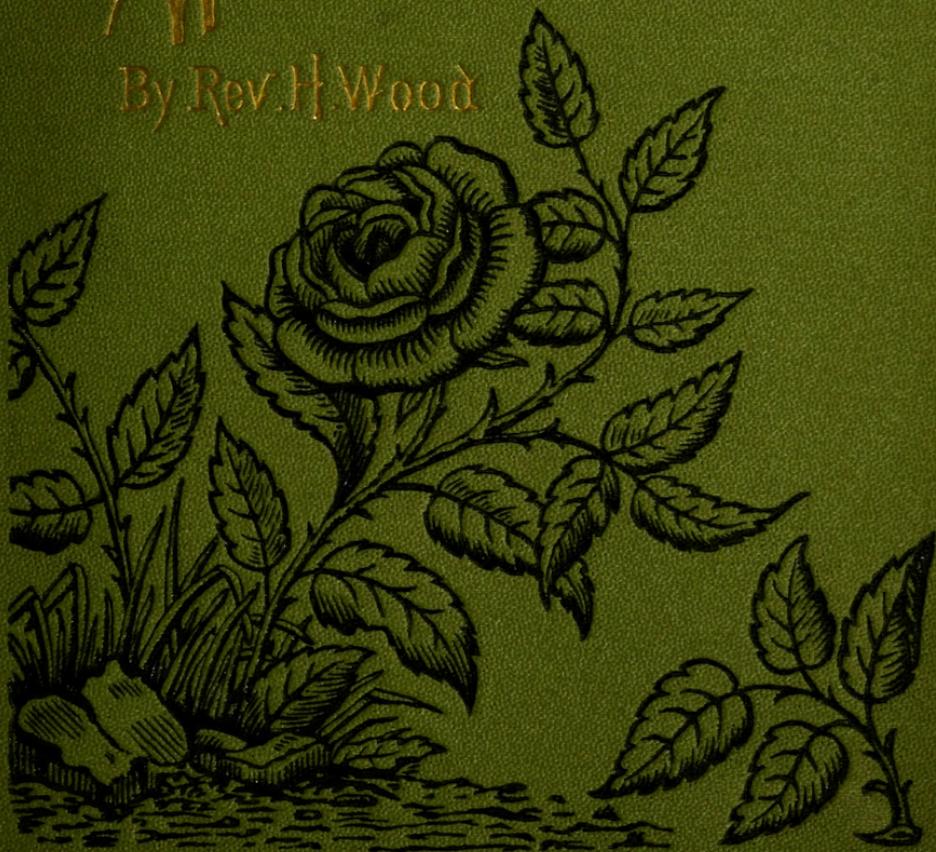
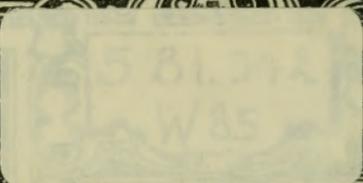




AMONG THE
WILD FLOWERS

By Rev. H. Wood





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AMONG THE WILD FLOWERS.



21

A SEASON
AMONG THE WILD FLOWERS.

BY THE

REV. HENRY WOOD,

VICAR OF EASEBOURNE, SUSSEX; AND DOMESTIC CHAPLAIN TO THE
EARL OF EGMONT.

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With Illustrations and Index.

"Cradled ye were, fair flowers, 'midst all things loving,
A joy to all!"—HEMANS.

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TO THE READER.

THESE Papers were the medium of weekly communication, during a Spring and Summer, between the writer and a number of persons of whom many are personally known to him; hence they have acquired a conversational style. They aim at giving simple but accurate information respecting the principal Natural Orders and Genera of our British Flora, with occasional references, chiefly in the earlier papers, to the place of the plants in the Linnaean System. A few notices of familiar or remarkable foreign and garden plants are added under the respective Orders.

The method adopted has been to describe plants which were in bloom at the time, and to notice, with these, other species and genera of the same Natural Order. The work is

OCT 22 1927

founded upon many years of observation, during which a collection of numerous specimens for reference was formed. Professor Babington's Manual has been mainly followed in the nomenclature and classification; but several other Authors have been constantly referred to, including Mr. Leo. H. Grindon, whose interesting book on British and Garden Botany has afforded some valuable notes for the present work. The Papers have been the Author's recreation amidst grave responsible duties, but they have been written with care; and whilst they profess nothing new beyond the method adopted, it is hoped that they may prove useful in the earlier study of Botany, and interesting to those who are more advanced.

H. W.



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WHERE GROW THE FLOWERS?

WHERE proud mansion rears its head,
Where the rich domain is spread ;
'Mid trees that only nobles own,
Since long ancestral ages grown ;
Planted by a skilful hand,
Rare, and gay, and fragrant band,
Beauties which strange lands well know,—
There the gorgeous flowers grow !

By the humble peasant's door,
Precious portion of his store ;
Fragrant and luxuriant all,
Climbing, clustering o'er the wall,
Fringing round the oval border,
Full of beauty, lacking order ;
'Mid simplicity they smile,
Thought of poverty beguile,
And with sweetest freshness blow,—
There the simple flowers grow !

Scattered o'er the mountain side,
Scarce beyond the roaring tide,
Like a firmament revealed
Of daisies which the night concealed,
Roving, twining, where they list,
Circles none can e'er untwist,

Like the love-knots of the heart,
Which not death itself can part ;
In the woods, and in the vales,
Lending odour to the gales ;
Heaven's love on earth to show,—
Everywhere the flowers grow !

Where true love in sorrow weeps,
Sad and lonely vigil keeps,
Or, reviving now to joy,
Tastes a spring without alloy ;
To express a tender thought,
Love within the breast hath wrought ;
Silent utterance to find
For the full and bursting mind ;
Stillness of the soul to break,
As soft breezes music wake ;
To convey the grasp in fancy,
Taught by love this necromancy ;
E'en the senses to salute,
Scent and colour rich, though mute,—
Wheresoever Love doth go,
There it bids the flowers grow !

H. W.





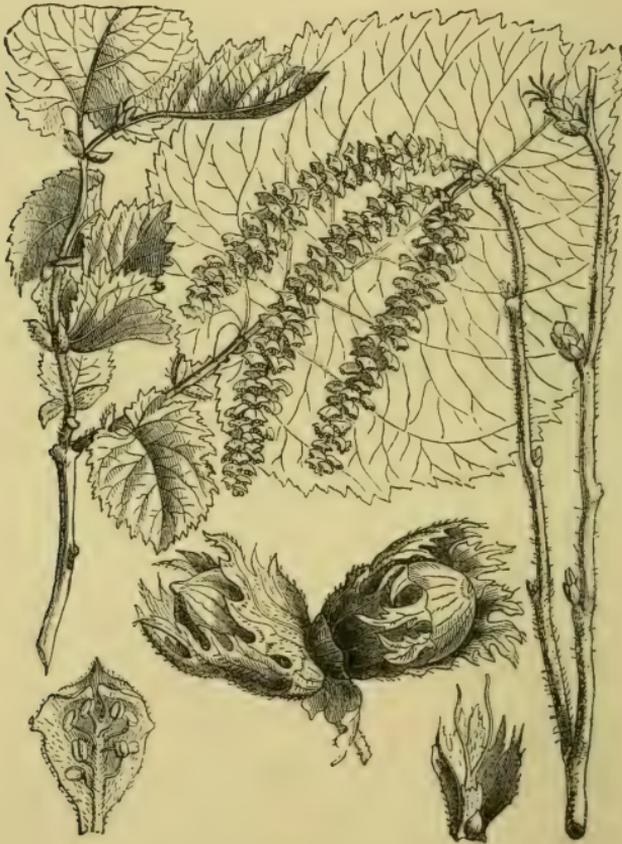
AMONG THE WILD FLOWERS.

I.

GENTLE reader, when you are wandering in our pretty English lanes, and through woods, and over heath, do you sometimes wish you knew a little more of the names and peculiarities and associations of the gifts which Flora has strewn there? If so, I invite you to come with me in thought, whilst I tell you, from week to week, some few things about them which many years of pleased attention to them have enabled me to know. Pity it is that the simple beauties of our fields and waysides are necessarily encumbered with scientific names; and as far as possible I will in these papers supply an English description of a number of our principal plants.

During mild winters our banks are never without flowers; but I will mention in order

those with which the floral year begins. Everywhere for several months—but now dying away—we have seen the elegant catkins of the



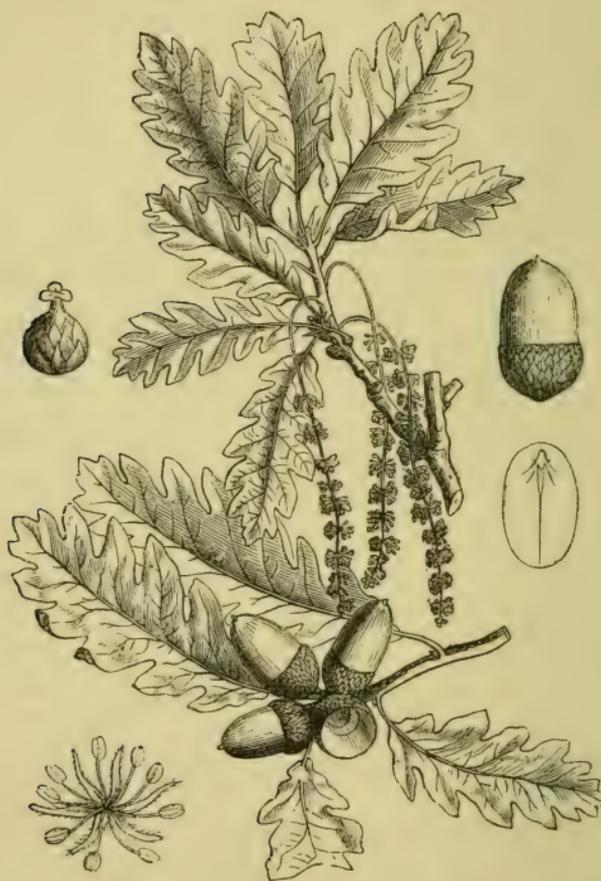
HAZEL.

Hazel-nut, *Corylus Avellana*, with the crimson-tipped buds that contain the female flowers. Every one who takes an interest in observing flowers should carry a small pocket lens ; and

if you examine the structure of those tassels of bloom, you will see that they consist of a number of delicate scales one above another, within which are the stamens; those are the male flowers. Every catkin is laden with Pollen-dust, which falls or floats about when the tree is shaken, and fructifies the female buds. Within those buds are several flowers, each of which may produce a nut. The crimson tuft is composed of the stigmas which rise out of the germen, which will become the actual nut.

You will notice here, that instead of finding the stamens and pistil in the same flower, as in many other cases, the stamen-bearing or male flowers are separated from the pistil-bearing or female ones, though both kinds of flowers are on the same tree. A plant which bears its flowers thus is called a *Monœcious* plant; and you thus learn the characteristic of one of the 24 classes of the Linnæan system of Botany. Several of our large trees are of this class; the common Beech, *Fagus Sylvatica*, the Hornbeam, *Carpinus Betulus*, which when clipped forms excellent fences; the several kinds of Oak, *Quercus*, and the

tree of which there are such fine specimens in Cowdray Park, Sussex,¹ the Spanish Chestnut,



CATKINS OF OAK.

Castanea Vesca. This last-named tree has no

¹ The Avenue of these trees in the park at Cowdray, the seat of the Earl of Egmont, has been pronounced the finest in Europe.

alliance whatever with the Horse Chestnut, which is entirely foreign to our country.

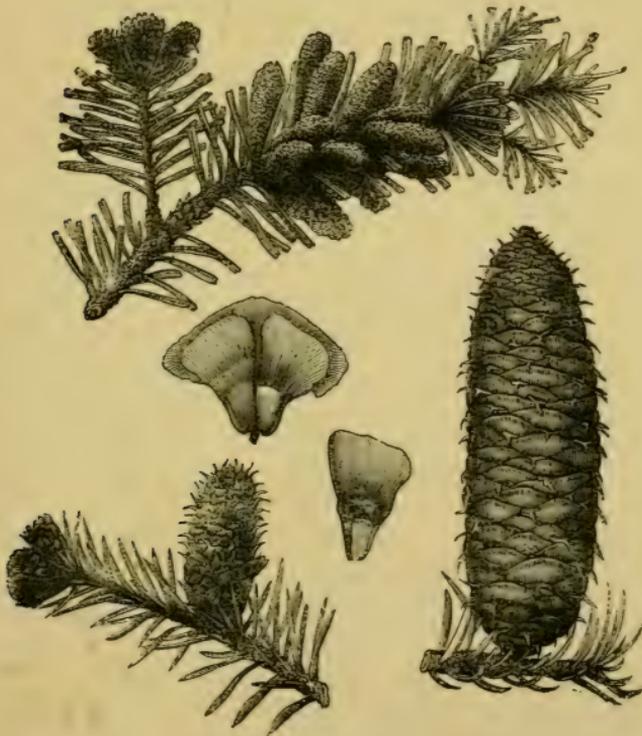
All these examples have their male and female flowers in separate catkins on the same tree, and are *Monœcious*. On the other hand, all the species of Willow, *Salix*, of which there are about 30 indigenous to these Islands, have the male catkins on one tree, and the female on another, and are therefore called *Dicœcious*. The meaning of these two terms is, that in the former class, the monœcious plants, the respective kinds of flowers have *one home* on the same plant; whereas, in the latter, the Dicœcious, they have *two* distinct homes on actually different trees. The male Willows in one species bear golden yellow catkins, which are a gorgeous ornament of the spring; and the female trees bear silvery grey catkins, from which, later in the season, when their fruit is ripe, a profusion of silky seed is scattered. This species, the common Willow, is *Salix Caprea*. The Poplar, *Populus*, of which we have four species, is also dicœcious.

One more dicœcious plant must be mentioned; it is the earliest to rise from the earth.

In some of the woods it forms large patches, even in summer, of a dark green carpet which is in striking contrast of colour to the floor of brown leaves; and when the noonday sunlight streams down upon these patches between the tall trees, the effect is exceedingly rich. The plant is the Perennial Mercury, *Mercurialis Perennis*. At first it emerges from the ground doubled up; then it uncurls, and spreads itself out rapidly, as a butterfly when it leaves the chrysalis shell. The male plants have a clustered circle of leaves interspersed with upright spikes of flowers, having stamens only; the female, which are usually found growing near, but in separate patches, have shorter spikes, also among the leaves, containing flowers with germens of the colour of the leaves, and a whitish feathery stigma. After a time the male flowers die away; the female perfect their fruit, and the plants remain green, as described, all through the summer. The Perennial Mercury, which is a poisonous plant, belongs to the Natural Order, EUPHORBIACEÆ, the Spurge Family, which we will notice later in the season. The gorgeous *Poinsettia*, now so much used for ornament, with its great

scarlet leaves crowning the stem, is one of this family.

All the other plants or trees of which mention has been made are of the Nat. Ord. AMENTIFERÆ, or Catkin-bearers.



FIR CONES,

The various species of the Fir-tree Family, Nat. Ord. CONIFERÆ, or cone-bearers, are either monœcious, or diœcious; the purple catkins of the female Larch, *Larix Europæa*, are

a beautiful ornament of the spring. The Yew-tree Family, TAXACEÆ, is diœcious. Our only species, the common Yew, *Taxus baccata*, has its scarlet berries on one tree, and the male catkins, covering the tree with yellow Pollen-dust, upon another.





AMONG THE WILD FLOWERS.

II.

IT may be well now to notice the methods by which plants are arranged in Classes or Orders, as we must constantly refer to them. The great Swedish Botanist Linnæus has given his name to one System by which all plants are classified according to the number and position of the parts of fructification, *i.e.* the stamens and pistils. The Linnæan System has 24 Classes, of which the first Ten are numbered according to the number of stamens in the flower. Thus Class I., *Monandria*, has *one* stamen; II., *Diandria*, *two* stamens; III., *Triandria*, *three*; IV., *Tetrandria*, *four*; V., *Pentandria*, *five*; VI., *Hexandria*, *six*; VII., *Heptandria*, *seven*; VIII., *Octandria*, *eight*; IX., *Enneandria*, *nine*; X., *Decandria*, *ten*.

Beyond the Tenth Class some variation

occurs. Cl. XI., *Dodecandria*, has twelve or more stamens. Cl. XII. and Cl. XIII. have both alike numerous stamens, but in Cl. XII., *Icosandria*, the stamens are all affixed to the inner part of the calyx,—for example, the Hawthorn, Strawberry, Wild Rose, and Blackthorn, etc. ; whilst in Cl. XIII., *Polyandria*, they grow up from the receptacle, as the top of the flower-stalk is called,—example, the Buttercup and Anemone. It will be convenient to postpone the description of the remainder of the Linnæan Classes to other papers in which examples of them are mentioned.

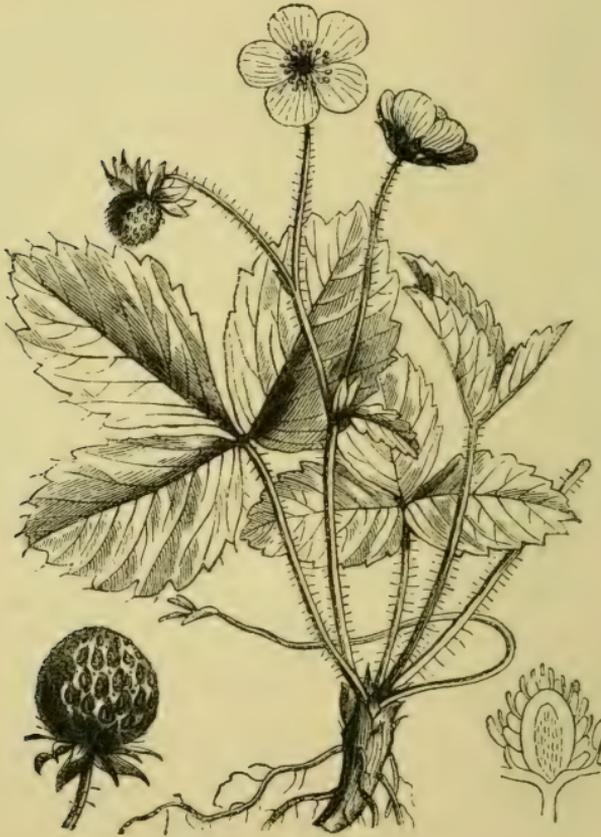
What has been said shows that this system is a purely artificial one ; but it was the result of the keenest observation, and has always been found useful in the early stage of Botanical study. All students, however, will acquaint themselves with the Natural System, which classifies plants according to some natural peculiarities common to individuals among them. Under this System all our British plants are comprised in about 100 Natural Orders, named respectively after some prominent plants of the Order ; for example, Grasses, GRAMINEÆ ; Ferns, FILICES ; Orchids, ORCHIDACEÆ ; the Butter-

cup Family, RANUNCULACEÆ. Familiarity with these Orders will be gained by gradually acquiring a knowledge of the structure of the flowers of the plants. We shall in due time discuss the characteristics of the most interesting of them.

Meanwhile let us look in the banks again for living specimens. There is the little Barren Strawberry, *Potentilla fragariastrum*, much resembling the true strawberry, but much smaller, and as distinct from the latter as its dry hard fruit is from the pulpy fruit which regales our palate in the summer. This plant is often mistaken for the Wood Strawberry, *Fragaria Vesca*, which has a whiter looking bloom, larger petals closer together, and the flowers lifted on stalks several inches long, and does not come into flower until May, when the little *Potentilla* is dying away. Both these specimens have many stamens in the flower affixed to the Calyx, and are therefore examples of the Linn. Class XII., *Icosandria*. They both belong to the Nat. Order ROSACEÆ, the Rose Family.

Then there are the shining yellow flowers of the Pilewort, or Celandine, *Ranunculus Ficaria*, of Linn. Class XIII., *Polyandria*, the

earliest of the Buttercup Family, which decks our banks and the damp fields with its golden stars in every half hour of March sunshine, closing as rapidly when the sky becomes dull.



WOOD STRAWBERRY.

It has heart-shaped leaves, and at the root are curious fig-shaped knobs, whence the name *ficaria*, from *ficus*, a fig. The Poet Words-

worth has a pretty ode to this flower, in which he well describes its habit :—

“ Blithe of heart, from week to week
Thou dost play at hide and seek ;
While the patient primrose sits
Like a beggar in the cold,
Thou, a flower of wiser wits,
Slipp’st into thy sheltering hold ;
Bright as any of the train
When ye all are out again.”

This contrast with the habit of the Primrose, *Primula Vulgaris*, is admirable. But this first Rose of the Spring, as the name *Primrose* seems to designate it, suffers nought from its hardihood, braving all weather, so long as it can nestle amid the leaves the wintry storm has spread. There are in our British Flora five species of *Primula*, of which *P. Veris*, the Cowslip, is the most frequent after the Common Primrose. They give name to the Nat. Ord. PRIMULACEÆ ; and as each flower contains within its tube a ring of five stamens, the Linn. Class is *Pentandria*.

To this class also belong all the violets, Nat. Ord., VIOLACEÆ. We have nine species of *Viola*, of which one is the sweet-scented *V. odorata* ; the scentless specimen, with paler

bloom and longer stalk, is *V. Canina*, Dog Violet. Those who have not seen grassy hills covered with the yellow violet, *V. lutea*, have a treat in store. The writer has walked over



HEARTSEASE.

them on the grassy hills of Montgomeryshire ; and once stood upon a green cliff, richly sprinkled with their yellow blooms, on the coast of Donegal, the Atlantic surge roaring beneath.

The Wild Heartsease, *V. tricolor*, the miniature of the Pansy, is of this genus; it does not bloom till May.

Everywhere on banks and in woods now appear the flowers of *Anemone nemorosa*, the Wood Anemone. The yellow species, *A. Ranunculoides*, is naturalized in several counties, and introduced into gardens; as also is the blue one, *A. Apennina*. The Pasque Flower, *A. Pulsatilla*, is truly wild in some eastern counties. This genus belongs to the RANUNCULACEÆ: so also does the common but gorgeous Marsh Marigold, *Caltha Palustris*, as rich a flower as can be found, and abundant throughout the land in marshy meadows. All these are good illustrations of Linn. Class XIII., *Polyandria*.





AMONG THE WILD FLOWERS.

III.

Two very interesting specimens may be found screening themselves from the winds of March, but in very different situations,—the Golden Saxifrage, *Chrysosplenium oppositifolium*, and the Tuberous Moschatel, *Adoxa Moschatellina*; the former on moist ditch-banks and by runnels of water, quite common, but not the less pretty, its level heads of flowers looking as though gold-dust had been sprinkled on the green flowers, and readily attracting attention. There is an alternate-leaved species also, very rare. The latter plant, *Adoxa*, a name which means *without glory*, or inconspicuous, is much less common, and might be overlooked a hundred times by an unpractised eye, as it mingles its leaves and flowers, which are alike of a delicate pale green, with the faded leaves

and newly-springing herbage of the dry copse. It is of Nat. Ord. CAPRIFOLIACEÆ. It will repay a careful examination of its curious little heads, one terminal flower having eight stamens, whilst the four surrounding ones have ten. This variation shows the imperfection of the Linnæan System, in which the plant is placed in Cl. VIII. It will be perceived to have a musky smell, from which it has been called Musk-root. The like variation in the number of stamens exists in *Chrysosplenium*, which is placed in Cl. X., although only the terminal flower has ten stamens, the rest eight. This plant belongs to the Saxifrage Family, SAXIFRAGACEÆ, in which are the numerous and beautiful species of *Saxifraga*, including *S. Umbrosa*, London Pride.

On wall-tops, and low roofs, in company with the Mosses, seeming like little troops of fairies coming forth to herald Spring, there has been for weeks past a perfect miniature of plant life, the *Draba Verna*, Common Whitlow Grass. It is now, in these latest days of March, developing its oval flat pods by which it will be recognised, as also by its circle of leaves from whose centre the flowering stem

rises, and on which are plentiful forked hairs easily seen with a lens. The plant is from one to four inches high, with a *scape*, or bunch of snow-white flowers in structure resembling



WALL-FLOWER.

those of the Cress and Cabbage Tribe, Nat. Ord. CRUCIFERÆ, named from the four equal petals being opposite like the limbs of a cross, as in the common Wall-flower, which is a good

example. The stamens are six in number, of which the four larger are in the centre, and two shorter ones on either side. This character of the CRUCIFERÆ, is also the mark of the Linn. Class XV., *Tetradynamia*, which name refers to the four longer stamens as superior.

In Cl. XIV., which may best be studied by comparison with the structure just described, there are two pairs of stamens, one pair appearing above the other; this class is named *Didynamia* as having two superior stamens. These didynamous plants are distributed among several Natural Orders; but many of them belong to Nat. Ord. LABIATÆ, whose flowers have a projecting lip, *labia*, in front. Two examples of this Class and Order are at this time abundant, the White Dead-nettle, *Lamium album*, and the Purple Species, *L. purpureum*. In these very common plants, the colour of the Anthers, black and yellow in the one, orange in the other, is very fine, especially when seen through a lens. The Dead-nettle genus, *Lamium*, not only differs from the stinging Nettle by the absence of the poisonous hairs of the latter, but in every other

feature; and especially in the fact that the flowers of the stinging Nettle are monœcious. Our most charming little plant of the LABIATÆ, Linn. Cl. XIV., *Didynamia*, is the common Ground Ivy, *Nepeta Glechoma*, in whose bright purple blooms you will observe two snow-white crosses, formed by the two pairs of Anthers meeting and closing together,—

Glechoma, with its cross of white,
Pure emblem of a faith as bright !

The plant trails and creeps on the ground through the summer like Ivy, with which it has, however, no alliance. Sometimes the Anthers are wanting, or imperfect.

At this point we may give some details of the ordinary structure of flowers. The flower or bloom of a plant is the crowning point of its growth, and the period of its greatest beauty. Hence the usually coloured part is called the Corolla, or crown, as being the perfection of the plant's life. This corolla is sometimes undivided, and the flower is then called Monopetalous, as consisting of one petal; often, however, there are more than one, or many petals.

Take now a Primrose flower, and observe

its parts. Gently pluck the yellow corolla out of the green cup, the Calyx, which contains it; when you open its long tube, you find a ring of stamens attached to the corolla by very



PRIMULA.

short stalks. Looking into the calyx, you see a round seed vessel at the base, which is the Germen, from which rises a long straight pillar called the Style, ending in a knob called the

Stigma. The germen, style, and stigma together form the Pistil. These parts vary much in various specimens, in form and size, as well as number. Sometimes there is no stigma; sometimes the style is wanting. Stamens consist of two parts—the Filament, or thread-like stalk, and the Anther which is attached to it, and which contains a fertilizing dust called Pollen. Under the microscope this Pollen-dust exhibits great variety of form in different plants. Sometimes the Anther is sessile, having no filament.

The stamens and pistils of a flower are called the parts of fructification, and are necessary, in most plants, to the production of seed. But there is one large family, the *Cryptogamic* Plants, to which belong Mosses, Ferns, and their allies, in which these parts are, as the name implies, invisible, the fact being that they are substituted by other natural provisions for reproduction, which we shall in due time notice. Meantime the careful noticing of the endless variety of form and arrangement of the various parts of flowers will be an instructive process.

The calyx is sometimes wanting; sometimes

there is no corolla ; and when one or other of these cases occurs, the term Perianth is frequently used to describe the part of the flower which encloses the stamens and pistils. *Clematis* and *Anemone* have no corolla ; but what we call the flower is, in them, a coloured calyx ; the perianth of the Tulip is at first green ; afterwards it assumes its gay and varied hues. Separate parts of a corolla are called Petals ; those of a calyx, Sepals. *Caltha Palustris*, Marsh Marigold, has no petals, but brilliant yellow sepals.





AMONG THE WILD FLOWERS.

IV.

You will have observed that every plant or flower bears two names; the former designates the *genus*, the latter the *species*. Thus *Primula* is a genus, of which our British Flora has six species: *P. vulgaris*, Common Primrose; *P. Veris*, Cowslip; *P. elatior*, Oxlip; *P. Farinosa*, Bird's-eye Primrose; *P. scotica*, Scottish Primrose. Of the genus *Viola* we have nine species, of which seven are common or frequent, namely, *V. palustris*, Marsh Violet; *V. odorata*, Sweet Violet; *V. hirta*, the hairy-leaved one; *V. Sylvatica*, growing in woods; *V. Canina*, Dog Violet; *V. Lutea*, Yellow Violet; and *V. tricolor*, Wild Pansy.

The observation of peculiarities which distinguish one species from another is a delicate part of the study of Botany; distinctions of

genus are more marked. A Natural Order may contain many *genera*. A genus may possess only one species, or many. The genus *Vinca*, Periwinkle, which blooms in spring, has two species, *minor* and *major*: the latter is the large handsome blue flower so frequent in gardens; the smaller species, *minor*, is found quite wild in woods. In some localities this species is found white; in some a very fine rich purple, and with double flowers. A double flower is an overgrowth, in which the stamens are substituted by additional petals in the corolla; and such flowers seldom bear seed or fruit. Thus whilst in the flowers of the Wild Rose you find numerous stamens, the cultivated Roses are filled up with petals, which give form and beauty to the flower.

An interesting little plant is abundant in the newly springing grass in the meadows and on lawns, *Luzula Campestris*, the Field-rush; it belongs to the same Nat. Order as the Common Rush, JUNCACEÆ, and both are of Linn. Cl. VI., *Hexandria*, their dark flowers having 6 stamens. The little Field Rush has a rather dense cluster, *panicle*, of flowers. The perianth has six divisions, and in dull weather is often

found closed up with its three stigmas protruding. When open in the sunshine, its star-like flowers are very pretty. The leaves of the plant are grass-like, and slightly hairy. Another species, *L. pilosa*, found in thickets and copses, is still more hairy. *L. sylvatica* has broad shining leaves, with hairy edges. All three species are frequent; our Flora has seven species in all.

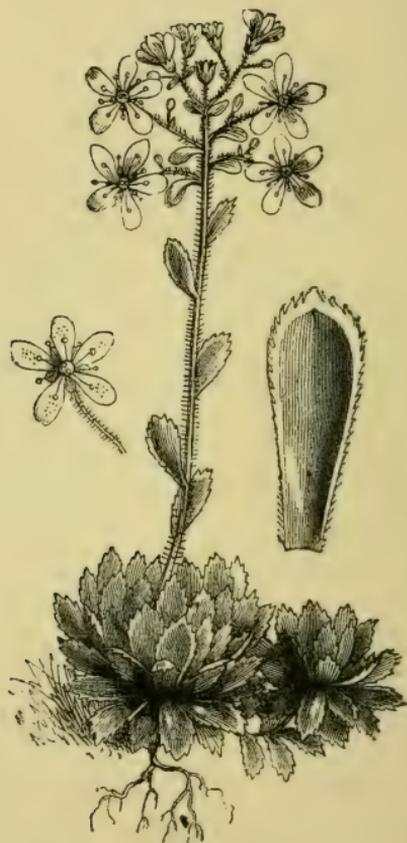
Another genus that attracts our attention is *Stellaria*, Stitchwort, of which there are six British species. Two of these are early in bloom,—*Stellaria Holostea* and *S. media*. The former is the plant whose flowers, like white stars, in early spring so plentifully adorn the banks; it has ten stamens—Linn. Cl. X., *Decandria*, and its yellow Anthers are very conspicuous. The name *Holostea* refers to the bone-like brittleness of the stem, whose joints come apart very readily. In Cheshire the plant is called Break-bones. Its grassy stems supporting one another, lift up the flowers to view, and make them almost a dazzling ornament to the banks. The species *media* is the Common Chickweed, found in bloom in every month; its stamens vary much in number,

but ten is the full number. The genus *Stellaria* belongs to Nat. Ord. CARYOPHYLLACEÆ, which may be remembered as including the Carnation or Pink Family, and all the genus *Lychnis*, with others.

In the sunny spring you will find on walls and roofs little beds of *Saxifraga tridactylites*, Rue-leaved Saxifrage; the plant is two to five inches high, has 3-cleft leaves, and small white flowers; it is viscid or gummy all over, and its stems are more or less red. The whole plant is covered with glandular hairs. This genus, *Saxifraga*, which gives name to the Nat. Ord. SAXIFRAGACEÆ, is quite distinct from the genus *Chrysosplenium*; it contains many beautiful and interesting species, of which 18 belong to our Flora. Many are cultivated in gardens, where we often find *Saxifraga Hypnoides*, Mossy Saxifrage, with cream-white flowers; *S. granulata*, White Meadow Saxifrage, often with double flowers, and having grain-like bulbs at the base of the stem; and, notably, *S. umbrosa*, London Pride, whose native habitat, notwithstanding its acquired name, is in the south and west of Ireland.

A large plant of this genus common in

gardens, not native, is *S. crassifolia*, whose dense panicles of lilac flowers bloom in spring ; the leaves are large, oval, and shining. Later, the clustered flowers, a *raceme*, spread out



SAXIFRAGE

and form branching curves. The pretty old-fashioned plant often suspended in windows, and sending out long, pendulous stems, like the

runners of a strawberry plant, is the Strawberry Saxifrage, *Saxifraga Sarmientosa*; it has concave leaves dangling at the end of the long stem, and its flowers are like London Pride, but having the two lower petals hanging down and three upper and smaller ones erect, almost, like a little orchid. The Saxifrages are a very interesting portion of the Flora of Alpine regions.

The little Wood-Sorrel, *Oxalis Acetosella*, abundant in woods and copses, and in gardens, where it sometimes becomes too plentiful, is of Linn. Cl. *Decandria*, but stands alone in the Natural System, giving name to the Nat. Ord. OXALIDACEÆ. This well-known plant has sensitive leaves, which bend down in the form of little pyramids when gathered, or in cloudy weather; and its seed vessels, when ripe, jerk out their seeds by the contraction of a membrane which invests them. We have two other species, whose flowers are yellow; but it is doubtful whether they are native. I collected one of them, *O. Corniculata*, apparently wild, in North Lancashire some years ago; and the other, *O. stricta*, is a weed in our West Sussex gardens. The former has the leafy ap-

pendages at the base of the flower-stalk, called *stipules*; the latter is destitute of them.

The Blackthorn, or Sloe, *prunus communis*, with three other species which are sometimes



BLACKTHORN.

given under the genus *Cerasus*, Cherry, belongs to the Nat. Ord. ROSACEÆ, and Linn. Cl. XII., *Icosandria*. The name Blackthorn must refer to the fact of the flowers appearing whilst the

dark-coloured branches are yet leafless. The pretty pink-blossomed Almond-tree, *Amygdalus*, is of this Order; so also is the *Mespilus*, whose clouds of bloom resemble a fall of snow lying in sunshine, and covering the shrubs.

We have among the very early visitors the Cuckoo-flower, or Lady's Smock, *Cardamine pratensis*, of Nat. Ord. CRUCIFERÆ, and Linn. Cl. XV., *Tetradynamia*. Its pale lilac flowers, so abundant in damp ground, are frequently double, and look very handsome in large clusters. There is another species, less common, in wet meadows, *C. amara*, with purple anthers, and white flowers. Two less striking ones, but common on damp walls, are *C. Sylvatica* and *C. Hirsuta*, the latter with only 4 stamens instead of 6. The flowers of these last two species are small and inconspicuous.



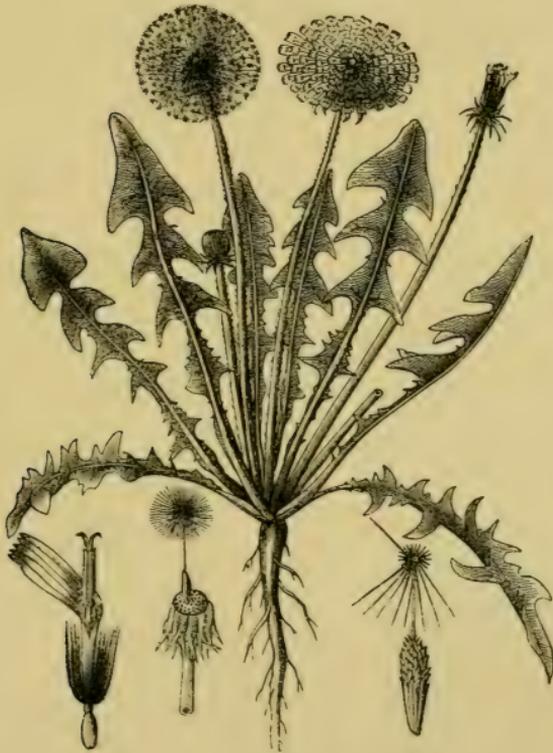


AMONG THE WILD FLOWERS.

V.

IT is time to speak of two of our universal flowers, which, though troublesome in the gardens and on lawns, are the glory of our fields on the green carpet of spring, and are very interesting and perfect specimens of the Class and Order to which they belong,—the Daisy, *Bellis perennis*, its English name attributed to its being the eye of the day, *Day's-eye*, and the Dandelion (*Dent-de-lion*), *Leontodon Taraxacum*, the name probably from its large-toothed leaves. Both these are what are called compound or composite flowers, each single head comprising a number of florets, in which the Anthers when present are united together in a tube. They belong to the Nat. Ord. COMPOSITÆ, and Linn. Cl. XIX., *Syngenesia*, and the same description applies to both systems.

The composite flowers are numerous, increasing as the season advances, and are the glory of the summer. Each head of florets looks like a single flower. The Daisy flower



DANDELION.

has in its centre a number of yellow tubular florets, and this yellow disc is surrounded by a ray of long spreading white or pink-edged petals, each of which is a separate floret con-

taining a pistil ; the centre florets are perfect, having both pistil and stamens. In the Dandelion *every* floret has the long flat petal, *ligu-*



DAISY.

(*Floret of Disk and Ray : Receptacle.*)

late, or strap-shaped, and all are perfect and produce seed.

The structure of this seed is remarkable. It is found at the base of the floret, which, in fact,

springs from it, and is crowned with a tuft of bristles or hairs termed the *Pappus*, or down. Sometimes this pappus is like feathers ; in most of the genera of this Order it is sessile, seated upon the seed or nut, *achænium*, without a stalk ; but in the Dandelion it is elevated upon an erect pillar, which is developed while the seed is ripening. On the first fine day when the air is warm and dry, after the fruit is fully formed and ripe, this circle of hairs expands and forms the well-known white feathery globe, whose separate parts are carried everywhere by the breeze, like little balloons of which the beautifully embossed car is the seed or nut. The proverbial Thistle-down floats its seed in the same way. The Common Groundsel, *Senecio Vulgaris*, also a composite flower, but without any ray-florets, forms a feathery globe in like manner, and thus sows itself abundantly.

The early spring finds, in poor soils, the flowers and leaves separately appearing of the Colt's-foot, *Tussilago Farfara*. Another early species of the Composite Order is the Butterbur, *Petasites Vulgaris*, which frequently by river sides sends up numerous dense spikes of purplish flowers, followed by leaves somewhat

resembling those of rhubarb, and which are the largest produced by any wild plant in our country. By the end of May, the hyacinth-like spikes become tufts of white-plumed fruits, which are the seeds crowned with the papus.

This Composite Order is a very attractive one, but we must pass on to notice the simple but pretty Speedwells.

For some time the little Field Speedwells, *Veronica agrestis*, and *V. arvensis*, have been in bloom in fields and waste places. Of these two species, *V. arvensis* has its flowers slightly spiked, whereas *V. agrestis* has solitary flowers produced between the leaves and the stem, *axillary*; the flowers of *agrestis* have the lower lip of the corolla *white*; those of *arvensis* are wholly, but pale, *blue*. Then we have as an abundant and prolific weed,—happy the garden that is free from it!—the elegant little Ivy-leaved Speedwell, *V. hederifolia*, with minute flowers, pale blue with deeper lines. On ground not disturbed during winter, you will find another species, *V. Serpyllifolia*, Thyme-leaved Speedwell, a small plant with a long spiked raceme of whitish flowers blue-veined.

The stem is rooting below, afterwards erect, but only 2 to 5 inches high.

Above all, in bright spring days, we welcome the appearance of the Germander Speedwell, *V. Chamædryas*, with its bright blue-eyed flowers, the brightness being increased by the snow-white pollen of the Anthers. We have 17 species of the genus *Veronica*, several more of which will be described as the season advances. Some are rare. I once had the good fortune in North Wales accidentally to come upon a large bed of *V. Spicata*, with its handsome tall spikes of blue; and several years afterwards found the identical spot designated by Sir W. Hooker in his *Flora* published some 40 years ago. This last species more nearly resembles the foreign species met with in gardens, which are well worth attention.

This genus belongs to Linn. Cl. *Diandria*, its flowers having 2 stamens; and it will perhaps surprise you to learn that it is in the same Nat. Ord., SCROPHULARIACEÆ, as the little Ivy-leaved Toad-flax, *Linaria cymbalaria*, which creeps and dangles on walls, clothing them most months in the year with its small ivy-shaped leaves, and producing many small

purplish flowers like little Snapdragons. These flowers are Didynamous, and therefore of Linn. Cl. XIV., having two pairs of stamens, one pair rising above the other. The Figwort, *Scrophularia*, gives name to this Nat. Ord., which, besides other genera, contains the Foxglove, *Digitalis*.

The earliest of the genus *Myosotis*, Mouse-ear, called also Scorpion-grass from the curving spikes of most of its species like a scorpion's tail, is now to be found. Its flowers are small but deep blue; it is *M. arvensis*. We have 8 species of *Myosotis*, most of which probably, in common parlance, share with the very beautiful one, *M. palustris*, the poetical name of Forget-me-not. This last, which is the one that bears the name *par excellence*, is an ornament of streamlets, river-sides, and pools. *M. collina*, a smaller plant, but with a rich blue flower, should also now be found in open grassy places. And very soon there will be, on sunny old walled banks and other dry open places, *M. versicolor*, a slender little plant, whose corolla, at first yellow, changes afterwards to blue.

The Lungwort, *Pulmonaria*, is rare as a wild

plant, but common in gardens, its leaves spotted, and its flowers red or violet according to the time they have been in bloom, both colours appearing at the same time. It is of the same Nat. Ord. as *Myosotis*, namely, BORAGINACEÆ, many of the plants of which Order have flowers resembling in structure the handsome blue Borage of gardens.

Besides these our gardens have the bright azure flowers of *Omphalodes verna*, Blue Navelwort, among oval leaves like those of the Primrose; also the Evergreen Alkanet, *Achusa Sempervirens*, with similar bright blue flowers, but a taller plant and hairy; and the handsome blue *Lithospermum prostratum*, one of the Gromwells, of which genus we have several native species; and a various alien multitude of the *Myosotis*;—all these being of the Borage family, whilst their five-stamened flowers place them in Linn. Cl. V., *Pentandria*.

The observer should notice two curious lines of dense white down on the stem of Germander Speedwell, and glandular hairs about the upper part of the plant; also the hooked bristles on the Calyces of the species of *Myosotis* named.

LEGEND OF THE FORGET-ME-NOT.

Myosotis Palustris.

Side by side two hearts are beating,
Looks of fondest Love are meeting,
 He the Maiden's joy,
 And she her Lover's pride,
While tenderest words their lips employ,
 Soft-spoken, whispered, sighed !

O'er them skies are brightly gleaming,
And below are waters streaming,
 With a gurgling noise,
 Mid many islands green,
Then wandering on amid the joys
 Of glowing summer scene.

“ Seest thou yonder willow leaning
O'er the water's brink, and screening
 From the plashing wave,
 Breaking the current's force,
A blue-eyed Flower, whose stem doth lave
 In the cool water-course ? ”

“ On thy breast it shall be shining
Soon,” her chosen said, divining,
 By the power of Love,
 Her yet unspoken thought ;
Then swift essays the stream to prove,
 And plucks the flower he sought.

Back through the strong current steering,
Fainter, although the shore is nearing,
 Fainter still he grows ;
 Strength fails him at that spot—
The prize upon the bank he throws,
 And gasps—" Forget-me-not !"

Since then have all agreed in naming
The blue-eyed flower his love proclaiming,
 The FORGET-ME-NOT—
 Justly immortal name !
Nor can the lapse of ages blot
 That story's precious fame.

H. W.





AMONG THE WILD FLOWERS.

VI.

OF the Gooseberry and Currant family, Nat. Ord. RIBESIACEÆ, there is only one genus, *Ribes*; *Ribes Grossularia* is the Gooseberry; *R. nigrum*, and *R. rubrum*, the black and red currant. The various coloured kinds of currants are only varieties of *rubrum*. North America sends us several ornamental species of *Ribes*, including the pink-flowering currant, *R. Sanguineum*, with leaves in form and odour like the black currant, and *R. aureum*, the golden-flowering currant, with large glossy lobed leaves and bright yellow calyx, with a ring of scarlet-tipped petals at the mouth of its tube.

In warm countries these shrubs become evergreens, and cease to bear fruit. Five small stamens within the circle of the petals place the

flowers of this genus in Linn. Cl. *Pentandria* ; the colours of the flowers of these species belong mainly to the five-parted calyx ; the minute petals are of the same colour, and their withered relics are found upon the enlarged and ripened berry.

We have now the usual profusion of the Blue-bell, or Wild Hyacinth, *Endymion nutans*, called also *Scilla nutans*, and, still further back, *Hyacinthus nonscriptus*. Its English name must ever be the "Blue-bell." The Blue-bell of Scotland, an autumn flower, is a *Campanula* ; it is the slender stemmed flower of which the poet writes, in the *Lady of the Lake*,

"E'en the slight hair-bell raised its head
Elastic from her airy tread."

The true *hare*-bell is the Wild Hyacinth. Does not Shakspeare associate this latter flower with the Primrose in the passage in *Cymbeline*—¹

"Thou shalt not lack
The flower that's like thy face, pale Primrose, nor
The azured Harebell, like thy veins !"

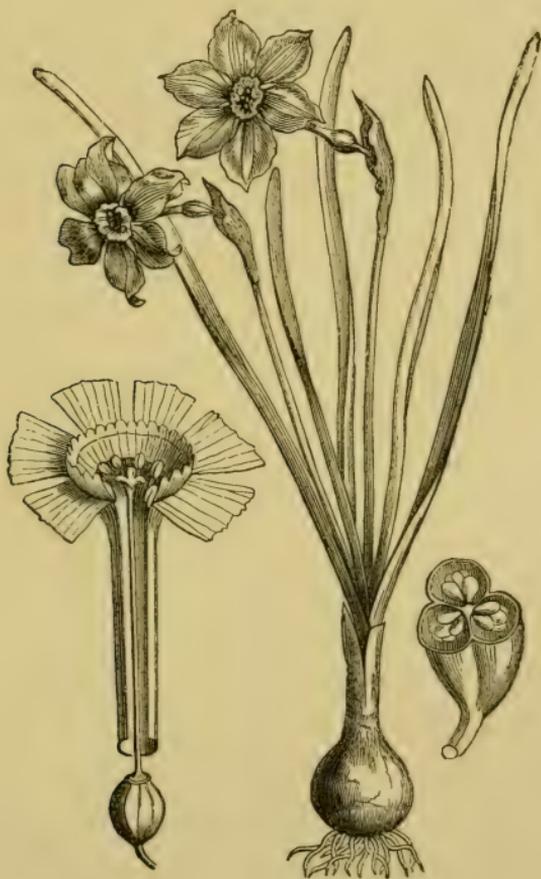
The Blue-bell of spring is of Linn. Cl. *Hexan-*

¹ Mr. Grindon alludes to this in his *British and Garden Botany*.

dria, and Nat. Ord. LILIACEÆ, the Lily family, to which also belong the Fritillary, Tulip, Garlick, and other genera. The flowers of all these consist of a 6-leafed perianth enclosing 6 stamens, and a very distinct germen. These plants spring from bulbs. The Star of Bethlehem, *Ornithogalum umbellatum*, with two other species, and the Autumnal and vernal Squill, *Scilla*, are also Liliaceæ. The lovely spring-flower called Dog-tooth Violet is no violet, but a lily, *Erythronium Dens-canis*; it is well-known for its pendulous lilac blossom, and pale green leaves marbled with purple. The Garden Tulip is a native of S.-Western Asia.

Closely allied with this Order are the AMARYLLIDACEÆ, which include the Daffodil, *Narcissus*; Snowflake, *Leucojum*; and Snow-drop, *Galanthus*. None of these have calyx or corolla, but a 6-parted perianth, within which the *Narcissus* has a bell-shaped crown. Of this last genus we have three species: *N. biflorus*, common in gardens, with two flowers, and very fragrant; *N. poeticus*, with crimson-edged cup; and *N. Pseudo-narcissus*, double in gardens, single and plentiful in fields, and, unhappily, poisonous. The exotics of this order,

including the Lilies, are numerous and beautiful; and the order fitly adopts the name of the Classic Shepherdess, AMARYLLIS.



NARCISSUS.

Sometimes included with plants of the two last mentioned orders are the Lily of the Valley, *Convallaria majalis*, and the three

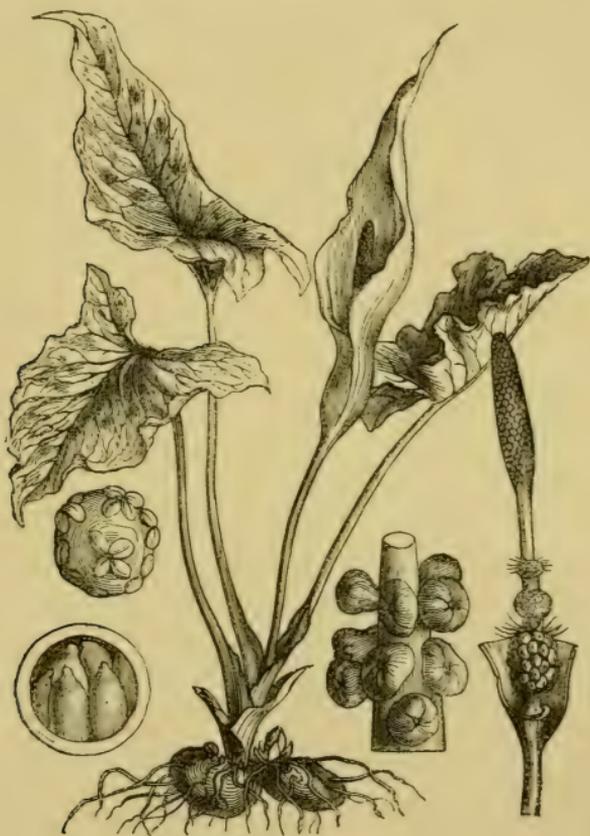
species of Solomon's Seal, *Polygonatum*; but they are properly placed in Nat. Ord. ASPARAGACEÆ, to which the Asparagus, a rare sea-coast plant, gives name. The name Solomon's *Seal* is from circular scars left in the old rhizome or underground stem, having a fancied resemblance to the impressions of a seal. These scars are the points from which last year's stems of flowers grew.

The curious Butcher's Broom, *Ruscus Aculeatus*, with its small flowers upon the middle of the leaf-like flattened shoots, belongs to this Order. It abounds in the Isle of Wight. In gardens in the north it produces only flowers; in the south it ripens scarlet berries.

A plant of most curious structure, equal in that respect to any foreign one, is now in perfection in our banks,—*Arum maculatum*, called of old, Cuckoo-pint. Its fresh and shining leaves are very early seen, in shape reminding us of those exquisite painted-leafed species, the *Caladiums*, whose foliage attracts us in the hot-house.

The Nat. Ord. ARACEÆ derives its name from the genus *Arum*; the separate position of its stamens and pistils, although they are closely

adjacent, places it in Linn. Cl. XXI., *Monœcia*. The flower is unique in structure ; there is no calyx nor corolla ; but a pointed sheath, called a *Spath*, encloses a pillar-like formation, *Spadix*,



ARUM.

upon which are separate clusters, first and lowest, of *pistils*, then of 2-celled *Anthers*, and, above these, other imperfect pistils, often only thread-like. Above these there is a terminal

club-like prolongation of the spadix. As the germens enlarge and become berries, the rest of the plant withers away ; and, in the advanced summer, we find the thickened stem, crowned with a dense cluster of scarlet berries.

The beautiful white Arum, so called, grown in pots, is of this order ; it is *Richardia Æthiopica*, the Trumpet-lily. The curious *Anthurium* of the greenhouse is also allied to this order.

Three plants, now blooming, of Linn. Cl. XIV., *Didynamia*, are *Pedicularis Sylvatica*, Red Rattle, a pink flower, with prostrate stems, and leaves divided into numerous lobed segments, one of the SCROPHULARIACEÆ ; *Ajuga reptans*, common Bugle, a dark looking plant with a dense short leafy spike of purplish blue flowers, plentiful in wet places ; and a *Lamium* which has been usually named *Galeobdolon luteum*, Yellow Weasel-snout, with rather showy pale-yellow flowers streaked with darker yellow, the plant resembling one of the Dead-nettle genus, and placed with that family as *Lamium Galeobdolon*. *Ajuga* and *L. Galeobdolon* are in Nat. Ord. LABIATÆ.

Several more of the RANUNCULACEÆ are

early in bloom, all of the genus *Ranunculus*, Crowfoot,—*R. auricomus*, Goldilocks, a slender plant, common in thickets and shaded banks, with yellow Sepals (Calyx leaves), petals often wanting, root-leaves roundish, whilst those of the stem have long segments; *R. heterophyllus*, Water Crowfoot, or *Snow-cups*, a handsome white flower with yellow centre, stem in the water, floating leaves roundish and lobed, submersed ones with long narrow segments; and *R. hederaceus*, Ivy-leaved Crowfoot, with very small flowers, also white, stem floating, or creeping on mud, and few stamens.

Alliaria officinalis, Hedge-Garlick, also called Sauce-alone, is sending up, in the fickle April days, its clusters of white cruciform flowers by waysides, and in waste places; the plant has a garlick-like smell, when bruised. Notice also two other common CRUCIFERÆ, and compare their pods,—*Sisymbrium thalianum*, Thalecress, a slender little plant with long thin pods, and forked hairs on its lower leaves; and the universal weed *Capsella Bursa-pastoris*, Shepherd's Purse, known by its peculiar bag-like pouches of seed, widened upward and compressed.

A little plant on many walls, with inconspicuous white flowers and hairy leaves, the seed pod or capsule opening when ripe with ten teeth, and curving like a horn, is *Cerastium glomeratum*, Broad-leaved Mouse-ear. It is one of the CARYOPHYLLACEÆ. The white downy plant of this genus, frequently used for edging in gardens, is *Cerastium tomentosum*. The name of the genus is from the horn-like appearance of some of the Capsules.

If you find a little plant, 2 to 6 inches high, among short grass, with a pale yellow, brush-like tuft of Anthers at the top, and, close to them on the same stalk, narrow dark spikes with the stigmas of pistils protruding, this is *Carex præcox*, the earliest of the Sedge family. The description of this genus, of which Professor Babington gives 70 British species, must be reserved till more specimens are attainable.





AMONG THE WILD FLOWERS.

VII.

WHAT a wealth of beauty and store of provision for life comes with a plentiful rain just upon the threshold of the sweet month of May! How positively vocal with joy all nature seems, from the simplest wild flower to the noble forest tree! Thus the Poet sings ;

See Nature gay, as when she first began,
With smiles alluring her admirer, man !
She spreads the morning over eastern hills,
Earth glitters with the drops the night distils ;
The Sun obedient at her call appears
To fling his glories o'er the robe she wears ;
Banks clothed with flowers, groves filled with sprightly
sounds,

The yellow tilth, green meads, rocks, rising grounds,
Streams edged with osier, fattening every field
Where'er they flow, now seen, and now concealed ;
From the blue rim, where skies and mountains meet,
Down to the very turf beneath thy feet,—
All speak one language, all, with one sweet voice,
Cry to her universal realm “ Rejoice ” !

The 'yellow tilth' is chiefly the effect in the landscape of the rich yellow flowers of the several species of *Ranunculus*, the Buttercup family. Three of them have now to be noticed



RANUNCULUS.

among the grass, of which the bulbous Crow-foot, *R. bulbosus*, is the earliest. You will at once know it by the reflexed sepals of the calyx, which turn down and clasp the stem,

and by the turnip-like base of its stem. The segments of its leaves are also more slender than those of the other two, *R. repens*, and *R. acris*. *Repens* is the Creeping Crowfoot; it sends out long side shoots, *stoles*, which creep and take root; it is a common weed in gardens. Its leaves have rather broad 3-lobed segments which are again cut. *Acris*, the Upright Crowfoot, has *palmate* root-leaves, *i.e.*, with lobes like the out-spread hand; its flower stalks, *peduncles*, are round, whereas those of *repens* and *bulbosus* are furrowed. *Bulbosus* alone has the stem bulb-like at the base; its receptacle, which is the bed of the flower at the top of the stalk, is smooth, *glabrous*, whereas that of *repens* and *acris* is hairy.

There is another plant of this genus, *R. parviflorus*, which ought to be found in banks, and, perhaps, in fields; to be known by its very small yellow flowers, roundish leaves, upper ones 3-lobed, prostrate creeping stems, and seed-vessels, *carpels*, with hooked prickles.

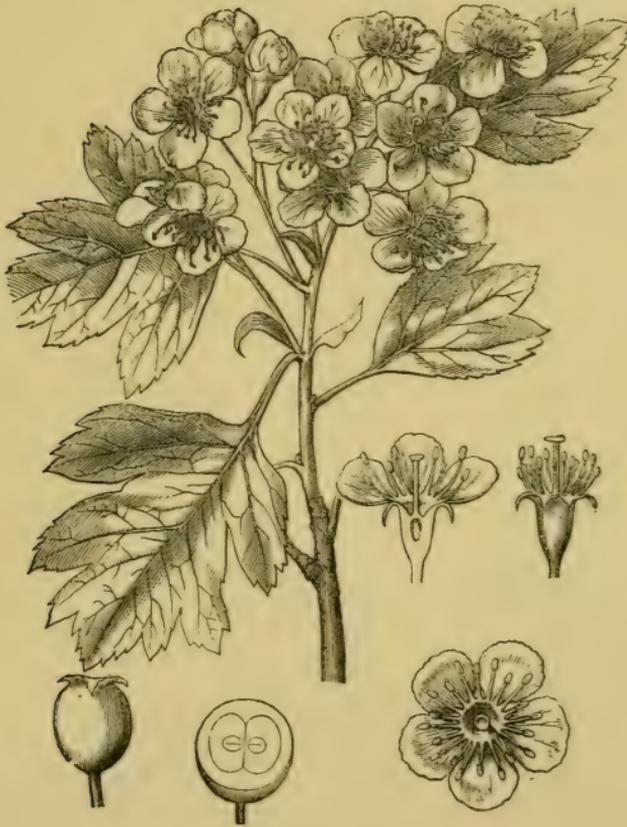
It is well worth some trouble to find another curious little plant of this Order, the Mouse-tail, *Myosurus minimus*; it has numerous rather fleshy, linear leaves, flower stalks 2 to

5 inches high, bearing only one small flower each, the receptacle lengthening out into a long tapering spike covered with numerous carpels, and thus assuming the appearance of a mouse's tail. The technical scientific description of this peculiarity is "*closely imbricate* upon a long *filiform receptacle*"; *imbricate* means placed over each other like the leaves of ivy upon a wall. This plant is distinctly of the Nat. Ord. RANUNCULACEÆ, but has been placed in Linn. Cl. V., *Pentandria*, owing to the fact of its having only 5 stamens developed.

The Hawthorn, *Cratægus oxyacantha*, is now in bloom, asserting its well-known claim to the name of "May." It is one of the ROSACEÆ, and with it is associated in that order the *Pyrus* Tribe, of which the Pear-tree is such an ornament of the spring by its plentiful blooms. Add to these the Crab-tree, *P. Malus*, and the Mountain-ash.

The pretty pink flowers of our native *Geraniums* are now seen in every direction. We have two Genera of this Nat. Ord. GERANIACEÆ, namely, *Geranium*, Cranesbill, and *Erodium*, Storksbill. Both names are derived from the resemblance of the long beak, formed by the

cohering carpels, to the bill of a crane or stork. In the common species, *Erodium cicutarium*, this likeness is curiously exact. This plant is



HAWTHORN.

common on dry waste ground and walls. It spreads its rosette of deeply divided leaves close to the ground, and sends up stems with pink or white flowers. *E. moschatum* is a

larger plant, with a strong musky scent, rather rare; the sea-side species, *E. maritimum*, has very minute petals, often wanting, and its



GERANIUM. (*Cranesbill.*)

flower stalks have only one or two flowers, whereas the other species have many.

Of our 12 species of *Geranium*, seven claim present notice. *G. molle* will be at once known

by the soft pubescence all over the plant ; and *G. Robertianum*, by its bright pink flowers, much divided leaves, red stems, and the strong, disagreeable odour of the entire plant ; both species very common. Frequent also by streamlets and in wet meadows is *G. pratense*, Meadow Cranesbill, a fine tall plant, with handsome large purplish-blue flowers, and 7-lobed palmate leaves. *G. dissectum* is very common, having leaves divided into deep *laciniate*, narrow-lobed and irregular segments, and rose-coloured blossoms on very short stalks. A very pretty plant is *G. lucidum*, Shining Cranesbill, much less common, with small rose-coloured blooms, and stem and leaves alike glabrous and shining ; it is often found upon old stone-heaps and old buildings and roofs.

In our gardens we have *G. phæum*, Dusky Cranesbill, with purplish-black flowers, a plant which has gained a place in our Flora ; and *G. sanguineum*, with large crimson flowers, and dark green leaves, not often found wild, but is truly so, as the writer knows from seeing it in profusion some years ago on the sunnier side of the Great Ormeshead.

There are interesting observations to be

made upon the seeds and other distinctive parts of the various species of the Geraniums. For instance, the 5 carpels which extend into the long beak of the ripe seed at length separate from the central pillar and spread out, in some genera twisting spirally; but if wetted, the spires uncurl and become straight, resuming the ringlet form when they become dry again. This property they retain for years.

We must now mention that the plants of this Order GERANIACEÆ, together with the Mallows, MALVACEÆ, are of Linn. Cl. XVI., *Monadelphica*, the character of which is that the filaments in the flower—of which in *Erodium* and *Geranium* there are 10, in the Mallow tribe many—are united at their base round the pistil, thus constituting one brotherhood or set, as the name of the Class implies. Contrast with this arrangement that of the flowers of Cl. XVII., in which there is one single stamen or filament separate from the rest which are united together, thus forming two sets, whence the name of this Class, *Diadelphia*. To this same class belong many of the leguminous plants, LEGUMINOSÆ, so called from their bearing a legume or long pod; the blooms of

these plants are, in our British species, all pea-shaped.

Compare also with these two Classes the Linn. Cl. XVIII., *Polyadelphica*, in which the stamens have their filaments united in several groups, which are very ornamental in the centre of the flowers of the only genus we possess of this class, *Hypericum*, St. John's Wort. Thus you have a view of three more of the Linnæan Classes, not previously mentioned, namely, Monadelphous plants, Cl. XVI., as above described; Diadelphous plants, Cl. VIII., including Fumitory, Milk-wort, Broom, Furze, Vetches of several genera, Clovers in 20 species, and others; and Polyadelphous plants, of the genus *Hypericum*.

The beauty and elegance of the plants of these three Classes render them very attractive. It may be remarked that the so-called Geraniums of the greenhouse and garden are *Pelargoniums*, chiefly coming from the Cape of Good Hope, as well as many species of true Geranium. Australia also has the *Pelargoniums*. A prominent mark of distinction between a Geranium and a *Pelargonium* is,

that the former has its five petals equal and regular; the latter has the two upper ones larger and erect, whilst the three lower ones project forward and downward.





AMONG THE WILD FLOWERS.

VIII.

THE LEGUMINOSÆ, already alluded to, now demand more detailed notice, as several species are in bloom.

First and earliest is the Furze or Gorse, *Ulex Europæus*, whose glorious blooms, when first beheld in profusion by the great Linnæus, caused him to fall on his knees in rapture, and praise the Creator for the beautiful sight; the later autumn-flowering plant on heaths is *U. nanus*.

On our moist peaty commons is the Needle Whin, *Genista anglica*, which looks like a smaller kind of Furze, but is of the genus of which the use of one species as an ornament gave name to the Royal House of Plantagenet, — *Planta genista*. *G. Anglica* has spines on its stem; but its flowering branches are glabrous and without thorns.

On dry hills there is the Broom, *Sarothamnus*, with its large yellow flowers. Under foot in various places, where the soil is sandy and dry, scarcely distinguishable from the short herbage, you may find beds of the pretty Bird's-foot, *Ornithopus*, stems prostrate, 3 to 12 inches long; leaves with many pairs of downy leaflets; and minute but beautiful white flowers with crimson veins. The pods are several together, curved and jointed, and spreading so as to resemble a bird's claw.

Then there is the Vetchling, *Lathyrus macrorrhizus*, sometimes given as *Orobus tuberosus*, the Heathpea, with its purple flowers, variegated with red and blue; and to this genus, *Lathyrus*, belong the Yellow Vetchling, *L. pratensis*, and the handsome and vigorous climber, *L. Sylvestris*, Wood Vetch, with its large racemes of greenish yellow flowers varied with purple. These last two bloom in the summer.

Soon we shall have the two species of Bird's-foot Trefoil, *Lotus corniculatus*, whose rich yellow flowers are painted with scarlet, and *L. major*; both bearing pods which are claw-like.

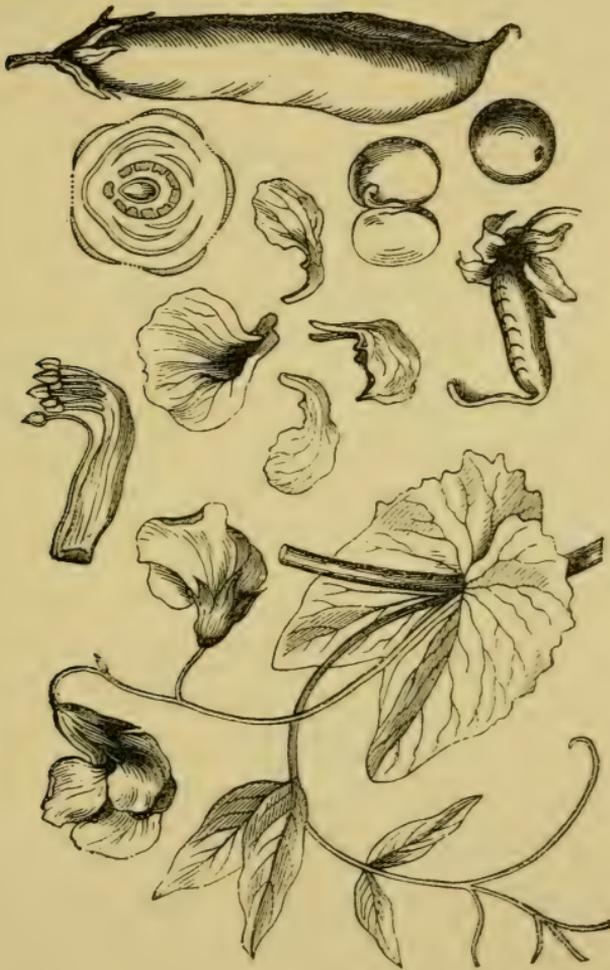
Then there is the large family of *Trifolium*, Clover. First in order is *T. minus*, with heads of small yellow flowers; *T. filiforme* is similar, but has fewer flowers in the head, besides other marks of distinction. *T. procumbens* has rather larger pale yellow heads of about 40 flowers, which at length become tawny. *T. repens*, the Dutch or white clover, is the plant worn in Ireland as the Shamrock on St. Patrick's Day.

Peculiar to the South, and plentiful in West Sussex, though often unobserved, is *T. subterraneum*, the subterranean Trefoil. This name refers to the fact that as the 3 small white flowers, of which each head consists, begin to wither, they turn downwards to the ground, having been previously erect; and from the end of the peduncles are produced a number of white stellate fibres, *abortive calyces*, like small waxen hands with fingers outspread, which enclose the legumes, as it were, in a cage, finally burying them in the soil, where in due time they germinate. The plant lies so close to the ground that it frequently escapes even the lawn-mower. Its growth should be watched in order to realize this description.

A very remarkable species also is *T. fragiferum*, Strawberry Trefoil, whose membranous and inflated calyces form a globose head, tinged with pink as they ripen, reminding one of a strawberry. The head of pale purple flowers is small and inconspicuous; the plant creeps. On clay soil in Bucks, it is widely spread and abundant, though said to be less frequent inland than near the sea. The common purple clover is *T. pratense*. *T. arvense*, the Hare's-foot Trefoil, has silky heads of flowers whose soft appearance is due to the long and, at length, spreading hairy teeth of the calyx. It is most common near the sea.

Then there are the tiny flowers of *Vicia hirsuta*, the Hairy Tare, and *V. tetrasperma*, Smooth Tare, the distinction observable in the pods, which are respectively 2-seeded and 4-seeded; and notably, the handsome, boldy climbing *V. Cracca*, with its long racemes of blue flowers, decorating the hedgerows and borders of meadows. Wild plants of *Vicia Sativa*, the crimson Fodder-vetch, are very frequent, and may be found through the summer; the deep crimson flowers are either solitary, or 2 or 3 together. *V. Sepium*, the

Bush-vetch, with 4 to 6 dull purple flowers in a cluster, is everywhere met with.



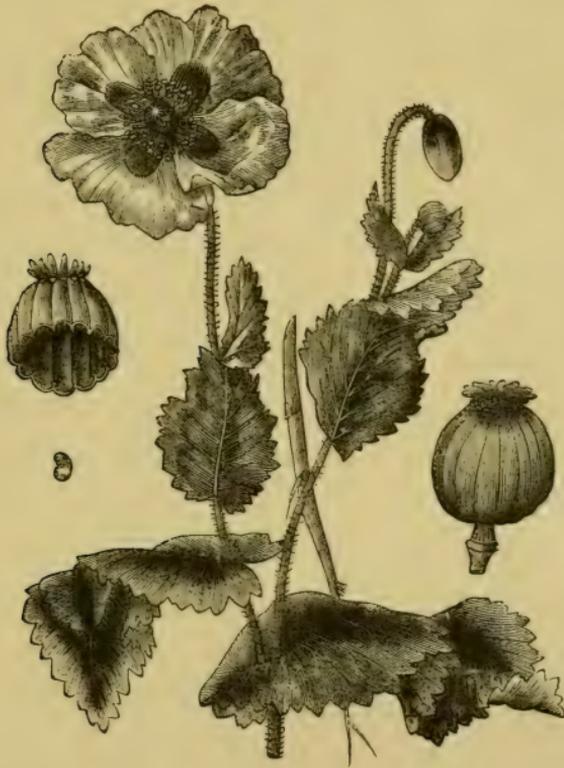
PAPILIONACEOUS COROLLA.
(*Leguminous Plant.*)

All our native Leguminosæ, of which we have more than 70 species, have the butterfly-shaped corolla, called *papilionaceous*; the large

upper petal of the flower is called the *standard*; the two side ones, the *wings*; the two lowest, which form a boat-like cover for the stamens and pistils, usually concealing them, are called the *keel*. There are in the flower 10 stamens, which are sometimes all united by the filaments in a tube round the pod, and are therefore monadelphous: but in many of the genera, one stamen is separate from the other nine, and the flower is then diadelphous.

Among the exotics of this order many other formations occur in the structure of the parts of flower and fruit, as well as in the form and habits of the plants, of which there are known not less than seven thousand; but whatever the aspect of the plant, or the structure of the flower, whether the corolla be like that of the pea, as in our plants, which are all of the sub-order *papilionaceæ*; or with spreading but irregular petals, as in the second sub-order *Cæsalpinieæ*, which includes many medicinal plants, and is named from *Cæsalpinia* which yields the Brazil-wood of commerce, one of many similar instances in this division; or with regular flowers like those of the third sub-order, *Mimoseæ*, of which there are about one thousand,

—the characteristic legume is sure to be found. Some of the plants of the last-named suborder are irritable as to their leaves; especially *Mimosa Sensitiva*, and *pudica*, which are hence



POPPY.

called Sensitive plants. Almost all the pinnate-leaved Leguminous plants close their leaves in a marked way during darkness.

New specimens are daily crowding upon us with the advancing season. The handsome

pale-green plant in banks, with bright yellow flowers of four petals and long narrow pod, is *Chelidonium majus*, one of the PAPAVERACEÆ, Poppy family; all parts of this plant are full of an orange juice. Of this Nat. Ord. you may find ere long, besides the several species of scarlet Poppy, *Papaver*, *Glaucium luteum*, the Horned Poppy of the sea-shore, and the yellow Welsh Poppy, *Meconopsis cambrica*, a genus by itself, rare, but sowing itself freely in garden rockeries. The garden *Eschscholtzia* is of this Order, remarkable for the dilated apex of the peduncle from which the calyx separates when the petals expand, in a form, *calyptra*, like an extinguisher.

Veronica Beccabunga, Brooklime, Nat. Ord. SCROPHULARIACEÆ, now displays its pretty racemes of small bright blue flowers, or sometimes pink, in ditches and small streams; and another Speedwell, *V. polita*, in fields and waste places, with wholly blue but small flowers, and capsule of 2 turgid lobes, leaves falling short of the peduncles. *V. agrestis*, as mentioned in Paper V., has the lower corolla-lip white; *V. arvensis* has the leaves bract-like and exceeding the flowers, which are paler than in *V. polita*.

The Red Campion, *Lychnis diurna*, loves damp hedge-banks and wet copses, where it forms very handsome beds. In moist places also you find *L. Flos-cuculi*, Ragged Robin, with petals deeply 4-cleft. *L. vespertina*, White Campion, displays its white flowers in the dusk of evening, and almost in the dark, whence the name *vespertina*, as distinguished from *L. diurna*, whose red blooms are visible only in daytime; it is observable that the two species do not often appear both plentiful in the same neighbourhood. The flowers of *L. vespertina* are dioecious; only stamens on one plant, a large germen on the other. About Midsummer the pretty *Lychnis Githago*, Corn Cockle, will appear among the grain crops.

The corn-fields and sandy ground have now the Corn-Spurrey, *Spergula arvensis*, a small plant with white flowers, linear leaves convex above, channelled beneath, and deflexed fruit-stalks; you will find also *Scleranthus annuus*, Knapwell, a densely growing plant with green flowers often solitary in the forks of the stem. Also *Arenaria trinervis*, and *A. Serpyllifolia*, two Sandworts, the former a weak-branched little plant in damp places, with 3-ribbed acute

sepals, and stalked leaves; the other in dry places and on walls, with sessile leaves, and *ampullaceous*, jar-shaped, capsules. The Pearl-worts, *Sagina procumbens*, and *S. Apetala*, so common on gravel walks and in dry places are not easily distinguishable from each other. They are diminutive plants with corolla scarcely visible, or none, and resemble clusters of dwarf stunted grass.

Lychnis, Spargula, Scleranthus, Arenaria, and Sagina are all of Nat. Ord. CARYOPHYLLACEÆ, the Pink family.





AMONG THE WILD FLOWERS.

IX.

ON grassy banks, both in fields and by waysides, as May advances, you meet with beds of *Galium cruciatum*, the Crosswort Bedstraw, fully suggestive of the name of the genus, by its lax growth, and pale greenish-yellow appearance. Few sights are prettier of the kind than beds of this plant with the arched stems of the blue-bell suspending their flowers among them.

This genus, *Galium*, is numerous; it is of Linn. Cl. IV., and Nat. Ord. RUBIACEÆ. This Order is named from *Rubia*, Madder, besides which plant it includes the Woodruff, *Asperula*, and the little Field Madder, *Sherardia*, whose lilac clusters of flowers are seen in cultivated fields. Most of these have a corolla with 4 regular divisions, spreading out in a flat surface

in all the Bedstraw species, in the Woodruff slightly recurved.

The Woodruff and Crosswort Bedstraw present good examples of what is called a *corymb*, the peduncles or flower-stalks being gradually shorter towards the top, so that the flowers are all on a level; a *raceme* is a spike with stalked flowers; a *panicle* is a branched raceme, as in many grasses. The Sherardia, on the other hand, produces its flowers in an *umbel*, the tiny flowers being on stalks which all spring from one point and reach about the same level.

The genus *Galium* supplies very much of the decoration of the banks and hedgerows. Even the troublesome plant called Cleavers, or Goose-grass, *G. Aparine*, with its small white flower, leaves with marginal backward prickles, and fruit covered with hooked bristles, causing the burs to cling to the unwary wanderer's clothes, is truly ornamental when climbing among otherwise bare thorns; whilst the golden yellow panicles of *G. verum*, on erect stems with whorls of dark green linear leaves, mingling on the same bank with *G. mollugo* the great Hedge Bedstraw, whose dense white

panicles often over-top the hedge, present a very rich appearance, like gold inlaid in silver.

Marshy places and borders of slow streams have, in summer, abundance of *G. palustre*, Water Bedstraw, which is to be distinguished from *G. uliginosum*, Marsh Bedstraw; both have white flowers, but the former has 4 leaves in a whorl, and is the stronger plant; the latter has 6 to 8 leaves in the whorl. There is also the White Heath Bedstraw, *G. saxatile*, with smooth leaves, and, unlike the last two, with very few prickles about the leaves and stem. *G. tricornis*, an interesting specimen, with 3-flowered peduncles, and granular reflexed fruit, grows in dry chalky soils. Eight species have thus been mentioned out of the total of thirteen. They will reward attention.

The Woodruff, *Asperula odorata*, so called from the pleasant fragrance of its flowers, and of the whole plant when dry, resembling the smell of hay, is wild in woods and cultivated in gardens. Its white corymbs are in fine contrast to the dark whorls of leaves. The other species, *A. cynanchica*, is very distinct, and has lilac flowers.

We have only one genus of the POLY-

GALACEÆ, namely, the Milkwort, *Polygala*, whose blooms are in red and white and pink. This flower is remarkable for having two large sepals, coloured like the three little narrow petals. In some foreign species, of which many appear in the greenhouse, the blossoms much resemble the papilionaceous flowers of the Leguminosæ, but are distinguished by a curious tufted appendage to the lower petal which is keel-shaped. After flowering, the two large sepals of *P. vulgaris* become wholly green, and clasp the flat ovary. The roots of plants of this order contain a milky juice. The stamens of the flowers are 8 in number, generally divided into 2 equal bundles, and therefore diadelphous.

The Fumitory family, FUMARIACEÆ, though not important plants, are very interesting from the singular conformation of their flowers. We have only two genera of this order, *Corydalis* and *Fumaria*. *Corydalis lutea* is naturalized on old walls, and seems almost to spring from the very stone, displaying its yellow flowers. *C. claviculata*, found in bushy places in hilly districts, has very small flowers, yellowish white, and its stems climb several feet; it is

the White Climbing Fumitory. *C. solida* has purplish flowers, appearing in early spring in gardens, and a solid tuberous root.

The genus *Fumaria* has 7 species, of which the best known are *F. officinalis*, climbing about hedges and among field-crops, with many rose-coloured flowers on the raceme; and *F. micrantha*, which has very large sepals. The flowers of this order are diadelphous, the 6 stamens being in two distinct bundles, or sets; the 4 petals are parallel, which gives the flowers a flat appearance; the two inner ones cohere at their tips, and form a little pouch, and the two outer ones are *gibbous*, swollen, at the base. The pod of *Corydalis* is many-seeded; that of *Fumaria* one-seeded. Though the flowers are small, the pink corollas of *Fumaria* are very handsome, and in beautiful contrast to the pale green foliage.

To this order belong the elegant *Dielytra spectabilis*, common in gardens and greenhouse, with arching sprays of rose-tinted blooms; and *D. formosa*, a smaller plant, in dense tufts, with racemes of pendulous pink flowers, seen in gardens from May to winter.

In many directions, *Potentilla tormentilla*,

the smaller species of *Tormentil*, now shows its golden cruciform flowers. Although the corolla is cruciform, its flowers are produced singly, and not in clusters, as are the *Cruciferæ*; and the parts of fructification show it to belong to the *ROSACEÆ*; it has leaves with 3 to 5 lobes. There is a larger species, *P. reptans*, easily known by its 5-lobed leaves on long stalks. *P. Anserina*, Silver-weed, is abundant on damp road-sides and in waste places; its flowers are large and yellow; leaves pale green above, white and densely silky below; or silky on both sides. *P. fragariastrum*, Barren Strawberry, is now past bloom; but *Fragaria vesca*, the Wood Strawberry, is met with in abundance.

To this Order belong the numerous species of *Rosa*, and also those of *Rubus*, the Bramble, more than 40 in number, including the Wild Raspberry, *R. Idæus*, the Dewberry, *R. Cæsius*, and the Cloudberry, *R. chamæmorus*. The English name "Cloudberry" no doubt refers to the cloudy bloom on the ripe fruit of this species, as on the surface of the purple grape; the specific name *chamæmorus* describes the habit of the plant, which spreads on the ground. *R. fruticosus* is the common Blackberry. The

pulpy fruits produced by the Raspberry, and Blackberry are, in reality, clusters of succulent carpels, *Drupes*, collected round the receptacle. Our three species of *Spiræa* belong also to this Order, including *S. ulmaria*, the Meadow-sweet, and *S. Filipendula*, Dropwort, often found in our gardens, as well as growing wild.



BRAMBLE.



AMONG THE WILD FLOWERS.

X.

WITH the month of June, several more of the ROSACEÆ attract attention. In damp meadows there is *Sanguisorba officinalis*, the great Burnet, on stalks 18 inches high, no corolla, but a 4-cleft dark purple calyx, and pinnate leaves with leaflets coarsely toothed; Linn. Cl. IV., *Tetrandria*. The Lesser Burnet, *Poterium*, has monœcious flowers, Linn. Cl. XXI.; its numerous tassel-like stamens, from 30 to 50, and its crimson-tufted pistils decorate the heads of its greenish flowers, of which, contrary to the usual arrangement, the female flowers are in the upper part of the head, and the male below; the pinnate leaves are finely serrate. There are two species, *P. sanguisorba*, and *P. muricatum*; they grow in dry pastures.

The species differ in general appearance, as well as in some characteristics of the calyces.

Alchemilla, Lady's Mantle, is another genus of this Nat. Order, of which *A. vulgaris* is found in pastures, especially dry and hilly ones ; it has yellowish green flowers without corolla, and roundish plaited leaves with lobes. The Alpine Lady's Mantle, *A. alpina*, is valued in gardens for the beauty of its leaves, which are white and silky beneath ; the stem and calyx are also silky ; the lobes of the leaves extend nearly to the base. In a larger kind, called by gardeners *A. argentea*, the lobes are only a third of the way down, the leaves having the under surface like white satin. A curious but unattractive little plant of this genus is *A. arvensis*, Parsley Piert, with greenish flowers close to the stem, and leaves variously cut, found commonly in dry fields and on gravel.

Among the ROSACEÆ is also *Agrimonia Eupatoria*, Common Agrimony, of Linn. Cl. XI., *Dodecandria*, the flowers having from 12 to 20 stamens ; it is seldom absent from the waysides, where it displays its long, close, tapering spike of yellow flowers, succeeded by the little burs which are the capsules. Almost every bank

has *Geum urbanum*, the Wood Avens, a plant from one to two feet high, with yellow flowers, and many stamens attached to the calyx, Linn. Cl. XII., *Icosandria*. *G. rivale*, Water Avens, is a curious plant, with purplish calyx and pale reddish corolla, exhibiting its nodding flowers in damp woods. A peculiar feature of the genus *Geum* is the sickle-like form of the mature fruit, the ovary being the handle of the sickle. In *G. rivale*, the part of the style above the joint becomes a tail of fine hairs.

The Marsh Cinquefoil, *Comarum palustre*, differs from *Potentilla* by its enlarged spongy receptacle like a juiceless strawberry. The flowers, of which the petals are very small, and the inside of the sepals, are purplish-red.

It will be observed that the plants above-named are of four different Linnæan classes, though all of the same Nat. Ord. ROSACEÆ. The Order includes many edible fruits ; among them, Raspberries, Strawberries, Plums, Apples, Pears, Cherries, Peaches, and Apricots. The petals of *Rosa centifolia*, and its varieties *R. damascena*, and *R. moschata*, yield Rose-water, and the oil called "attar of Roses."

The pretty creeping plant with yellow Pen-

tandrous flowers, in moist woods and shady places, in form so like the scarlet Pimpernel of the cornfields, is the Wood Loosestrife, *Lysimachia nemorum*; another common species, often planted on rock-work, is *L. nummularia*, Moneywort; these plants are of the Order PRIMULACEÆ.

To the same order belong *Anagallis arvensis*, the scarlet Pimpernel, and *A. tenella*, the pretty little Bog Pimpernel, found in wet places; the latter has pinkish flowers and opposite roundish leaves on its procumbent stems. The flowers of *Anagallis* are *meteoric*, not opening in cloudy and damp weather; hence *A. arvensis* has been called the "shepherd's barometer." The capsules of this genus open with a lid, and illustrate the form of seed-vessel called a pyxidium.

Of the COMPOSITÆ, several more plants are now in bloom; *Hieracium Pilosella*, Mouse-ear Hawk-weed, one of the 32 species of this genus; a common plant with pale yellow heads of florets, the outer ones striped with red, about 6 inches high, and sending out stoles, or side shoots covered like the rest of the plant with silky hair; and *Hypochæris radicata*, Cat's-ear, with bright yellow heads of flowers, on smooth

branching stalks 18 inches high, with rough leaves, *runcinate* in form, that is, having large marginal teeth turned downwards, like the Dandelion leaf. There is another species, less common, which has smooth leaves.

Above the tall mowing grass little beds of the large Ox-eye Daisy, *Chrysanthemum Leucanthemum*, now display their conspicuous flowers, brightening the scene. The Corn Marigold, *C. segetum*, with deep yellow flowers, is the other species of this genus. But most of the Compositæ wait for the full maturity of summer.

Ranunculus arvensis, Corn Crowfoot, may be recognized by its pale yellow flowers and curious spinous capsules; the leaves have linear-lanceolate segments. *R. Flammula* is common in wet places; it has stalked linear leaves and furrowed peduncles, and rises from 6 to 18 inches high; it is the Lesser Spearwort. The Greater Spearwort, *R. Lingua*, a *rare* plant, found in water, sometimes in a deep pool among other aquatic plants, is a noble specimen, with tall stout stem, 3 feet high or more, and large golden blooms. *R. sceleratus*, celery-leaved Crowfoot, though small flowered,

is a handsome plant, almost bushy with its many stems and branches. The segments of the leaves are so formed as to give some resemblance to celery; the fruit is oblong, narrowing upward.

Veronica officinalis, Common Speedwell, is found in dry places, having spiked racemes of pale purplish flowers, shortly stalked oval serrate leaves, and stems prostrate. The rare species, *Potentilla argentea*, Hoary Cinquefoil, may be now met with; it has pale yellow flowers, and leaves of silvery white under-surface, often growing on the borders of fields. *Lamium amplexicaule*, Henbit Dead-Nettle, has a small corolla finely painted with deep crimson, and stem leaves clasping, so as to be almost *connate*, or growing together where they meet the stem.

If you find a slender Stitchwort, reminding you of the common white *Stellaria*, but with much narrower segments of petals, and very slender stems and peduncles, it is *Stellaria graminea*, Grassy Stitchwort. Its stems are so thin that the star-like flowers sometimes seem as if floating in air, and unattached to any plant.

The Dwarf Mallow, *Malva rotundifolia*, Nat.

Ord. MALVACEÆ, is now in bloom ; its stem is decumbent, corolla very pale purple, has outer and inner sepals, the latter with stellate hairs. *M. sylvestris* will also be found during all the



MALLOW.

summer, bearing large purple flowers ; and after Midsummer there will be the pretty pink delicate tufts of bloom of *M. moschata*, Musk Mallow, growing in dry places and banks. The

carpels of these plants are set in a ring round a thick axis, and together present the form of a small cheese. The same structure marks the genus *Althæa*, of which *A. officinalis* is the Marsh Mallow, and *A. rosea* the Hollyhock so well known in gardens; also the Tree-Mallow, *Lavatera arborea*, which naturally prefers rocks near the sea, but is grown in inland gardens; it has a woody stem, and 7-angled plaited velvety leaves, with one large purplish rose-coloured flower on each stalk; height from 3 to 8 feet.

The MALVACEÆ belong to Linn. Cl. XVI., *Monadelphia*, of which they are a very fine example. There are numerous exotics in the Order, of which one must be mentioned, namely, *Gossypium* which includes the various species of cotton. *Gossypium barbadense* seems to be the species which produces the best cotton, which is the hair surrounding the seed. Under the microscope the hairs are seen to be twisted.





AMONG THE WILD FLOWERS.

XI.

OF the vast Family of the Grasses, Nat. Ord. GRAMINEÆ, Lindley enumerates 291 genera, including about 3,800 species. They are everywhere the prevalent herbage and dress of the earth ; but probably few persons have observed how much the aspect of a landscape is indebted to their presence, especially in respect of colour. Many of the fine tones and shades which exercise the keen discrimination of the artist are produced by the varieties of grass, and even by the different stages of the growth of the plants.

The number of species indigènous to these Islands of ours is about 140 ; of these our meadows and pastures contain only about 20, the remainder growing in various peculiar situations, and only 10 or 12 forming the or-

dinary constituents of a hay-field. The *Cereals*, or those species, British and Foreign, which are classed with corn, and produce grain used for food, are still fewer in number, there being only seven principal kinds, and of these only four are ordinarily grown by farmers. The four are Wheat, *Triticum*; Barley, *Hordeum*; Oat, *Avena*; Rye, *Secale*. The other three are Millet, *Panicum*; Rice, *Oryza*; and Maize, *Zea*. In dimensions the species differ greatly, from the dwarf stem an inch long, to the grass of tropical jungles in which the elephant is hidden, and the tree-like Bamboo, *Bambusa arundinacea*, which attains a height of 50 feet or more. The Pampas Grass, *Gynerium argenteum*, with its vegetable-silk spikes, reaches 10 feet. With only one exception the Gramineæ of our Flora have three stamens, and are therefore of Linn. Cl. III., *Triandria*. The exception is the sweet-scented Vernal Grass, *Anthoxanthum odoratum*, which has 2 stamens; this species, as it dries, gives the pleasant odour to the hay.

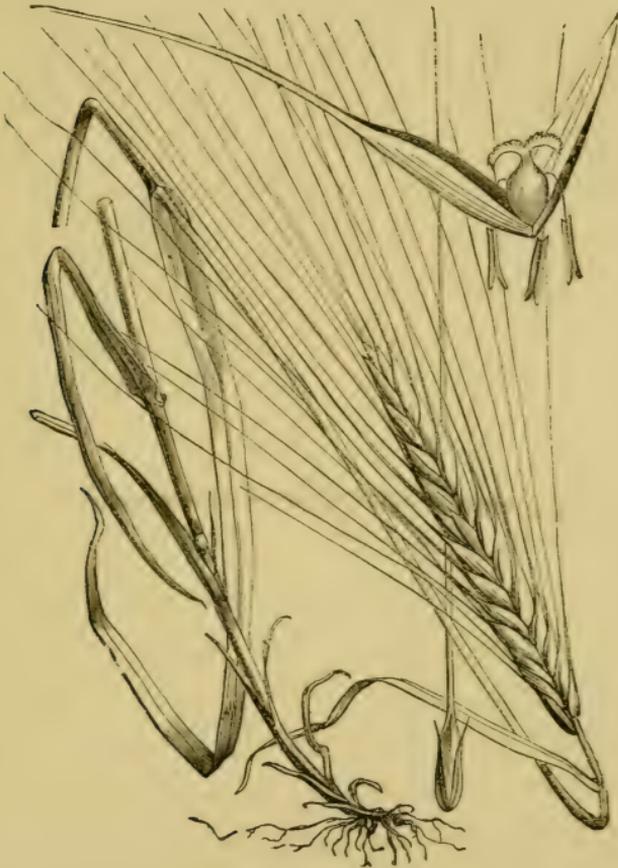
The Grasses are comprised in 12 Tribes, which again are included in two SUB-ORDERS: I., CLISANTHÆ, those with closed flowers; and II., EURYANTHÆ, in which the flowers are

open. This distinction is very observable in them, and assists much the study of these plants.

The student must carefully, from the first, distinguish the Grass from the *Carex*, or Sedge, which is a Monœcious plant, having on the same stem spikes which bear stamens only, and other spikes which have only pistils; whereas the flowers of grasses are perfect, having stamens and pistils both in the same flower. Of the *Carex* or Sedge family we have 70 species, growing in every sort of situation, and, very grass-like in appearance; it is therefore very necessary to distinguish them at once from grasses.

The Grass-Flowers frequently present much beauty, even of colour, under the microscope, though not in the same degree to the naked eye. Their structure is different from all other flowers. They are produced in the form of a spike, called a *panicle*, either more or less branched, or crowded and close. Each little stalk containing one or more flowers is called a *spikelet*. At the base of this spikelet are two narrow leaves, which may be likened to the bracts of other plants, and which are called

glumes. Within these glumes are two other bracts, often membranous, called *paleæ*, or pales, and which are, in fact, the chaff scales



BARLEY.

(*Spike and Flower.*)

that ultimately enclose the grain or seed, as in wheat, etc. Within these pales are the 3 stamens, and the germen, the latter usually

with two feathery styles; some foreign plants of the Gramineæ have 2 stamens, others 6. The filaments are often long, and hang out of the flower with the anthers suspended to them. To some of the glumes there is appended a bristle, long or short, sometimes knee'd and twisted, called an *awn*. This awn may be an extension of the tip of the glume, or of the pale; or it may spring from the base of the flower, or from the middle of the pale. It has hygrometric properties, and will bend at the knee or return to its position, according as the air is damp or dry.

The flowers of grasses are very sensitive to change of atmosphere, and to absence or presence of sunshine, closing or opening under the varying circumstances.

The earliest grass of the season, if we except *Poa annua*, is *Aira præcox*, whose short stems are very stiff and erect, and neatly jointed so as to be like a miniature bamboo; the panicle is very close, and the flowers are awned. The universal species is *Poa annua*, which takes speedy possession of every undisturbed plot of ground.

The species which form the hay-crops are

the following—*Anthoxanthum odoratum*, sweet-scented Vernal grass, panicle spike-like, dense, anthers purple in meadows, dull yellow in woods; *Poa trivialis* and *P. pratensis*, the rough-stemmed and smooth-stemmed Meadow grass, with diffuse panicle of green flowers, on tall erect stem; *Phleum pratense*, Cat's-tail with long closely packed cylindrical panicle, pale green, called also *Timothy Grass*; *Agrostis vulgaris* and *A. alba*, the common and the white, or pale, Bent Grass; both have spreading panicles with very numerous flowers, one upon each of the very slender stalks; *A. alba* becomes compact after flowering—that is, the spikelets close up together; *Trisetum flavescens*, Shining Yellow Oat Grass, a very beautiful species, the panicle at first green, but as it spreads out for flowering it displays a glittering yellow, which it retains permanently when dried for the herbarium; *Aira Cæspitosa*, Tufted Hair Grass, its large spreading panicles generally glossy, the tall stems crowded and numerous; *Arrhenatherum avenaceum*, Common Oat-like Grass, a long, much branched, but not spreading panicle, often 2 feet high; the base of the stem in damp or luxuriant soils

produces bulbs like small onions, which propagate the plant; in Ireland this grass is called *Pearl Grass*, certainly a misnomer; *Holcus lanatus*, soft Meadow Grass, its pale pink or green panicle spreading, and very conspicuous in the meadows, having an awn like a fish-hook in each flower; *Lolium perenne*, common Rye Grass; *Bromus mollis* and *B. erectus*, two Brome Grasses, the spikelet of the former like a large swollen Oat; the latter finely glossy, and presenting the structure of the open flower well to view; *Alopecurus pratensis*, Meadow Fox Tail, a dense cylindrical panicle, of dull grey-green colour, often covered with the protruded anthers; *Festuca ovina*, Sheep's Fescue, and *F. pratensis*, Meadow Fescue, often much branched, but very variable; *Dactylis glomerata*, Cock's Foot, a large coarse grass, panicle branches with ovate dense clusters of spikelets, the whole panicle somewhat like the claw of a large bird; *Hordeum pratense*, Meadow Barley Grass, easily recognised from its resemblance to Barley; *Cynosurus cristatus*, Dog's-Tail Grass; flowers produced in a spike-like raceme, and unilateral; the raceme is flat, and the *bract*, a small leafy

appendage at the base of each spikelet, is comb-like; *Briza media*, Quaking Grass, one of the most elegant of our species, panicle very light, and with very slender branches, on which are suspended the purplish ovate spikelets.

The twenty pasture grasses are here named; we may mention also *Melica nutans*, Wood Melic Grass, the ornament of our woods and shady banks, glumes purple, panicle a raceme, lax, drooping over the handsome broad recurved foliage; also *Brachypodium Sylvaticum*, Slender Brome Wheat, a tall slender drooping grass in shady places, with divided loose panicle, and long hairy leaves; and *Bromus Sterilis*, Barren Brome Grass, which clothes our banks and walls with its gracefully drooping panicles everywhere.

The only grass which has any injurious property is *Lolium temulentum*, the Bearded Darnel; it is called Tare, and grows among wheat, which it resembles; the grains, when eaten, have a slightly intoxicating effect.

Grasses are easily dried, and preserved for many years. The writer has a collection made 80 years ago, which came into his possession

by the kindness of a friend, and in which the specimens are in perfect preservation. But the power of distinguishing the genera and species can only be attained by careful observation with a microscope of moderate power.

Care should be taken to get the specimens both for study and for drying when they are in bloom, as they differ much in appearance in various stages of their growth; if gathered too soon the spike is not expanded, nor the structure of the flower duly developed; and, if the seed be ripening, the specimen, when gathered, may fall to pieces.





AMONG THE WILD FLOWERS.

XII

THE resemblance which, to a casual observer, many of the species of *Carex*, Sedge, bear to grasses, suggests that this genus and the Nat. Ord. CYPERACEÆ, to which they belong, should now be spoken of.

In some points the *Carices* have the same kind of structure as a grass. The roots of both are fibrous, the stems slender and straw-like, and the leaves long and narrow; but instead of the round, hollow, and jointed stem of the grass, the *Carex* has its stem usually triangular and solid, and seldom divided; it is also hard and coarse, and sharp at the edges, instead of being, like grass, soft and succulent.

These are not necessarily characteristics of other genera of the Cyperaceæ; but it is so with nearly all the 70 species of *Carex*.

In many of the most striking plants of this genus the male flowers compose a terminal and erect spike or catkin, covered, when in flower, with abundant brown or yellow anthers, whilst the females are placed in several other spikes below ; these fertile spikes are often of beautiful cylindrical form, and sometimes gracefully pendulous.

Most of the Order have neither corolla nor perianth, but simply a scale or glume, enclosing the stamens in the barren flowers, and the germens in the fertile ones. The fertile flowers of *Carex*, however, have also a bottle-shaped perianth completely enclosing the *nut*, as the germen of this flower is called. This formation is called the *fruit*, and in describing the various species it is usual to specify the shape of this fruit, as well as of the nut separately. Each spike, whether fertile or barren, has usually numerous flowers, consisting of scales or glumes, which are imbricate, *i.e.*, arranged one over the other like tiles on a roof, but upward instead of downward.

Although this description applies to all the Carices, yet there is so great variety in the general aspect of the various species that their

relation to one another is not easily recognised apart from really scientific observation. One species, and only one, *Carex dioica*, is dioecious, having the fertile spike on one plant, the barren one on another; three other species have only one spike, which has male flowers at the top and female below; twenty others have, in one and the same spike, spikelets with both male and female flowers; the spike is therefore called compound; in a few species the spikes are *panicled*, or branched; the remainder of the species have one or more terminal spikes wholly or partly male, others *axillary*—*i.e.*, produced between the stem, and the leaf or bract—and fertile.

The study of a few actual specimens will make these distinctions clear. Perhaps what has been said above respecting the stems and leaves of Carices and Grasses is the most decisive method of distinguishing the one from the other.

Some of the Carices are extremely handsome in respect of the graceful form of their spikes, especially those larger kinds which inhabit damp woods, growing several feet high. The two species found by river-sides, and in

ditches near rivers—viz., *C. ripifera*, with its black clusters of upright spikes, and *C. paludosa*, a similar but much more slender plant—are truly ornamental. *C. remota*, with its small roundish pale spikelets distant from each other, an elegant ornament of the brook-side, is a great contrast to these. *C. pallescens* has delicate pale spikes, the barren one rising from amidst the fertile ones at its base; it is a very pretty specimen. *C. sylvatica* has long pale green spikes dangling on extremely slender stalks. *C. ampullacea* displays handsome yellow-brown spikes in boggy places. Du Chaillu, in his account of the Arctic people, says that this species and *C. vesicaria* form the “Shoe-grass” of the Lapps, with which they protect their feet from cold. *C. paniculata* is a water-loving species, often several feet high, with large brown branched spikes; all these are interesting and elegant. *C. vulpina*, Great Sedge, is a robust plant, very frequent, two feet high, with coarse stiff spike of crowded compound green spikelets, and leaves so rough at the margin as to be dangerous to meddle with. *C. divulsa*, and *C. muricata*, two nearly allied species, common

on banks, grow in dense bunches of slender but strong stems, the spikelets small, and, in *divulsa*, very distant.

Several species have an interest from being very rare ; it may be impossible to determine some of the species without patient use of the microscope ; but the most common and striking ones may easily become familiar by a little friendly aid. It is one of the wonders of natural history that the *perianth* and *nut* of the 70 species of *Carex* have, in each of the various species, their own peculiar form, which does not vary, and can always be recognized by comparison with a well-drawn set of diagrams of the fruits of these plants.

There are 9 other genera of the CYPERACEÆ ; *Cyperus longus*, Galingale, is the one that gives name to the Order, and is an elegant and rare plant with large umbel of flowers and brownish-red glumes.

Several species of *Eleocharis*, Spike-rush, are frequent ; they grow in very wet places, have stems like the common Rush, *Juncus*, but instead of a panicle of flowers springing from below the summit of the stem, they have a solitary spike terminating it.

The Club-rush, *Scirpus*, is a more numerous genus, comprising 13 species, three of which are sometimes known by the name *Isolepis*; the individuals of this genus vary much in size and appearance, as will be evident by comparing with one another *Sc. lacustris*, the true Bulrush; *Sc. Setaceus*, the little bristle-stemmed plant, often seen in the greenhouse; *Sc. Maritimus*, with its large ovate reddish-brown spikes; and *Sc. sylvaticus*, a very handsome plant with a large very compound grey-green panicle or cyme, not unfrequent, and sometimes planted as an ornament to pools, where it grows by the side of the Bulrush, as unlike it as possible, though of the same genus; whilst hard by may be seen the tall stems of Reed-mace, *Typha*, terminated by very long cylindrical blackish-brown spikes, often doing duty in pictures as the Bulrushes amid which the infant Moses was concealed; and, again, the tall Reed, *Phragmites communis*, formerly *Arundo*, which is one of the Gramineæ.

Only one other genus of the CYPERACEÆ must have mention here, viz., *Eriophorum*, Cotton Grass, so called from the tufts or tassels of long bristles which ultimately sur-

round the fruit, and which, in *E. Polystachion*, are long, pendulous, and silky; in *E. Vaginatium* the bristles are upright, and so like a hare's tail as to have obtained for the plant the name of Hare's-Tail Cotton Grass.

The plants of this Nat. Order seem to have little utility beyond the conservation, by their creeping and binding roots, of the soil where they grow. Possibly the seeds, which are numerous, may be serviceable food for living things in the water as well as on land. Certainly many of the plants are very ornamental.

The celebrated Papyrus of the Nile, *P. antiquorum*, probably the plant called Bulrush in our English Bible, is one of this Order, and is a beautiful plant, with triangular stems 6 feet high, and large compound umbels of little green flowers.





AMONG THE WILD FLOWERS.

XIII.

WE must no longer delay some notice of the *Orchis* family, though their times of flowering extend from April to September. This family, Nat. Ord. ORCHIDACEÆ, is undoubtedly the most remarkable in the whole vegetable kingdom. There are probably about 6,000 species, of which we have only 42. The name, which is Greek, alludes to the tubers of the roots, especially those of the genus *Orchis*, whose plants have either *ovoid*, solid egg-shaped root-knobs, or *palmate* ones, *i.e.*, shaped like a hand.

The few which grow in the British Isles spring from the ground; but in tropical countries they perch themselves upon boughs, and in the crevices of trees, and are nourished, in that case, partly by the moist steamy atmos-

phere which surrounds them, and partly by the decayed matter adjacent to their roots. These tree-inhabiting Orchids are called *Epiphytes*, as distinguished from parasites. Many of the species have beautiful blooms of rich colours ; and whilst scarcely any of these blooms resemble those of other plants in appearance, many of them assume fantastic forms palpably resembling insects, birds, reptiles, quadrupeds, and even the human figure. Hence such names as Bee-Orchis, and those called after the fly, the lizard, the dove, the butterfly, and the wasp, etc. The Dove Orchis, *Peristeria elata*, has a large white flower containing in the centre a brooding dove ; another species is the Swan's-neck, *Cychnoches*, the neck-like portion being two inches long ; another presents the perfect similitude of a donkey's head, with its eyes and long ears.

In temperate countries—our own for instance—instead of the straggling growth elsewhere so frequent, the Orchids have spikes more or less dense, often resembling those of a hyacinth. The structure of the flower is wholly different from that of all others ; and from the peculiar position of the parts of fructification it bears

the name *Gynandria* in the Linnæan system, in which it forms Cl. XX., the stamens being actually placed upon the stigma, which is a viscid or glutinous space above the germen.

If you examine a spike of flowers—for example that of the common species *Orchis maculata*—you will observe that in each flower the corolla and the calyx, which are both of the same colour, are attached to the top of the germen, which has thus the appearance of being a flower-stalk, and is often, as in the genus *Orchis*, spirally twisted. There are three sepals which are *patent*, spreading out widely, and often coloured; two of them are the outer lateral leaves, and the remaining one is at the back of the flower. Within these are the two upper petals of the corolla, which converge, forming a sort of concave hood over the centre of the flower; the third petal projects in front as a lip, *labellum*, which is often divided into three lobes, and more or less streaked with purple; this petal is sometimes extended behind in a hollow tubular form which is called a spur. In our two species of the white Butterfly Orchis, *Habenaria bifolia* and *chlorantha*, this

spur is twice as long as the germen, and its presence helps at once to distinguish it from the genus *Cephalanthera*, of which the white flowers are sometimes mistaken for those of the Butterfly Orchis.

But the most remarkable feature is, that whereas the law of vegetable structure requires that there should be found in all the flowers of this Order *three* stamens, only one, the central one, is actually developed in them, the two on either side being abortive; there is, however, one exception, in the case of *Cypripedium*, Lady's Slipper, in whose solitary flowers the central stamen found in all our other Orchids is wanting, whilst the two lateral ones are present. Further it must be noticed that what we call the stamen in these flowers is simply an anther, which has its pollen-masses stalked, and sometimes enclosed in a pouch. Sometimes the stigma, which is a viscid space in front of the column or germen, is prolonged into a *rostellum*, so called, at the base of the anther-cells. The substance of this description may be simply, though less accurately, expressed by saying that the anther, constituting the stamen, is seated close upon the hollow of the tube of

the germen; and yet, notwithstanding this closely adjacent position of these organs of fructification, it has been shown by Mr. Darwin



ORCHID.

that most, if not all, of the British species of Orchids require the aid of insects to produce fertilization; and if moths and other insects

were not to visit these plants when in bloom, they would be sterile.

Our Orchid plants are comprised in five Tribes, which are distinguished chiefly by the peculiarities of the anther, and of the pollen. The principle genera are—*Orchis*, of which seven species are fairly common; *Aceras*, the Green-Man Orchis, only one species, the four-lobed lip of whose green flowers has two upper lobes very long, hanging down like human arms, the middle portion long and cleft so as to resemble legs; *Habenaria*, including the Frog Orchis, *H. viridis*, and the two species of Butterfly Orchis; the genus *Ophrys*, in which are included the Bee, the Fly, and the early and late Spider Orchis; *Herminium*, Musk Orchis, a tiny but interesting plant; three species of *Spiranthes*, Lady's Tresses; the Tway-blade, *Listera*, two species, of which one is only three to five inches high; the other, frequently met with, has two broad ovate leaves, and a stiff spike of green flowers; *Neottia Nidus-avis*, Bird's-nest Orchis, a curious plant, stem and flowers alike of a pale reddish-brown, leaves none, found in shady woods; four species of *Epipactis*, Helleborine, fine plants, with incon-

spicuous though curious flowers ; three species of *Cephalanthera*, the name pointing to the position of the anther at the head of the column in the flower ; and four rare genera, including *Cypripedium*, which, though reported to be extinct, is, in fact, still found in Yorkshire.

Most of the coloured species are capable of what is called the albino condition, in which their colour is exchanged for white. The writer has seen fields in Suffolk crowded with the early purple Orchis, *O. mascula*, in which the purple spikes were mingled with plentiful ones of a delicate white. The leaves of this species, mostly radical, are usually spotted, the spike lax, and centre of the lip whitish at the base, two outer sepals reflexed upwards. Its month is May. *O. maculata*, flowering in June, has also spotted leaves, but they are upon the stem, and diminish in size upwards till they become like bracts ; the spike is crowded with pale flowers variegated with purple, and is narrowed upwards. Two other species are distinguished from this : *O. latifolia*, with leaves broadest about their middle, and a hollow stem, whereas the stem of *maculata* is solid ; and *O. incarnata*, whose leaves are narrowed

from a broad base and hooded at the end, the stem also hollow. *O. morio*, the Green-winged Meadow Orchis, has a spike of only a few purple flowers, the petals marked with green veins. *O. ustulata*, the Brown (or burnt) topped Orchis, is a beautiful dwarf plant, with helmet of dark purple, and each lobe of its whitish lip decorated with a round crimson spot. Specimens have reached the author from the Isle of Wight; and it is abundant in Kent, on calcareous hills, and in dry open meadows. *O. pyramidalis* is much like a small rich-pink hyacinth, but its spike is distinctly pyramidal, this feature alone being sufficient to determine it; its lip, which has three equal lobes, has also two *tubercles* at its base above. *Listera cordata*, the small Tway-blade, is a pretty miniature of the larger species. *Ophrys apifera*, and *O. muscifera*, the Bee and Fly Orchids, are happily still frequent, and in their perfect resemblance to those insects, and their intrinsic beauty and singularity of appearance, equal any known specimen.





AMONG THE WILD FLOWERS.

XIV.

MIDSUMMER displays increasing richness of colour in the fields, especially previous to the entrance of the scythe. Even a grass field has its rich and varied tones ; but a crop of clover, purple or crimson, varied with white Lychnis, the Scarlet Poppy, and other plants, with dense tufts of grasses waving above them, is a glorious sight.

In such a crop there often appear also the brilliant blue spikes of *Echium vulgare*, Viper's Bugloss, which no flowers can exceed in beauty ; and they have the merit of lasting long, and continuing to open their buds when gathered and kept in water. The plant is one of the BORAGINACEÆ ; it is rough with hairs springing from a tubercle as their base ; the short lateral spikes of flowers are curled in bud like the

Scorpion Grass, *Myosotis*, and the corolla is at first reddish-pink, then changes to bright blue.

Lycopsis arvensis, the Small Bugloss, has a small blue flower, with white eye, somewhat crowded by surrounding leaves, the whole plant *hispid* with strong hairs rising from scaly tubercles. Hairs of this kind are very good objects for the microscope, when the leaves are mature and dry.

In the same Nat. Order is *Symphytum officinale*, Comfrey, by the river-sides and in cottage gardens, valued for medicinal purposes both for man and cattle. This has also a rough pubescence; the racemes of bloom are in pairs, and drooping.

In cornfields there is *Lithospermum arvense*, Corn Gromwell, flower small, white, nuts pale brown and pitted with little pores; and in dry, stony places *L. Officinale*, Common Gromwell, with greenish-yellow flowers, and grey, polished nuts; in both plants the leaves have adpressed bulbous hairs, but in *L. Officinale*, these are only on the upper surface. The flowers are somewhat like *Myosotis* in shape.

By waysides you will now find *Cynoglossum officinale*, Hound's-tongue, a downy dull green

plant, about 18 inches high, corolla dull pink, plant fetid, smelling like mice. *Myosotis Sylvatica* and *M. palustris*, the Poet's Forget-me-not, are now plentiful, the former in damp woods where the sun looks in; the latter will decorate the sides of streams and pools onward to the end of summer.

Possibly many of those who take an interest in flowers will have passed by without notice a plant rearing itself up from the interstices of old walls, with red stems, and presenting inconspicuous little clusters, *cymes*, of reddish minute flowers, consisting of perianths, and either stamens only, which are elastic, or pistils only, or both in the same flower. The flowers are thus either monœcious, diœcious, or, rarely, perfect, all on the same plant, and therefore belong to the Linn. Cl. XXIII., *Polygamia*, of which this peculiarity is the characteristic. The plant is *Parietaria diffusa*, or *officinalis*, Pellitory of the wall; it is of Nat. Ord. URTICACEÆ, which order includes also *Urtica*, the Stinging Nettle, and *Humulus*, the Hop. These two genera have either monœcious or diœcious flowers; the bristles of the plants of *Urtica* have a venomous juice which is intro-

duced into the wound they inflict. There is a stingless species—not, however, wild—*U. biloba*, having leaves nearly cleft in two, and marked with a handsome network. The ovoid catkins of *Humulus* are well known.

A very curious plant of this order met with in the greenhouse, resembling *Parietaria* in its flowers, is *Pilea muscosa*, the “Artillery Plant,” with very numerous leaves like Wild Thyme, and minute diœcious flowers. The English name refers to the effect of the elastic power of the filaments, which in straightening themselves cause the anthers to discharge their pollen in puffs, like smoke from a distant gun. This process may be quickened by sprinkling the plant with a little water.

Specimens of the COMPOSITÆ are now increasing in number: there is the common Hawk’s-beard, *Crepis virens*, a vigorous plant about 18 inches high, with numerous yellow flowers, stalked, and a circle of deeply cut runcinate leaves at the base; *C. paludosa*, the Marsh Hawk’s-beard, should also be found. Then there is *Apargia hispida*, Rough Hawk-bit, a plant somewhat similar to the yellow Cat’s-ear, *Hypochæris*, but has the leaves *hispid*, rough,

with forked hairs, and the heads drooping in bud. In cornfields, *Centaurea cyanus*, Corn Blue-bottle, displays its handsome blue flowers; and *C. Scabiosa*, Great Knap-weed, on borders of fields and banks, with large solitary purple flowers; also *C. Nigra*, Black Knap-weed, or Hard-heads, a purple flower, looking like a thistle, but not spinous, very common.

Lactuca muralis, sometimes called Prenanthes, Wall Lettuce, is a handsome plant with dark purplish stalks and leaves, and rather small flowers, each of which has five ray florets, and looks like a simple flower with five petals; it will grow on the driest wall; there are three other species.

The genus *Sonchus*, Sow-thistle, has four species, of which *S. arvensis*, Corn Sow-thistle, is the most common, displaying its white downy heads all too abundantly, and sowing itself widely. *Senecio sylvaticus* is a tall species of Groundsel, much branched at top, and bearing flowers with small revolute rays; it grows in dry heathy places. The viscid Groundsel, *S. viscosus*, may be also found, having leaves covered with *viscid*, sticky, glandular hairs.

There are five species of *Filago*, Cudweed;

F. germanica, Proliferous Cudweed, found in dry fields, is a very downy slender plant, stem ascending 4 to 12 inches, usually simple at first, afterwards producing from just below its summit two opposite erect branches, which are again proliferous in like manner. A botanist has described this plant as *herba impia*, the wicked plant, because the children rise above their parents! *F. minima* is another of these cottony plants; it is the Least Cudweed, frequent in gardens and dry places, 2 to 6 inches high. Both these plants were formerly called *Gnaphalium*. Of the genus *Gnaphalium*, there is a species found in woods and on heaths, from 3 to 24 inches high, with darker flower-heads; it is *G. Sylvaticum*. You may find, on walls and in dry places, *Erigeron acris*, Blue Fleabane, a plant about 6 to 12 inches high, with a small corymb of flowers yellowish in centre, the ray pale blue.

On river-sides the reddish-purple heads of *Eupatorium cannabinum*, Hemp-Agrimony, another of the COMPOSITÆ, will soon be seen; the plant is tall and handsome, having leaves with 3 to 5 deep segments, rather like the Horse-Chestnut, and downy. It mingles with the Comfrey and other waterside plants.



AMONG THE WILD FLOWERS.

XV.

THE UMBELLIFERÆ derive their name from the inflorescence, or mode of flowering, being in form of an *umbel*; that is, when many-stalked flowers spring from one point of a stem and reach about the same level. Very commonly there is a *partial* umbel at the end of each stalk of the principal or primary umbel; it is then termed a *compound* umbel.

This mode of producing the flowers is a constant peculiarity of this Nat. Order; but it is by no means the only one. Other very different plants have their inflorescence in form of the umbel; but in the Umbelliferæ there is a distinct form of flower and fruit which belongs to no other Order, and is an interesting study.

We have nearly seventy species comprised in about forty genera. Some of those best

known are the Wood Sanicle, *Sanicula Europæa*; Wild Celery, *Apium graveolens*; Goutweed, *Ægopodium Podagraria*, called in Sussex Ground Elder; the Caraway, *Carum Carui*; two species of Water-Parsnep, *Sium*; Fool's Parsley, *Æthusa Cynapium*, a poisonous weed, whose leaf causes it to be mistaken for Parsley that is not curled; Wild Parsnep, *Pastinaca Sativa*; the large Cow-Parsnep, or Hogweed, *Heracleum Sphondylium*; the Carrot, *Daucus Carota*; several species of Hedge-Parsley, *Torilis*; the curious little plant in cornfields, and among other crops, called Shepherd's Needle, *Scandix Pecten-veneris*; the Wild Chervil, *Anthriscus Sylvestris*; and Hemlock, *Conium maculatum*.

Nearly all the plants of the Order have pinnatifid leaves, divided and subdivided. The exceptions are *Hydrocotyle*, Penny-wort, which has a nearly circular, *peltate*, leaf attached to its stalk by the centre—a very rare form of leaf,—the Wood Sanicle, and several others.

There is often much beauty in the form of these plants, especially those which, like the Hemlock, have pinnatifid leaves, and numerous umbels of white, or nearly white, flowers; other-

wise they are not showy, and are effective chiefly in the general grouping of objects in nature's pictures.

The earliest species is *Anthriscus Sylvestris*, Wild Chervil, which makes its appearance in the early spring, and crowds the hedge-banks in most parts of the country with its large foliage and tall furrowed stems, surmounted by large umbels of white flowers. The leaves are collected for rabbits. This is a very good example of the Order, and as its fruit matures in summer, it may be as well to make it here an illustration of the Umbelliferous plants.

You will find at this time, then, in the banks, tall stems bearing umbels of capsules, something like pods, but each capsule consisting of two parts of the shape of a Caraway seed, which, when quite ripe, become brown and separate, each part being then suspended by its upper end from a slender stalk between the two. In the Caraway plant, what is called the *caraway-seed* is actually a *half-fruit* of the kind now described. This half-fruit is called a *carpel*, or *mericarp*; and a whole fruit consists of 2 carpels, which, in the earlier stage of growth, and until they get ripe, adhere closely

together by their inner surface or face, called the *commissure*. When ripe, each carpel shows 5 ridges upon its surface, besides which there



UMBELLIFER.

are often other *secondary* ridges between the primary ones ; and under the ridges, or in the spaces between them, are usually present receptacles called *vittæ*, or stripes, containing oil.

This oil gives the aromatic odour and property peculiar to most of the plants of this Order. The seed itself lies within this outer case, and is tasteless. The best method of observing the stripes is to cut through the mericarp horizontally, when the position of the oil-tubes, or vittæ, is seen by dark dots, from which the oil itself exudes. The entire fruit is called a *cremocarp*; each of the 2 seed-like valves into which it divides is a *mericarp*; the central column or stalk, from the divided parts of which the mericarps hang, is called the *carpophore*. This carpophore is also designated the *axis*.

This description is that of one of the most common forms of the fruit; there are various other shapes, but all following the same rule of structure. *Daucus*, Carrot, has the fruit prickly; the fruits of *Pastinaca* and *Heracleum* have a dilated flat margin; those of the Angelica Tribe are much compressed, with a double wing on each side; these variations, and the various position and number of the stripes and ridges, are the features which determine the different species.

There is another plant similar to the Wild Chervil, namely, *Chærophyllum temulentum*,

Rough Chervil, of a darker green hue, and slightly downy with soft hairs; it flowers later than the other Chervil, and has a round, solid, spotted stem, instead of a furrowed, hollow one, like that of *Anthriscus Sylvestris*. Its flowers may still be found, and may serve for an illustration of the inflorescence of an Umbellifer. On examination of the opened flower, it will be noticed that at the top of the carpel there is a sort of raised border, which is in fact the calyx, with 5 very minute teeth, sometimes scarcely perceptible. Two styles rise from a double fleshy disc, which is called the stylopode, which appears to be the dilated bases of the styles, and crowns the ovary. In *Scandix*, Shepherd's Needle, there is a long pointed beak, which ultimately becomes 2 inches long, projecting from the disc of the fruit. From below this stylopode proceed the 5 small petals, often unequal, frequently notched or lobed, and having the point curved inwards. The stamens also are five; hence these plants are placed in Class V. of Linnæus; the filaments are alternate with the petals, and curve inwards while young.

This minute and somewhat technical descrip-

tion of the umbelliferous plants is given, because the difference is so great in the aspect of the foliage of some of them, and consequently of their general appearance, that the only method of including the whole Family is thus to describe the flowers and fruit; compare, for example, the little peltate-leaved Hydrocotyle with the stately pinnatifid-leaved Hemlock, or Angelica; yet it is true that most of the British species of this Order do correspond closely. The leaf stalks are frequently dilated at the base, forming a sheath for young buds. The umbels vary from 1 to 12 inches across. One prodigious species, the Siberian Cow-Par-snep, the largest discovered, is found in gardens and shrubberies, its main stem rising from 8 to 15 feet, and the terminal umbels measuring more than a yard across. This is either *Heracleum giganteum* or *H. Sibiricum*.

The smaller divisions of the inflorescence of an Umbellifer are called *umbellules*; the stalks that support them are the *rays*; at the base of the rays there are often bracts, several of which together form an *involucrum*. The flowers are most commonly white; in a few cases yellow, and also pinkish.

The properties of the Umbelliferæ are of three kinds ; in one section a watery and acid matter is present, and the plants are then poisonous ; in another the secretion is milky and resinous, in which case they become stimulants ; when the juice is aromatic and oily, they are carminative and serviceable in connection with food or medicine.

Like the Grasses, these plants contribute much to the features of a landscape, especially in foreground.





AMONG THE WILD FLOWERS.

XVI.

THE Nat. Ord. SOLANACEÆ comprises, in our Flora, the two species of Nightshade, *Solanum*, together with the Henbane, the Thorn-apple, and the almost celebrated *Atropa Belladonna*, Deadly Nightshade.

There is also the straggling shrub often seen on cottage fronts, improperly called "Tea-tree"; it is the Willow-leaved Lycium, *L. Barbarum*, a production of Southern Europe; flowers star-like and purplish; its shoots are often many feet or even yards long.

The flowers of these plants are usually pentamerous, having their parts respectively in fives; they are frequently star-like, as in the two species of *Solanum*, Nightshade, and the Potato, which is a good example; but sometimes bell-shaped, as in *Atropa*, Deadly

Nightshade, and the Tobacco Plant, *Nicotiana Tabacum*. The anthers form a yellow cone in the centre, and there is usually a berry produced, but sometimes a capsule. This is one of the large and important families, distinguished for the beauty of its flowers, its often curious fruits, and the powerful and frequently deadly qualities of its juices.

In most hedges you will find *Solanum dulcamara*, Woody Nightshade, or Bitter-sweet, as the second name implies. Its flowers are violet-blue, rarely white or pink; the red berries are produced in elegant and tempting clusters. The other species, *S. nigrum*, has black berries but white flowers, is herbaceous, and grows on waste ground. This genus is entirely distinct from *Atropa Belladonna*, which grows in waste and stony places, usually near ruins. Its medicinal properties, under the name of Belladonna—the generic name *Atropa* will be recognized as alluding to that of one of the Fates who cut the thread of life—are very valuable; but as a poison its berries are very dangerous. One author,¹ relates that a

¹ *Mr. Leo. H. Grindon.*

lady friend of his, when a girl at school in Germany, had her life saved, after eating some, only by being enveloped in mustard poultice for 24 hours. A countryman had warned her, as he thought, by repeatedly calling out "*Schöne Frau!*" the German equivalent of the name *Bella-donna*; but the exclamation was regarded as a rustic compliment, and the real intention was not discovered until too late.

The Henbane, *Hyoscyamus niger*, is also a valuable medicinal plant; the whole plant is clammy, with a disagreeable odour; corolla about an inch across, yellowish, dark in the centre, with a network of purple. The capsules form a very long spike, and are *ventricose*, swollen at base, and opening with a lid. The Potato is a *Solanum*; and though so valuable for its tubers, formed on what are really underground stems, it yields from its leaves an extract which is strongly narcotic. The Tomato belongs to the same Nat. Order; so also does *Physalis Alkekengi*, which, from its globular scarlet fruit within its finally net-like calyx, is called Winter Cherry. The Petunia also belongs to this Order.

Several aquatic plants worthy of note be-

long to the TYPHACEÆ, named from *Typha*, Reedmace. The genus *Typha* has two species, *T. latifolia*, and *T. angustifolia*. The large broad-leaved one is the more common, ornamenting still water. The large brown club or mace terminating the flowering stem is monœcious, the upper portion being male, consisting of numerous yellowish anthers, and dying off; the lower female, consisting of innumerable minute ovaries, packed very closely together, and enveloped in tufts of brownish hairs, giving the whole a velvety appearance. This lower portion can be permanently preserved. In the smaller species, *T. Angustifolia*, the two parts of the flower-spike are separated by a portion of free stem.

The other genus is *Sparganium*, Bur-reed, of which there are 4 species; two only are common, *S. ramosum* and *S. simplex*; the distinction is that the stem of the former is branched above, and that of the latter, simple; they are both handsome plants, growing in water.

The Reed-mace, *Typha*, is often improperly called Bulrush, whereas the true Bulrush is *Scirpus lacustris*, the tall Rush growing in

rivers, whose dried stems are used for the seats of chairs, and for matting. The Bur-reed, *Sparganium*, is a bright green plant with broad leaves rising from the water, among which are panicles of dense globular heads of flowers, the male with white flaccid filaments; the female, below these, larger, and with firm, pointed, prominent ovaries. The leaves overtop the flowers; it is a handsome aquatic plant.

Our solitary species of *Verbena*, the Vervain, *V. officinalis*, is now in flower, almost always seen by the wayside. It forms the only example we have of Nat. Ord. VERBENACEÆ; it has an angular stem, and small, distant pale purple flowers; the stamens are either 4, and didynamous, or 2. The gay Garden Verbena comes from Buenos Ayres. The pretty Lantana and curious Clerodendron of the conservatory are of the same Nat. Order. The Lemon Verbena, *Aloysia*, is a native of Chili; its strong and delightful fragrance is caused by the presence of glands on the plant, which, when bruised, give forth the scent.

The Rush Family, *Juncus*, Nat. Ord. JUNCACEÆ, are not attractive plants, but differ much from other families by their rigid, unbranched

stems, and by the distinct *pith* in the stems, which is not the case in any other plants of the great Division of ENDOGENS¹ to which they belong. Some of the species have long radical leaves like the stems. Some have leafy stems, and some are wholly without leaves. We have about 20 species out of the 200 that are known. The flowers are in a panicle which bursts forth either from the end or side of the smooth stem. The Perianth is 6-leafed, its divisions resembling the glumes of a Grass. It is impossible to describe the various species without a technicality that would be useless except in presence of actual specimens.

¹ *All flowering plants are included in Two Great Divisions, —EXOGENS, which increase by addition of external layers; and ENDOGENS, which increase by the addition of new matter within.*





AMONG THE WILD FLOWERS.

XVII.

THE Linn. Class XVIII., *Polyadelphia*, is represented by only one genus, *Hypericum*, St. John's-wort, from which the Nat. Ord. HYPERICACEÆ is named. The flowers have their stamens, which are numerous, connected at the base in 3 or 4 sets.

In many of the plants the leaves have pellucid dots, as though punctured with a needle point. *H. perforatum* exhibits this peculiarity more than some of the other species; it is a very common plant. In wet places you will find *H. quadrangulum*, or *tetrapterum*, with a 4-angled stem. *H. elodes*, Marsh St. John's-wort, is a pretty plant found in spongy bogs, with reddish stalked glands on the sepals. *H. humifusum* is prostrate on the ground, sending out slender stems and small yellow flowers.

All the plants of this genus bear yellow flowers. *H. Androsænum*, Tutsan, is a handsome plant, often found in gardens, but truly wild in hilly districts, with broadly ovate leaves which have a strong aromatic smell; the berry is purplish black, somewhat resembling a coffee berry. *H. calycinum* is the large handsome flowered plant frequent in shrubberies, wild in the West of Ireland. In woods there is *H. hirsutum*, the Hairy Species, about 2 feet high, with downy stem and leaves, numerous bright yellow flowers, and bracts and segments of the calyx fringed with black glands. The handsomest of all, however, though a small plant, is the Upright St. John's-wort, *H. pulchrum*, well named "beautiful," the smooth heart-shaped leaves contrasting so well with the rich golden yellow flowers tipped with red in the bud, and having scarlet anthers.

There are several foreign shrubby species cultivated in gardens, where they are a pleasing ornament.

In many directions there will now be noticed plants bearing loose clusters of pale pink flowers on stems varying from 6 inches to 5 feet in height. These are several kinds of

Willow Herb, *Epilobium*, of which genus 13 species are recorded.

The aspect of the plants is peculiar, owing to the long linear capsules below the corolla, having the appearance of *peduncles*, or flower stalks. These capsules, or ovaries, are often 2 inches long; they are pliant, and, when ripe, open at the summit by 4 valves, which curve outwards, and discharge abundance of seeds with white silky down attached.

The smaller species, commonly met with, are *E. parviflorum*, small-flowered W. H., with woolly stem and downy leaves; *E. montanum*, broad-leafed W. H., with shortly-stalked leaves of which the edges and veins are pubescent; *E. roseum*, pale Rose W. H., with stalked ovate serrulate leaves acute at both ends, more rare; *E. tetragonum*, Square-stalked W. H., a common species, with leaves strap-shaped, much *denticulate*, minutely toothed, and stem with several raised lines, usually much branched; *E. palustre*, Round-stalked Marsh W. H., leaves narrowly lanceolate from a wedge-shaped base, stem often with two rows of down. There are also the larger species, *E. hirsutum*, Great Hairy W. H., the handsome tall downy plant

with leafy clusters of large rose-coloured flowers, so abundant in watery places, and on banks of rivers, forming a great feature of our English Summer Flora, with clasping leaves, and round woolly glandular stem; and *E. angustifolium*, Rose-bay W. H., a plant comparatively rare, found on damp borders of woods, 3 to 6 feet high, with long terminal racemes of rich crimson flowers, and lanceolate, veined, and *glabrous*, smooth, leaves, stem also glabrous and reddish; it is frequently cultivated in gardens.

The genus *Epilobium* is of Linn. Cl. *Octandria*, and of Nat. Ord. ONAGRACEÆ, sometimes called the Fuchsia Family; and there are some points of resemblance between the flowers of *Epilobium*, especially in the two larger species last named, and the Fuchsia flower.

Ænothera, Evening Primrose, two species, scarcely indigenous to this country, belongs to the same Nat. Order; also *Isnardia palustris*, the very rare plant formerly found at Petersfield, in Hampshire, and also in Sussex, named after d'Isnard, a French Botanist; and the two species of *Circæa*, Enchanter's Nightshade, one of which, *C. lutetiana*, is common in woods, and bears a raceme of whitish flowers with 2

petals, 2 stamens, and a 2-limbed calyx; the germen is clothed with white hooked bristles.

The oldest Fuchsia is said to have been brought from Chili in 1788; others, including *F. fulgens*, from Mexico. Those species of *Ænothera* known as "Evening Primroses" open their flowers only when the sun declines, and are in perfection about 8 or 9 p.m. A very fine old perennial garden species, now too seldom seen, is *Æn. macrocarpa*, with yellow flowers fully 4 inches across.

The well-known Clarkias also belong to the Onagraceæ.

There is a limited Nat. Ord., HALORAGACEÆ, which includes *Hippuris*, Mare's-Tail, a plant which presents the simplest known condition of a flower, having only one stamen and one carpel, no petals, and a calyx of the smallest possible size; it is therefore of Linn. Cl. I., *Monandria*.

There is no alliance between this plant and the Horse-tail, *Equisetum*, which is one of the Cryptogamous plants, Linn. Cl. XXIV., in which there are no visible flowers. It is true the *Hippuris* resembles a leafy stem of *Equisetum*, which is cane-like, with circles of green

branches springing from the joints ; but the linear, entire leaves of Hippuris, in crowded whorls over nearly the whole stem, with the sessile ovary, or germen, and single stamen conspicuous for its redness, at once distinguish it. It is not common, but the writer once saw an extensive bed of it rising from the quiet intercepted water of a stream in Bucks.

The only other plants of this Order are those of the genus *Myriophyllum*, Water Milfoil, handsome plants, but entirely submerged, except when the flowering spike rises above the water. The leaves are numerous, in whorls, and divided into *setaceous*, bristle-like, segments, and there are in *M. verticillatum*, *pectinate*, comb-like, bracts. The flowers are monœcious ; in the male flowers are 4 petals ; the petals in the female flowers are very minute. The other species are *M. spicatum* and *M. alterniflorum*, with the sterile flowers alternate, the fertile ones about 3 together. These two species are more or less common ; *M. verticillatum* is rare.





AMONG THE WILD FLOWERS.

XVIII.

WE have two plants bearing the name of "Bryony," but each of a distinct genus, and belonging respectively to different Nat. Orders. In each case also the plant is the only representative in our Flora of the Nat. Order to which it belongs. Both plants are common, and their growth in our hedges is very handsome; both also are diœcious, and the berries of the fertile plants in both are red; yet one of them, *Tamus communis*, is called Black Bryony, from its roots being externally black; the other, *Bryonia dioica*, is called, in Babington's Manual, Red Bryony.

Tamus belongs to Nat. Ord. DIOSCOREACEÆ, named from the foreign genus, Dioscorea, several species of which produce the tubers called "Yams," in warm countries used like the

potato. It twines its long stems about the nearest object, sometimes dangling in handsome festoons, crowded with shining leaves which are *cordate*, heart-shaped, acute, and undivided. The racemes of male flowers are very delicate, of a pale yellowish green colour, and longer than the leaves; there are 6 stamens in each flower. The clusters of flowers on the female plant are shorter, and the leaves usually smaller; the stigmas are 3 in number.

In greenhouses are various species of *Dioscorea*, and a very singular plant of this Order called "Elephant's-foot," *Testudinaria Elephantiipes*, which presents a huge tuber divided into compartments on the surface, like the shell of a tortoise, this being, in fact, a thickened compressed stem, which sends forth slender branches.

Bryonia is at once distinguished from *Tamus* by its palmate leaves resembling those of the vine, and having a rough surface on both sides. The plant spreads more widely than *Tamus*; the flowers are much larger, and in clusters of only 3 to 6; its male flowers have 5 stamens. Although in Manuals of the Linnæan System *Bryonia* is placed in Cl. XXI., *Monœcia*, the

male and female flowers are almost always on separate plants, as the specific name "dioica" implies. Another plant is mentioned by Babington under the name *B. alba*, said to be monœcious, and to have black fruit.

Bryonia dioica belongs to the Nat. Ord. CUCURBITACEÆ, the Cucumber family, which have their home chiefly in the Tropics. The familiar genera are the Cucumber, *Cucumis Sativus*, the Vegetable Marrow, *Cucurbita ovifera*, and the Pumpkin, Melon, and Gourd. Their natural habit is to climb by means of their strong tendrils, which in their cultivated state often seem useless, as the stems lie on the ground.

We have now reached the season when our peaty commons and hill-sides are purpled over with Heather, a name which may be taken to include several of the most common of the Heath Family, Nat. Ord. ERICACEÆ. The most abundant of these is *Erica cinerea*, Fine-leaved Heath, which bears its purple flowers in dense whorled racemes, the leaves 3 in a whorl. The flowers are so dry that, even when fresh, they rustle as if withered. Mingled with this, and much less plentiful, is

E. Tetralix, Cross-leafed Heath, leaves 4 in a whorl, flowers rose-coloured, of a waxen look, delicately shaded, growing in an umbellate head.

There are four other species which are distinctively local, as *E. vagans*, in Cornwall, and others in Ireland. The Ling, of which brooms are made, is *Calluna vulgaris*; its long racemes of pretty pale lilac-coloured flowers end in a leafy shoot. The flowers of these plants have 8 stamens. *Arctostaphylos Uva-ursi*, Red Bear-berry, has 10 stamens; the leaves are obovate, thick, and evergreen, the flowers pale rose or white, in short terminal clusters; the plant is found on mountain heaths. *Andromeda polifolia*, Marsh Andromeda, is a pretty native of peat bogs, with drooping clusters of pink flowers, usually with 10 stamens. *Menziesia polifolia*, a West of Ireland plant, is common in gardens. This is the Connemara or St. Dabeoc's Heath, *Dabeocia polifolia*.

The several species of *Pyrola* are also among the Ericaceæ; and also the genus *Vaccinium*, of which we must distinguish *V. Myrtillus*, the Bilberry, leaves ovate, serrate, flowers solitary, greenish tinged with red, and stem angular;

V. Uliginosum, Bog Whortleberry, leaves ovate, entire, flowers several together, flesh-coloured,—both these species having anthers with 2 horns at the back, and ripening black berries; *V. vitis-idaea*, Red Whortleberry, Cowberry, leaves dotted beneath, and margins revolute like box, flowers pink and berries red, the berries sometimes made to do duty for Cranberries; and *V. Oxycoccus*, Cranberry, with creeping, thread-like stems, bright rose-coloured flowers, corolla remarkably reflexed, and crimson berries.

There are many very beautiful plants of this Order, including the superb Rhododendrons and Azaleas. About 450 of the true Heaths belong to the Cape of Good Hope; in America there is not a single *Erica*, though *Calluna*, Ling, is found.

The handsome plants of the genus *Verbascum*, Mullein, may vie with any foreign production. The Nat. Ord. is SCROPHULARIACEÆ, the Foxglove Family, of which family we have already described several members. The Mullains are tall plants with long spikes of flowers, yellow or whitish, often densely crowded, corolla *rotate*, *i.e.*, having a short tube and spread-

ing limb, the stamens with white or purple hairs on the filaments.

The most common species are *V. Thapsus*,



FOXGLOVE.

Great Mullein, a densely woolly plant, with pale yellow flowers, and leaves strongly *decurrent*, clasping the stem in their lower portion; *V. nigrum*, Dark Mullein, in contrast as

to its foliage with the last named, having very little down, sending up numerous handsome spikes of yellow flowers. More rare species are *V. virgatum*, Branched Mullein, with large handsome yellow flowers, and purple hairs on the filaments; and *V. pulverulentum*, or *floccosum*, Hoary Mullein; the writer has been fortunate enough to find each of these last two species once, but only once in each case. The Hoary Mullein is a very remarkable plant, covered in every part with a mealy loose, deciduous wool. It is probably peculiar to Norfolk and Suffolk.

Among the SCROPHULARIACEÆ in these weeks of summer are seen *Linaria vulgaris*, Yellow Toad-flax, somewhat like a Snap-dragon, having the form of flower called "personate" or mouth-like, the flowers numerous in terminal spikes; two species of *Antirrhinum*, *A. majus*, on garden walls, and *A. orontium*, in dry waste places and cornfields; in running water there are the tall stems of *Veronica Anagallis*, Great Water Speedwell, with long axillary racemes of small purplish flowers; and, notably in West Sussex, the naturalized American *Mimulus luteus*, on the river banks. There is plenty

of the common yellow Cow Wheat, *Melampyrum pratense*, in our woods and thickets; and I have specimens of the curious *M. arvense*, with its rose-purple bracts and flowers varied with yellow and purple, from the Isle of Wight.

The common scented Musk-plant is *Minulus moschatus*, a native of California. The Yellow Foxglove, *Digitalis lutea*, is found in gardens, introduced. Calceolarias also belong to this Order.

THE PURPLE HEATHER.

Written among the Donegal Mountains.

Lo! the glorious purple Heather,
Like a myriad host together,
Trooping o'er the mountain side;
Warmer glowing where are seen
Tracts inlaid of living green,
All the latest Summer's pride.

Was it joy when flowers were strewing,
'Neath the breath of Spring's renewing,
All the pleasant glen together?
Passed are primroses and bell,
Violet we loved so well—
Nought is now but purple Heather!

'Tis our mountain's evening dressing,
Darksome night upon us pressing,
Wintry gloom and brooding storm;



AMONG THE WILD FLOWERS.

XIX.

THE small family which contains the Teasel, *Dipsacus*, hence named DIPSACACEÆ, has only two other British genera. The large Wild Teasel, *Dipsacus sylvestris*, is a decided ornament where it grows. The genus is remarkable for the *spinous scales* proceeding from the receptacle, the ends of which are straight in *D. sylvestris*, but in *D. Fullonum*, Fuller's Teasel, they are hooked, and have been made serviceable for dressing cloth; this last plant is not native.

One other species, rarely met with, but recently gathered by the writer near Arundel, is *D. pilosus*, Shepherd's Rod, a tall plant, with small, globose heads of white flowers, and stalked leaves, having a leaflet on either side of the base,—in all these particulars differing from

D. Sylvestris. In several counties where D. Fullonum is cultivated, it is found half wild on banks.

The Field Scabious, *Knautia arvensis*, has large and beautiful heads of delicate pale purple flowers often decorating the borders of fields and waysides; the outer flowers of the head are much larger than the central ones; the leaves well exhibit the gradual change, on the same plant, from undivided to pinnatifid, and even *pectinate*, comb-like, leaves. *Scabiosa succisa*, Devil's-bit Scabious, is a smaller plant with deep blue flowers in a globose head, and leaves mostly entire; the root is abrupt at the lower end, as though part were bitten away, whence, an old author says, it is reported "that the divel did bite it for envie, because it is an herbe that hath so many good vertues."

In gardens the beautiful *Scabiosa atropurpurea*, a tall plant with heads of rich claret-brown flowers, is commonly seen.

An interesting Leguminous plant is brought to me, distinguished by Babington as *vicia gracilis*, regarded by some authors as only a variety of *V. tetrasperma*, but, no doubt, a distinct species; it is much more slender than

V. tetrasperma, and has from 5 to 8 seeds and larger flowers.

I observe in a lane near the base of Bepton Down, in Sussex, a continuous growth, all along the fence, of *Lathyrus Sylvestris*, Everlasting Pea, its flowers varied with greenish-yellow and purple. This plant is to be distinguished from *L. latifolius*, which has broadly elliptical leaves and bright rose-coloured flowers, a very doubtful native, but frequently seen on trellis-work and in gardens. The leaves of *L. Sylvestris* are *gladiate*, long and narrow like a sword-blade. *Lathyrus Aphaca*, the Yellow Vetchling, belongs to the South, but is rare; it is a very peculiar plant, remarkable for the absence of leaves which are substituted by the *stipules*, which are leaflike appendages at the base of the *petiole* or flower-stalk; in *L. Aphaca* the petiole itself forms a tendril.

The Melilot, *Melilotus officinalis*, now displays its pretty racemes of yellow flowers on stems about 18 inches high; there is also *M. parviflora*, with very small flowers, and *M. alba* with white ones. The curious pods of *Medicago*, Medick, may be looked for; we have 7 species, several of which have *spiral* pods, and

several have pods edged with spines ; most of the specimens have yellow flowers, but those of *M. Sativa*, Lucerne, are more commonly violet. The two species of *Ononis*, Rest-harrow, may be distinguished by the comparative length of the pod and calyx ; the calyx is longer than the pod in *O. arvensis*, and the plant has no spines ; in *O. Campestris*, the pods exceed the calyx in length, and the plant is usually spinous.

The appearance in bloom, in watery places, of some of the genus *Mentha*, Mint, suggests the mention of several more of the Nat. Ord. LABIATÆ, to which this genus belongs.

The more common species of *Mentha* are, *M. Sylvestris*, Horse Mint ; *M. Sativa*, Whorled Hairy Mint ; and *M. Arvensis*, Corn Mint ; all of which have the flowers in whorls ; *M. Aquatica*, Capitata Mint, has the flowers collected in terminal and axillary clusters rather than whorls ; this is the *M. hirsuta* of some manuals. The Penny Royal of gardens is our native *M. Pulegium*.

The more rare plants are, Spear Mint, *M. viridis*, of very ancient cultivation ; Peppermint, *M. piperita*, scarcely a native ; and two or three others.

A well-marked variety of *M. Aquatica* has been called Bergamot Mint; *Monarda didyma* (called in this country Bergamot) bears dense



LABIATE FLOWER.

(Sage Family.)

terminal whorls of long crimson flowers, making a fine show in the garden.

This may be the best place to give a list of

those Labiates, all of them aromatic herbs, which are cultivated in the kitchen garden :— Sage, *Salvia officinalis*; Spear Mint, Peppermint, Bergamot, Penny Royal; Marjoram, *Origanum*; several varieties of Thyme, *Thymus*; Balm, *Melissa officinalis*; Savory, *Satureja montana*; two species of Basil, *Ocimum*; White Horehound, *Marrubium vulgare*; Rosemary, *Rosmarinus officinalis*; and Lavender, *Lavandula spica*.

We have 3 native species of *Salvia*, Sage; the most common is *S. Verbenaca*, English Clary; the flowers of *S. pratensis* are of a fine blue colour. Of the genus *Calamintha*, the most frequent of our 5 species are *C. acinos*, Basil, a small Thyme-like plant with blue-purple flowers, which have a white spot on the lip; and *C. Clinopodium*, Wild Basil, very common, its *setaceous*, hair-like, bracts giving it a hairy appearance; the corollas are pink. *Nepeta Cataria*, Cat Mint, is a handsome plant, but rare, producing tall spikes of white flowers minutely dotted with crimson, all the plant more or less pubescent.

Very common in most hedge-banks is the coarse plant *Ballota fœtida*, Horehound, flowers

purple; some give this as *B. nigra*. *Lycopus Europæus*, Gipsy-wort, is a tenant of the banks of streams and ditches, about 2 feet high, leaves wrinkled and deeply serrate, flowers pale in dense whorls. It should be observed that the flowers of *Lycopus* and *Salvia* have only 2 perfect stamens, which fact removes them to the Linn. Cl. II., *Diandria*. They are, however, distinctly Labiates as to their structure, the missing pair of stamens being only imperfect or abortive.

The two species of *Scutellaria*, Skull-cap, *S. galericulata*, and *S. minor* must be noticed; the former has pairs of large blue flowers in the axils of the leaves, and *secund*, pointing all one way; it loves wet ditch-banks and borders of ponds, etc.; the latter has similar pairs of small pink flowers; the calyx of both these plants is in shape like a helmet.

Four species of *Stachys* are common,—*S. sylvatica*, Hedge Woundwort, with dull purplish-red flowers, variegated with white; *S. palustris*, Marsh Woundwort, a much brighter looking plant, with numerous light purple flowers, and narrow long leaves; *S. arvensis*, Cornfield Woundwort, altogether a smaller plant, calyx-

teeth awned, and the nuts having dots and tubercles : and *S. Betonica*, Wood Betony, or *Betonica officinalis*, with several distant whorls of dull purple flowers, the upper ones usually much crowded.

A very curious plant of the genus *Ajuga* is *A. Chamæpitys*, Ground-Pine, only 3 to 6 inches high, with solitary axillary yellow flowers half concealed among many small branches, and many leaves divided into long linear segments, altogether seeming like a miniature Pine-tree. I collected it in Surrey a few years ago.

This notice of the LABIATÆ may be concluded with mention of *Teucrium Scorodonia*, Wood Sage or Germander, which has lateral racemes of pale yellowish flowers, and the strong smell of hops, for which it has sometimes been used ; there are several other species of *Teucrium*.





AMONG THE WILD FLOWERS.

XX.

THE CAMPANULACEÆ comprise several genera besides *Campanula*, of which genus we have 7 species. *C. glomerata*, Clustered Bell-flower, has deep blue sessile flowers, forming dense clusters; *C. latifolia*, Giant Bell-flower, is 3 to 4 feet high, with very large flowers; *C. Trachelium*, Nettle-leaved Bell-flower, is smaller, and found chiefly in the South; *C. rapunculoides*, styled Creeping Bell-flower, is rare; its flowers are unilateral in a terminal cluster. Some authors place in this genus *Specularia* and *Wahlenbergia*, but they are separated by Mr. Babington. The latter plant, Ivy-leaved Bell-flower, has a filiform prostrate stem, and is a charmingly delicate plant; it inhabits peaty places in the South and West.

C. rotundifolia is our universal *Hair-bell*;

its first leaves are roundish cordate or reniform, afterwards dying off, so that there are only the linear leaves of the stem left. This is the Blue-bell of Scotland.

Shaped like a *Campanula* as to the lower portion of its flower, but with corolla in long linear segments, is the pretty blue Sheep's Scabious, *Fasione montana*, growing in a rounded head, almost like a Composite Flower; Linnæus actually, but erroneously, classed it with the *Compositæ*. It has also its anthers united in a tube; but by other characters is marked as one of the *Campanulaceæ*.

This Order has also the genus *Lobelia*, of which the species *L. Dortmanna* is submerged in water, springing from the gravelly bottom of lakes, and at length putting forth just above the surface a raceme of pale lilac flowers. The writer once gathered it in Shropshire, kneeling by a lake side on a bed of wet moss net-worked with the trailing stems of the pretty Cranberry.

Many are the cultivated species of *Campanula*, none more beautiful than the well-known *C. pyramidalis*. The blue and red garden *Lobelias* are familiar to all.

Several Parasitical plants now present them-

selves for description. It has been already mentioned that plants which grow upon others without any attachment to the soil, but chiefly deriving their sustenance from the atmosphere, as in the case of many of the tropical Orchids, are called EPIPHYTES. These plants, when they grow upon the surface of trees, probably feed upon some of the decaying portions of the bark, but not upon the trees themselves; they are virtually *air-plants*. Those plants, on the other hand, which are called PARASITES, as deriving their food from others, actually prey upon the plant to which they are attached.

Not only are Fungi and many other Cryptogamic plants parasitic, but a certain number also of flowering plants are to be classed among these "vegetable thieves," as they have been termed. There are two kinds of them; first, those plants which are of a brownish colour, and have scales instead of leaves; and secondly, those which are of a green colour, and produce leaves. To the former belong, in our Flora, *Orobanche*, Broom-rape; *Lathræa*, Tooth Wort; and *Cuscuta*, Dodder. *Viscum*, the Mistletoe, is an example of the second kind; also *Thesium*. *Euphrasia* and *Melampyrum* are

also mentioned as being parasitic, but proof seems wanting.

Orobanche gives name to the Nat. Ord. OROBANCHACEÆ; the genus has 8 or 10 species,



MISTLETOE.

of which the common ones are *O. rapum*, or *major*, and *O. minor*, the Greater, and the Smaller Broom-rape, the name given on account of the ravages which the plants commit upon the others on which they feed.

The Broom-rapes feed upon Broom, Furze, Hazel, Thyme, Ivy, Clover, and several species of them upon other selected plants. They have no green colour, but are simply stems bearing spikes of flowers of dull colour, combining dingy purple, pale yellow, and brown, mingled indistinctly, and at length changing to a rusty brown. The flowers are didynamous, Linn., Cl. XIV. The seeds of such parasites seem to lie in the ground until they come into contact with the plant on which they feed, and then begin to vegetate. Very many of them occur among the clover, where they feed luxuriously; whoever gathers one of the larger spikes will observe how considerable a plant is being supported in this way so injurious to the proper crop. The farmer's remedy would be to weed them out before they ripen their seed; indeed, as soon as they can be plucked.

The Orobanchaceæ include also the Toothwort, *Lathræa Squamaria*, a very curious specimen, parasitic upon Hazel, resembling a spike of several rows of large yellowish-white teeth affixed to a stem of the same colour. Once only, many years ago, in Cheshire, the writer gathered it, made a drawing of it in

colour, and dried it, when, as anticipated, it turned black.

The Dodder genus, *Cuscuta*, also parasites, are of Nat. Ord. CONVULVACEÆ. On a large scale the twining stems of *Convolvulus Sepium*, Great Hedge Bindweed, with their white bell-shaped flowers, are not wanting in resemblance to the Didders with their stems attached to their favourite but doomed plants, and their little Convolvulus-like flowers; the resemblance ceases in the other two species of *Convolvulus*, *C. arvensis*, which has often prostrate stems, and flowers beautifully variegated with pink and white; and *C. soldanella*, the Sea Bindweed, which has a short decumbent stem, and a handsome pink flower with yellow bands. We may add respecting *C. sepium*, though not a Parasite, that if unchecked in its growth, it threatens to exterminate other plants, by the multiplied development of its underground stems, and its strangling clasp of everything round which it twines.

The only other plants of this Order are the *Didders*, of which we have 3 native species, and two others, the Flax Dodder and the Lucerne Dodder, introduced. It is the habit

of these singular plants to germinate in the soil adjacent to the plant on which they feed, and as soon as their thread-like stems can attach themselves to it, which they do by small tubercles, they leave the soil, and in due time put forth clusters of small whitish waxen-looking flowers, remarkable for scales inside the tube. Large portions of Clover crops are sometimes completely destroyed by the ravages of *Cuscuta trifolia*, Clover Dodder; *C. Epithymum* is not unfrequent on Ling as well as on Thyme and other shrubby plants. The stems of the Didders become numerous, and form a tangled mass, so as almost to conceal their victim.





AMONG THE WILD FLOWERS.

XXI.

OUR attention has hitherto been given to Flowering Plants, including not only those which have conspicuous and showy flowers, but those also whose corolla is scarcely distinguishable from the calyx owing either to its minuteness or its resemblance in colour, and those in which the corolla is wholly wanting; the fact being that the essential character of a flowering plant is that it should have visible organs of fructification,—the calyx and corolla not being essential.

Plants of this kind, with or without the ornament and protection of calyx or corolla, embrace the great majority of the Vegetable Kingdom, and form one of the *Two Great Divisions* in which the entire catalogue of

vegetable productions is comprehended. They are called PHANEROGAMOUS Plants,—those in which the essential parts of a flower are produced and are visible.

The other Great Division contains what are called CRYPTOGAMOUS Plants,—those which have no visible flowers, and in which the parts of fructification are concealed, and invisible to all ordinary observation.

Of the latter class it is proposed now to speak. In the Linnæan system they form Class XXIV., *Cryptogamia*. Though they have no true flower with stamens and pistils, yet they are capable of producing a vast quantity of the germinating bodies called *spores*, whence it comes that they appear in great abundance in situations favourable to their production; and although flowerless, they contribute probably more than any other plants to beauty and ornament, in their endless variety of form, and multiplicity of shades of green and brown. They are the very artists of the prettiest bits of nature, and sometimes the painters, on a grand scale, of vast tracts; compare the shady nook in which the Fern makes its home with the “Red Snow” of the Alps, both alike

Cryptogams. Many thousand species are microscopic.

The whole Class contains the following ORDERS : Equisetaceæ, the Horse-tail Family ; Filices, Ferns ; Marsileaceæ, the Pepperworts, or Pill-worts ; Lycopodiaceæ, the Club-moss family ; Musci, Mosses ; Hepaticæ, Liverworts ; Lichenes, the Lichen family ; Fungi, the Mushroom family ; Algæ, Seaweeds ; and the Characeæ. There is only one genus of the Equisetaceæ, *Equisetum*, Horse-tail ; the plants consist of green stems, more or less branched, with no true leaves, jointed and cane-like in appearance, the joints being concealed by a toothed sheath. They always inhabit damp places, several species growing in the water.

The fructification is produced in a terminal spike or cone of a light-brown colour, which consists of a number of *peltate*, shield-shaped, and many-angled scales arranged in whorls. Under these scales are the *Thecæ*, urn-like vessels full of innumerable greenish *spores*, which they discharge when ripe, and which will float like dust in the air. The spores are very curious ; they will be seen under the microscope to consist each of a globular cell, with four fila-

ments at the base of it, each filament club-shaped at the end, and all four at first clasping the spore, but, in a dry atmosphere, spreading themselves out. On breathing upon them the moisture of the breath causes them again to curl up, closing round the spore; when dry again, they again uncurl; and this hygrometric property is retained for years.

We have 9 or 10 species, of which the most common and abundant are those which grow in pools and slow streams, often like a dense crop of green canes; these are the Marsh Horse-tail, *E. palustre*, and the Smooth Horse-tail, or "Paddock Pipes," *E. limosum*. *E. arvense*, the common Field Horse-tail, produces its fertile stems early in spring, about 6 or 8 inches high, and its much-branched barren ones later. *E. sylvaticum* is found in beds on the damp borders of woods; it is a beautiful specimen, having many whorls of slender deflexed branches, and delicate russet-brown sheaths, which together give to a bed of this pretty plant the appearance of a forest of miniature larch trees. Probably it cannot be looked for in the South; in more Northern Counties and in the North of Ireland I have seen it in great beauty. The

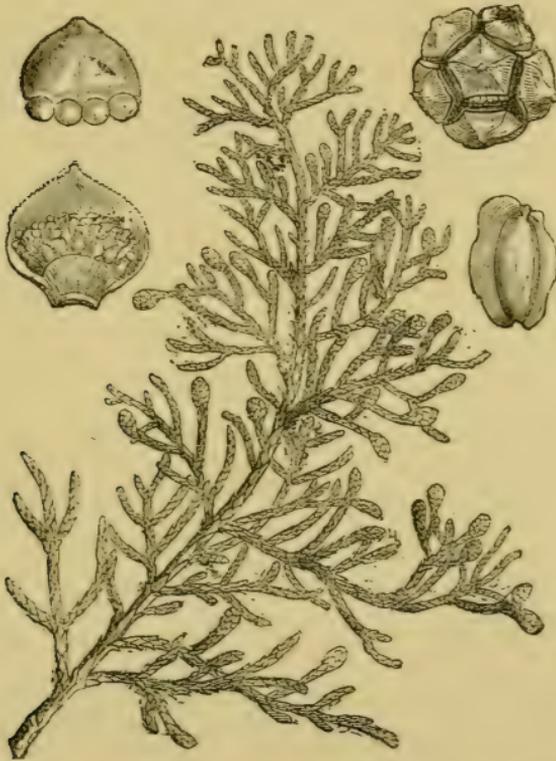
largest species, whose barren stems, 3 to 6 feet high, and copiously branched, suggest the name "Horse-tail," like *E. Arvense*, sends up its cone-bearing stems about April; these are only a foot high. This species is *E. maximum*, known also as *E. fluviatile* and *E. Telmateia*. Most of the other species are less frequent, or local.

Reserving the Filices for separate notice, as being the object of such widely spread and popular attention, the remainder of this paper will speak briefly of the other families of Cryptogams.

The MARSILEACEÆ are creeping or floating plants without stems, and producing globular, pill-like bodies with several cells in which are sacs containing granules. In our solitary genus, *Pilularia*, which is found in shallow water or muddy places, the capsules, like pepper-corns, are produced in the axils of the leaves, and have 4 cells. Another genus, *Isoetes*, Quill-wort, is sometimes placed in this Order; it is seldom gathered, owing to its growing at the bottom of deep water; it has a tuft of awl-shaped leaves, in the base of which the reproductive bodies are embedded; it is

perhaps more correctly placed among the LYCOPODIACEÆ, the Club-moss family.

We have 6 species of *Lycopodium*, some of which have the spore-cases collected in terminal spikes; in one, *L. Selago*, Fir Club-moss,



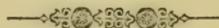
LYCOPODIUM.

they are placed in the axils of the leaves. The Common Club-moss, *L. clavatum*, found in mountainous pastures, is capable of extending its stems several yards; the spores are pro-

duced in vast quantities, and ignite like gunpowder, but without smoke. The spikes are usually in pairs. The varieties of *Lycopodium*, and another similar plant, *Selaginella*, in the greenhouse, need only be mentioned to recall their value in the way of ornament.

The Mosses, *Musci*, are a distinct and wide study, beyond the scope of these papers ; as are also the *Liverworts*, which clothe the dark and damp recesses with their peculiar green, and the *Lichens* which will cover the driest bark or tiled roof. The innumerable *Fungi* and *Algæ* are equally beyond our scope, though full of beauty and interest. The very curious plants of the genus *Chara* grow wholly submerged ; they have numerous brittle, pale stems, without any leaves. The fructification, in the axils of the outer tube-like stem, consist of globules of two kinds, of a brick-red colour, containing granular matter and spiral filaments. Some of the plants display the circulation of the sap, under the microscope.

It is impossible to do more than name these several numerous and interesting families.





AMONG THE WILD FLOWERS.

XXII

OF all the Cryptogamous Plants, the Order FILICES, *Ferns*, are the highest, notable at once for their vast variety, their graceful forms, and the interesting structure of their fructification. No doubt the reader has a fernery, or has ready access to one, whence a *frond* can be gathered for examination. The leaf of a fern is usually called a *frond*, though the term leaf is also used; there are barren fronds and fertile ones, but the frond of a fern is an arrangement by which the stalk, leaves, peduncles, and seats of fructification are all combined, though none of these parts exist in the same distinctness as in flowering plants.

The actual stem of the Fern is usually underground, but occasionally runs along the surface, and is then called a *Rhizome*. This

stem sends forth its fronds sometimes in circular bunches, sometimes at intervals singly; in the Tree-ferns of warm climates the stem, in that case called a *Stipe*, whilst continually producing circles of fronds at its summit, rises in course of time to the perpendicular height of 50 or 60 feet. The stalk to which the leafy growth is attached is called the *rachis*, sometimes the *stipes*, or stipe; the leafy part may be either entire, or more or less divided, frequently pinnatifid, the divisions in that case being *pinnæ*, wings; and if these pinnæ are again divided, as they often are, the sub-divisions are called *pinnules*.

In any case the leafy portion of the frond is traversed by ribs and veins from which arise the little clusters of fructification called *sori*, the plural of *sorus*, a cluster. These sori vary in different ferns both as to shape and contents and method of opening when the seed-dust, consisting of spores, is ripe.

If the frond you have gathered is one of the gracefully arched fern *Lastrea dilatata*, a very common species, you will find underneath it rows of sori, regularly arranged, springing from the lateral veinlets of the pinnules. With a

good lens, still better under the microscope, it will be seen that each sorus is covered by a delicate membranous *indusium*, below which are small roundish cases, *thecæ*, each theca having a short stalk, and being surrounded by an elastic ring, *annulus*.

We must suppose it to be Midsummer when you bring in your frond, and having detached a small portion of it containing a sorus, you see the black shining thecæ protruding all round from under the indusium, and as you watch in the drier atmosphere of the room, perhaps near a sunny window, you see the elastic rings with a sudden jerk straighten themselves, at the same moment splitting open the thecæ, and scattering the spore-dust.

As the season advances, it is not so easy to find the fructification in the proper state for this interesting observation; the under surface of the fronds is then covered with the empty shells of the thecæ, and the indusia are shrivelled up.

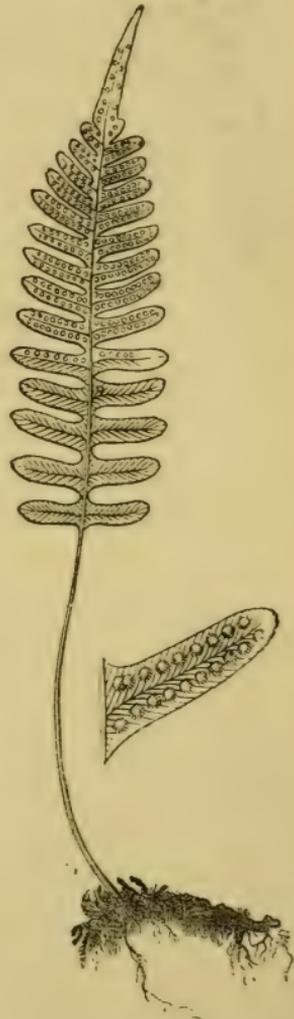
Most of the ferns produce their fruit thus on the under surface of the fronds, though varying much as to the disposition of it; in *Scolopendrium*, Hart's-tongue, it is in lines extending

from the mid-rib to the margin; *Blechnum*, Hard-fern, has two kinds of frond, the fertile ones rising from the centre, with narrow linear pinnæ, and the thecæ in a continuous row at the back of them; *Osmunda*, King's-fern, often called Flowering Fern, has the spore-cases collected together in a spiked panicle at the end of the fertile fronds, which fact has procured for it this very inappropriate name; *Pteris*, the Brake-fern, has its fruit in a continuous line under the margin; our species is *Pteris aquilina*, Eagle-fern, the name recalling the fact that if the rachis be cut obliquely, the section shows the figure of the Imperial eagle.

All the species of *Polypodium* have the sori naked, *i.e.*, destitute of the covering indusium; *Athyrium filix-fœmina*, Lady-fern, a much varying kind, has kidney-shaped clusters and indusia; *Cryptogramme crispa*, Rock-brake, or Parsley-fern, known also as *Allosurus crispus*, has distinct fertile fronds, containing clusters of fruit without indusium, but covered by the reflexed margin; *Botrychium Lunaria*, Moonwort, has pinnules of a crescent shape, and the clusters of spore-cases are produced in a lateral panicle, like an erect bunch of grapes; *Cys-*

topteris, Bladder-fern, has a bladder-like indusium attached by its base, and opening upwards, resembling a basket of fruit; *Adiantum*, the Maiden-hair, has the sori *lunate*, crescent-shaped, upon the margin of the fan-shaped segments of the frond; *Ophioglossum*, Adder's-tongue, produces its fructification in a linear, tapering spike, with two rows of spore-cases embedded in it, the tongue-like spike rising out of the centre of the solitary, undivided frond, somewhat after the manner of the spadix of the *Arum*; the entire plant is green and succulent.

These examples are sufficient to illustrate the variety which characterizes the fructification of ferns, whilst the same general type is preserved. Considerable diversity of opinion exists as to the classifica-



COMMON POLYPODY.

tion and nomenclature of this interesting Order ; the following summary of our British Ferns follows Mr. Babington's manual, and is in as near agreement with general consent as can at present be attained :—

NAT. ORDER, FILICES : Sub-Order I.—POLYPODIÆ, including the Parsley Fern, 6 species of Polypody, among them the Beech and Oak Ferns, and 2 species of Woodsia ; also the genera Lastrea, Polystichum, Cystopteris, Athyrium, Asplenium, Scolopendrium, Ceterach, Gymnogramma, Blechnum, Pteris, Adiantum, Trichomanes (N.B., not Asplenium Trichomanes), and Hymenophyllum. All these have the fructification in clusters at the back, *dorsal*, or at the margin ; the Sub-Order has five Tribes.

Sub-Order II.—OSMUNDACEÆ has the clusters of fruit stalked in a spike at the extremity of the frond ; the thecæ are stalked and membranous, rachis woody ; our only example is *Osmunda regalis*.

Sub-Order III.—OPHIOGLOSSACEÆ, also bearing their fruit in a spike, but the thecæ are sessile, and *coriaceous*, skin-like ; the rachis is succulent ; our only plants are Botrychium, and Ophioglossum.

No plants are more easy to preserve in a dried state than Ferns, provided they be kept from damp; and none are more beautiful when carefully preserved. Many ferns dislike the drip from trees; all love shade, and coolness at the root. A few exceptions grow in apparently dry walls and rocks; but it will always be found that their roots have a fair supply of moisture in those situations, from one source or other.





AMONG THE WILD FLOWERS.

XXIII.

A NOT very common plant of the CARYOPHYLLACEÆ is *Malachium aquaticum*, or Cerastium, Great Water Chickweed, much like *Stellaria nemorum*; its weak stems are covered with glandular hairs.

There is some difference between authors as to the genus of the pretty pale pink-flowered Sand-Spurrey, one of this Nat. Order; with one it is *Spergularia*, with another, *Lepigonum*; the leaves are generally linear, sometimes fleshy. In the case of *Alsine* and *Arenaria*, the Sandworts, there is also a disagreement.

Three species occur of *Impatiens*, Balsam, Nat. Ord. BALSAMINACEÆ; the capsule has five elastic valves, which, if touched when ripe, suddenly roll inwards, often leaping to a distance, whilst the large brown seeds are jerked

out : hence its name of Touch-me-not. The tall weedy plant of this genus in gardens, with dull red flowers, is *Impatiens glanduligera*.

A minute plant called *Radiola millegrana*, All-seed, is found in damp sandy places ; it is only about two inches high, with many forked branches, and a minute white flower in the forks as well at the ends. It is one of the Flax family, Nat. Ord. LINACEÆ, in which we have three species of *Linum*, two blue, and one, *L. Catharticum*, Mountain Flax, white-flowered. The cultivated Flax is not indigenous.

The genus *Sedum*, Stone-crop, Nat. Ord. CRASSULACEÆ, numbers 12 species ; the most common are *S. acre*, Wall Pepper, a very acrid plant, yellow flowers, in walls and dry places ; and *S. album*, with white flowers. In mountainous districts are found *S. Telephium*, Orpine, or Livelong, the name referring to the tenacity of life in the plant when gathered, a characteristic of the genus ; and several handsome kinds, including *S. rupestre* and *S. Forsterianum*.

A wonderful plant of this Order is the common Houseleek, *Sempervivum*, which seems

to have its life in itself, flourishing on the driest roofs; its flowers are very handsome. The Order includes also the curious peltate-leaved *Cotyledon umbilicus*, Navelwort, with its racemes of pendulous greenish-yellow flowers.

October sees the flowers of the Ivy, *Hedera*; this plant is not a parasite, since its roots derive sustenance from the earth; its stem-fibres are merely for the purpose of support in climbing; flowering in autumn, its berries ripen in spring. It gives name to its own Nat. Ord., HEDERACEÆ.

In the Nat. Ord. CAPRIFOLIACEÆ, besides *Adoxa*, already mentioned, are *Sambucus*, Elder; *Viburnum*, Guelder-rose; and *Lonicera*, Honeysuckle. *S. Ebulus*, Dwarf Elder, is called also Danewort; it is herbaceous; *S. nigra* is the common Elder tree; *Viburnum Lantana*, Mealy Guelder-rose, is frequent in hedges, especially in Midland Counties; its leaves are covered with a thick stellate down; *V. opulus*, common Guelder-rose, has brilliant red cymes of fruit; its flat white cymes of flowers are also handsome; in cultivation the flowers are changed into the neuter condition

by the loss of the stamens, and the cyme becoming globular, the name "Snowball" tree has been given to it. *Lonicera* is well known ;



ELDER.

L. Caprifolium has orange fruit with white or purplish sessile flowers; *L. Periclymenum*, Woodbine, has stalked flowers, pale yellow with exterior red; and *L. Xylosteum*, with

2-flowered peduncles, pale yellow flowers, and scarlet fruit, is native in Sussex; this last is called Fly-Honeysuckle. The handsome foreign shrubs, *Weigela rosea* and *Leycesteria formosa*, are of this Order. The ovate-leaved Honey-suckle is *Lonicera Japonica*.

Two pretty plants with heads of blue flowers, of Nat. Ord. CAMPANULACEÆ, linger on late into the autumn: *Jasione montana*, Sheep's-bit, or Sheep's Scabious, corolla light blue, leaves at the root in a rosette, stems bare upwards; and *Phyteuma*, Rampion, two species; *P. orbiculare* has serrate leaves, cordate at the root, lanceolate on the stem; its globose heads of blue flowers are met with on chalky downs; the other species, *P. spicatum*, has a spike of cream-coloured flowers; its habitat is said to be Sussex. It is interesting to observe the likeness of the individual flowers of these plants to those of *Campanula*.

Under the Nat. Ord. PLANTAGINACEÆ, we have the 5 species of *Plantago*, Plantain,—*P. Coronopus*, Buck's-horn Plantain, has pinnatifid or dentate leaves, probably suggesting the name "Buck's-horn;" this plant is called "Star of the Earth," from its stellate appear-

ance close to the ground; *P. maritima* has linear fleshy leaves; the spikes of both species have greenish flowers. The spikes of *P. major* are similar but much larger, and its leaves are broadly ovate; this is the Great Ribwort Plantain, present with us all summer and autumn; *P. lanceolata*, Narrow-leafed Ribwort, first shows its black heads of flowers with pale-yellow stamens in the spring, but lingers on through the season; *P. media*, called Lamb's-tongue, in perfection in the summer, is a very pretty plant, with leaves flat on the ground, and cylindrical spikes of flowers, with conspicuous lilac filaments and yellow anthers.

A very interesting little plant, forming the only other genus of this Order, is *Littorella lacustris*, Shore-weed; it is monœcious, but resembles the Plantain in having 4 stamens, the filaments very long, no stem, but fleshy leaves springing from runners, frequent about the margins of lakes and pools; under water it does not flower; the flowers are white, the fertile ones sessile, the male with long stalks.

A very curious structure exists in the genus *Euphorbia*, Spurge, which gives name to Nat. Ord. EUPHORBIACEÆ; the Herb Mercury,

Mercurialis, and the Box, *Buxus*, complete the Order. In *Euphorbia* the flowers are collected into monœcious heads surrounded by an involucre with several divisions, between which are produced yellowish glands; in this involucre are contained one female and many male flowers; the ovary of the female, with its 3 styles and bifid stigmas, hangs upon a long peduncle; the males consist each of a single stamen upon a minute pedicel, mingled with scales; there is no perianth; the stamens do not attain maturity all at once, but in succession. In our plants the flowers are produced in umbels, except in *Euphorbia Peplis*, which has solitary flowers; *Eu. Helioscopia*, Sun Spurge, and *Eu. Peplus*, Petty Spurge, are garden weeds; *Eu. Exigua*, Dwarf Spurge, is plentiful in corn-fields; *Eu. Amygdaloides*, Wood-Spurge, frequent in woods and thickets; *Eu. Paralias*, Sea Spurge, is found on shores, leaves *coriaceous*, leathery, and closely imbricated; *Eu. Lathyris*, the Caper Spurge, is a handsome plant, frequently admitted into gardens, its capsules like Capers; there are in all 14 species of Spurge; the plants abound in milky juice. The common Box-tree, *Buxus semper-*

virens, has three to five male flowers in the clusters, each having 2 petals and four stamens, and one or two female flowers; the ovary becomes a 3-horned capsule, each cell containing two black shining seeds. The Box-tree is wild on Box Hill in Surrey, and at Chiltern, Herts.

The genus *Rumex*, Dock, companion of Polygonum, and of Nat. Ord. POLYGONACEÆ, has 13 species, of which *R. obtusifolius*, Dairy-maid's Dock, which removes the pain of Nettle stings, *R. crispus*, Waved-leaf Dock, and *R. Acetosa* and *Acetosella*, the last two with acid herbage, are very common. A very handsome plant, but not common, is *R. Hydrolapathum*, Great Water-Dock; the leaves of several species assume brilliant hues of red as they advance towards decay, and thus contribute to pleasing landscape effect; *R. Acetosella* is the Sheep's Sorrel.

This Order has been named the Rhubarb Family, and the resemblance of the flowers of the Rhubarb to those of the Dock will scarcely have escaped notice. The structure of the flowers is curious; there is a perianth of six divisions, the three inner ones, which may be

regarded as petals, ultimately enlarge and converge round the seed ; the stamens are six ; stigmas in tufts, nut *triquetrous*, having three angles, and the surfaces between them concave. The forms of the enlarged petals, when the fruit is mature, is various in the different species, and drawings of them present much interest. The Garden Rhubarb is *Rheum Rhaponticum* ; Turkey Rhubarb is the root of *Rheum palmatum* ; the French Sorrel used for culinary purposes is *Rumex Scutatus*.





AMONG THE WILD FLOWERS.

XXIV.

THE last days of August seem peculiarly the time for some separate notice of AQUATIC and WATERSIDE PLANTS ; several genera not as yet described will thus gain attention, and the beautiful grouping of the plants, and the varied forms of them, will repay special observation.

Nothing we read of foreign lands, including the tall and tangled growths on the banks of Amazon itself, seems to surpass the charming and often luxuriant fringe in which the slowly moving streams of our own Island rejoice.

A walk by the river will show you the handsome crowded stems of Hemp Agrimony, *Eupatorium*, with its dense corymbs of reddish-purple flowers and deeply divided leaves. A little higher on the banks are the plentiful bunches of yellow Ragwort, *Senecio* ; and

mingled with these is the Great Valerian, *Valeriana officinalis*, with pale rose-coloured triandrous flowers. Below, extending like troops in long unbroken line, the triangular stems and branches of several kinds of *Carex* rise from the water, especially *C. Paludosa* and *C. Riparia*, which often grow together, and, in company with the true Bulrush, *Scirpus lacustris*, and the more rare and handsome *Scirpus sylvaticus*, form the haunt of the Dab-chick.

The Bulrush is not one of the Rush family, *Juncaceæ*, whose flowers have a 6-partite perianth, and are hexandrous, having 6 stamens, but is of the Nat. Ord. CYPERACEÆ; it has a tall dark-green pointed stem rising many feet above the water, and producing a paniced spike of brownish flowers at the end. The lesser plant of the same genus, *Scirpus sylvaticus*, is about 2 feet high, paler green, with broad flat leaves, and a much more compound and widely-spreading panicle.

This last is sometimes found in company with the Reed-mace, *Typha*, the plant with the club-like velvety spike, which is so generally miscalled "Bulrush." *Typha* is seldom, however, a river-side plant, appearing to delight in

pools, of which it is liable to take almost exclusive possession. The long dark stems of the Bulrush might be compared to a dense aquatic forest of leafless trees, whose undergrowth of flowering shrubs is substituted by the bright gay blue flowers of the Forget-me-not, or Great Water Scorpion-Grass, *Myosotis palustris*, varied by the densely-flowered panicles of the White Water-Bedstraw, *Galium palustre*; and, if the water is slow, with the erect and branching stems of the Great Water-Plantain, *Alisma plantago*. This plant rises several feet from the root, and at the end of each peduncle has a small white or pale purplish flower; its broad leaves have long erect stalks, all springing from the root; it is one of the ALISMACEÆ.

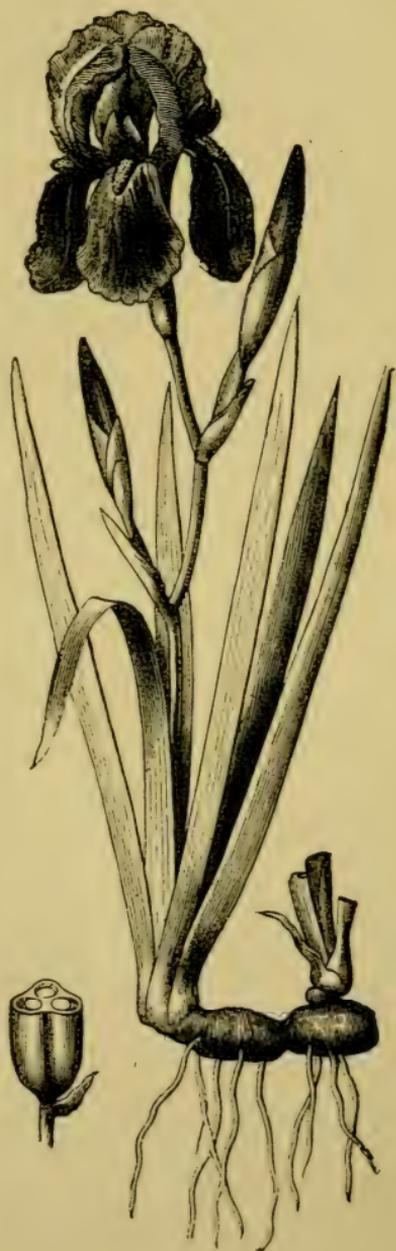
Another of this Order, a beautiful ornament of the water, and capable of breasting a rather rapid stream, is the Arrow-head, *Sagittaria sagittifolia*; it bears a spike of white flowers, 3 in a whorl, and the leaves which, like those of the Water-Plantain, spring from the root are remarkably arrow-shaped, *sagittate*, the three divisions of the leaf being nearly equal. The flowers are monœcious, the male with many stamens, the female with many

carpels, forming a globose head. Occasionally also in rapid but shallow streams the pretty plant called Water-Violet, or Featherfoil, *Hottonia palustris*, is found; the foliage, all submerged, is handsome, consisting of whorls of long leaves with comb-like linear segments, *pectinate*, the spike of pale pink flowers erected above the surface of the water.

At intervals along the river banks are seen the beautiful tall spikes of the Purple Loosestrife, *Lythrum salicaria*, which gives name to the Order LYTHRACEÆ, and is of Linn. Cl. XI., *Dodecandria*, having about 12 stamens. It should be observed that Linnæus has no class for flowers with *eleven* stamens, but passes at once from ten to twelve; the number eleven seems unknown to structural Botany; and although it may be found in some flowers—the *Cuphea*, for instance—these are to be regarded as imperfectly developed, the true number being twelve.

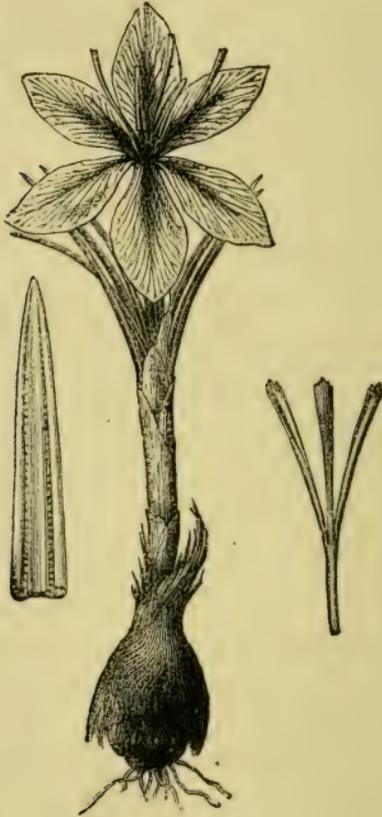
In company with the tall growths of the river side, and in pools, will be seen the flowers of the Yellow Flag, *Iris pseud-acorus*, on tall round stems, among numerous sword-shaped leaves rising from the root. The yellow flower

is not truly a corolla, but a 6-parted perianth, the 3 outer segments of which are larger and reflexed, the 3 inner ones erect and narrow; the 3 stigmas widen upwards so as to resemble petals, and arch over the 3 stamens. The Iris gives name to the Nat. Ord. IRIDACEÆ, to which the *Crocus* genus also belongs. It may seem late now to mention the *Crocus*, its gay blooms being so much associated with spring; but there is an autumnal species, *Crocus nudiflorus*, whose time for sending up its purple flowers, unaccompanied by any leaf, is September. Mea-



IRIS.

dows near the river Mersey, and also near Nottingham, are plentifully covered with its flowers among the grass; the leaves come up in winter and are full-grown in March.



CROCUS.
(Corm at base.)

The flower of a Crocus is not truly a corolla, but a coloured perianth with six equal divisions and a long tube that extends downward into

the bulb, or *corm*,¹ as it is called; inside this tube is the long thread-like style rising from the germen or ovary which is in the corm, and which at length finds its way above ground full of seeds. The Crocus is very partial to ground which is periodically overflowed with water. The species just named must be distinguished from the *Colchicum*, which has flowers with 6 stamens, and gives name to a different Nat. Ord., the COLCHICACEÆ.

Among the tall denizens of the water side and in ditches, the Great Hairy Willow Herb sends up its stems with grey-green foliage and pretty rose-coloured flowers, but somewhat in excess; and alongside of it, the pleasant Meadow-Sweet, whose airy odour is sure to call attention to its presence. Often, too, the more venturesome individuals of the Meadow Crane's-bill, *Geranium pratense*, will show their large blue flowers in the assemblage which is gathered by the water side; and several of the larger species of Cress, *Nasturtium*, and the Yellow Rocket, *Barbarea vulgaris*, may be noticed on

¹ The *corm* is really a sort of underground stem, which looks like a bulb, and is surrounded by network.

some projecting piece of ground, out of reach, gazing, as it seems, upon their own picture reflected in the water below. The many-branched panicle of the Square-stalked St. John's-Wort, *Hypericum quadrangulum*, rises among the rest; and where the bank is less thickly occupied, the dangling stems of *Lysimachia nummularia*, the Money-Wort, creep downwards as if seeking the water; while at the uppermost edge the Trailing St. John's-Wort, *Hypericum humifusum*, often spreads its rosettes of thin stems with pretty yellow flowers. *Scrophularia aquatica*, Figwort, is generally found in such habitats, with its dense cymes of small dark-purple flowers and winged stem. All these, with the admixture of some of the damp-loving grasses and overhanging shrubs, unite in clothing our river sides with abundant and artistic luxuriance.





AMONG THE WILD FLOWERS.

XXV.

PURSUING our notice of AQUATIC PLANTS, it may be observed that several of our noblest Grasses are distinctly of this group; for example, the tall Reed-grass, *Phalaris arundinacea*, which is very ornamental, rising several feet out of the water; it is a variegated kind of this grass which is grown in gardens, and called Ribbon-grass, the leaves having white and green stripes. With this often appears in abundance the very handsome *Glyceria aquatica*, Reedy Sweet-grass, 3 to 6 feet high, with large much-branched and spreading panicles of brownish spikelets. There are two other species of *Glyceria*, very different from this in general appearance, in shallow wet places, with long narrow green spikelets of close-pressed flowers, ultimately standing out at right angles

to the stem, which is partly floating and partly erect; one of them, *G. fluitans*, is called Flote-grass.

Taller than any of these, and scarcely admitting other plants to grow together with it, is the great Reed, *Phragmites communis*, which is fairly a rival of the Pampas Grass; its large panicles are at first, when in bud, of a rich purple colour; then, as the bristles of the flowers elongate, the whole panicle becomes feather-like, and, in its latest stage of development, crowning the dense masses of stems which occupy the quiet sides of streams or pools, it defies for many a day even the blasts of winter. One or two species of *Alopecurus*, Fox-tail Grass, also grow in watery places.

Together with these aquatic grasses, mention must be made of several of the UMBELLIFERÆ, which love the water and its immediate vicinity. The larger species of Water-Parsnep, *Sium latifolium*, is a noble growth in rivers and the channels communicating with them, its pinnate leaves often 18 inches long, with leaflets 3 or 4 inches long; we have few finer plants. It is frequent in the Midland Ouse. The smaller

species in ditches, *S. angustifolium*, has narrower and more deeply serrate leaves, and is common. Another plant, which nearly chokes up ditches and crowds brooks, is *Helosciadium*, Marshwort; it is liable to be confused with the smaller Sium, but its sessile umbels, and procumbent and straggling stems, distinguish it.

The Water-Dropworts, Genus *Ænanthe*, are all lovers of water. Several of them are tall conspicuous Umbellifers, several feet high, with handsome umbels; *Æn. crocata*, the yellow-juiced species, is very poisonous, and an instance was recently recorded of some Greek sailors, who had eaten it in mistake for Celery in the Isle of Wight, losing their lives in consequence. *Æn. Phellandrium*, sometimes called Horsebane, grows abundantly in deep running water; the stems are much elongated and the foliage hair-like, but it sends up a somewhat handsome growth above the water, with much pinnatifid dark-green leaves and umbels of white flowers, seldom, however, perfecting any seed. This plant is distinguished from *Æn. fluviatilis*, though very similar. *Æn. fistulosa* is a curious-looking specimen, about 18 inches high, with hollow stems and *petioles*, leaf-stalks; the pin-

natifid leaves of the stem are shorter than their stalks.

The *Angelica* is a fine tall handsome Umbellifer, rising above other growths in watery places. The two kinds of Bur-reed, *Sparganium simplex* and *ramosum*, are not found together; the former appears to like quiet and shallower water, the latter a swift running stream.

In quiet water you may find, rising several feet, the stems of *Butomus umbellatus*, absurdly called "Flowering-Rush," but having not the slightest relation to the Rush family; it is the only plant in our Flora of Linn. Cl. IX., *Enneandria*, having nine stamens; its Nat. Ord. is ALISMACEÆ. The summit of its long *scape*, or flowering stem, is crowned with a large and beautiful umbel of flowers, both calyx and corolla being of fine pink or rose colour. The leaves are triangular and twisted at the top.

Of the same Order are two species of the inconspicuous plants of Arrow-grass, *Triglochin*, one of which, *T. palustre*, is frequent in marshy places; it is hexandrous, and the spike is green, tinged with red. A handsome flower is the

Bog-bean, *Menyanthes*, liking the peaty bog, and apparently also delighting in the shallow part of a lake with muddy bottom; it may be gathered in most localities which afford either of these conditions for its growth. The writer saw it years ago in great beauty occupying a large area in Llanberis Lake, in sight of Snowdon. The plant is allied with the Gentian family, GENTIANACEÆ; its long raceme has many flowers, flesh-coloured, and petals densely bearded within. Its general appearance has earned for it the name of "hyacinth of the marshes."

Villarsia Nymphæoides, another of the same Nat. Ord., is found in the Thames and Isis; it has yellow flowers with darker disk, pentandrous, and has leaves like those of the White Water Lily, *Nymphaea alba*. This last-named plant, and its companion, *Nuphar lutea*, the Yellow Water Lily, constitute, with one other species, *N. pumila*, the whole Nat. Ord. NYMPHÆACEÆ; being so well known, they scarcely call for remark beyond a note of admiration of their beauty, as they lie floating their round leaves and white or yellow blooms on the surface of the deep still water. The stigmas con-

sist of a number of rays. *N. lutea* has a strong scent like brandy.

Several species of the Mint tribe, *Mentha*, are distinctly aquatic plants, and mingle their pale purple spikes with other flowers by the water side and in ditches.

Of the COMPOSITÆ, there are but few that grow in water; among these are the two species of Bur-Marigold, *Bidens cernua* and *tripartita*, tall plants with brownish yellow flowers, the heads drooping, the leaves of *cernua* undivided, those of *tripartita* 3-partite; they are found in shallow pools. The common Flea-bane, *Pulicaria dysenterica*, is abundant in ditches, displaying large yellow-rayed flowers, and having thick woolly foliage. Several species of Groundsel, *Senecio*, may also be named, as *S. aquaticus* and *paludosus*—the latter rare—in the fens in eastern counties. Of two species of *Cineraria*, Flea-wort, the marsh kind, *C. palustris*, should be found, with yellow flowers and woolly stems. Mr. Babington includes this genus under *Senecio*, but it is distinguished by its involucre having scales at their base, which the plants usually comprised under *Senecio* have not.

It will be observed that this notice of Aquatic plants, which must still be pursued a little further, does not include those which grow in *salt* water, which are reserved for mention among the SEASIDE plants.





AMONG THE WILD FLOWERS.

XXVI.

ACTUALLY immersed in water, or growing at the bottom of streams, are several species of *Ranunculus*; indeed, most of this genus are aquatic. The Water Fennel, *R. trichophyllus*, has *trifurcate*, 3-forked, submersed leaves; *R. circinatus* has sessile leaves divided into numerous rigid linear segments spreading into a roundish, fan-like shape, which gives the long stems a pretty appearance as they stretch out with the motion of the running water; *R. fluitans* has the segments of the leaves parallel; *R. sceleratus*, *Flammula*, and *Lingua*, described in Paper X., all grow in water.

The golden flowers of *Caltha palustris*, Marsh Marigold, are often protected by the fact of their being unapproachable in their watery home.

Three species of *Veronica*, Speedwell, grow in brooks or streams—*V. Beccabunga*, Brooklime, with broad dark shining leaves, and racemes of small bright blue flowers; *V. Anagallis*, Great Water Speedwell, with long narrow leaves and pale purple flowers in opposite racemes; and *V. scutellata*, Marsh Speedwell, with flesh-coloured flowers, and flat roundish capsules; these Water Speedwells contrast strongly in habit with the other species growing in dry places.

The numerous genus *Potamogeton*, Pondweed, 24 species, are occupants of rivers, ponds and ditches. They largely form the subaqueous plantations amid which the finny creatures and varied animal life of the water disport themselves and find their sustenance. The genus is a study in itself, and little would be gained by general description without minute technical examination of specimens.

The plants have usually a dark bronze-green look almost like Sea-weed, quivering in the current of the deep and rapid stream, with spikes of greenish flowers an inch or two long slightly elevated above the surface of the water. Their perianth—for there is no

corolla—is in four small segments, sometimes absent.

In the Linn. System they are in Cl. IV., *Tetrandria*; the genus gives name to the Nat. Ord. POTAMOGETONACEÆ.

The stamens of the Pondweed are 1, 2, or 4. *P. natans* may be commonly seen with ovate or elliptic leaves floating on the water, and the green spikes rising among them; *P. perfoliatus* has the leaves, as the name implies, so clasping the stem that it appears to pass through them; the leaves of *P. crispus* are strongly waved, and crisped and serrate at the edges.

The name Potamogeton is a Greek compound, meaning “inhabitant of the river.”

On the surface of the same water with *P. natans* are sometimes seen the floating leaves and upright dense rose-coloured spikes of *Polygonum amphibium*, one of the Persicaria family, more than half of whose 14 species are inhabitants of water or wet places. *P. amphibium* is a beautiful ornament, especially when it occupies the quiet pool of a slow river whose borders are well stocked with the taller aquatics. But, as the name implies, it is so far amphi-

bious that Mr. L. H. Grindon records having seen it 5 feet high in a dry hedge, "its rosy cones—*i.e.* of flowers—mingled with ripening blackberries!"

The Linn. Cl. is VIII., *Octandria*, but the stamens vary in number. The Nat. Ord. is POLYGONACEÆ, the name from the Greek, referring to the numerous joints or knees of the stems.

The spikes of flowers are mostly pink or rose-coloured; sometimes they are produced in pale green. The perianth is divided into 5 segments. Several species have large black spots on the leaves. All the plants have a peculiar membranous stipule called an *Ocrea*, and the shapes of these *Ocreæ* help to determine the species.

P. Hydropiper, Water-Pepper, has wavy leaves without spots, pale-green slender spikes of flowers, and a hot acrid taste in the whole plant. About half the size of this plant is *P. Minus*, Small Red Persicaria, with procumbent diffuse stems, less common. *P. Persicaria*, Common Red Persicaria, has pretty pink spikes, and spots on leaves, and is abundant in wet places.

It will be sufficient to mention *Myriophyllum*, the Water-Milfoil, submerged, and *Hippuris*, the Mare's-tail, sending up its spikes above the water—both described in Paper XVII.

Callitriche, the Water-starwort, is known by its fresh green rosettes of leaves crowded together at or under the surface of ponds and slowly running water, with long white *filiform*, thread-like, stems. It is a monœcious plant, flowers without perianth or corolla, male with one stamen and yellow anther on long filament, produced in the upper axils of the leaves; female flowers below, consisting of a green 2-lobed ovary and two long styles. Mr. Babington distinguishes 4 species of this common plant.

In ponds and ditches will be observed masses of long slender stems, often without any flower discoverable, densely clothed with whorls of dark-green leaves, in the axils of which the flowers are found when produced. The male flowers have 12 to 20 sessile anthers. This is the Hornwort, *Ceratophyllum*; there are two species. *Lemna*, Duckweed, is another monœcious Aquatic, often covering over the stagnant pond with its green *fronds*, as the

leaflike floating plates which constitute these simplest of all flowering plants are called. There is no distinction of stem or leaf. The plate or frond is tailed at one end, and serrate at the other. The flowers are very minute, and consist of one or two stamens in a membranous bag, or spathe; they are put forth from the margins of the plates. The plant increases chiefly by buds, which survive the winter. Minute as these plants are, there are four species of them.

The *Anacharis alsinastrum*, usually known as the American Water-weed, also as Water Thyme, is very common in midland counties. It appears to have been first observed in England about 40 years ago, and has meantime increased so extensively as to partially choke up many water-courses and canals. The flowers of this plant are dioecious, but in Britain only the female flowers are found, and the plant therefore does not perfect any seed, which may in part account for its exceptional vegetative power. There are 3 petals and 9 stamens in the male flower; the female flower has a long tube and 1-celled capsule, sepals and petals broad and nearly equal, stigmas reflexed;

leaves 3 in a whorl, something like Thyme leaves, many whorls close together. It belongs to the Nat. Ord. HYDROCHARIDACEÆ, which Order includes the interesting *Vallisneria spiralis*, so often seen in aquariums, known by its long narrow bright grass-green leaves, ascending from the bottom of the water to its surface. This plant is a native of Italy. The female flowers, which are white and tubular, rise to the surface on spiral peduncles. The male are on separate plants far below the level of the water, and when they are ready to discharge their pollen, their peduncles are set free, and the flowers rise to the surface.

The phenomenon of vegetable circulation is admirably seen in *Vallisneria* under the microscope.

Of the same Order is the Water-soldier, *Stratiotes aloides*, a remarkable plant with bayonet-shaped triangular leaves, delicate white dioecious flowers with three petals, male with 12 or more stamens, female with 6 bifid styles. The leaves are in aloe-like tufts on the water's surface, produced from runners creeping in the mud. The plant rises to the surface of the water to flower, and sinks again afterwards.

There are two rare plants which form the genus *Elatine*, Water-wort, Nat. Ord. ELATINACEÆ; *E. hexandria*, with 6 stamens and 3 petals, and *E. Hydropiper*, with 8 stamens and 4 petals. They form small matted green tufts under water. These plants have been found only in two or three stations; care should be taken not to mistake for them specimens of *Peplis Portula*, a water plant somewhat like *Elatine*, but larger.





AMONG THE WILD FLOWERS.

XXVII.

THERE are some very interesting plants whose habitats are exclusively in Bogs. Some of them are little known, owing partly to the difficulty of reaching them in their native home.

First among these may be mentioned the Bladderwort, *Utricularia*: the plants of this genus are submerged in water, and have numerous fibrous root-like branches which form a sort of network, and pinnatifid leaves upon which are little green bladders. The yellow flowers are several together some inches above the water. The bladders are open at the smaller end, and float the plant whilst it is in bloom. The corolla is irregular, 2-lipped, and spurred; having two stamens, it is of Linn. Cl. *Diandria*.

To the same Nat. Ord., LENTIBULARIACEÆ, belongs the genus *Pinguicula*, Butterwort, a small very pale green plant with greasy-looking leaves spreading close to the ground, and flower stalks 2 to 6 inches long, bearing a pretty violet-coloured flower with two stamens. When the plant is drawn out by its root from its moist soft bed, the leaves curve back and cover the root. The corolla, like that of *Utricularia*, is 2-lipped and spurred, but that of *Pinguicula* is of the kind called a *ringent* corolla, the two lips being widely open; whereas the two lips of *Utricularia* are so disposed as to close the opening, and this is called a *personate* corolla, being like the muzzle of a quadruped.

Few plants are prettier than the Butterworts starrng the carpets of wet moss where they grow, and displaying their purple-blue flowers on slender stems. The natives of Scandinavia use this plant to hasten the coagulation of their milk, which they like thickened.

We have three species of *Drosera*, Sundew, the only genus of the Nat. Ord. DROSERACEÆ, extremely pretty plants. The writer has in his possession some interesting Australian speci-

mens. Our three plants are—*D. rotundifolia*, the round-leafed species, anthers white, stigmas white and undivided ; *D. intermedia*, which has spatulate leaves, yellow anthers, and pink, bifid stigmas, less frequent than the former ; and *D. anglica*, rather rare, with much longer, lanceolate, leaves widening above, clearly distinguishing it from the two former species ; all these plants present much beauty both to minute inspection of their parts, and in the aspect of their natural habitat, where they put forth their crimson-haired leaves and elegant little clusters of white blooms from tufted beds of pale-green Sphagnum Moss, and other growths of the bog. All of them are alike covered with crimson glandular hairs, from which exudes a viscid dew often seen standing in diamond drops on the glandular extremity of the hairs. Insects attracted by this gummy exudation are detained, and—recent observation compels us to make the sad confession respecting this beautiful family—are *devoured* by a process of absorption performed by the hairy leaves !

Some of my readers will have seen a plant of this Nat. Order called Venus's Fly-trap,

Dionæa Muscipula, the leaves of which have two flat lobes, with stiff hairs, the lobes closing upon any insects that alight on them. It is now established that this group of plants are carnivorous. The *Droseras* will grow in wet moss in a sunny window, under a bell glass. The specific name *longifolia* is retained by Withering; but Babington and others discard it.

Parnassia palustris, Grass of Parnassus, one of our most beautiful native plants, has been sometimes grouped with these plants; Lindley places it among the St. John's-Worts, but it is one of the SAXIFRAGACEÆ; it has 5 white petals, and 5 stamens alternated with 5 yellow scales bearing glandular bristles. At first the filaments are short, afterwards they elongate one or two at a time, so that the anthers may be able to discharge the pollen upon the stigmas. Several days are occupied with this operation.

Most bogs are gay in summer with the dense spiked clusters of yellow flowers of *Narthecium Ossifragum*, Bog Asphodel. There is no corolla, but a coloured perianth; the filaments covered with yellow wool, and the scarlet anthers in contrast, have a pretty appearance. The narrow flat leaves are sword-

shaped. Some authors place this plant in a sub-section of the Lily family, but its Nat. Order is JUNCACEÆ, which includes also the two genera *Luzula* and *Juncus*.

Several of the Rush family, *Juncus*, are natives of the bog; all of them love wet. The most common species which have to be distinguished are *J. glaucus*, *J. squarrosus*, *J. acutiflorus*, or *articulatus*, *J. obtusiflorus*, *J. conglomeratus*, and the rather handsome *J. lamprocarpus*. Again let the novice beware of confusing the Bulrush, *scirpus lacustris*, with this family, *Juncus*; all the latter have flowers with a 6-parted parted perianth star-like when open; the *Scirpus* genus, Nat. Ord. CYPERACEÆ, have no perianth, but stamens and ovaries covered by glumes in small brown heads. *Juncus bufonius*, Toad Rush, is less like the rest of the family in general aspect, owing to its *setaceous*, bristle-like leaves, and solitary unilateral flowers; it is very common.

Cladium Mariscus, a rare plant in bogs and fens, distinctively named the "Sedge,"—though *Carex* is also "Sedge,"—is seldom seen. The several species of *Eriophorum*, Cotton-grass, mentioned among the CYPERACEÆ in Paper

XII., are always tokens of the presence of bog-land. In this genus the flowers are in clusters of heads, often with the anthers protruding in plenty between the *glumes* or scales, which enclose the stamens and nuts, or germens. The bristles which surround the nut ultimately lengthen and become silky in appearance, waving in the breeze above the bog. The silk of *E. Polystachion* is a beautiful and elegant object. *Schoenus nigricans*, Black Bog-rush, has blackish brown spikelets and whitish shining fruit, the spikelets in a terminal roundish head.

Of the Grasses, *Nardus stricta*, Mat-grass, is a pretty species with spikelets in a slender double row, the plant itself forming dense tufts upon which the foot can always be safely set in crossing a wet moor. Besides this, it does not appear that there is any other Bog-grass.

The Bog Ferns are *Lastrea cristata*, and *L. Thelypteris*; *Athyrium*, Lady-Fern, often; and *Osmunda*. Of *Lycopodiums*, *L. inundatum* is found in bogs. The genus *Viola* contributes *V. palustris* in bogs in hilly districts, with pale lilac flowers having purple streaks, scentless; and the genus *Stellaria* gives us *S. uliginosa*, Bog-stitchwort.

Hypericum furnishes the species *H. elodes* which vies with *Drosera* in beautifying their wet spongy home. *Comarum palustre* shows also its dark reddish-purple flowers. *Illecebrum verticillatum*, Whorled Knot-grass, is found in Devon and Cornwall. Of the UMBELLIFERÆ, the peltate circular leaves of *Hydrocotyle*, Penny-wort, frequently lie scattered on the wet moss. The little umbels of the flower or seed will be easily found.

Then we have *Galium uliginosum*, and the pretty *Valeriana dioica*, not uncommon; also several of the COMPOSITÆ, and of Orchids, *Malaxis paludosa*, Bog-Orchis, called also Marsh Tway-blade, only 3 to 5 inches high, with spikes of greenish flowers. There is another Bog-Orchis, *Sturmia Læselii*, with yellowish spike of flowers, 6 to 10 inches high which "forms a large ovate bulb at its base enclosed in the whitish sheaths of the decayed leaves"; Hooker and Lindley give this as *Liparis*.

Many of the water-loving plants may be also found in bogs, which, however, are not exclusively natives of them.



AMONG THE WILD FLOWERS.

XXVIII.

IT is proposed in this Paper to give a brief notice of the distinctively SEASIDE PLANTS. Many inland plants are, of course, found also near the sea; but it is to those which seem to require the conditions of soil and climate which the sea-shore alone can supply, that reference will here be made.

One of the most ornamental is the Horned Poppy, *Glaucium luteum* which puts forth its yellow blooms, and long horn-like capsules amidst the very spray of the sea. Along with it is that most curious plant of our British coasts, the Sea-Holly, or Eryngo, *Eryngium maritimum*, with blue-tinged leaves and bright blue flowers, an Umbellifer.

Other Umbellifers that love the sea air are two species of *Bupleurum*, Hare's-ear; *Fœni-*

culum, Fennel; *Peucedanum officinale*, Hog's-Fennel or Sulphur-weed, in Kent and Essex only; *Daucus gummifer* or *maritimus*, Sea-coast Carrot, rare, the ripe umbels flat, or even convex, instead of having the bird's-nest appearance of the common Carrot; *Ligusticum scoticum*, Scotch Lovage, a plant of Northern shores; *Petroselinum sativum*, Garden Parsley, abundant in the I. of Wight, "originally a native of Greece and Asia Minor;" and *Crithmum maritimum*, Samphire, its fleshy foliage on rocks washed by the sea.

The seaside COMPOSITÆ are few, represented by *Aster Tripolium*, Sea Starwort, flowers purple with yellow disk, *Inula Crithmoides*, Golden Samphire, whose linear fleshy leaves render it very unlike the other two Inulas, Elecampane and Ploughman's Spikenard.

Of the CRUCIFERÆ there are found *Brassica oleracea*, Wild Cabbage, the origin of the numerous varieties of the Garden Cabbage, with large cream-coloured flowers, on the sea-cliffs in the South and West; three species of *Cochlearia*, Scurvy-grass, with smooth green foliage, and globose pouches of seed, and corymbs of white flowers; two species of

Lepidium, Pepper-wort, *L. ruderale*, and *L. latifolium*, leafy plants of a dull green hue, and with unattractive white flowers; *Senebiera didyma*, a curious prostrate plant with pinnatifid leaves, and slender clusters of small white flowers which are often without petals, one of the two species of Wart-cress; the other, *S. coronopus*, called Swine's-cress, being frequent on waste ground inland, both plants distinguished by the rough pointed or wrinkled lobes of their seed pouches; *Cakile maritima*, the Purple Sea-Rocket; *Crambe maritima*, Sea-Kale, frequent, and identical with our cultivated plant; *Raphanus maritimus*, Sea-Radish, rare, on South and West Coasts; two species of *Matthiola*, Stock; *M. incana*, Hoary Stock; and *M. sinuata*, Sea-Stock; the former said to be the origin of the cultivated Stock; and *Draba Aizoides*, yellow-flowered Rock Whitlow-grass, a curious little plant with dense tufts of leaves fringed with rigid forked hairs, on rocks and walls near Swansea.

From these two lists, compared with other seaside plants, it will be seen that the Umbelliferous and Cruciform flowering plants somewhat preponderate.

It is, on the whole, characteristic of the plants growing by the sea, that they are curious rather than showy; but there are several very pleasing ones which may be grouped together as such:—*Convolvulus soldanella*, Seaside Bindweed, is a small procumbent plant with slightly angular *reniform*, kidney-shaped leaves, and one large handsome flower pink with yellow bands; *Glaux maritima*, known as Sea-Milkwort, or Black Salt-wort, is also procumbent, but its stems are filled in the axils with numerous sessile pale-pink flowers which are the coloured calyces, for this plant alone of the Nat. Ord. PRIMULACEÆ has no corolla; and *Silene maritima*, a rather showy species of the Catch-fly or Bladder-Campion, white-bloomed, with calyx inflated above the middle.

Erodium maritimum, Sea Stork's-bill, is, unlike the other Erodiums, a rare plant, with very minute pale-red petals, often wanting.

In contrast with this is the tall large-leaved Tree-Mallow, *Lavatera arborea*, with plaited velvety foliage, and large purple flowers, rare, on rocks, occasionally in gardens.

Statice, Sea-Lavender, five species, is a maritime genus, of which the most frequent is *S.*

Limonium, a very handsome plant with dense 2-ranked spreading or recurved spikes of lavender-coloured, flowers, reminding one of Heliotrope. More frequent, and often abundant, is the pink-flowering Thrift, *Armeria maritima*, sometimes placed in the genus *Statice*; every one knows the dense round tufts of linear leaves of this plant; these two genera form the Nat. Ord. PLUMBAGINEÆ.

Two species of the truly handsome *Erythræa*, Centaury, are found on sandy shores, displaying dense forked tufts of pure pink flowers, which, however, only expand in sunshine; the seaside species are *E. latifolia*, with broad leaves, those at the root very large, and *E. littoralis*, a small plant, similar, but with narrow radical leaves.

There are two other species often found inland, which is the case also with the beautiful orange-yellow flowers of *Chlora perfoliata*, Yellow-wort, often found in company with *Erythræa* both inland and near the sea; its foliage has a deeply *glaucous*, grey, hue; this plant has the *connate* form of leaves, the two opposite ones so growing together at their base that the stem appears to perforate them.

These two genera are of Nat. Ord. GENTIANACEÆ.

On Western and Northern coasts *Scilla verna*, the little blue Squill, may be found.

There are often pretty Leguminous plants on the grassy borders of sea-banks, but only some half-dozen of them can be classed as seaside plants; *Anthyllis vulneraria*, Kidney-Vetch, or Ladies'-fingers, is certainly more abundant near the sea than elsewhere; its heads of numerous yellow flowers are in terminal pairs. The Rest-harrow, *Ononis*, is also abundant near the sea, and one species, *O. reclinata*, entirely local, is noted as only near the sea.

There is a seaside Vetchling, *Lathyrus maritimus*, with purple flowers; a Melilot, *Melilotus alba*, with racemes of white flowers; a Medick, *Medicago denticulata*, rare and local; two or three species of Clover, *Trifolium*, including *T. incarnatum*, *stellatum*, *maritimum*, and *suffocatum*; and two species of Lotus, Bird's-foot Trefoil, *L. angustissimus* and *hispidus*, both rare.

Of the Grasses, the pretty purple spikelets of *Cynodon*, Dog's-tooth, are found on a few

sandy sea-shores. My specimens are from Dorset and Guernsey. In muddy salt-marshes or flats are the two species of *Spartina*; a very rare species, *Mibora*, in pastures near the sea; *Phleum arenarium*, the Sand-hills Cat's-tail, and *Triticum junceum*, Sand-hills Wheat-grass, are found commonly growing with *Psamma* or *Ammophila*, the tall, rigid grass called Sea-reed, or Sea-bent, with straw-coloured panicle, whose roots bind the shifting sands; *Hordeum maritimum*, Sea-barley, is common; *Alopecurus bulbosus*, a species of Foxtail, forms ovate fleshy knobs at the lower knots of its stem. There is also *Corynephorus canescens*, or Aira, its spikelets varied with purple and white; the two species of *Polygogon*, one of them, *P. monspeliensis*, having beautiful silky panicles; several species of *Sclerochloa*, or Glyceria, by some classed with *Poa*; and the two species of *Elymus*, Lyme-grass, one of which, *E. geniculatus*, has its spikes bent downwards at the second or third spikelet; all these belong to the sea.

Then there is a group which is attractive rather for curiosity than for any other feature, *Triglochin maritimum*, *Potamogeton flabellatus*,

Ruppia, the Tassel-Pondweed, *Zostera*, Grass-wrack, *Scirpus Savii*, much resembling *Scirp. Setaceus*, these last two sometimes placed in a genus as *Isolepis*; and *Blysmus rufus*, Brook-rush.

Carex arenaria, *C. incurva*, *C. divisa*, *C. extensa*, *C. distans*, may be taken as representing the seaside Carices. Only one Fern calls for mention here,—*Asplenium marinum*,—unless *Asplenium lanceolatum* may be added.

Little more than a bare mention must comprise the remaining plants whose habitat is near the sea,—*Frankenia*, Sea-Heath; *Mertensia*, beautiful but rare; *Honkeneja peploides*, a fleshy plant with globose capsules, called also *Arenaria*; *Cerastium tetrandrum*; *Sagina maritimum*, Sea-Pearl-wort; *Suaeda*, Sea-Blite; *Sal-sola*, Salt-wort; several species of *Chenopodium*, Goose-foot, and the genus *Atriplex*; *Salicornia* Glass-wort; *Beta maritima*, Sea-Beet; *Rumex maritimus*, Golden Dock; and *Polygonum maritimum*. *Hippophaë*, Sea-Buckthorn, is a thorny shrub, and *Asparagus* rarely found but wild.

For description of the plants in this list it will be necessary to consult the Manuals of British Plants.

BEAUTIFUL FLOWERS.

We have searched, as we roamed, for the haunts of the
flowers,

And gazed on their features, and drunk in their love ;
And oft we have called back those beautiful hours,
Like spirits descending to earth from above !

Yes ! flowers are surpassingly lovely, and full
Of a language that speaks to our innermost heart ;
Not the meanest, or least, you can venture to cull,
But something of sweetness and love can impart !

Yes ! Earth has no gift that is fairer than flowers !
They smile o'er the meadow and sleep in the grove ;
Bedecking the hedgerow, perfuming the bowers,
And gleaming in sunshine wherever you rove.

And flowers, by similitude, teach us of man,
Of the prime of his thought and the grace of his mind ;
Of the joys of his soul, and the width of its span,
Of his noblest emotions, deep, lasting, and kind ;

Of the best of his actions,—the bloom of his life,
Devotion and dignity, pity Divine,
Undying affection, true courage in strife,
And many an offering on Charity's shrine.

We have flowers, too, of time, though they fade with the
hour,

Opportunities precious, as fleeting their speed ;
And the breezes of heaven conveying the shower,
Bear with them the blossom, or scatter the seed.

Yes ! Earth is all teeming with beautiful flowers,
And, more as we love them, we surely shall prove
Less of sorrow of heart, and more joy in the hours,
Delighting our spirit wherever we rove.

H. W.



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