. Appears in northern Ohio. May–July.

Scarlet Painted-Cup.
Castillĕja coccĭnea

Stem.—Simple, with few erect branches, six to twenty-four inches high, pubescent.

Leaves.—Basal leaves clustered, mostly entire, obovate or oblong; stem-leaves deeply and irregularly cleft; floral leaves dilated, three to five-cleft, bright scarlet toward the summit.

Flowers.—Inconspicuous, greenish yellow, enclosed by broad, three-cleft floral bracts, more or less tipped with vermilion, borne in a terminal spike.

Calyx.—Flattened, tubular, cleft above and below into two lobes, usually green, sometimes scarlet.

Corolla.—Irregular; upper lip long and arched; the short lower lip three-lobed.

Stamens.—Four, unequal, two long and two short; anther-sacs unequal.

Pistil.—Ovary one; style threadlike.

Fruit.—Many-seeded capsule.

The curious thing about the Painted-Cup is that when the flowering time comes the entire plant bursts into bloom. The real blossom is yellow and incon-

spicuous, but the upper leaves upon the floral stem look as if their sides and tips were dipped into a scarlet tincture. The plant is accused of parasitic tendencies, but a colony covering a barren, sandy hillside apparently has very little opportunity for evil-doing.

WOOD BETONY. LOUSEWORT

Pedicularis Canadensis

Pedicularis, relating to lice; long supposed to breed lice in sheep that feed on the plant.

Perennial. Found in sprawling clusters on sandy knolls in moist woods, on dry roadside banks. Nova Scotia to Manitoba, south to Florida and Mississippi, west to Colorado. Common in northern Ohio. April, May.

Flowering stems.—Several, that spring from the centre of a tuft of clustered, sprawling leaves, stout, hairy, sparingly leafy, from six to eighteen inches high.

Leaves.—Scattered on the stem, oblong-lanceolate, pinnately parted into obtuse, deeply cut, or dentate lobes.

Flowers.—Two-lipped, greenish yellow and purplish red, in a thick, tousled, leafy terminal spike.

Calyx.—Tubular, oblique, split in front; two or three minute scallops on upper side.

Corolla.—Two-lipped; upper lip arched, concave, with two tiny teeth at the apex, between which extends the slender pistil; the lower lip three-lobed.

Stamens.—Four, grouped beneath the arch of the upper lip; filaments hair-like; anthers large.

Pistil.—One; style long, slender, protruding from the upper lip.

Capsule.—Many-seeded.

Pollinated by bumblebees. Nectar-bearing.

Many species of *Pedicularis* are found in and west of the Rocky Mountains; in the Eastern States there are but three reported, of which the Wood Betony, *Pedicularis Canadensis*, is one of our April flowers. This species particularly delights to grow on sandy knolls in open woods or in swampy lowlands, where it may enjoy a humid atmosphere, thus combining dry feet with a moist head. It grows in patches and the general effect of a blooming area is a leafy, tousled mass of sprawling, fern-like leaves and blooming heads, the color of the flowers creeping into leaves and stems and a general dishevelled air pervading all.

Wood Betony. *Pedicularis Canadensis*

The individual flower is extremely interesting. In the first place, it is two-lipped, always an interesting form, and the color scheme varies from golden brown to reddish purple, from pale yellow to white.

After the flowering season the spike lengthens several inches, and the fruit ripens as a head of stiff, brown capsules.

PLANTAGINÀCEÆ—PLANTAIN FAMILY

RIB-GRASS. RIBBED PLANTAIN

Plantàgo lanceolàta

Perennial. Naturalized from Europe. In fields and on roadsides, a very common weed. April–June.

Scape.—Naked, grooved, angled, slender, one to two feet high.

Leaves.—Lanceolate or lance-oblong, forming a loose rosette upon the ground, ribbed, hairy.

Flowers.—Minute, whitish, noticeable because projecting style and stamens are more conspicuous than the corolla; in a spike which lengthens as the flowers open.

Calyx.—Four imbricated, persistent sepals, scarious and brownish.

Corolla.—Rotate; border four-parted; withering on the pod.

Stamens.—Four; anthers long-exserted after the corolla has opened.

Style.—Ovary two-celled; style and long hairy stigma projecting from the unopened corolla.

Fruit.—Capsule, two-celled; when ripe the top falls off like a lid.

This is sometimes called Ribwort, and it has also a common name—Kemp, a Danish word meaning soldier, which use of the word seems to have come from a sport of children in knocking the heads of these stalks with others of the same size held in the hand, turn and turn

about. The point of the game is the removal of the white anthers. Other common names suggestive of such pastime are Fighting-Cocks, Hardheads, French-and-English.

Rib-Grass. *Plantàgo lanceolàta*

RUBIÀCEÆ—MADDER FAMILY

BLUETS. INNOCENTS

Houstònia cærùlea

Houstònia, named in honor of Doctor William Houston, an early English botanist.

Perennial. Growing in tufts by means of delicate creeping stems, in grassy places both moist and dry. Nova Scotia and Ontario to Michigan, southward to Georgia and Alabama. Abundant in northern Ohio. April–July.

Stem.—Smooth, slender, erect, three to six inches high and sparingly branched.

Leaves.—Oblong or spatulate, small, opposite.

Flowers.—Small, pale blue, lilac, or cream-white, with a yellow eye, solitary.

Calyx.—Four-parted.

Corolla.—Salver-shaped, with four oval, pointed, spreading lobes that equal the slender tube in length.

Stamens.—Four, inserted on the tube of the corolla; variable in position.

Pistil.—Ovary two-celled; style variable in length.

Fruit.—Capsule; seeds few.

Pollinated by flies, bees, and butterflies. Flowers are dimorphous.

"Innocents, children guileless and frail,
Meek little faces, upturned and pale."

The number of common names this little plant possesses is evidence that its delicate beauty has appealed to and has won the popular heart. Among its common names are Innocents, Blue-Eyed Babies, and in the neighborhood of Philadelphia it is called Quaker Ladies. Sometimes the blossoms are called Forget-me-nots, from the tradition prevailing in the country that all small bluish flowers of whatever kind are to be thus designated. Whatever name is given, it is always a caress.

Bluets. *Houstònia cærùlea*

The spreading rootstock sends up a tuft of small leaves from which the slender stems arise and the whole is so delicate that it seems almost like a flowering moss. The blossoms are set on the tip of the stem, where they nod in the bud, but are erect in bloom. In color they fade from sky-blue to white, but the yellow eye remains. The flowers are extremely sensitive to atmospheric conditions; at night and in rainy weather the blossoms bend down, to become erect again when sunshine appears.

The flowers are peculiar in that they are what botanists call dimorphous; that is, some of them have long anthers and a short style, while others have short anthers and a long style. This arrangement for the exchange of pollen secures cross-fertilization.

GOOSE-GRASS. BEDSTRAW

Gàlium aperîne

Gàlium, Greek, milk, one of the species having been used to curdle milk.

Annual trailing herb. In rich, shaded grounds. Naturalized from Europe. New Brunswick to the Dakotas, south to Florida and Texas. Frequent in northern Ohio. April–September.

Stem.—Slender, procumbent, four-angled, retrorsely prickly, four to eight feet long.

Leaves.—In whorls of eight, sometimes fewer, linear-oblanceolate, one to two inches long.

Flowers.—White, small, in few-flowered clusters borne in the axils of the leaves.

Calyx.—Tubular, ovate, or globose.

Corolla.—Rotate, four-parted, white.

Pistil.—Ovary adnate to the calyx, of two united carpels; styles two.

Fruit.—Twin, dry, hairy.

Gàlium aperîne is a plant of English hedges; driven from cultivated fields, it finds a refuge there, as our weeds find their refuge in fence corners. It came to this country very early and is now quite as much at home as any other early emigrant. Though an annual, it responds so quickly to the warmth of spring that it is able to bloom in April.

The plant sends its wandering, befrilled stems three to five feet away from the life-giving root, and this stem branches and spreads and scrambles and sprawls over everything within reach. Why it succeeds in

this is clear to one who picks a branch; for that branch is so armed with sharp, stiff, backward-pointing prickles that the immediate problem is not to keep it but how to get rid of it.

Goose-Grass. *Gàlium aperine*

The name Goose-Grass is said to refer to the fact that geese wandering along the hedges often became helplessly entangled in these stems to the detriment of their feathers. The old English nursery rhyme,

> "Goosey, goosey, gander,
> Whither do ye wander?"

is regarded as a reference to this danger. The many common names which the English people give the plant is proof that for some reason it was an object of considerable interest, and this from very early times. In addition to Goose-Grass, it also has the names Bedstraw, Cleavers, Robin-Run-in-the-Hedge, Love-Man, Bur-Weed, Catchweed, Cling-Rascal, Grip-Grass—and these are really only a few of those which it has acquired.

It also had a great reputation for its medicinal value, which reputation it seems to have lost. To-day it is simply a weed whose room is regarded much more desirable than its company.

COMPÓSITÆ—COMPOSITE FAMILY

DANDELION

Taráxacum taráxacum. Taráxacum dens-leònis

Name from *tarasso*, to disquiet, in allusion to its medicinal properties.

Perennial. Perhaps the most common weed; with basal leaves, brilliant yellow flowers and milky juice. Introduced and indigenous. Everywhere. January to December.

Root.—Large, whitish, bitter.

Leaves.—Basal, oblong to spatulate in outline, coarsely and irregularly toothed, with teeth projecting backward; juice milky.

Scape.—Erect, hollow, milky, bearing a large solitary head of flowers.

Flower-head.—Composite, golden yellow, solitary, one to two inches across, containing one hundred and fifty to two hundred perfect ray florets on a flat receptacle at the top of a hollow scape two to eighteen inches high.

Involucre.—Of two rows of bracts; outer row of short bracts reflexed; inner row of long linear bracts erect.

Calyx.—Tube united with the ovary, the pappus crowning its summit composed of many soft white bristles.

Corollas.—Strap-shaped or ray florets, all having both stamens and pistils; each strap with five small teeth.

Stamens.—Five, with anthers united into a tube.

Pistil.—One; style two-cleft at the apex.

Fruit.—Akenes oblong, ribbed, rough; the apex prolonged into a slender beak attached to abundant soft,

white pappus, all of one head together forming when mature a silky white globe.

Pollinated by many insects; capable of self-fertilization. Pistil matures later than the stamens. Abundant nectar.

> "Dear common flower that grow'st beside the way
> Fringing the dusty road with harmless gold."
>
> —LOWELL.

Anna B. Comstock, writing of the Dandelion, says: "I always look at a Dandelion and talk to it as if it were a real person. One spring, when all the vegetables in my garden were callow weaklings, I found there in their midst a Dandelion rosette with ten great leaves spreading out and completely shading a circle ten inches in diameter. I said: 'Look here, Madame, this is my garden!' and I pulled up the squatter. But I could not help paying admiring tribute to the tap-root, which lacked only an inch of being a foot in length. It was smooth, white, fleshy, and when cut bled a milky juice, showing that it was full of food. It was as strong from the end pull as a whip-cord; it also had a bunch of rather fine rootlets about an inch below the surface of the soil and an occasional rootlet farther down; and then I said: 'Madame, I beg your pardon; I think this is your garden, and not mine.'"

Consider the Dandelion! Roadsides and lawns, hamlet and village are all in the grasp of this wonderful plant. Upon what meat does this our floral Cæsar feed that it has grown so great? What are the tactics of our golden lord? Study shows us that they are many and all successful. In late autumn and early

spring one finds rosettes of Dandelion leaves covering waste places, forming in gardens and lawns, preempting a circle of soil space three to six inches in diameter; other plants within that circle are smothered, so each has that much space to itself.

Dandelion. *Taráxacum dens-leónis*

Underground it has a strong tap-root, reinforced with many fibrous rootlets and capable of digging deep for moisture. The stem which bears its flower-head to light and air is a hollow tube, the strongest form of structure.

But its blossom and its fruit are, after all, its greatest means of success. It belongs to the great Composite

group, a group whose flowers have acquired the ability to help one another. In each Dandelion head there are from one hundred and fifty to two hundred separate flowers. Each tiny flower has an open strap corolla united below into a tube, five stamens whose anthers have grown together, and a pistil with a divided style. As each of the two hundred flowers ripens a seed with a balloon attachment, we need not wonder that the plant is a weed. The blossom opens upon a very short stem, but as the seeds begin to mature the stem lengthens, usually lying along the ground, and when the globe of seeds is ready to expand it rises and, erect, bears them into the air and sunshine.

The plant is fortunate also in the character of its involucre. In the bud tightly wrapped about the little family of flowers, this protects them as if it were a calyx. When the head expands the involucre bracts open and turn back just far enough to make a shallow cup to contain the flowers. After these have faded the involucre closes up a second time to protect the ripening seeds. Finally, when the last act in the life history is approaching and the stem is ready to lift the fairy seed globe into the air, the involucre folds itself back out of the way and leaves each little seed free to fly with its own parachute wherever the wind may carry it.

The Dandelion blooms early and blooms late, will grow on all soils, and its blossoms brim with nectar so that no insect need go away hungry. If insects do not come it can fertilize itself. Considering all these things, the wonder is not why there are so many Dandelions but why there are no more.

The beauty of the Dandelion blossom is beyond

words. Its fairy ball of seeds is one of the most exquisite of floral forms, and each seed, equipped with silvery wings, intrusts its fortune to the wind and sails away, east of the sun and west of the moon, in search of a home. Early to bed and early to rise is the family law of the Dandelions. Glowing in the sunlight, at nightfall they vanish; each involucre draws its protecting cover over its own yellow florets. It is one of the sights of the morning to see a field of Dandelions wake up under the rays of bright spring sunshine. They fairly twinkle out, like stars. Worshippers of the sun, if it becomes cloudy or dark they close again.

The struggle of lawn-owners to keep the Dandelion out of their enclosure is pathetic as well as ineffectual. It can only be accomplished by eternal vigilance, and then success is brief. Personally, I would pardon much if only the blossoms would remain open after they are picked.

The Dandelion gets its name not from the golden blossom but from the foliage. The word is a corruption of the French *dent-de-lion* (lion's tooth) and refers to the jagged edges of the leaves.

COLTSFOOT

Tussilàgo fárfara

Named from *tussis*, cough, for which the plant is a reputed remedy.

Perennial. Naturalized from Europe. Wet places and along brooks, in New England, New York, and Pennsylvania; rare in the Middle West. Rare in northern Ohio. April, May.

Rootstock.—Horizontal, creeping, sending up simple scaly scapes in early spring, each bearing a single flower-head.

Leaves.—Rounded, heart-shaped, angled, or toothed, woolly when young.

Flower-heads.—Radiate-composite, containing both ray and disk florets; ray-florets in several rows, narrow, pistillate, fertile; disk-florets sterile; involucre nearly simple; receptacle flat; akenes cylindrical; pappus abundant, soft, and hair-like.

Coltsfoot. *Tussilàgo fárfara*

Coltsfoot is a plant that came to us from Europe and has not wandered very far from the Atlantic seaboard. New York and Pennsylvania are given as its western limit. There is nothing attractive about the plant; the flower-head is borne on erect, leafless stems and has been described as a small Dandelion with its heart plucked out. However, this is the same Coltsfoot that once was gathered and preserved in company with Boneset, Catnip, and Hoarhound as part of the domestic *materia medica*, and had at one time a great reputation as a remedy for coughs and colds. Its Latin name is an old one used by Pliny, and this points to a similar use of the plant in ancient times.

The flower-head is paler yellow than that of the Dandelion and is set in a deep, leafy, thimble-shaped green cup. The ray-florets are fringe-like. The head usually closes at noon. The flowers precede the leaves by some days.

ANTENNARIA. DWARF EVERLASTING. PUSSY-TOES

Antennària plantaginifòlia

Antennària, named from the resemblance of the sterile pappus to the antennæ of certain insects.

Perennial. Woolly herbs that appear as broad white patches of leaves carpeting dry fields, hillside pastures, and open woods in early spring. Newfoundland to Alaska, southward to North Carolina, Kansas, Nebraska. Abundant in northern Ohio. April, May.

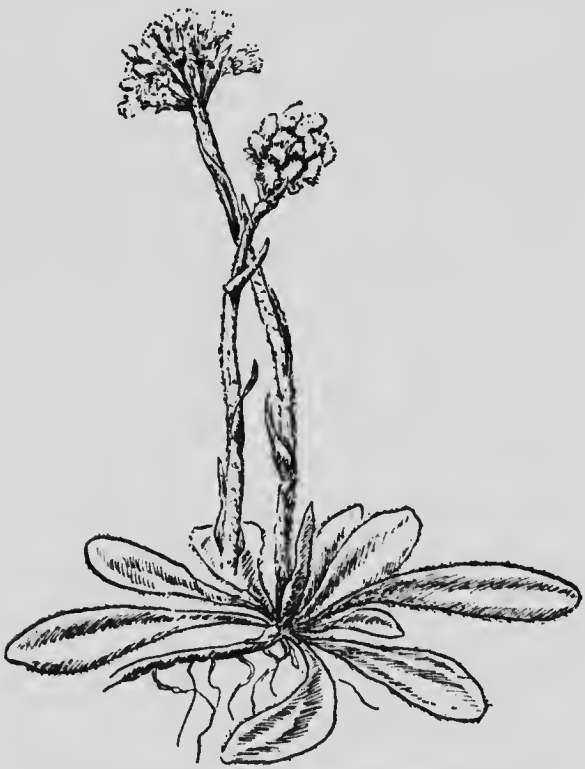
Stem.—Downy or woolly; the erect flowering stems six to eight inches high; leafy runners spread in all directions.

Leaves.—Silky, woolly when young, at length green above and silvery beneath; those of the flowering stems alternate, small, lanceolate; the basal leaves are obovate or oval, rather large, petioled, three-ribbed, white at first.

Flower-heads.—Composite, small, silky-haired, silvery white, borne in clusters at the summit of the stem; each small head has an involucre of greenish white bracts; florets all tubular, and the heads of two kinds; some bearing only pistillate florets, others only staminate florets, the two kinds usually in separate patches; involucre bracts of the pistillate florets are narrow and acute at apex, of the staminate florets obtuse at apex.

When the well known spring flowers are all in the race, two white-coated groups, brothers and sisters, may be found in many open, woodsy places, in rocky fields, or on gravelly knolls, holding their own and seen from afar. These are the staminate and pistillate plants of the Dwarf Everlasting, the spring Antennaria, which lift their stems and bear their flowers in April. These patches begin to appear in March, the leaves

white and woolly as befits the season; later they become green and inconspicuous. As the plant is dioœcious and spreads chiefly by offshoots and runners there is a tendency for each group to keep by itself.



Dwarf Everlasting. *Antennària plantaginifòlia*

These flowering heads differ in appearance: some are small and pointed, others larger and rather flat at the top. The smaller, which bear pistils only, are silvery white, the others are creamy white with brownish, orange-tipped stamens, which give a brownish color to the heads. After these heads have shed their

pollen, which happens by the middle of May, they droop, the stems wither, and a general collapse sets in. Their work is done. The others, the pointed pistillate heads, wax strong, the stems grow high, keeping level with the grass and their heads take on a tinge of color. By June the seeds are mature and the plant becomes lost in the surrounding foliage.

ROBIN'S PLANTAIN. DAISY FLEABANE

Erigeron pulchéllus. Erigeron bellifólium

Erigeron, from *er*, spring, and *geron*, an old man; suggested by the abundant pappus of some species.

Perennial. Moist banks and grassy fields, borders of woods. Nova Scotia to Ontario and South Dakota, south to Florida and Louisiana. Abundant in northern Ohio. April–June.

Stem.—Simple, covered with long, silky hairs, about two feet high, producing runners and offshoots from the base.

Leaves.—Basal leaves obovate or spatulate, in a flat tuft about the root, two to three inches long, an inch wide; stem-leaves distant, oblong-lanceolate, partly clasping.

Flower-heads.—Radiate-composite, an inch to an inch and a half across, borne in a loose cluster at the summit of the flower-stem; ray-florets a circle of about fifty narrow, pale-pinkish rays; disk-florets greenish yellow; scales of involucre very narrow, hairy.

The Daisy Fleabanes are the Aster-like flowers of spring and early summer. The blossoms look so much like Asters that it may be a matter of some little interest why they are not Asters—as a matter of fact the two are blood-brothers—the difference lies not in essentials but in trifles.

In the first place, the Daisy Fleabanes bloom in spring and early summer, not in autumn; Asters are

Common Fleabane. *Erigeron Philadelphicus*

among the autumn flowers. Then the rays of the Fleabanes are very narrow and very many, so that

they form a thick, pinkish or pale-violet fringe around the central yellow disk of the flower-head. There are also some minor differences in the matter of involucre and pappus.

Robin's Plantain is the earliest Fleabane to bloom at the north; it wears a finely cut, pale pinkish-violet fringe around a flat, yellow disk of minute florets. It is a rather sturdy-looking plant with a hairy stem bearing at the summit not many flower-heads and these rather large, with a tuft of obovate root-leaves and usually equipped for the race of life with offsets and runners.

Upon its heels in middle May, covering great stretches of fields in northern Ohio with a pinkish, misty cloud, comes *Erígeron Philadélphicus*, the Common Fleabane, a plant three to four feet high, with oblong leaves, the upper clasping by a heart-shaped base, with margins coarsely dentate; the lower spatulate, toothed, and narrowed into short petioles.

The flowers are pale-rose or flesh-colored heads of very many narrow rays surrounding a flat, yellow disk of innumerable, tubular florets. A little later and lasting longer is *Erígeron ánnuus*, the Daisy Fleabane, two to four feet high, which is an annual and found about the edges of cultivated fields and lurking in fence corners.

This has many small flower-heads, the rays either white or slightly tinged with purple. Often Robin's Plantain and Common Fleabane possess the fields together, but the Daisy Fleabane possesses them for a longer time. I am told these plants have some forage value, but, beautiful as they are, the meadows are better off without them.

SENECIO. GOLDEN RAGWORT

Senècio aùreus

Name from *senex*, an old man, alluding to the white, silky hairs of the pappus, which soon make the fertile disks hoary.

Biennial. One of the few brilliantly yellow daisy-like flowers of spring. Open grounds, wet or dry. Newfoundland to Florida, west to the Mississippi. Abundant in northern Ohio. May, June.

Stem.—Smooth or woolly when young, one to three feet high, hollow and sparingly leafy, solitary or tufted.

Leaves.—The basal leaves are simple, round or heart-shaped, on long petioles, with scalloped edges; the stem-leaves are partly clasping, lanceolate or oblong, deeply cut and notched; the leaves are thin and together with the stalk often stained with purple.

Flower-heads.—Radiate-composite, golden yellow, about an inch across, borne on slender peduncles in loose, leafless, rather flat clusters; ray-florets eight to twelve, pistillate; disk-florets perfect, tubular.

Stamens.—Five; anthers united into a tube.

Pistil.—One; style two-cleft.

Fruit.—Akene; pappus of many slender, white bristles.

The Golden Ragwort stands as a surprise and an astonishment among the flowers of early spring, it is so deeply, so goldenly yellow. Then, too, it looks like a Daisy, and Daisies are of the summer.

Before the flower-stems arise the plant appears as a tuft of long-stemmed, roundish, scalloped, heart-shaped leaves. A little later a stem ascends, a slender,

Golden Ragwort. *Senècio aùreus*

tough, angular, twisting stem that finally reaches the height of two or three feet. A single stem or several may rise from the one root, and each will carry at its summit a loose cluster of bright orange-yellow flower-heads about an inch across, a trifle ragged and dishevelled, but gloriously yellow.

EQUISETÀCEÆ—HORSETAIL FAMILY

FIELD HORSETAIL

Equisètum arvénse

In early spring there appear in dry, sterile places, often on the slope of a railway embankment, in locations where few other plants can even exist, myriads of brownish yellow stems four to twelve inches high, of the same size from top to bottom, and each topped with a curious, cone-like head. These are the fertile stems of the Field Horsetail. There is something very mushroom-like in the rapidity with which these fleshy stems mature when once they have started to develop, and the likeness is increased by the fact that there is no green about them and also that they multiply by means of spores instead of flowers and seeds.

Each fertile stem is decorated at intervals with several slightly bulging rings of slender, dark, sharp-pointed scales that are united at the base and point upward. The blossom, which is not at all a blossom to a botanist, is a cone at the very top of the odd-looking stem, and is made up of row after row of tiny disks set around the central stalk. Before the cone is ripe there extends back from the edge of each disk a row of little sacs stuffed so full of green spores that they look united like a row of tiny green ridges. The uppermost disks discharge their spores first and the empty sacs are whitish and hang dishevelled around the disks.

Field Horsetail. *Equisètum arvénse*

These spores are produced in great abundance, and at the proper time the slightest jar will shake them out in clouds. By shaking a ripe stem over a piece of white paper apparently a green powder is obtained which, under the microscope, proves to be many tiny green balls, each with four spiral bands wound about it. These spirals uncoil and throw the spore, giving it a movement as of something alive. The motor power in these living springs is the evaporation of the moisture in them, as they prepare to drift away with the wind, bearing on their wings the hope of the plant. After the spores are scattered the fertile stems wither and disappear. At the same time the sterile stems begin to appear springing from the small buds at the top of the rootstock near the point where the fertile stem arises. These finally develop into erect stems from ten to eighteen inches high and bearing ring after ring of green fringe. This fringe of angular branchlets gives the plant a bushy appearance, in which it is not difficult to fancy a likeness to the tail of a horse.

The Horsetail is not a flowering plant, but its stems are one of the first signs of returning spring, and its early and striking appearance gives it an honored place among springtime vegetation.

GLOSSARY OF BOTANICAL TERMS

ACUTE.—Sharp-pointed.

AKENE.—A dry fruit.

ALTERNATE.—Not opposite, arranged singly at different heights on the stem.

ANNUAL.—Of one year's duration. Winter Annual, a plant from autumn-sown seed which blooms and fruits the following spring.

ANTHER.—That part of the stamen which contains the pollen.

APETALOUS.—Without petals.

APEX.—The outer tip of a leaf or petal.

AXIL.—The point on a stem directly above the base of a leaf.

AXIS.—The central line of any organ.

BASAL.—Leaves near the ground; at the base.

BEARDED.—Bearing tufts of hairs.

BERRY.—A fruit in which the whole pericarp is fleshy or pulpy.

BIENNIAL.—Of two years' duration, usually flowering and fruiting the second year only, and then perishing.

BLADE.—The expanded portion of the leaf.

BRACT.—A small modified leaf at the base of or upon the flower-stem.

BRACTLET.—A secondary small bract.

BULB.—A bud with fleshy scales, usually underground.

BULBOUS.—Having the character of a bulb.

CALYX.—The outer and lower set of leaves at the base of the flower, usually green, but sometimes highly colored.

CARPEL.—A single pistil, or one member of a compound pistil.

CLEISTOGAMOUS.—Small, inconspicuous flowers which never open but fertilize themselves in the bud and usually grow near the ground.

COMPOSITE.—A floral head, composed of few or many florets gathered in a head, such as daisy or dandelion.

COMPOUND.—Composed of two or more similar parts united into a whole; *e. g.*, a compound leaf is one divided into separate leaflets.

GLOSSARY

CONVOLUTE.—Rolled up longitudinally.
CORDATE.—Heart-shaped.
CORM.—A solid enlargement at the base of the stem, bulb-like.
COROLLA.—The flower-leaves standing next within and above the calyx.
CRENATE.—Scalloped; with rounded teeth.
CROSS-FERTILIZATION.—Is produced by the pollen which has been transferred from the anther of one flower to the stigma of another by bees, moths, butterflies, other insects, and the wind.
CRUCIFER.—Name given to corollas of four petals in the form of a cross.
DENTATE.—Toothed; teeth outwardly projecting.
DIADELPHOUS.—Stamens divided into two sets.
DIŒCIOUS.—Bearing staminate flowers on one plant and pistillate flowers on another plant of the same species.
DISK-FLOWERS.—The tubular florets composing the central "button" of a daisy or an aster, usually surrounded with a circle of ray-florets.
ENTIRE.—Without divisions, lobes, or teeth.
EVERGREEN.—Bearing green leaves throughout the year.
EXSERTED.—Prolonged past surrounding organs.
EXTRORSE.—Facing outward.
FERTILE.—Fruit-producing flowers; bearing seeds.
FERTILIZATION.—A process whereby the tiny pollen grain, which comes in contact with the stigma, penetrates the style and enters the ovary, where it quickens the seed formation into life.
FILAMENT.—The threadlike part of a stamen which supports the anther.
FLORET.—A small flower; one of the flowers of a head, such as daisy or clover.
FOLLICLE.—A simple dry fruit, opening on one side only.
FRUIT.—The seed-bearing product of the plant.
GLABROUS.—Smooth, neither rough nor hairy.
GLAND.—A secreting cell or group of cells.
GLOBOSE.—Spherical or nearly so.
HABITAT.—A plant's natural place of growth.
HEAD.—A dense cluster of nearly stemless flowers, like the daisy or clover.

HERB.—A plant with no persistent woody stem above ground.
IMPERFECT FLOWER.—One having either stamens or pistils, but not both.
INTRODUCED.—Brought intentionally from another region.
INTRORSE.—Facing inward.
INVOLUCRE.—A whorl of bracts, subtending a flower or flower-cluster.
IRREGULAR.—Showing inequality in the size, form, or union of its similar parts.
KEELED.—Ridged like the keel of a boat; applied to the two united petals of the peculiar corolla of the blossoms of the Pea family.
LANCEOLATE.—Longer than wide, broadest above the base and tapering to the apex.
LEAFLET.—A separate or single division of a compound leaf, or a tiny leaf or bract.
LIGULATE.—Strap-shaped, as the rays of composite heads.
LIP.—The prominent petal of Orchids; or the divisions of the two-parted flowers of the Mints.
LOBE.—The rounded segments of any part of a flower or leaf.
MARGIN.—The edge or outline of a leaf or petal.
MIDRIB.—The central or main rib of a leaf.
MUCRONATE.—Having a bristle at the apex of a leaf.
NATURALIZED.—Plants not native to the region but so firmly established as to have become part of the flora.
NECTAR.—A sweetish fluid contained in some part of the flower.
OBCORDATE.—Inversely heart-shaped.
OBLONG.—Longer than broad, with nearly parallel or curving sides.
OBOVATE.—Inversely ovate.
OBTUSE.—Blunt or rounded.
OVARY.—Lower part of a pistil which bears seeds.
OVATE.—Egg-shaped, with the broadest end toward the stem.
OVULE.—The seed-sac in the ovary.
PANICLE.—A compound flower-cluster of the racemose type.
PAPILIONACEOUS.—Having a winged corolla, somewhat resembling a butterfly and peculiar to the flowers of the Pea family.
PERENNIAL.—Lasting year after year.
PERFECT (flower).—One having both stamens and pistils.

GLOSSARY

PERICARP.—The outer wall of the seed-vessel, sometimes dry and sometimes fleshy.

PETAL.—A division of the corolla.

PETIOLE.—The stalk of a leaf.

PISTIL.—The central and seed-bearing part of a flower, consisting of the ovary, stigma, and style when present.

PISTILLATE.—Having pistils but no stamens.

POD.—Any dry fruit that opens when ripe; especially used for the fruit of the Pea family.

POLLEN.—The yellow fertilizing powder contained in the anther.

POLLINATION.—The placing of the pollen grains of the stamens upon the surface of the stigma.

PUBESCENT.—Hairy.

RACEME.—A lengthened flower-cluster.

RAY.—One of the branches of an umbel; one of the flat marginal flowers of composite heads.

RECEPTACLE.—The end of the flower-stem, bearing the floral organs, or, in *Compositæ*, bearing the flowers.

ROOTSTOCK.—An underground stem—rooting at the joints, and becoming erect at the apex.

ROTATE.—A flat, round corolla with very short tube.

SALVER-SHAPE.—A corolla which forms a long tube below, expanding into a flat border above.

SCAPE.—A leafless or nearly leafless flower-stalk rising from the ground.

SEPAL.—One of the leaves of a calyx.

SERRATE.—With teeth projecting forward.

SESSILE.—Without a stalk.

SPADIX.—A fleshy spike enveloped by a spathe as in the Jack-in-the-pulpit.

SPATHE.—A large, leaf-like bract or pair of bracts enclosing a flower or spadix.

SPIKE.—An elongated, closely set flower-cluster.

SPUR.—A hollow sac-like or tubular extension of some part of the blossom, usually nectar-bearing.

STALK.—Here used to designate the main ascending part of the plant.

STAMEN.—One of the pollen-bearing organs of a flower.

STAMINATE.—Flowers which bear stamens but no pistils.

STEM.—Here used to designate the connecting parts between the stalk and the leaves and flowers.

STERILE.—Unproductive, as a flower without a pistil or a stamen without an anther.

STIGMA.—The tip or side of a pistil through which the pollen is received which by means of minute tubes penetrates the style and conveys the minute grains to fertilize the seed-sacs within the ovary.

STIPULE.—A tiny leaflet borne at the base of a petiole.

STYLE.—The usually slender part of a pistil connecting the stigma and the ovary.

TERETE.—Circular in cross-section.

TERMINAL.—Borne at the summit of the stem.

TUBER.—A short, thick, underground branch having eyes, like a potato.

TUFTED.—Growing in clusters or clumps.

UMBEL.—A terminal floral cluster in which the stems spring from the same point, like the ribs of an umbrella.

UTRICLE.—A bladder-like cover to a one-seeded fruit.

VEINLET.—A branch of a vein.

VEINS.—The threadlike branching parts in the fibre or tissue of the leaf.

VENATION.—The arrangement of the veins.

WHORL.—An arrangement of leaves in a circle around the stem.

WINGED.—Having a thin expansion on either side of the stem, or of the petiole, or of a dry fruit.

COLOR KEY FOR IDENTIFICATION OF PLANTS

FLOWERS WHITE OR NEARLY SO. A, B, C

A. Corolla of several similar petals or petal-like sepals. 1, 2, 3

1. *Petals normally 3*

GREAT WHITE TRILLIUM. *Trillium grandiflorum.*

SNOWY TRILLIUM. Earliest Trillium; blooms in March; a Western and Southwestern species. *Trillium nivale.*

PAINTED TRILLIUM. Petals white, striped with red. *Trillium undulatum.*

GOLDEN SEAL. Petal-like sepals falling as the flower opens. *Hydrastis Canadensis.*

2. *Petals normally 4. Corolla cruciform, or petals recurved*

WHITE CARDAMINE. Flowers white. *Cardamine rhomboidea.*

CUCKOO-FLOWER. Flowers white or purplish. *Cardamine pratensis.*

TWO-LEAVED DENTARIA. Flowers white or pale purple. *Dentaria diphylla.*

CUT-LEAVED DENTARIA. Flowers white or pale purple. *Dentaria laciniata.*

WHITLOW-GRASS. Small, insignificant. *Draba verna.*

LYRE-LEAVED CRESS. The basal leaves only are lyre-shaped. *Arabis lyrata.*

SHEPHERD'S-PURSE. Flowers very small at the top of the stem; plant easily known by heart-shaped pod. *Capsella bursa-pastoris.*

FLOWER-OF-MAY. Low plant, with two shining leaves; usually growing in beds; flowers in a crowded terminal raceme, petals recurved. *Maianthemum Canadense.*

3. *Petals or petal-like sepals normally* 5. *Corolla saucer-like or flat*

HEPATICA. White, also pink, blue, lavender; frequently more than five petal-like sepals. Two species, distinguished by the shape of leaf. *Hepatica.*

ANEMONE. White, delicately tinted with pink outside. *Anemone nemorosa*, var. *quinquefolia.*

MEADOW RUE ANEMONE. White, sometimes tinted with pink; often more than five petal-like sepals. *Syndesmon thalictroides.*

ISOPYRUM. Usually five petal-like sepals. *Isopyrum biternatum.*

WHITE BANEBERRY. Petals sometimes fewer than five; drop quickly. *Actæa alba.*

MITELLA. Petals finely cut. *Mitella diphylla.*

TIARELLA. Flowers in a crowded raceme. *Tiarella cordifolia.*

EARLY SAXIFRAGE. Flowers in loose, flattish clusters. *Saxifraga Virginiensis.*

CHICKWEED. Petals deeply cut. *Stellaria media.*

STRAWBERRIES. Two species; flowers very like those of cultivated Strawberries. *Fragaria.*

WILD SARSAPARILLA. White flowers in an umbel. *Aralia nudicaulis.*

DWARF GINSENG. Flowers in an umbel-like head. *Panax trifolium.*

HARBINGER-OF-SPRING. Very early; flowers in small umbels. *Erigenia bulbosa.*

DOWNY SWEET CICELY. Flowers minute, small clusters at top of stem. *Washingtonia claytoni. Osmorrhiza brevistylis.*

B. Corolla irregular; petals dissimilar. 1, 2, 3, 4

1. *Violet-shape; petals* 5

SWEET WHITE VIOLET. Found in two forms. *Viola blanda.*

LANCE-LEAVED VIOLET. *Viola lanceolata.*

PRIMROSE-LEAVED VIOLET. *Viola primulæfolia.*

CREAM VIOLET. Cream, with dark stripes. *Viola striata.*

CANADA VIOLET. White often flushed with blue. *Viola Canadensis.*

2. *Modified pea-shape; petals* 5

WHITE CLOVER. White, often pinkish. *Trifolium repens.*

CAROLINA VETCH. White with bluish keel. *Vicia Caroliniana.*

3. *Heart-shape; petals 4, in two pairs*

DUTCHMAN'S-BREECHES. White, tipped with pale yellow; spurs wide apart. *Dicentra cucullaria.*

SQUIRREL-CORN. White, tipped with pale pink; spurs rounded. *Dicentra Canadensis.*

4. *Petals, or perianth-segments, normally 6 or more*

SMILICINA. Flowers small, clustered at the top of a leafy stem. *Vagnera racemosa.*

THREE-LEAVED SOLOMON'S-SEAL. Three shining leaves; a flower-cluster at the top of the stem. *Vagnera trifolia.*

BLOODROOT. Buds protected by enfolding leaf. *Sanguinaria Canadensis.*

TWINLEAF. Blossom not unlike that of Bloodroot; leaves cut into two similar parts. *Jeffersonia diphylla.*

MANDRAKE. Flower always at the fork of two terminal leaves, nodding. *Podophyllum peltatum.*

C. Corolla of parts grown together, making one piece. 1, 2, 3

1. *Salver-shape; border 4 or 5-lobed*

PHLOX. Normally pink; sometimes white. *Phlox divaricata.*

BLUETS. Normally blue; sometimes white. *Houstonia cærulea.*

2. *Rotate, or short-tubed corolla*

GOOSE-GRASS. Minute, 4-lobed. Stems cling because of retrorse bristles. *Galium aperine.*

STAR-FLOWER. Star-shape, usually 5 to 7-lobed; white, rarely pinkish. *Trientalis Americana.*

BUCKBEAN. Plant of the bogs; 5-lobed; segments bearded. *Menyanthes trifoliata.*

3. *Composite head*

DWARF EVERLASTING. Flowers either pistillate or staminate. Heads very hairy. *Antennaria plantaginifolia.*

COLOR KEY

FLOWERS YELLOW OR YELLOWISH GREEN. A, B, C

A. Corolla of several similar petals. 1, 2, 3

1. *Petals normally* 4

CELANDINE. Corolla of buttercup type. *Chelidonium majus.*
YELLOW ROCKET. Corolla cruciform. *Barbarea vulgaris.*

2. *Petals normally* 5. *Corolla saucer-like, flat, or petals incurved*

EARLY BUTTERCUP. Corolla saucer-like. *Ranunculus fascicularis.*
SWAMP-BUTTERCUP. Corolla saucer-like. *Ranunculus septentrionalis.*
BULBOUS BUTTERCUP. Corolla saucer-like. *Ranunculus bulbosus.*
SMALL-FLOWERED BUTTERCUP. Corolla of five, small, pointed petals. *Ranunculus abortivus.*
MARSH-MARIGOLD. Marsh plant; flowers brilliant yellow. *Caltha palustris.*
POTENTILLA. Flowers look like yellow strawberry blossoms. *Potentilla Canadensis.*
WOOD-SORREL. Foliage acid to the taste. *Oxalis stricta.*
GOLDEN MEADOW-PARSNIP. Flowers small, borne in an umbel; petals incurved. *Zizia aurea.*
SANICLE. Coarse plant with small flowers. *Sanicula Marylandica.*

3. *Petals, or perianth-segments, normally* 6. *Corolla lily-like or star-like*

LARGE-FLOWERED BELLWORT. Pale yellow. *Uvularia grandiflora.*
PERFOLIATE BELLWORT. Pale yellow. *Uvularia perfoliata.*
SESSILE-LEAVED BELLWORT. Pale yellow. *Uvularia sessilifolia.*
ADDER'S-TONGUE. Bright or tawny yellow; there is a white species. *Erythronium.*
YELLOW CLINTONIA. Greenish yellow. *Clintonia borealis.*
INDIAN CUCUMBER-ROOT. Greenish yellow; stem has two whorls of leaves. *Medeola Virginiana.*
DISPORUM. Yellowish green, at first lily-like, later star-like. *Disporum lanuginosum.*

B. Corolla irregular; petals dissimilar. 1, 2

1. *Violet-shape; petals* 5

DOWNY YELLOW VIOLET. *Viola pubescens.*
SMOOTH YELLOW VIOLET. *Viola scabruscula.*
HALBERD-LEAVED VIOLET. *Viola hastata.*
ROUND-LEAVED VIOLET. *Viola rotundifolia.*

2. *Orchid-shape; petals 3, one a pouch*

YELLOW LADY'S-SLIPPER. *Cypripedium pubescens.*

C. Corolla or perianth of parts grown together, making one piece. 1, 2

1. *Perianth slender bell-shape*

SOLOMON'S-SEAL. Yellowish green, in pairs along a leafy stem. *Polygonatum biflorum.*

2. *Composite heads*

DANDELION. All florets strap-shaped; that is, ray-florets. *Taraxacum dens-leonis.*
GOLDEN RAGWORT. Disk of tubular florets; border of ray-florets. *Senecio aureus.*
COLTSFOOT. Disk of tubular florets; ray-florets in several rows. *Tussilago farfara.*

FLOWERS RED, RED AND YELLOW, BROWNISH RED, OR BROWNISH PURPLE. A, B

A. Corolla of several similar petals or petal-like sepals

WILD COLUMBINE. Red and yellow; petals trumpet-shaped, 5. *Aquilegia Canadensis.*
ILL-SCENTED TRILLIUM. Madder-red; petals 3. *Trillium erectum.*
WILD GINGER. Brownish purple; petal-like sepals, 3. Entire plant has the taste of ginger. *Asarum Canadense.*
RED SORREL. Greenish, red, or yellow; sepals 4 to 6, persistent. *Rumex acetosella.*

COLOR KEY

B. Corolla of parts grown together, making one piece

WOOD BETONY. Red and yellow; corolla two-lipped. *Pedicularis Canadensis.*

SCARLET PAINTED-CUP. Upper leaves of stem more or less scarlet; corolla greenish yellow, two-lipped. *Castilleja coccinea.*

FLOWERS PINK, PINK AND WHITE, PINK-PURPLE.

A, B, C

A. Corolla of several similar petals or petal-like sepals. 1, 2

1. *Petals normally* 4. *Corolla cruciform*

PURPLE CRESS. *Cardamine rhomboidea*, var. *purpurea.*

2. *Petals normally* 5. *Corolla saucer-like.*

HEPATICA. White, pale pink, lavender, blue; petal-like sepals, 5, often more. *Hepatica acutiloba* and *Hepatica triloba.*

WILD GERANIUM. Pink-purple; petals veined. *Geranium maculatum.*

SPRING-BEAUTY. Pale pink with darker veins; flowers in a raceme. *Claytonia Virginica.*

B. Corolla irregular; petals dissimilar. 1, 2

1. *Modified pea-shape*

ALSIKE CLOVER. Pink and white. *Trifolium hybridum.*

RED CLOVER. Purple-pink. *Trifolium pratense.*

2. *Orchid-shape*

MOCCASIN-FLOWER. Pink, veined with darker lines. *Cypripedium acaule.*

SHOWY ORCHIS. Pink and white. *Galeorchis spectabilis.*

C. Corolla of parts grown together, making one piece. 1, 2, 3

1. *Corolla salver-shape; border* 5*-lobed*

PHLOX. [illegible]nk varying to white. *Phlox divaricata.*

MOSS-PINK. In cultivation. *Phlox subulata.*

TRAILING ARBUTUS. Pink varying to white. *Epigæa repens.*
PYXIE. Flowers pink or white. *Pyxidanthera barbulata.*

2. *Corolla two-lipped*

DEAD-NETTLES. Flowers purplish or pink or white. *Lamium.*

3. *Composite heads*

FLEABANES. Disks yellow; ray-florets many, pinkish. *Erigeron.*

FLOWERS VIOLET-BLUE, BLUE, BLUE AND WHITE. A, B

A. Corolla irregular; petals dissimilar. 1

1. *Violet-shape; petals* 5

COMMON BLUE VIOLET. Common stemless species. *Viola cucullata.*
BIRD'S-FOOT VIOLET. Leaves finely cut; flowers often of two colors. *Viola pedata.*
DOG-VIOLET. An early form. *Viola Labradorica.*
LONG-SPURRED VIOLET. Pale blue with long spurs. *Viola rostrata.*

B. Corolla of parts grown together, making one piece

GRAPE-HYACINTH. An escape from gardens. *Muscari botryoides.*
WILD HYACINTH. Pale blue; segments almost separate. *Quamasia hyacinthina.*
BLUEBELLS. Deep blue, pink in bed. *Mertensia Virginica.*
GREEK VALERIAN. Blue, rarely white. *Polemonium reptans.*
WATER-LEAF. Pale blue or white; calyx with long white hairs. *Hydrophyllum Virginicum.*
PERIWINKLE. Blue, escaped from gardens. *Vinca minor.*
BLUETS. Pale blue varying to white. *Houstonia cærulea.*
SPEEDWELLS. White-centred, pale blue, small flowers. *Veronica.*
COLLINSIA. Two-lipped; upper lip usually white; lower lip blue. *Collinsia verna.*
GROUND-IVY. Two-lipped, bluish purple. *Glecoma hederacea.*

PLANTS NOT LISTED IN KEY

SKUNK-CABBAGE. With large, fleshy spathe. *Spathyema fœtida.*

GOLDEN-CLUB. Flowers yellow at the summit of the scape, the spathe becoming a mere bract. *Orontium aquaticum.*

JACK-IN-THE-PULPIT. Spathe green and purple, striped, curving over the top of the spadix. *Arisæma triphyllum.*

UPRIGHT SMILAX. *Smilax ecirrhata.*

EARLY MEADOW-RUE. Dicœcious; flowers green; the yellowish anthers of the staminate plant hanging on long filaments. *Thalictrum dioicum.*

PINK CORYDALIS. Flowers whitish; tips touched with yellow and pink; one short and rounded spur. *Corydalis glauca.*

GOLDEN CORYDALIS. Flowers golden yellow with rounded spur. *Corydalis aurea.*

BLUE COHOSH. Flowers greenish purple; petals 6. *Caulophyllum thalictroides.*

SHOOTING-STAR. Flowers in an umbel; nodding, pointed, whitish, with a cone of stamens grown together. *Dodecatheon meadia.*

BUNCHBERRY. Low plant with flowers resembling the Flowering Dogwood. *Cornus Canadensis.*

CYPRESS-SPURGE. Flowers yellowish green; plant usually appearing in beds; stems very leafy. *Euphorbia cyparissias.*

RIB-GRASS. One of the bad Plantain weeds. *Plantago lanceolata.*

FIELD HORSETAIL. Not a flowering plant; fertile stems appearing abundantly in early spring in sandy soil. *Equisetum arvense.*

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