

FLOWERING
PLANTS
OF
GREAT BRITAIN

—
ANNE PRATT



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THE
FLOWERING PLANTS,
GRASSES, SEDGES, AND FERNS
OF
GREAT BRITAIN,

AND THEIR ALLIES
THE CLUB MOSSES, PEPPERWORTS, AND HORSETAILS.

By ANNE PRATT,
AUTHOR OF "OUR NATIVE SONGSTERS," "WILD FLOWERS," ETC.

PUBLISHED UNDER THE DIRECTION OF
THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY
THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

VOL. II.
(FLOWERING PLANTS, WITH 254 SPECIES COLOURED.)

LONDON:
FREDERICK WARNE AND CO.
BEDFORD STREET, COVENT GARDEN.
NEW YORK: SCRIBNER, WELFORD AND CO.

277502
TOMING



LONDON:
SAVILL, EDWARDS AND CO., PRINTERS, CHANDOS STREET
COVENT GARDEN.

LIST OF PLANTS IN VOL. II.

254 SPECIES ILLUSTRATED.

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<i>nivalis</i>	Chickweed Alpine	82	4	346
<i>aizoides</i>	Yellow Mountain Saxifrage	82	7	347
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<i>oppositifolia</i>	Purple Mountain Saxifrage	82	5	348
<i>granulata</i>	White Mountain Saxifrage	82	8	351
<i>cernua</i>	Drooping Saxifrage	82	9	351
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<i>geranoides</i>	Geranium Saxifrage	83	8	353
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<i>salicifolia</i>	Willow-leaved Spiræa	66	1	176
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<i>grandifolia</i> . . .	Broad-leaved Downy Lime	48	3	8
<i>Tillæa muscosa</i> . . .	Mossy Tillæa	79	1	319
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<i>pratense</i> . . .	Purple Clover	59	4	105
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<i>arvense</i> . . .	Hare's-foot Trefoil	59	9	109
<i>maritimum</i> . . .	Teasel-headed Trefoil	59	6	109
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<i>stellatum</i> . . .	Starry-headed Trefoil	59	8	110
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<i>strictum</i> . . .	Upright Round-headed Trefoil	60	5	113
<i>fragiferum</i> . . .	Strawberry-headed Trefoil	60	6	113
<i>resupinatum</i> . . .	Reversed Trefoil	60	7	114
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<i>nanus</i> . . .	Dwarf Furze	57	2	81
<i>Vicia sylvatica</i> . . .	Wood Vetch	63	10	125
<i>cracca</i> . . .	Tufted Vetch	63	8	127
<i>orobus</i> . . .	Wood Bitter Vetch	63	9	129
<i>Bithypica</i> . . .	Rough-podded Purple Vetch	63	7	129
<i>lathyroides</i> . . .	Spring Vetch	63	1	129
<i>sativa</i> . . .	Common Vetch	63	2	130
<i>var. β.</i> . . .		63	2a b	131
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<i>hybrida</i> . . .	Hairy-flowered Yellow Vetch	63	6	131
<i>sepium</i> . . .	Bush Vetch	63	3	132
<i>lævigata</i> . . .	Smooth-podded Vetch	63	4	134
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<i>tetrasperma</i> . . .	Slender Tare	63	11	135

THE
FLOWERING PLANTS
OF
GREAT BRITAIN.

ORDER XVII. TILIACEÆ.—THE LIME TRIBE.

Sepals 4 or 5, valvate when in bud; *petals* of the same number as the sepals, often with a little pit at the base, sometimes wanting; *stamens* numerous; *glands* 4 or 5 at the base of the petals; *ovary* single, of from 2 to 10 united, rarely distinct, carpels; *style* 1, with as many stigmas as carpels; *capsule* with one or more seeds in each cell. This Order consists of trees or shrubs, and a few herbaceous plants, the latter being found only in tropical countries. Though less viscid than the *Malvaceæ*, they are all mucilaginous and innoxious, and some, like the lime-tree, have a thick tough bark. One genus, *Córchorus*, is the Jews' Mallow, which, as has been before stated, is by some believed to be the mallow of Scripture. Lady Calcott has figured it as such in her Scripture Herbal. It is also the

Mauve de Juif of the French. The fibres of another species, *Corchorus capsularis*, are twisted into fishing-lines and nets by the Indians. The *Sloanea* of the hothouse is one of this Order; it is a native of South America. It has very large white flowers, and fruit as large and as round as a tennis-ball, armed all over with strong spines, and regularly divided into four cells, each containing a small chestnut.

1. TÍLIA (Lime).—*Sepals* 5, soon falling off; *petals* 5, with or without a scale at the base outside; *ovary* 5-celled; *style* 1; *capsule* 1-celled, not opening by valves, 2-seeded. Name of uncertain origin.

1. TÍLIA (The Lime, or Linden-tree).

1. *T. parvifolia* (Small-leaved Lime-tree).—*Leaves* obliquely heart-shaped, smooth on both sides, with the exception of small tufts of downy hair on the under surfaces; *flower-stalks* springing from a leaf-like bract, many-flowered; *capsule* brittle. Plant perennial. This species has better claims than either of the others to be regarded as a native tree, though many writers doubt if any lime is truly indigenous. It grows in woods, in Essex, Lincolnshire, Sussex, and other English counties, as well as in some parts of Wales, bearing its yellowish-green flowers in July and August.

2. *T. Europæa* (Common Lime, or Linden-tree).—*Leaves* twice the length of the foot-stalks, smooth on both sides, except a few tufts of downy hair beneath; *branches* and *flower-stalks* smooth; *nectaries* none. Plant

perennial. This, though probably not a truly British tree, is very common in our woods and hedgerows, and has been for some centuries planted in avenues and parks. It is well fitted to lend its shadow to the public promenade, for it bears the smoke of the city well, its only defect being, that it is late in coming into leaf, and one of the first to shed its foliage, looking sere and yellow long before the elm or beech is showing a tinge of the autumnal brown. It is a favourite tree for avenues on the Continent, and is largely planted in Holland and Germany. We owe some of our lime-walks, doubtless, to John Evelyn, who, in his "*Sylva*," recommended its culture for this purpose. He describes trees growing in Switzerland, Germany, and Hungary, as attaining an immense size; and after referring to the esteem in which the tree is held by the people of these countries, as it was by the ancient Romans, adds, "It is a shameful negligence that we are no better provided with nurseries for a tree so choice, and so universally acceptable." At that time there were no plantations of young limes in England, and our countrymen procured these plants from Holland and Flanders.

It is very pleasant to sit beneath a lime-tree on a summer's evening in July, when the green flowers are fully expanded; for the odour, imperceptible during day, becomes then most deliciously fragrant, and the green shadow refreshes us, while the whispering of the soft airs among the well-elad boughs gives gentle music. Linden-trees, even in our country, often attain a considerable size, and they then become of a beautiful form, though younger trees have usually a formal appearance.

The flowers are very profuse, and are so much prized by bees, that these insects keep up a perpetual humming on a summer's day among the branches. In Lithuania, near Kowno, where there are large forests of limes, the honey is remarkable for its excellence, and much valued for medicinal purposes, and as an ingredient in liqueurs, Kowno honey being worth double the price of any other.

The ancestors of our great Swedish botanist owed their name to a linden-tree growing near their dwelling, Linne being the Swedish name of Linnæus ; and Hohenlinden is one of many places called after this tree. Several linden-trees are famous in local histories, and in poetry, like that under which Martin Luther stood and preached the doctrines of the Reformation ; or that huge tree, at Fribourg, which commemorates the victory of the Swiss over Charles the Bold, in 1476. This tree is old, but a lime-tree older yet, and supposed to have been planted a thousand years ago, stands at no great distance from it, and has a trunk thirty-six feet in circumference. One of the finest limes in England is that celebrated one of Moor Park, in Hertfordshire, which is surrounded by many a large and old companion, and is itself nearly a hundred feet high. What Bryant said of another group of trees is true of these limes :—

“ These shades are still the abodes
Of undissembled gladness : the thick roof
Of green and stirring branches is alive
And musical with birds, that sing and sport
In wantonness of spirit ; while below,
The squirrel, with raised paws and form erect,
Chirps merrily. Throngs of insects in the glade

Try their thin wings, and dance in the warm beam
That waked them into life. Even the green trees
Partake the deep contentment as they bend
To the soft winds; the sun from the blue sky
Looks in, and sheds a blessing on the scene;
Scarce less the cleft-born wild-flower seems to enjoy
Existence, than the wingèd plunderer
That seeks its sweets."

Professor Burnett tells us that there are some famous old lime-trees, a variety of *Tilia platyphylla*, growing in the churchyard of Seidlitz, in Bohemia, the broad leaves of which are hooded; and the peasants assure you that they have miraculously borne hooded leaves ever since the monks of a neighbouring convent were hanged upon them.

The Rev. C. A. Johns, in his work on the Forest Trees of Britain, mentions several remarkable lime-trees as having been described by various authors. "At Chalouse, in Switzerland," says this writer, "there stood one, in Evelyn's time, under which was a bower composed of its branches, capable of containing 300 persons sitting at ease; it had a fountain, set about with many tables formed only of the boughs, to which they ascend by steps, all kept so accurately and so very thick, that the sun never looked into it." The same author mentions another famous lime at Neustadt, in Wirtemberg, which gave a distinctive name to the town. Its huge limbs were supported by numerous stone columns, bearing inscriptions. This tree was still in existence, Loudon tells us in his "Arboretum," in 1838, the trunk being eighteen feet in diameter, and beneath its broad shadow the people of Neustadt were then, like the men

of former generations, accustomed to sit and eat fruit ; many gooseberry-trees having sprung up in the crevices and hollows of the bark, and furnishing a supply to those who came to sit beneath the shelter of the old tree.

German poets, like our own, often refer to the linden-tree. Even so long ago as the days of Chaucer, it was to be found on the poet's pages.

“ There weren Elmis grete and strong,
Maplis, Ashe, Oke, Aspe, Planis long ;
Fine Ewe, Popler, and Lindis faire,
And other trees full many a paire,
What should I tell you more of it ?
There weren so many trees yet,
That I should all encombred be,
Er I had rekenid tre.”

The timber of the lime is light, smooth, close-grained, and not liable to be worm-eaten. Various boxes, screens, and other articles on which ladies paint flowers, are made of the wood, and it is valued by carvers for ornamental work. Many of the screens in palaces and cathedrals are formed of this material ; and those airy wreaths of flowers carved by the skilful hand of Grinling Gibbons, which no artist since has rivalled in grace and beauty, are made of lime-wood. In the choir of St Paul's Cathedral are some exquisite specimens of this work, and some very delicate and elegant wreaths adorn Trinity College, Cambridge. Artists have the scribbles for their first draughts made of lime-wood ; and when burnt it forms one of the best charcoals for the maker of gun-powder. Turners, toy-makers, and various artizans use it in their work ; and ropes are made of the fibres of the

bark in Lincolnshire, the Forest of Dean, and in Wales. This, peeled off in thin layers, is used for making the mats which gardeners wrap about tender trees. It is called bass or bast, and forms a considerable part of the exports from Russia.

So many materials are now used for making paper, and that article is so cheap, and so easily procured, that we no longer need, even in the most remote villages, the bark of trees as a material on which to write. In former days, however, the bark of the lime was commonly used for this purpose, and strips of it were also separated for forming ornamental head-dresses. Evelyn mentions a book written on the inner bark of the lime, which was brought to the Count of St. Amant, governor of Arras, 1662, for which the Emperor gave 8,000 ducats. It contained "a work of Cicero, *De ordinandâ Republicâ, et de invenendis Orationum Exordiis* ; a piece inestimable, but never published, and now in the library at Vienna, after it had formerly been the greatest rarity in that of the late Cardinal Mazarin."

The nuts of the lime-tree are said to have, when roasted, the flavour of chocolate, and might be used for this purpose ; a good sugar has been obtained from the saccharine substance with which the sap abounds, and a pleasant wine made by fermenting it. The flowers and bracts, when dried, are sold in the shops of Paris for coughs, and their demulcent nature is very apparent to us, if we only eat a leaf, or one of the young buds of spring, which are full of mucilage. This species of lime is chiefly distinguished from the last by its coriaceous fruit.

3. *I. grandifolia* (Broad-leaved, Downy Lime-tree). —*Nectaries* none ; *leaves* downy, especially beneath, with solitary hairs ; origin of the *veins* woolly ; young *branches* and *leaf-stalks* hairy ; *fruit* woody. Plant perennial. This tree, though usually enumerated among our British plants, has less claims than either of the other species to be considered as a native. It grows, however, in several woods and hedges, as in those about Edinburgh, flowering in June and July.

ORDER XVIII. HYPERICINEÆ.—ST. JOHN'S
WORT TRIBE.

Sepals 4 or 5, not falling off, unequal, often fringed with black dots ; *petals* of the same number as the sepals, sometimes unequal-sided, twisted when in bud, often bordered with black dots ; *stamens* numerous, united at the base into three or more sets ; *ovary* single ; *styles* 3—5 ; *fruit*, a capsule or berry, composed of several valves and cells, the valves curved inwards ; *seeds* minute, numerous. This Order consists of herbs or shrubs, most of them having opposite leaves. Their flowers are chiefly yellow, and they abound in a resinous juice the greater number being glandular. Both leaves and petals are generally dotted with black, are viscid, mostly bitter, and slightly astringent. Some species are used as febrifuges, or as lotions ; and one is reputed in Brazil to be an antidote against the bite of serpents. Many afford a good yellow dye ; and one of the St.

John's Worts is commonly employed by dyers in Quito, to give that colour to wool. A few of the plants of this order are tropical, but it consists chiefly of herbs, growing among hedges and trees in the cooler parts of Europe and Asia. The genus *Parnassia* is by many botanists included in this order, but its place is doubtful, and some writers refer it to the Sundew tribe. It differs from the St. John's Worts, in not having opposite leaves, in its fewer stamens, as well as in various other particulars.

1. *HYPÉRICUM* (St. John's Wort).—*Sepals* 5; *petals* 5; *stamens* numerous, filaments united at the base in 3 or 5 sets: *styles* 3, or rarely 5; *capsule* 3-celled. Name from *Hypericon*, the Greek name of the plant.

2. *PARNASSIA* (Grass of Parnassus).—*Calyx* deeply 5-cleft; *petals* 5; *stamens* 5, with fringed scales interposed; *stigmas* 4; *capsule* 1-celled, with 4 valves. Named from Mount Parnassus.

1. *HYPÉRICUM* (St. John's Wort).

* *Styles* 5.

1. *H. calycinum* (Large-flowered St. John's Wort).—*Stems* square, branched, and single-flowered; *segments* of the calyx unequal; *leaves* oblong and blunt. Plant perennial. This shrub is found apparently wild in some bushy places, as at Ryde, in the Isle of Wight. Though growing also at Cork without culture, it is probably there a naturalized plant, as it is doubtless in many parts of the kingdom, having been long a common ornament of gardens and shrubberies. It is generally

about three or four feet in height, bearing from July to September, large handsome yellow flowers, with the conspicuous bundles of numerous golden anthers, which, like the blossoms of all the species, have a strong odour of resin, especially when bruised. There is often much redness on the leaves of this plant.

* * *Styles 3, sepals not fringed.*

2. *H. Androsæmum* (Common Tutsan).—*Stem* 2-edged and shrubby; *leaves* egg-shaped, sessile; *sepals* unequal; *capsule* pulpy, and like a berry. This Tutsan is common in Devon and Cornwall, occurring occasionally in other counties. The author has found it at Higham, in Kent, and in great plenty throughout the Weald of Sussex. It is frequent in Ireland and the West of Scotland. It is a handsome shrub, very strongly scented, and the leaves, as well as the glossy, berry-like capsule, much tinted with red in autumn. The flowers are numerous and showy, of bright golden yellow, expanding in July. This species is about two or three feet high, and is often called Park-leaves. It was once much esteemed as a vulnerary, and its leaves laid on wounds. Its common English name is a corruption of *Toute-saine*, All-heal.

3. *H. quadrángulum* (Square-stalked St. John's Wort).—*Stem* herbaceous, erect, with four somewhat winged angles, branched; *leaves* oblong, egg-shaped, with pellucid dots; *sepals* erect, lanceolate. Plant perennial. This species grows commonly in damp places, having stems one or two feet high, and flat panicles of yellow flowers. It blossoms in July and August.

4. *H. perforátum* (Perforated St. John's Wort).—*Stem* herbaceous, erect, 2-edged; *leaves* elliptic-oblong, copiously perforated with pellucid dots; *sepals* erect, lanceolate acute. Plant perennial. During the months of July and August, and often as late as the end of September, the golden blossoms of this plant are commonly seen in woods and edges, on grassy banks, or in shady lanes. Several of the species are blooming at the same season, and their general aspect is very similar, but this is the most frequent kind, and is well distinguished by the marked character of its two-edged stems. A lovely plant it is, with its wealth of golden flowers growing on a branched stem one or two feet high, and having its yellow petals profusely dotted with black. The leaves are strongly ribbed, and of delicate green, reddening somewhat with age, and full of clear dots, easily seen if we hold the leaf up to the light. The flowers have a sweet scent of lemon, mixed with resin, and if we grasp them, they leave a yellow stain on our fingers. They will tinge spirits and oil of a rich purple colour, and if dried and boiled with alum, they dye wool of a fine yellow hue. Those pellucid dots in the foliage are full of an essential oil, which, indeed, pervades the whole plant, and which is aromatic and astringent. The flowers are made into gargles, lotions, and salves; and some good botanists recommend that further trial should be made of their remedial powers. The author has much faith in the efficacy of ointment made from St. John's Wort, and could go willingly now, as she did in the days of childhood, over dale and hill, to bear away a basketful of its blossoms for domestic use. The plants,

when gathered, were put into a large vessel of water, forming thus a magnificent nosegay, and the flowers being picked off the stems daily, as they expanded, were finally made into a salve, which served well to heal the scratches or more serious wounds made during rambles among bush and brier, and which certainly healed them quickly and surely. This St. John's Wort salve is still much used in villages in Kent, and, probably, also in other counties, for it is a very old remedy. Dioscorides and Pliny spoke its praises, as did Gerarde, Dodonæus, Culpepper, and all our old English herbalists. The latter commends it as a marvellous cure for various disorders, and says, in the quaint manner of these old writers, "It may be, if you meet a Papist, he will tell you, especially if he be a lawyer, that St. John made it over to him by a letter of attorney." "It is," he adds, "a singular wound herb;" and after praising leaves, flowers, and roots, for various uses, he says, "The seed, too, is much commended, being drank for forty days together, to help sciatica, the falling sickness, and palsy. Indeed, so greatly is the plant eulogised, that it almost rivals in its assumed balsamic effects the wonderful plant in the field of Balsam, described by Sir John Mandeville, which was an infallible specific for fifty different diseases, though, unfortunately, according to a later traveller, that balsam had perished, "either through carelessness of the gardener, or through fraud of the Jews, or through religion and piety having been offended by people in the neighbourhood." Happily, our flower yet remains, though some of its old uses have died away.



2

One of the notions respecting the St. John's Wort in the olden times was, that it had a great efficacy in maniacal cases ; and some old writers on this account gave it the fanciful name of *Fuga Dæmonum*. This name led to a variety of superstitions, or, as they have been called, "pleasant absurdities," which in course of time became, in various countries, connected with the plant. The fact that this genus of plants had, by the monks, been dedicated to St. John the Baptist, was an additional cause, too, for reverencing them ; and this species was, and still is in some countries, carefully gathered on the eve of the festival of that saint, and with some ceremonies hung about the windows and door-ways of houses, as a preservative against evil spirits ; while the Scotch formerly wore it about their persons to protect them from witchcraft and the evil eye, and from the ill designs of spirits ; for many believe with Milton that—

"Thousands of spiritual creatures walk the earth
Unseen, both when we wake, and when we sleep."

Nor was the practice confined to our northern countrymen ; it was observed by the peasants of France and Germany, who, in some remote places, still regard it as a safeguard against thunder. It is known almost everywhere by the name which connects it with the saint. The French not only call it *Le Mille-pertuis*, from its perforated leaves, or *Toutsaine*, from its healing virtues, but also know it as *l'Herbe de S. Jean*. *Das Johannis Kraut* is its German name ; and the Dutch call it *St. Jan's Kruid* ; but the Italians term it *Pelatro*, and

the Spaniards *Corazoncillo*. In Kent, one of the common names of the species is Amber. Among the plants which, like the Mistletoe, the Vervain, and the Hawthorn, stand associated with old English customs, the St. John's Wort holds a conspicuous place. The old practices on Midsummer Eve, the Vigil of St. John the Baptist's Day, gave great occasion to its use, year after year; and as, not in London only, but in other towns, and even in villages, the Midsummer bonfires were lighted, the plant must in those days have been gathered in great quantities. These bonfires were of high antiquity; and that the practice of lighting them on this day was a remnant of the pagan rites usual on the Festival of the Summer Solstice, several observances used at them abundantly prove. The custom of turning round a wheel on these occasions, is related or hinted at by writers treating of those times; and the wheel was designed by the Pagans to signify by its revolution the sun's annual course. In later years it was believed to roll away ill luck from those who used it. In the translation given by Barnaby Googe of the Latin poem of Naogeorgus, called "The Popish Kingdom," we have a full description of the rites used in London on St. John's Eve:—

"Then doth the joyful feast of John
 The Baptist take his turne,
 When bonfiers great, with loftie flame,
 In everie towne doth burne;
 And young men round about, with maides,
 Doe daunce in everie streete
 With garlandes wrought of Motherwort,
 Or else with Vervaine swete,

And many other flowres faire,
With Violets in their handes,
Whereas they all doe fondly thinke,
That whosoever standes
And thorow the floures beholds the flame,
His eyes shall feel no paine ;
When thus till night they dauncèd have,
They through the fire amaine,
With striving mindes doe run, and all
Their hearbes they cast therein ;
And then with wordes devout, and prayers,
They solemnly begin
Desiring God that all their illes
May there consumèd be,
Whereby they thinke through all that yeere
From agues to be free :
Some others get a rotten wheel,
All worne and cast aside,
Which, covered round with straw
And tow, they closely hide ;
And caryed to some mountaine's top,
Being all with fire light,
They hurle it downe with violence,
When darke appears the night,
Resembling much the sunne that from
The heavens downe should fal,
A strange and monstrous sight it seemes,
And fearfull to them all."

The plants chiefly used on these occasions are more particularly named by Stowe, in his Survey of London; and he says that, on the Vigil of St. John, every man's door was shadowed by green birch, fennel, St. John's Wort, orpine, white lilies, and such like, garnished up with garlands of beautiful flowers, and had also lamps of glass, with oil burning in them all night. Pennant, in later days, speaks of the custom in Wales of hanging

St. John's Wort over the doors on Midsummer Eve; and the following curious extract, quoted by Sir Henry Ellis, in one of his notes to Brande's *Antiquities*, is interesting; it is from Bishop Pococke. "Whanne men of the countree uplond bringen into Londoun at Mydsomer Eve braunchis of trees from Bischopis wode, and flouris fro the field, and bitaken tho to citessins of Londoune, for to therwith arraie ther houses, that thei mak therwith ther houses gay into remembrance of Seint Johan Baptist, and of this that it was prophecied of him that manie schulden joie in his burthe."

That the birch was a plant in great regard at this period, is attested by the entries in the churchwardens' books of several parishes. Thus, at St. Mary-on-the-Hill, stands an entry made in the reign of Edward IV., "For birch at Midsummer, VIIId;" also "Varius payments for birch bowes against Midsummer." And the verses of many an old writer tell how branches of this tree were hung at this season over the sign-boards then exhibited at every shop.

5. *H. dúbium* (Imperforate St. John's Wort).—*Stem* herbaceous, erect, 4-sided, with rounded angles; *leaves* nearly destitute of dots; *sepals* reflexed, elliptical, blunt. Plant perennial. This is not a common plant, and rarely occurs in any quantity. It has much the general aspect of the Perforated species, and the same properties, and the two would be gathered indiscriminately, either for medicinal uses, or to serve for the—

"St. John's Wort, scaring from the midnight heath
The witch and goblin with its spicy breath."



The corolla is often marked with small black dots, and its stem is about one or two feet high. This herb is common in Russia, where it is employed as an antidote to canine madness, for which purpose, like many other popular remedies, it is perfectly ineffectual. This plant flowers in August, and is most often found in mountainous bushy places. A variety of this, with toothed sepals, and petals dotted and marked with purple streaks, grows in wet places, and has by some botanists been called *H. maculatum*.

6. *H. humifusum* (Trailing St. John's Wort).—*Stems* prostrate, somewhat 2-edged; *leaves* oblong, obtuse, perforated with clear dots; *flowers* somewhat cymose; *stamens* rarely more than 15 in number. Plant perennial. This pretty little St. John's Wort has its blossoms of the same hue and form as all the other species, but its mode of growth is very different from any of the preceding. Its slender stems, from three to nine inches long, covered during July with blossoms, spread over stone walls, gravelly heaths, or boggy pastures. Both corolla and calyx have at their edges a few scattered black dots, but not distinct enough to entitle the plant to a place in the next group. This St. John's Wort, though somewhat local, is plentiful in many places; it is one of the prettiest plants of the genus, and well adapted for growing in pots. The odour is rather disagreeable.

* * * *Styles 3; sepals fringed with glands.*

7. *H. montanum* (Mountain St. John's Wort).—*Stem* erect, round, smooth; *leaves* oblong, sessile, smooth,

with glandular dots near the margin; *sepals* acute, fringed with shortly-stalked glands. Plant perennial. This is not an unfrequent plant in hilly limestone districts, where there is a growth of underwood; and it also occurs on many chalky or gravelly soils, flowering in July and August. Its stem is about two feet high; the leaves are rather large and distant. Though the yellow petals are without glands, the calyx and bracts are beautifully fringed with them, and form a very distinctive mark in this species from any of those yet described. The glands, which abound in the genus *Hypericum*, as well as in many other plants, contain in all this family a deep red juice in the cells. Glands may be described as cellular bodies containing some peculiar secretion, and situated on or below the thin skin or cuticle which covers the surface of the plant. Stalked glands are very singular objects, being elevated on a little stalk, which is in some cases simple, in others branched. Link described them as either simple or compound, the former being composed of a single cell, and placed upon a hair acting as a direct conduit, occasionally interrupted by divisions; the latter kind consisting of several cells, and seated upon a stalk, containing several conduits; and thus these delicate dots are seen by the microscopic observer to have a most perfect and beautiful structure.

8. *H. hirsútum* (Hairy St. John's Wort).—*Stem* erect, nearly round, downy; *leaves* egg-shaped or oblong, downy beneath, slightly stalked. Plant perennial. This species, which grows in woods and thickets on limestone soils, is well marked by the downy nature of its some-

what large leaves. Its general aspect much resembles that of the Mountain species. It flowers in June and July.

9. *H. púlchrum* (Small Upright St. John's Wort).—*Stem* erect, round, smooth ; *leaves* heart-shaped, clasping the stem, smooth ; *sepals* obtuse, fringed with sessile glands ; *petals* fringed with glands. Plant perennial. This is a very slender plant, bearing many flowers at the top of its stem. It may, indeed, like some of the other species, be described as it was by Cowper, "Hypericum, all bloom ;" for in May and June its loose panicles are so conspicuous that we hardly notice its small leaves. The flowers are deep yellow, often tinged, as well as the stem, with red ; while the red anthers, and the young buds tipped externally with a rich earmine tint, render them very attractive. The stem is very slender, and sometimes two feet high, and the leaves few and scattered. The sessile glands, or glands without stalks, occur in various parts of plants. They vary much in form, being in some cases conical, and in some, as in the *Cruciferous* plants, little roundish shining bodies. In some plants, as the *Acacias*, they are tiny hollows, surrounded by a thickened rim ; in others, they are kidney-shaped, or of some other form.

10. *H. elódes* (Marsh St. John's Wort).—*Stem* creeping, branches erect ; *leaves* roundish, and, as well as the stems, densely covered with shaggy down. Plant perennial. Mr. Johns, in his "Flowers of the Field," justly remarks of this plant, that "it may be detected at some distance by the hoariness of its foliage, and by the strong, and far from pleasant, resinous odour which it

emits, especially in hot weather." This scent is indeed very strong, and is, in the opinion of the author, more disagreeable than that of any other species, being altogether destitute of that lemon-like perfume which mingles with the resinous odour of the Perforated and some other kinds. The flowers of this species are of a pale yellow colour; they are few, and expand in July and August. Reddish-coloured glandular serratures fringe its calyx, and its stamens are fifteen in number. Though rare in Scotland, it is not unfrequent on the spongy bogs of England. It appears to be the plant called by earlier botanists *Ascyron tomentosum palustre*. Dr. Vaughan, in a letter to the great naturalist John Ray, remarks, "I much wonder that this plant has not been taken more notice of in physie, for I look upon it to be one of the best balsamie astringent plants we have; the native Irish call it *Birin yarragh*." As none of the species have a stronger odour than this, it is not improbable that it possesses more powerful properties than any of the other plants of the genus.

11. *II. linearifolium* (Linear-leaved St. John's Wort).—*Stems* erect; *leaves* narrow, with their margins rolled under; *flowers* in a terminal cyme; *sepals* lanceolate, their margins with numerous black spots, and glandular serratures. Plant perennial. This very rare species is, save in its erect habit, very similar to the Trailing St. John's Wort. It is described as growing on the slopes of hills of several parts of Jersey, on the banks of the Tamar and other rivers of Devon, and also on some parts of the sea-coast of Cornwall. It has small flowers, in July and August.



12. *H. barbátum* (Bearded St. John's Wort).—*Stem* erect, and rounded; *leaves* egg-shaped, with black dots scattered over the under surface; *sepals* fringed with long-stalked glands; *flowers* in a terminal cluster; *petals* minutely fringed and dotted. This is a doubtful native, described by Mr. Don as growing at the side of a hedge, near Aberdalgie, in Strathearn, Perthshire. It is characterized by the long hairs of its calyx, to which it owes its specific name. Sir William Hooker and Dr. Arnott remark, that they do not believe it ever was really found wild in Scotland. Its stem is about a foot high, bearing yellow flowers in September and October.

2. PARNÁSSIA (Grass of Parnassus).

1. *P. palústris* (Common Grass of Parnassus).—*Leaves* heart-shaped, mostly from the roots, one on the stalk clasping; *flower* terminal solitary; *bristles* of the nectary from 9 to 13. Plant perennial. This very pretty flower, which has no just pretensions to the name of grass, is frequent on the bogs and wet places in the north of England, but is rare in the midland and southern counties. Its stem is from six to eight inches in height, and in October it is surmounted by the handsome cream-coloured blossom, marked with darker veins. The flower is very singular on account of its large fan-shaped nectaries, which consist of scales, each arranged opposite to a petal, and having their margins fringed with conspicuous white hairs, which have each a clear yellow globular gland at the tip. The plant is by no

means peculiar to Mount Parnassus, though well fitted to grace a spot so well known to fame. Dr. Clarke does not even describe it among the flowers which he found on that classic mount, which, he says, is bleak and bare at its summit, save where a few alpine plants, with their large blossoms, and leaves covered with woolly down as a protection from the cold, arrest the attention of the wanderer. Lower down, this traveller found the Alpine Daphne, several beautiful species of Cineraria, Yellow Potentillas, Rock Bell-flowers, and thorny thistles; and lower still, dark groves of pine-trees cast their dark shadows on his footpath. Doubtless, the beauty of the flower, rather than its abundance in that region, gave to it the name of Grass of Parnassus, and its allusion to that place is preserved in most of its European names. The French term it *Fleur de Parnassus*; the Dutch *Parnuskruid*; and the name of *Parnassia* is common to the Italian, Spanish, and Portuguese. Either this, or a similar species, grows on the bogs of Russia, where it is called *Pereloi trawa*; and it is the *Einblatt* of the Germans. Dr. Clarke found it on the borders of Lapland, flowering in July, and thus expresses his pleasure at the sight:—"This evening we found that beautiful plant, *Parnassia palustris*, in flower; it was growing on a swampy spot, and to us was quite new; for, although frequently found in Wales and the northern counties of England, and so far south as the moors near Linton and Trumpington in Cambridgeshire, we, as natives of Sussex, had never seen it." One or two very pretty species have been introduced into our gardens from North America; the *Parnassia fimbriata*, from

that land, is a most lovely flower, but as the seeds will not vegetate after a voyage, the young plants must be brought into this country.

ORDER XIX. ACERINEÆ.—THE MAPLE
TRIBE.

Calyx divided, occasionally into 4—9 parts, but consisting usually of 5; *petals* of the same number; *stamens* about 8, inserted on a flattened ring beneath the ovary; *ovary* 2-lobed; *style* 1; *stigmas* 2; *fruit* 2-lobed, 2-celled, not bursting; *lobes* winged on the outside; *cells* 1—2-seeded; *leaves* opposite, generally simple; *flowers* axillary. This Order consists wholly of trees which belong to the temperate regions, occurring in all parts of Europe, and in the north of India, but unknown in Africa. Some of the largest species of the Order are found in North America, where they form a conspicuous and ornamental portion of the forest trees. Lyell, who remarks on some maples growing at Mount Washington, 4,000 feet above the level of the sea, says that the autumnal tints of these trees are most beautiful, varying in every colour from orange to pale yellow, and from bright scarlet to a rich purple hue. Several species have a sugary sap, and the Sugar Maple, *Acer saccharinum*, of North America, produces an abundance of sugar; while both sugar and treacle are also obtained in a somewhat lesser quantity from the Red Maple, *Acer rubrum*, which grows in the swamps of Pennsylvania. Maple

sugar is often seen in this country, in large flat pieces, resembling in appearance the substance called candied horehound. It is an important article of manufacture, and an ordinary tree yields from fifteen to thirty gallons of sap, from which from two to four pounds of sugar may be procured, the tree remaining uninjured by the incisions made in it, and continuing to furnish its produce for forty years. The Red Maple is adorned with handsome scarlet flowers, which expand long before the leaves appear. Its bark also yields a good deep blue colour for the dyer, and an excellent ink is made from it.

1. *ÁCER* (Maple).—*Calyx* 5-lobed; *petals* 5; *capsules* 2, each furnished with a long wing. Name from the Celtic *Ac*, a point, on account of the hardness of the wood, which was formerly used for spears, and other sharp-pointed instruments.

1. *ÁCER* (Maple).

1. *A. campéstre* (Common Maple).—*Leaves* 5-lobed; *lobes* somewhat blunt, scarcely cut; *clusters of flowers* erect. This Maple is a picturesque little tree, very common in our woods and hedges, its leaves in spring being of the most delicate green. In the autumn none of our native trees exhibits a brighter foliage, which is first of a dull ochrey yellow, then of deeper hue, and lastly of an orange rich enough to remind us of the maples of America, whose brilliance is so often described by travellers. The hues of the American species, however, tint the leaves in an earlier stage of their progress, and



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1. Ranunculus repens L. (Common Crowfoot)
 2. Ranunculus acris L. (Common Cow-wort)
 3. Ranunculus abortivus L. (Ranunculus)
 4. Ranunculus flammula L. (Ranunculus)

are not, as with ours, a sign that decay is making rapid progress, and that before some other trees have lost a leaf, these will all be strewed on the earth. The author received from America some very beautiful wreaths, made on paper, of the dried leaves of the Maple and Sumach; the former wearing rich hues of green, red, and purple, the latter glowing in the scarlet tints of the brightest coral. They were preserved in memory of a friend, and years passed over and left their brightness untouched. Seeing that the leaves of our Maple were of golden yellow, and of some of our cherry-trees of richest crimson and orange, the author dried these leaves and formed a similar picture; but in a few months their beauty was lessened, and almost all their brightness finally passed away. Our common Maple has its foliage often thickly dotted with little red prominences, not so large as the head of a pin, but by their number giving to all the leaves of a branch a red appearance. This is caused by the puncture of an insect, which sought in its tissues a nidus for its young. The bark of the tree is very rugged, and its pretty upright blossom of delicate green appears in April and May, with the catkins of the hazel, and the golden and silvery balls of the willows, and often adorns the nosegay of primroses, blue-bells, violets, orchises, stitchworts, and celandines, which is gathered from wood and meadow in that delightful season.

The timber of our picturesque little tree is said to be far superior to that of the beech or sycamore for the purpose of the turner; while the mathematical instrument maker often substitutes it for the holly or

boxwood. It was formerly much employed for making pikes and lances ; but its chief use now is for gun-stocks and musical instruments. Bowls and trenchers were some centuries since commonly made of maple wood ; thus we find in Milton's "Comus,"—

“ For who would rob a hermit of his weeds,
His few books, or his beads, or maple dish,
Or do his grey hairs any violence ? ”

Delicately wrought bowls were sometimes made of this knurled wood, so thin as to transmit the light. The unfortunate Fair Rosamond is said to have drunk her fatal poison from a bowl of this material ; and the beautiful drinking-vessels, so much prized in mediæval times, were chiefly made of the maple, and took their name from the Dutch *maeser*, or the German *maszholder*, which are the names of the tree in Holland and Germany. These bowls were sometimes wrought of other wood, as the walnut and the ash ; and a very beautiful mazer, formed of the latter, was found a few years since in the deep well in the ruined castle of Merdon, near Hursley, built by Bishop Henry de Blois A.D. 1138. The ashen wood was at that period thought to be gifted with certain medicinal qualities ; but that the maple wood was the ordinary material for mazers, the old poets testify. Spenser gives a striking description of one of these bowls :—

“ A mazer ywrought of the maple warre,
Wherein is enchased many a fayre sight
Of bears and tygers, that maken fiers warre ;
And over them spred a goodly wilde vine,
Entrailed with a wanton yvy twine.

Thereby is a lambe in the wolve's jawes ;
 But see how fast renneth the shepheard swain,
 To save the innocent from the beaste's pawes,—
 And here with his sheepehooke hath him slain.
 Tell me, such a cup hast thou ever seene?
 Well mought it become any harvest queene ! ”

And Beaumont and Fletcher thus allude to these bowls,—

“ And dance upon the mazer's brim.”

A very beautiful and large mazer, of the time of Richard the Second, is figured in the “*Archæological Journal*” of 1845, in a paper contributed by Mr. T. Hudson Turner, “*On the Usages of Domestic Life in the Middle Ages.*” The material is apparently of maple wood, and the embossed rim of silver gilt bears this legend :—

“ En the name of the Trinite,
 Fille the kup and drinke to me.”

The writer of this valuable paper remarks,—“ Our ancestors seem to have been greatly attached to their mazers, and to have incurred much cost in enriching them. Quaint legends, in English or Latin, monitory of peace and good fellowship, were often embossed on the metal rim on the cover ; or the popular but mystic Saint Christopher, engraved on the bottom of the interior, rose in all his giant proportions before the eyes of the wassailer as he drained the bowl, giving comfortable assurance that on that festive day, at least, no harm could befall him.” The latest poet who alludes to the mazers is Dryden, in the seventeenth century ; but the

maple bowl was probably in use among the humbler classes some years after.

According to Evelyn, the knobs of old maple-trees, variegated with tints of dark and lighter brown, were collected at high prices in his day by the lovers of works of art. They were, when strongly veined, much prized by the Romans. "Of such," says Baxter, "were composed the celebrated Tigrin and Pantherin tables, of which some particular specimens, as those of Asinius, Gallus, King Juba, and the Mauritanian Ptolemy, are said to have been worth their weight in gold."

This species of Maple is not common in Scotland; and Sir William Hooker doubts if it is indigenous either to that country or Ireland; but it grows in woods and shrubberies there among the trees,—

"Some glossy-leaved and shining in the sun,
The maple, and the beech of oily nuts
Prolific."

2. *A. pseudo-Plátanus* (Greater Maple or Sycamore). — *Leaves* 5-lobed, unequally serrated; clusters of *flowers* drooping; wings of *fruit* slightly diverging. Plant perennial. This tree is much larger and handsomer than the common Maple, but is not so truly wild, having been introduced into this country about the fourteenth century. It grows, however, in hedges in many parts of the kingdom, and is often planted near houses and in shrubberies, affording during summer a broad and pleasant shadow by its outspread leafy boughs. No tree is better adapted for plantations near the sea; for the bleak winds and salt spray, which stunt and deform so many trees, seem favourable to this, for however roughly

the winds may blow, it is never bent on one side, but preserves its upright and symmetrical form, and under its shelter smaller plants and shrubs will grow and thrive. The winds of high hills also leave it unhurt; and it is, therefore, often to be seen by the door of the cottage or farm-house standing in exposed situations, while on mountains at the north of Europe it is a common tree. It grows in Norway by the sea-shore, is plentiful throughout Germany and Switzerland, in the north of Poland and Lithuania, attaining on a tolerable soil a very large size, and rapidly rising from a young shoot to a goodly tree. It is so common in England that, though it is not truly wild, Bishop Mant enumerates it among the trees which adorn the vales and groves of upland or lea.

“ Horse-chestnut, foremost of the wood
To dare his lengthening germs protrude,
Dark, clammy, hard—prepared the first
To hear the enlivening call, and burst,
With foliage cleft and spiral bloom,
The cerements of that living tomb:
The branching sycamore, that veils
His golden shoots in dark-green scales,
While still, as on the fabric goes,
Each pair to each succeeding shows
Its produce in a transverse line,
That step by step they all combine
To frame, by constant interchange,
Of cross-like forms a gradual range:
The taper lime’s compacted head,
With twigs and buds of coral red:
The mountain ash, erect, that rears
His shafts, a plump of bristling spears,
That shake and rustle in the gale:
With bending sweep, the poplar pale,

Of shapely form and graceful mien ;
And willows with their trunks of green,
Whose branches of bright orange dye
With tints of brighter crimson vie."

Our old herbalists describe the leaves of this plant as "excellent good" for the liver and the spleen, and the roots were considered to be, when bruised, a valuable application for various pains. The sweet milky juice with which it abounds would, if extracted during winter, furnish a small quantity of sugar. This juice renders the leaf obnoxious to insects; and Linnæus much recommended the growth of this tree, both on that account and for its timber, adding that its juice might also be rendered of use. The timber forms an excellent fuel, giving great warmth as it slowly burns. The musical instrument and cabinet maker make much use of it; and good wooden platters are still made of it, though not so frequently as they were in days when earthenware was little used. One great charm of the tree in the olden times has been lost by the increase of knowledge. Our fathers believed, as they sat beneath its shade, that they were looking up into the boughs of the kind of tree in which Zaccheus hid himself, to see our Saviour pass by; but it is now well known that the Sycamore of Scripture is a species of fig-tree. Our tree often lives from a hundred to a hundred and fifty years, and even much older trees are on record.

Some very large Sycamores are described as having grown in various parts of this kingdom. One mentioned by Sir Thomas Dick Lauder, at Calder House, in the county of Edinburgh, measured in October 1799

seventeen feet seven inches in girth, its trunk being about twelve feet high, and its branches extending to a distance of sixty feet in diameter. This tree is known to have existed before the Reformation, and is therefore not less than three hundred years old; yet it has the appearance of being perfectly sound. This was the tree to which in former years the iron jugs, a species of pillory, were fastened; and as the tree gradually grew over them, they have now long been completely enclosed in its trunk, a large protuberance on the surface marking the place at which they are embedded in the wood. "But the most remarkable Sycamores in Scotland," says the Rev. C. A. Johns, in his "Forest Trees of Britain," "are those which are called 'Dool trees.' They were used by the most powerful barons in the west of Scotland for hanging their enemies and refractory vassals on, and were for this reason called dool, or grief-trees. Of these there are three yet standing, the most memorable being one near the fine old castle of Cassillis, one of the seats of the Marquis of Ailsa, on the bank of the river Doon. It is not so remarkable for its girth of stem, as for its wide-spreading branches and luxuriant foliage, among which from twenty to thirty men could be easily concealed. It was used by the family of Kennedy, who were the most powerful barons of the west of Scotland, for the purpose above mentioned. The last occasion was about two hundred years ago, when Sir John Fau of Dunbar was hanged upon it, for having made an attempt, in the disguise of a gipsey, to carry off the then Countess of Cassillis, who was the daughter of the Earl of Haddington, and to

whom he had been betrothed prior to his going abroad to travel. Having been detained for some years a prisoner in Spain, he was supposed to be dead, and in his absence the lady married John Earl of Cassillis. It is said that the lady witnessed the execution of her former lover from her bedroom window."

The leaves of the Syeamore are often rendered clammy to the touch by the sweet substance called honey-dew, and plants growing beneath are frequently much injured by the dropping of this sweet liquid. This honey-dew has by many writers been believed to be caused by aphides, but others consider it to be a natural secretion from the leaf of this and other trees. Pliny gravely hesitated whether he should regard this exudation as the "sweat of the heavens, the saliva of the stars, or a liquid produced by the purgation of the air." Professor Burnett thinks that some kinds of honey-dew may be owing to the deposition of some of those minute lichen-like plants, which seem to be chiefly of meteoric origin and atmospheric growth, and which occasionally occur in vast profusion. Some persons are even of opinion that those airy lines, which sometimes at early morning seem spread like a gauzy veil over the meadows, looking as if the spiders had brought to every blade of grass a delicate tracery, have this meteoric origin. It does not appear, however, that the honey-dew on the Syeamore leaf is of this nature, and our recent naturalists seem to regard it as an exudation of the plant itself.

Very frequently also, in autumn, the foliage of the Syeamore is more or less disfigured by a black fungus, which gives to the leaves an appearance of having had

large drops of ink scattered upon them. In some seasons these spots are very abundant, and in one year the author saw a row of Sycamores in which almost every leaf was thus disfigured, so as to attract the notice of those who rarely observed plants. This fungus is the *Xylonia acerinum*, and when observed with a powerful microscope, is seen to be a curled tubercle, with a rugged border. The leaves so affected fall off at the first frost, and these spots then gradually corrode their entire substance.

The Sycamore-tree is never more attractive than in the early spring, when the young, tender, green foliage is shooting forth, and when the small pink scales, which at first envelope the handsome lobed leaf, are just being scattered around the tree by every gust of wind. When autumn is on its way, the more sober red of the gradually ripening winged seed-vessels, as well as the varied hues of the foliage, are also very ornamental among the deepening tints of the wood. Cowper described it as—

“The Sycamore, capricious in attire,
Now green, now tawny, and ere autumn yet
Has changed the wood, in scarlet honours bright.”

ORDER XX. GERANIACEÆ.—GERANIUM TRIBE.

Sepals 5, not falling, ribbed, overlapping when in bud; *petals* 5-clawed, twisted while in bud; *stamens* 10, often alternately imperfect, usually united by their fila-

ments; *ovary* of 5 carpels, placed round a long awl-shaped beak; *styles* 5, united to the beak; *stigmas* 5; *fruit* beaked, separating into 5 capsules at the base of the beak, and terminating in a long awn, which finally curls up, bearing with it the capsule. This is a large Order, composed chiefly of herbaceous plants, but comprehending also a few shrubs. The genera are distributed over various parts of the world, a great number of them being found at the Cape of Good Hope. These are chiefly the Pelargoniums, which are the plants usually called Geraniums, some of which are to be found in most gardens, and which are the commonest of window plants. The genera *Erodium* and *Geranium* are mostly natives of Europe, North America, and Northern Asia. A slight degree of astringency and acidity is possessed by the *Geranium*, and a fragrant essential oil has been distilled from *Pelargonium odoratissimum*, which is said somewhat to resemble attar of roses, and to be quite as pleasant. Another species of this genus, *Pelargonium cucullatum*, has been regarded as an emollient, and the ground tubercles of *P. hirsutum* are esculent, and much prized by the Arabs as food. The leaves of the common scarlet *Geranium*, the bright flowers of which are to be seen in many a cottage window, have in some recent scientific works been much extolled as remedies to be laid upon the wound inflicted by any sharp instrument. The whole tribe is innocuous, but their chief value consists in the lovely flowers with which they deck our lanes and meadows, or, as in the Pelargoniums, with which they grace our gardens, rooms, and greenhouses.

1. GERÁNIUM (Crane's-bill).—*Petals* regular ; *stamens* 10, 5 of which are alternately larger, and have glands at the base ; *fruit* beaked, separating into 5 capsules, each with a long awn, which is naked (not bearded) on the inside. Name from the Greek *géranos*, a crane, from a fancied resemblance of the fruit to the beak of that bird.

2. ERÓDIUM (Stork's-bill).—*Petals* regular ; *stamens* 10, of which 5 are imperfect ; *glands* 5 at the base of the perfect stamens ; *fruit* beaked, separating into 5 capsules, each with a long spiral awn, bearded on the inside. Name from the Greek *erodion*, a heron, from the resemblance of the fruit to the beak of that bird.

1. GERÁNIUM (Crane's-bill).

* *Flower-stalks single-flowered.*

1. *G. sanguíneum* (Bloody Crane's-bill).—*Root-leaves* nearly round, with 7 deeply-cut lobes, each of which is 3-cleft ; *stem-leaves* 5 or 3-lobed. Plant perennial. This species is, from May to September, so beautiful with its large flowers of bright purple, that we regret that it is not more frequent. It produces a large quantity of foliage ; its stem is hairy, swelling at the joints, and about a foot or a foot and a half high. Though not a common flower, it grows abundantly on some limestone and magnesian soils. In a very interesting paper, written by Mr. W. Thompson, on the relation between geological strata and the plants growing on their superincumbent soils, the author remarks :—"The basaltic ranges claim certain species, which, if not peculiar to them,

are at least more luxuriant when they are grown upon whinstone soil. The native *Gerania* I have always found thriving best in such districts. *Geranium sanguineum*, the most elegant of the genus, is richer in its tints and stronger near Edinburgh and on the Carrick shore of Ayrshire than any where else throughout the whole range of my botanical excursions. On mountain lime it is slender and straggling; on the basaltic ledges of Salisbury Crags, and beneath the scaurs of the Ayrshire whin, it exhibits the same dense bed of flowers, with a thickness of stem, compactness of leaf, and a hairiness of clothing so different, as almost to mark it out as specifically distinct from the *G. sanguineum* of North Wales, and its lakes. The *G. sanguineum* of Carrick extends nearly a mile along the shore, in one continued tract of beauty, exhibiting a luxuriance superior to that of any other flower of distinguished loveliness which our island produces." This author also describes the flower as growing, with the Broom-rape, along the ledges of the cliff in another district of mountain limestone, St. Vincent's Rock, and Clifton Downs, near Bristol. A variety of this Crane's-bill has been found by other botanists on the sands of Walney Island, in Lancashire, with pale flesh-coloured flowers, varied with purple.

* * *Flower-stalks 2-flowered.*

2. *G. phœum* (Dusky Crane's-bill). — *Stem* erect; *flowers* panicled; *sepals* slightly pointed; *capsules* keeled, hairy below, wrinkled above. Plant perennial. This species is frequently cultivated in gardens, but is rare as



a wild plant; and even when growing in our woods and thickets it is very often the outcast of some neighbouring garden, or its seed was borne thither by wind or bird from a more distant plot. The flowers are of a dingy, purplish black colour, looking like the blossom of some poisonous plant. They occur in May and June. A variety with white flowers is said, by Sir William Hooker and Dr. Arnott, to be found on the sands of Barrie, near Dundee.

3. *G. nodosum* (Knotty Crane's-bill).—*Stem* smooth; *leaves* opposite, with 5 or 3-pointed serrated lobes; *petals* with a deep notch; *sepals* with long awns; *capsules* downy, but not wrinkled. Plant perennial. This plant is not truly wild, and no British habitat is now known for it; but it is said to have grown formerly on the mountainous parts of Cumberland, and between Hatfield and Welwyn, in Hertfordshire.

4. *G. pratense* (Blue Meadow Crane's-bill, or Crow-foot Meadow Crane's-bill).—*Stem* erect; *leaves* palmate, 5-lobed; *lobes* cut and serrated; *stamens* smooth, tapering from a broad base; *capsules* hairy all over; *fruit-stalks* bent down. Plant perennial. This is the largest of our British Crane's-bills, and is, from June to August, a very handsome flower, of a beautiful purple colour, attaining, when luxuriant, about the size of a florin piece. The stem is often more than two feet high, and the plant is well distinguished by its much divided leaves. It is most frequently found among bushes and thickets, particularly near waterfalls, and is common in moist copses in Cambridgeshire, and in the neighbourhood of London. Mr. Thompson remarks:—

“*Geranium pratense* is, I am persuaded, to be found luxuriant only in basaltic districts. Every stream in Ayrshire, and to the east of Glasgow, is rendered eminently beautiful by the rich azure of its transparent petals, and the singular verdure of its long-stalked leaf. The Clyde, the Calder, the Tannock, and every streamlet near Bothwell and Campsie Fell, possesses this flower. The bed of these rivers is basaltic. In Ayrshire, the Ayr,* the Marnock, the Doon, the Irvine, and the Garnock, have tufts of this plant on their banks from the source to the sea. Long before botany became a study, these flowers gave an interest to that country, which is still remembered with something of the quiet delight which an early love of Nature produces and perpetuates; and even now, after the contemplation of mere beauty in flowers has given place to the pursuit of their scientific arrangement and philosophic purposes, there is a childish delight in the rencontre of such momentos of early days, when time, and thought, and pleasure were young and pure. I have met them thus in southern counties, and occasionally near the Irwell, but how altered! ‘*Quantum mutati ab illis!*’—the hue is less brilliant, the herbage weaker, the bed a few thin and scattered patches. What can be the cause? Is it that later impressions are warped by prejudice, from want of novelty, or of the requisite association? or does the preeminence of Ayrshire Crane’s-bill depend on the position of the streams, where it grows over basaltic rocks, whose débris is more suited to vegetation of this

* “This stream, the Ayr, occasionally crosses schist and plastic clay. In such places this *Geranium* is not to be found.”

kind than the washing of the new red sandstone of Lancashire? The latter conclusion I am willing to adopt," adds our author, "because it is the most reasonable, and, if for no other reason, because it favours my theory."

5. *G. sylvaticum* (Wood Crane's-bill).—*Stem* erect, many-flowered; *leaves* palmate, 7-lobed; *lobes* cut and serrated; *stamens* awl-shaped, fringed; *capsules* keeled, hairy; *fruit-stalks* erect. Plant perennial. This rare plant grows in woods and pastures, chiefly in the northern parts of this island. It has, in June and July, very pretty purple or pale rose-coloured flowers, which are smaller than those of the Meadow Crane's-bill, but larger than the blossom of the Dusky species. It is distinguished from the Meadow Crane's-bill, not only by its smaller size, but also by its capsules, which are most hairy about the keel, and by its stamens, which are fringed about half way up.

6. *G. Pyrenæicum* (Mountain Crane's-bill).—*Stem* erect, downy; *root-leaves* kidney-shaped, 5—7-lobed; *lobes* oblong, blunt, 3-cleft, and toothed; *petals* notched, and twice as long as the pointed sepals. Plant perennial. Although this species grows in many meadows and pastures, yet it is not a common flower. Its stem is two or three feet high, and its numerous small purple blossoms have their petals very distinctly 2-cleft. Sir William Hooker and Dr. Arnott remark that this species has a spindle-shaped root, while in all the former species the root consists of long fibres arising from a premorse tap-root. Mr. Backhouse mentions a Crane's-bill growing in Van Diemen's Land, the *Geranium par-*

viflorum, which has a long fleshy root, and is called Native Carrot, and much eaten by the people of that country.

7. *G. lúcidum* (Shining Crane's-bill).—*Leaves* nearly round, 5-lobed; *sepals* angular, and wrinkled; *capsules* with 3 keels, and wrinkled; *stems* spreading. Plant annual. The foliage and stems of this pretty species are very smooth and glossy, and the lower leaves, which are smaller than the upper ones, are often tinged with bright red. The stems are but a few inches in height, swelling at the joints, and the elegant little rose-coloured flowers expand in May, continuing in blossom till July. The plant is not uncommon in hilly and mountainous countries, on rocks, walls, and roofs of houses. Mr. Thompson remarks of this species, that it belongs especially to lime districts, and seems not appropriate to basalt. Derbyshire, he says, abounds with this plant. He also met with a luxuriant crop of it near Warwick, where it was growing on a base of lime which was at a considerable depth below the surface.

8. *G. Robertiánum* (Stinking Crane's-bill, or Herb Robert).—*Stems* spreading; *leaves* ternate, or quinate; *leaflets* deeply cut, the segments with minute points; *sepals* angular, hairy; *capsules* wrinkled and hairy. Plant annual. This pretty little Geranium, flowering in early spring and lingering sometimes in autumn among the last of the flowers, is the most common of all our native species. Every one knows it, and most of us have bound it in the nosegay gathered in childhood from woods and thickets, and green lanes and meadow hedgerows. It comes with the brilliant blue Germander

Speedwell to tell of the approach of summer ; and before a flower has yet expanded on the bank, we may see its beautifully cut leaves gleaming in the sun. When winter is approaching and flowers are gone, and many green leaves are turned brown, this foliage is often among the few bright things which are left, and, touched with a rich glow of crimson, it seems not to need the addition of blossoms to render it attractive. We have, in September, seen masses of it covering large heaps of stones with its stems and leaves, and thought, as the robin sate sweetly singing near it his prelude to the winter, that the hue of bird and leaf accorded well with each other. Mr. Thomson says that it grows with peculiar luxuriance on basalt, and that it is one of the most abundant plants in Ayrshire. He remarks that near the river Doon especially, its size was such as to incline him to examine it as a new species. We forget its strong and disagreeable odour when we see its hundreds of pink stars contrasting with the purple blossoms of the ground-ivy, or mingled in the later year, as the poet has described them, among many lovely wild flowers :—

“ Loudly raves

The bustling brook, which many a chasm hath cleft,
Where springs the hispid Comfrey ; and above,
In rich exuberance, light-vein'd Ivy trains
A drapery o'er the loftier trees. Here glows
The crimson berry of the Guelder-rose,
Whose vine-like leaves have caught a sanguine stain
From the October sun. Down in the grass,
And blushing through green blades, Herb Robert fain
Would catch the eyes of pilgrims as they pass,
Who seek for rarer plants The Arum there,
Now leafless, lifts its ruby sceptre—red

As coral rocks that stud the Sea Nymph's bed ;
Pale Agrimony scents the evening air
With a faint lemon odour ; and, around,
The roseate Mallow in profusion springs."

This plant is a native of many lands besides ours, and has smiled upon those who have wandered in Brazil and Chili, reminding them of the green lanes of England. In some places a decoction of the plant is used in medicine. The herb contains tannin, and exerts an astringent action on the system, and by the old herbalists it was regarded as a good vulnerary. They probably gave it its familiar name after some Robert renowned in their days, though unknown in ours. It appears to possess more astringency than either of our British species, but some foreign species exceed it in this respect. The *Geranium maculatum*, which is a common plant from Canada to North Carolina, enlivening with its pale lilac flowers many a grassy and leafy spot, contains so much astringency that it is known in America by the name of alum-root, and is employed by physicians as a remedy in complaints of the throat and of general debility. Dr. Bigelow ascertained that this species contained a great proportion of tannin and gallic acid, the amount of tannin appearing to be greater than that of any other constituent ; and Barton says it might form a substitute for kino. Our common Herb Robert is believed to be obnoxious to many insects, and is by cottagers often placed near beds to repel them ; and the strong odour is probably disagreeable to these intruders. In North Wales, it is believed to be an efficacious remedy for gout. Some of the exotic *Gera-*





niaceæ, as *Sarcocaulon L'Herétière*, have stems which burn like torches, emitting during combustion a most fragrant odour. The French call our plant *Le Geranium*, and the Italians term it *Geranio*. It is the *Storchschnabel* of the Germans, and the *Oijevaarsbek* of the Dutch.

9. *G. mollé* (Dove's-foot Crane's-bill).—*Leaves* roundish, lobed, cut, and downy; *petals* notched; *capsules* wrinkled, but not hairy; *seeds* smooth. Plant annual. This is almost as frequent a species as the Herb Robert, though growing more in the grass of the pasture lands than the former plant. It occurs also on banks and wayside places, and is often covered with the dust of the road; its downy leaves, soft as velvet, and of a greyish green hue, on spreading stems, forming large circular clumps. Being one of the earliest of spring flowers, its little reddish purple cups may often be found among its foliage in March, and they continue to expand till October, though their colour is not so bright at this season as in the earlier part of the year. The French call this flower *Pied de Pigeon*.

10. *G. rotundifolium* (Round-leaved Crane's-bill).—*Leaves* roundish or kidney-shaped, lobed, and cut; *petals* entire; *capsules* hairy, not wrinkled; *seeds* dotted. Plant annual. This plant much resembles the species last described, and is probably sometimes mistaken for it; it is not, however, like that, a common plant, but occurs in some few pastures and waste places, beginning to blossom at a later season, its small purple blossoms seldom peeping up from the leaves before the month of June. It may be distinguished from the Dove's-foot

by its petals without notches, and by its dotted seeds, which are very pretty when seen under a microscope.

11. *G. pusillum* (Small-flowered Crane's-bill).—*Leaves* roundish, lobed, and cut; *petals* notched; *stamens* 5; *capsules* keeled, downy, not wrinkled; *seeds* smooth. Plant annual. 'This Crane's-bill, which bears very small bluish-purple flowers throughout the summer, is also much like the Dove's-foot, and resembling it in its downy foliage and spreading stems, it is, to the unpractised botanist, difficult of distinction. The most obvious feature of difference is, that the capsules of this species are unwrinkled, though downy, whereas those of the former species are transversely wrinkled. The young botanist is often perplexed by the general similarity of several of the Crane's-bills, which are, however, essentially distinct; and a remark made upon this tribe by Mr. Johns, in his "Flowers of the Field," is worthy attention:—"Particular care," observes the author, "should be taken, when comparing specimens with their descriptions, to examine the root-leaves; for the stem-leaves vary on the same plants so as to defy description."

12. *G. disséctum* (Jagged-leaved Crane's-bill).—*Stems* spreading, hairy; *leaves* roundish, hairy, variously divided into numerous jagged narrow segments; *sepals* with long awns; *petals* notched; *capsules* hairy, and slightly wrinkled; *seeds* dotted. Plant annual. The name of this Crane's-bill well describes one of its characters, for its leaves are very deeply cut or jagged. They are hairy, and not soft and downy, like those of some of the former species. The flowers are on short

stalks, so that, as Mr. Curtis remarks, they seem sitting among the leaves. They are rose-coloured, and may be found all the summer on hedge-banks, pastures, and waste places, where the soil is of gravel.

13. *G. columbínium* (Long-stalked Crane's-bill).—*Stems* spreading, hairy, with short hairs; *leaves* 5-lobed, the lobes cut into long, narrow, acute segments; *flower-stalks* very long; *sepals* with long awns; *capsules* smooth. Plant annual. This graceful plant is not very common, and its flowers at once distinguish it from all the rest of the species. These are in bloom from June to August, and are placed on slender stalks, often longer than one's finger, and hardly thicker than a packthread. The flower is larger than that of any of the four species last described, and is a rich, reddish, erect, purple bell, sometimes in fine specimens almost as large as that of the large Stitchwort. The stem is procumbent, and the capsules have occasionally a few hairs scattered upon them, but are generally smooth.

2. ERÓDIUM (Stork's-bill).

1. *E. cicutárium* (Hemlock Stork's-bill).—*Stems* prostrate, hairy; *stalks* many-flowered; *leaves* pinnate; *leaflets* sessile, pinnatifid, and cut. Plant annual. This is a very pretty flower, and one also which is common on waste places. It grows very often near the sea, and in salt marshes. It might at first sight be taken for one of the Crane's-bills, but no species of that genus has the pinnate leaves which characterise our present plant. Its flowers, which grow in umbels, are of a delicate lilac

tint; and they are to be seen on the plant throughout the summer, but the petals are very frail, and easily scattered by the wind.

2. *E. moschatum* (Musk Stork's-bill).—*Stems* prostrate, hairy; *stalks* many-flowered; *leaves* pinnate; *leaflets* nearly sessile, and cut; perfect *stamens*, toothed at the base. Plant annual. This species is much larger and handsomer than the last, and its flowers are of deeper purple. Like the Hemlock Stork's-bill, it is common near the sea, and seems more luxuriant there than elsewhere. The foliage is deep green, somewhat clammy, and when passed through the hand leaves a pleasant musk-like odour, which the author has observed to be more powerful in the evening than during day, and which also seems stronger in the plant when cultivated, as it often is, in gardens. It grows in waste places, and flowers all the summer, but is not frequent. It is often called Heron's-bill. Its juice has sometimes been employed as an aromatic bitter.

Mr. Mallet, of Dublin, was apparently the first to give a full account of the curious movements of the seed-vessel of this plant, a peculiarity now well known to botanists. This gentleman, in 1836, observed in the Stork's-bill one of those wondrous and interesting modes of the dispersion of seeds which exhibit themselves variously in plants, and which are destined to make the surface of the earth a scene of beauty and grace, as well as to supply an abundant source of vegetable food to man and animals. It was on a cultivated plant of this species that Mr. Mallet made his observations; and having, as he said, looked into many books, and found

no mention of the circumstance, he resolved to state his account of it in a scientific journal of that time.

“Each seed, of which there are five to each flower,” says this writer, “is enclosed in a carpel, attached by its upper extremity to a tail or awn, which possesses the most wonderful hygrometric sensibility, as, indeed, does every other part of the plant. These five awns lie in grooves in the receptacle of the flowers, and this receptacle is central to, and is the axis of, all parts of the flower and the fruit. When the whole system has arrived at a certain point of aridity, the awns, which are provided with an exquisite power of torsion, twist themselves out from their grooves, and at the same moment a number of downy filaments, hidden in the back or inward face of the awns, bristle forth; they all together become now detached, and fall to the ground.

“But here they still continue to twist, and, from the position in which they always lie, keep tumbling over and over, and thus receding from the parent plant, until at length they become perfect balloons, ready to be wafted away by every zephyr. But motive power has not ceased to this apparatus to the seeds when this has twisted itself into this balloon shape; the slightest hygrometric change produces motion either backwards or forwards in the awn, and the constant tendency of this motion is to screw the seed into the ground. Such is the shape and great sensibility of the awns, that they may be readily applied to form most delicate differential hygrometers, for which purpose I have used them.”

Mr. Mallet, in recording his observations, has allowed

his imagination to run somewhat in advance of facts ; but, with the exception of the “balloon” simile, his remarks are very just.

ORDER XXI. BALSAMINEÆ.—BALSAM
TRIBE.

Flowers irregular ; *sepals* 5, or appearing to be 4, by two of the upper or inner ones uniting into one, the lowest spurred and hooded ; *petals* 5, but appearing to be only 2, by the unions in pairs of the two side ones, and the fifth being wanting ; *stamens* 5 ; *filaments* more or less united at the extremity ; *anthers* 2-celled ; *ovary* of 5 cells, alternating with the stamens ; *stigmas* 5, almost sessile, either distinct or united ; *fruit* a capsule, with 5 elastic valves and 5 cells, or succulent, and not bursting ; *seeds* 1, or many, suspended. The plants composing this Order are juicy and herbaceous, with opposite and alternate leaves, destitute of stipules. They are natives of damp bushy places among bushes, and are not remarkable for any medicinal properties. They have all a curious method of projecting their seeds to a distance.

1. IMPÁTIENS (Balsam).—*Flowers* of apparently 4 sepals, and 2 petals ; *capsule* of 5 valves. Name signifying impatient, given from the sudden opening of the valves of the capsule when touched.

1. IMPÁTIENS (Balsam).

1. *I. Noli-me-tângere* (Yellow Balsam, or Touch-me-not).—*Joints* of the stem swollen; *leaves* egg-shaped, serrated and stalked; *stalks* 3 or 4-flowered; *spur* of the calyx loosely recurved, and entire at the point. Plant annual. This is a very rare wild plant, growing in moist shady woods, chiefly at the north of England, and flowering in June and July. It has been found in the neighbourhood of Keswick, in Cumberland; by the side of Coniston Lake, on the banks of Winandermere, and is described as plentiful by some little rills near Rydal Hall. It occurs, more rarely, on the sides of the Avon, near Salisbury, near Fountains Abbey, and in several other places, both in England and Wales. The stem is about a foot high, round and succulent, and, like that of the garden balsam, which belongs to an allied genus, is very brittle. The flowers are large, and yellow, spotted with orange; and the foliage is so acrid as to be refused by all animals except the goat. Boerhaave considered the plant poisonous, and though it has been used medicinally, yet its use was generally considered by the medical profession as attended with danger. Its Latin name, *Noli-me-tângere*, is significant of the manner in which its seed-vessel curls up its valves spirally at the slightest touch, jerking its contents into the face of him who bends over it; and the German, Dutch, and French familiar names are synonymous with ours; the former is *Springsame*, and the latter *Springzaad*. The Italians call the plant *Balsa-*



mina gialla ; the Spaniards term it *Balsamia amarilla*, and *Erba impatiente* ; and it is the *Ne me touchez pas* of the French. The leaves are expanded during the day-time, but hang drooping at night.

Professor Lindley accounts in the following manner for the action of the seed-vessels. The tissue of the valves consists of cellules gradually diminishing in size from the outside to the inside, the fluids of the outer cells being the densest. The latter, by degrees, empty the inner cells, and distend themselves so, that the external tissue is disposed to expand, and the internal to contract, whenever anything occurs to disturb the force which keeps them straight. This at last happens by the disarticulation of the valves, the flower-stalk and the axis, and then each valve rapidly rolls inwards with a spontaneous movement. M. Dutrochet proved that it was possible to produce this phenomenon by putting some fresh valves of this Balsam into sugar and water, which gradually emptied the external tissue, and after rendering the valves straight, finally curved them backwards.

An American species, *Impatiens fulva*, is described as growing on the banks of the Thames, and also on the borders of the Wey, but is not a truly British plant. The spur of the calyx of this flower is notched and bent under so closely as to press against the sepals. The Garden Balsam is the *Impatiens balsamina* ; it is a native of the East Indies, and its beautiful varieties of carnation or purplish blossoms studding their amber stems, are among our most common garden annuals. The seeds often surprise the unwary by suddenly jerking out on some slight touch. The juice of the plant



prepared with alum is said, by Thunberg, to be used by the Japanese for giving a pink tinge to their nails; and of the leaves of another species the natives of Cochin China make a wash with which to cleanse and perfume the hair.

ORDER XXII. OXALIDEÆ.—THE WOOD-SORREL TRIBE.

Sepals 5, not falling off; *petals* 5, equal, often united at the base, twisted while in bud; *stamens* 10, the 5 outer ones shorter than the others; *filaments* generally combined at the base; *ovary* 3—5-celled; *styles* 3—5; *capsule* 3—5-celled, with as many, or twice as many valves; *seeds* few, enclosed in an elastic case, which curls back on the ripening of the fruit, and throws the seeds to a distance. The Order consists of herbaceous plants, or under shrubs, which are remarkable for the acidity of their foliage, and for their sensitiveness. Several are astringent, and their acid flavour has rendered many among them agreeable additions to soups, salads, and confectionary, as well as useful for medicinal and various economical purposes.

1. OXÁLIS (Wood-sorrel).—*Sepals* 5, united below; *petals* 5, often united below; *stamens* united by the base of their filaments; *styles* 5; *capsules* 5-celled, angular. Name from the Greek *oxys*, sharp or acid, from the acid nature of the leaves.

1. OXÁLIS (Wood-sorrel).

1. *O. acetosélla* (Common Wood-sorrel).—*Leaves* all springing from the root, ternate, hairy; *scape* with 2 small bracts about the middle, single-flowered; *root* scaly. Plant annual. There are few of our woodland flowers more beautiful than this, when, in May, its clear triple leaf is spreading around the trunks of the old trees. It might at first be taken for a mass of clover, but the foliage is both thinner and of brighter green than that of any of our species of Trefoil, and the delicate white or lilac flower, veined with purple, stands up gracefully from among it. As Linnæus remarked of them, these pencilled bells close on the approach of rain; even when the weather changes in a moment from sunshine to shower, though they were before fully expanded, they are folded up immediately. The leaves are always closed at night, as well as before and during rain. They are said to shrink together, too, at a blow with a stick, and the seed-vessel partakes of the general sensibility of the plant. This, if ever so slightly pressed, will open at right angles, jerking out the seeds at the opening. "This," says Mr. Curtis, "is not owing to any elasticity in the capsule itself, which continues unchanged; the cause of this propulsion is a strong, white, shining arillus which covers the seed, and, bursting by its elasticity, throws the seed to a distance."

Many of the leaves of our common plants, especially such as are pinnate in form, close regularly at night, as well as before rain. Any one who observes the

foliage of a clover-field, or of the peas, vetches, or mountain-ash, will see how readily they are affected by the moisture of the atmosphere, or the approach of night. But we have not, in this country, any plant which can at all compare with the sensitive plants, the *Mimosas* of tropical regions, whose thousands of leaflets fold together at the slightest touch, so that the Indians may well call them *Dormideras*, or sleepy plants.

There are large tracts of country in hot and damp districts entirely covered with *Mimosæ*, where the vibration caused by the galloping of a horse past them is sufficient to set the whole mass in motion. We know of no plant, however, truly wild in the British field or wood which would better deserve the name of Sensitive Plant than our woodland sorrel, though the species termed *Oxalis stricta*, which can hardly be claimed as a truly wild flower, has even more sensibility. The whole family of the wood-sorrels are remarkable in this respect. The leaves of the *Oxalis sensitiva* are well known to collapse on the slightest touch; and Professor Morren, of Liege, attributes to the *Oxalis stricta*, which is naturalized in the counties of Devon and Cornwall, the properties of the sensitive plants of the East. The excitability and spontaneous movements of the leaves of this species, which were accidentally observed by two of the pupils of this professor, in the Botanic Garden of Modena, were communicated to the Royal Academy at Brussels. Professor de Brognoli, in verifying some experiments which had been made, found that the plant must be teased for a long time, as its movements are much slower than those of the Mimosa. This botanist

believed, from various observations which he had made on sensitive plants, that heat was the principal agent in this phenomenon, as he observed that the most singular of plants, the Moving Saintfoin, (*Hedysarum gyrans*,) moved less during winter in hot-houses. This writer considers that all the species of *Oxalis* are susceptible of contraction when irritated; but as a large number of the cultivated species are from the Cape of Good Hope, they show no effects from concussion in our atmosphere, whose greatest heat is never equal to that of Africa. Professor Morren furnished several interesting notes on this phenomenon, which subsequently led to a discovery of some analogy in structure between the leaves of the Wood-sorrels and those of the Mimosæ, an analogy quite unexpected by botanists, but which subsequent observation has fully established. One very remarkable peculiarity belongs to the wood-sorrels, which is, that M. De Candolle was never able to modify the closing of these leaves at night, as he did those of many plants, by the alternation of artificial light with darkness; whence he inferred that the folding up of the leaves, termed the sleep of plants, and their unfolding, or awaking to the light of day, were connected with a periodical disposition of motion inherent in the plant. In the case, however, of *Oxalis stricta* the leaflets, when awake, assume, on receiving a blow, the attitude of the sleeping leaf.

The irritability of various plants, and the nightly folding of many, has occupied the attention of botanists, from Linnæus to those of our own day, and any one at all accustomed to observe the flowers, either of the

garden or the country landscape, must have seen it. Plants possess three distinct kinds of irritability, namely, such as depend on atmospheric phenomena, spontaneous motions, and such contractions as are caused by the touch of other bodies. Our Wood-sorrel exhibits two of these influences, but we have scarcely any native plant which shows any great degree of spontaneous movement, except the *Oscillatorias*, which are weeds of our fresh or salt water, and whose thread-like forms twist about like worms, and move to a considerable distance from the spot on which they are laid. Some sea-weeds and fresh-water Confervæ, both of our own and other lands, exhibit movements so much like those of animal life as to startle and perplex the observer; but the Moving Saint-foin of the East Indies is the most remarkable of all plants for its perpetual restless movement by day and night, without any apparent stimulus, either from contact or the atmosphere, and we have in our country no plant which at all resembles it in this peculiarity.

The sleep of plants is not confined to the folding of their leaves. As twilight approaches, many flowers alter their position. Sometimes the leaves fold over the delicate petals, so as to shield them from nightly dews or the hoar frosts of spring or chilly blasts of autumn. Many flowers close quite up during night. The daisies, which sprinkle our meadows, received their pretty name from their opening only to the morning light, and many, like Chaucer, mark them thus folded on the mead—

“When that the sunne out of the south gan west,
And that this floure gan close and gon to rest.”

Flowers of the rayed form are peculiarly so affected, and are like—

“The marigold that goes to bed with the sun,
And with him rises weeping.”

Even the corn-field shows its sensitiveness to the approach of the shadows of evening, and droops down its green or ripening blades to await the morn, while many a delicate cup and vase bend downwards, and drooping bells droop more and more as night comes on. There are flowers, however, which close even at noon; when the sun is shining down brightly upon them, and, like the Goat's-beard of our field, excite our wonder by folding up ere chilling dews have come to give a warning.

Even after various investigations and careful experiments, the folding up of plants presents phenomena for which we cannot account; and the closing up of the Wood-sorrel leaf at a touch is yet a wonder to thoughtful men. Miller tells of a Calabrian philosopher who became mad while considering the nature of sensitive plants; and were we not accustomed to observe to what singular opinions the transcendentalism pervading the German mind may sometimes lead, we might almost fancy that a similar occupation had similarly affected the mind of the excellent botanist, Von Martius. This philosopher, who published his views on the Soul of Plants, says, that in the more highly developed vegetable forms, phenomena occur which belong to animal life, so that a soul cannot be denied to vegetables. He ascribes to them “internal perceptions and ideas; a dark

sensibility and consciousness; a sympathy, and, probably, also a kind of memory," though he says we are not to trace in them "a higher sense, understanding, or free-will." He describes the fraternity as governed by a soft and peaceful spirit. Darwin, when he wrote his *Botanic Garden*, would have rejoiced in these opinions of Von Martius. Poets of all ages, ever ready to endow Nature with personal attributes and sympathies, have described flowers and trees as enjoying pleasing sensations. Wordsworth thus clothes in words his poetic fancy—

“Through primrose tufts in that sweet bower
The periwinkle trail'd its wreaths;
And 'tis my faith, that ev'ry flower
Enjoys the air it breathes.”

So, too, in sweetest verse we have Walter Savage Landor saying—

“And 'tis, and ever was my wish and way
To let all flowers live freely, and all die
Whene'er their genius bids their soul depart,
Among their kindred to their native place:
I never pluck the rose, the violet's head
Hath shaken with my breath upon the bank,
And not reproach'd me; the ever sacred cup
Of the pure lily, hath between my hands
Felt safe unsoil'd, nor lost one grain of gold.”

But it is not poets or German philosophers alone who have persuaded themselves that trees and flowers shared the feelings of the animal kingdom. Erasmus believed that the tree felt the stroke of the woodman's axe; and, in our days, that excellent botanist, Sir J. E. Smith,

declared his opinion that plants received enjoyment from their existence.

The Wood-sorrel was formerly called Wood-sower, and also Wood-sour, and very acid indeed are its leaves. They contain pure oxalic acid, and were in former days compounded into a confection which was used medicinally, and termed *Conserva Luzula*. Twenty pounds of the leaves of wood-sorrel yield six pounds, from which two ounces six drachms of impure salt may be obtained; but as the great chemist, Scheele, discovered some years since that oxalic acid might be procured by acting on sugar with nitric acid, this less expensive process has superseded the extraction of the salt from the sorrel leaf. The expressed juice of the leaves, evaporated and set in a cool place, affords a crystalline salt, which may be used in any case in which vegetable acids would be serviceable. This is the Essential Salt of Lemons sold by druggists for removing ink-spots and iron-mould from linen; though cream of tartar and vitriolic acid are often substituted for the genuine produce of the leaf.

Children in the country know well how agreeable to the palate are the fresh green leaves of the wood-sorrel, and the flavour as well as the medical properties approach very nearly to those of the lemon. A small portion of this foliage may be eaten with advantage, as it is an excellent antiscorbutic, but children should not be allowed to eat it in large quantities.

The leaves of several of the species are used in America and other countries as a dietetic vegetable. Our plant, boiled in milk, was much recommended by the old herbalists to quench thirst, and serve as a "cordial to the

heart;" and leaf, seed, root, and flower were all considered as fitted to "refresh the overspent spirits with the violent fits of agues." The French call our plant *La Surelle*, and *La Petit Oseille de Bois*; and the Germans term it *Der Sauerklee*. We find an allusion to its triple clover-like leaf in its Dutch name of *Claverzuuring*; while the Italians and Spaniards still call it by a name by which it was in former days commonly known in England, *Alleyluya*. Gerarde says, "Apothecaries and herborists call it Alleyluya, or Cuckowe's meat, either because the cuckowe feedeth thereon, or by reason that it springeth forth and flowereth when the cuckowe singeth most; at which time also Alleyluya was wont to be sung in the churches." The plant evidently had some sacred allusion in Italy, as the Italian painters represented its trefoil leaf in their pictures of the Crucifixion. Gerarde remarks also of this plant that it was used as green sauce for fish, and tells us that the French called it *Pain de Cucu*; while he also adds as common names those of Sour Trefoil and Stub-wort. The last was, doubtless, given from its frequent growth among underwood.

The root of our sorrel is very pretty; it is like a string of rounded beads, and we have sometimes found the knob so firm and smooth, and of such deep red colour, as to resemble coral. The roots of some other species are large and edible, and the *Oxalis crenata* was, some years since, much recommended for extensive culture, in order that its tuberous roots might serve as a substitute for the potato, but it was not found to answer the expectations of the cultivator. The *Oxalis Deppei* is

reared for the culinary uses of its roots, and is grown largely in Belgium, both for its root and leaves, which are employed in cookery. Mr. Cockburn, gardener to the Earl of Mansfield, at Caen Wood, says of this sorrel: "We have grown it for several years, and I am convinced that if a little attention is paid to its culture, it will be found useful in the months of October, November, and December, but it would require a longer season of fine weather than our climate affords to bring its tubers to perfect maturity." He adds, that eight or ten good tubers are sufficient for a dish, and that this plant would be no small acquisition to a garden destined to supply a large family with vegetables during the winter season.

The beauty of the flowers of many of the wood-sorrels has led to the culture by gardeners of nearly a hundred species. One of the prettiest and most early blooming is the *Oxalis cernua*, the Drooping Wood-sorrel, which has bright yellow flowers, with a most delicious jessamine-like odour, though there is one disadvantage attending it as an ornamental plant, which is, that the flowers all remain closed, not only in wet and cloudy weather, but in any spot on which the sun is not shining in full power. The blossoms of our woodland species are much affected by light, never expanding on a dull day. They are produced in April, but Curtis remarked a circumstance respecting them which all of us who have watched this plant can verify. He says, "If attentively observed, it will be found to continue producing seed-vessels and seeds during the greatest part of the summer, without any appearance of expanded blossoms, which are only

observable at one period of the year.” As soon as the plant has done flowering, the flower-stalk, as in many other plants, bends down, rising again into an erect position when ripe, for the better dispersion of the seeds to a distance.

Whether the leaf of the Wood-sorrel, or of one of the clovers is the ancient “shamrog” of Ireland, is a question which has led to much learned disputation, and which will be noticed more fully in the paper on Trefoils.

2. *O. corniculáta* (Yellow procumbent Wood-sorrel). — *Stem* branched; *branches* prostrate; *stalks* usually 2-flowered; *leaves* ternate; *stipules* united to the base of the leaf-stalks. Plant annual. This species, which has small yellow flowers, is not nearly so elegant a plant as the common Wood-sorrel. It is in flower from June to September, in shady woods in the south-west of England. Though so rare in Britain, it is a common flower in many countries of Europe, especially in the south, as in Spain and Italy. It is also found in Japan and Mexico, and in the latter country the flowers are much larger than in the English specimens. A yellow-flowered sorrel, termed *Oxalis microphylla*, is very common in Australia; Mr. Backhouse says that it displays its lively blossoms in almost every grassy spot in the colony of Van Diemen’s Land, and that its acid leaves resemble in form those of the clover. It is eaten in its fresh state by the natives to allay thirst, and when made into tarts is scarcely inferior to the fruit of the barberry. This traveller also found a white-flowered Wood-sorrel, *O. lactea*, generally dispersed over the colony, but not

growing anywhere in sufficient quantity to be of any service.

The *Oxalis stricta* is a yellow-flowered species, and is said to be naturalized in gardens near Penzance, and in fields near Northam, in North Devon. It differs from *Oxalis corniculata* in its more upright and less branched stem, in the greater number of its leaves, which, in some specimens, surround the stem in a whorl; in its flowers growing in an umbel, and in the absence of stipules at the base of the leaf-stalks.

SUB-CLASS II.—CALYCIFLORÆ.

Sepals distinct, or united; *petals* distinct; *stamens* inserted on the calyx, or close to its base.

ORDER XXIII. CELASTRINÆ.—SPINDLE-TREE TRIBE.

Sepals 4—5, inserted on a fleshy disk, when in bud overlapping each other; *petals* equal in number to the sepals; *stamens* equal in number to the petals, and alternate with them: *ovary* wholly or partly sunk in the disk, 2—5-celled; *fruit* either a capsule of 2—5 cells opening with valves, or berry-like; *seeds* often enveloped in a distinct covering called an arillus. This Order consists of a large number of trees and shrubs, which are natives of the warmer parts of Europe, North



1. *Prunella vulgaris* L.
2. *Prunella vulgaris* L.
3. *Prunella vulgaris* L.

4. *Prunella vulgaris* L.
5. *Prunella vulgaris* L.
6. *Prunella vulgaris* L.

America, and Asia, but are more abundant beyond the Tropics than within them. Many are found at the Cape of Good Hope; they also occur in Chili, Peru, and New Holland. They are mostly of an acrid nature.

1. *EUÓNYMUS* (Spindle-tree).—*Capsule* 3—5-angled, with 3—5 cells and valves; *seeds* solitary in each cell, coated with a fleshy arillus. Name from *Euónymé*, the mother of the Furies, on account of the noxious properties of the fruit.

2. *STAPHYLÉA* (Bladder-nut).—*Petals* erect during flowering; *capsule* membranaceous, and like a bladder. Name from the Greek *staphyle*, a bunch of grapes.

1. *EUÓNYMUS* (Spindle-tree).

1. *E. Europæus* (Common Spindle-tree). — *Petals* usually 4, oblong, acute; *stamens* usually 4; *branches* angular, smooth; *leaves* broadly lanceolate, minutely serrated. Plant perennial. The berries, which hang among the branches of the trees in autumn, are very beautiful. The flat cluster of scarlet fruits on the Cotton or Wayfaring-tree, gradually becoming of purplish black, the clear cornelian red berries of the Guelder-rose, the scarlet hips and haws, the red round berries of the Bryony, and the coral groups of the plant called Red-berried Bryony, the purple clusters of the Dog-wood, are all very attractive objects at a season when flowers have almost passed away from the landscape. Now we see the autumnal fruits contrasting with such remnants of green or yellow foliage as may yet linger on the tree

amid the bleak gusts of November, or glistening from among the large clumps of feathered seeds with which the clematis is garlanding the trees, or from among the ivy-leaves which are winding on trunk or branch. But no native berries are more beautiful than those of the Spindle-tree; and this plant is much better known by these than by the small greenish flowers which it bears in May, and which are so like the leaves in hue, that they almost escape notice. In October and November the deeply-lobed capsules are of a rich carmine, and as they burst open they display the seeds, of a brilliant orange hue, lying within. Even in our woods they are among the brightest tinted things to be seen; and we are not surprised to find that in America a species of Spindle-tree adorns the woods with fruits so brilliant as to have gained for it the name of the Burning Bush. This is the *Euonymus Americanus*.

Spindle-tree is the common name for the shrub whose dark green foliage so often thickens in our hedge-rows, and it has a name of the same meaning in many other countries. Thus it is the *Spindlebaum* of the Germans, the *Fusaggino* of the Italians, and the *Fusain* of the French. The latter people call it also *Bois à Lardoire*; and *Bonnet de prêtre* is another familiar name given, from its three-corned capsules; the Spaniards also commonly term it *Bonetero*. It was known to the old English herbalists chiefly by the name of Prickwood. The distaff and spindle are so little used in modern days, that it is no longer employed for making spindles, as it once was, though the Germans still use the tree for that purpose. Skewers are yet cut from its tough

close-grained wood, which forms also a serviceable material to the watch and clock-maker, who make of it the implements with which they clean their machinery. The musical instrument-maker also uses the wood of the Spindle-tree; and in Ireland it is called Peg-wood, because shoemakers cut their pegs from its branches. The burnt wood forms a good charcoal for the use of the artist.

This plant seldom attains in our hedges the size of a tree, and is rarely more than eight or ten feet in height, but in shrubberies it sometimes grows into a tall and handsome tree. The bark and leaves are very poisonous, and so also are the handsome and fetid berries, which cause sickness almost immediately on being swallowed. Most animals refuse to eat these berries, but they are sometimes used in dyeing, and afford a good yellow colour when boiled, without the admixture of any other ingredient, while, if mingled with alum, they yield a green dye, and a beautiful red tint is obtained from the seed-vessels.

The several species of Spindle-tree, which are very ornamental to our shrubberies, are the plants of other lands. The Hindoos make use of the inner bark of one of them, (*Euonymus tingens*), which is of a beautiful yellow colour, to mark the tika on their foreheads. Another of the Spindle-tree tribe, (*Catha edulis*), is the Kat or Khât of the Arabs. It seems to possess some stimulating properties. Forskhal says that the Arabs eat the green leaves with avidity, believing them to have the power of causing great watchfulness, so that a man may, after eating them, stand sentry all night without drowsiness.

So efficacious do they imagine this plant to be against the plague, that they assert of a person wearing a small piece about him, that he may go with impunity among the infected, and that the plague will not enter a neighbourhood in which it is planted. Forskhal, however, did not consider that the flavour of the leaf indicated any virtue of this kind.

2. STAPHYLÉA (Bladder-nut).

1. *S. pinnáta* (Common Bladder-nut).—*Leaves* pinnate; *leaflets* from 5 to 7; *flowers* in racemes; *styles* 2; *capsules* bladdery and membranaceous. Plant perennial. The yellowish-white flowers of this plant are to be seen in June in some thickets and hedges. It has no pretensions to be called a wild flower, for it is scarcely even naturalized, and custom alone sanctions its admission into a list of British plants. It occurs in Yorkshire, and about Ashford, in Kent. It is a native of Eastern Europe, and is an ornamental, hardy, shrubby plant, often cultivated in gardens for its singularity rather than its beauty. Its bony polished seeds are used in some countries for rosaries; they are bitter, but are eaten on the Continent by poor people, and by children. Gerarde says, that when first tasted they are sweet, but that this agreeable flavour becomes afterwards nauseous.

ORDER XXIV. RHAMNEÆ.—BUCKTHORN
TRIBE.

Calyx 4—5-cleft, valvate when in bud; *petals* 4—5, inserted on the upper part of the calyx-tube; *stamens* 4—5, opposite the petals; *ovary* superior, or half superior, 2—4-celled, surrounded by a fleshy disk; *fruit* either fleshy, and not bursting, or dry, and opening in three divisions; *seeds* several. This Order consists of trees and shrubs, having thorns, simple leaves, minute stipules, and small greenish flowers. They are found in almost all parts of the world, except the Arctic zone.

Some very interesting plants, both of the Scripture and classic writers, are contained in this Order. The *Zizyphus spina-Christi* is believed, by Hasselquist and some other botanists, to be the plant of which the crown of thorns was made which was placed in mockery on our Saviour's brow. Other writers consider the *Paliurus aculeatus* to be the true Christ's thorn. Both are prickly shrubs common in the East, and both bear eatable fruits. The fruit of the latter resembles a head with a broad-brimmed hat, and the plant is hence called *Porte chapeau*. They are sold in the markets of Constantinople, and the hakims, or native doctors, prescribe them in many complaints. This is one of the commonest thorns of the hedges and thickets in many parts of Asia, forming an almost impenetrable hedge.

The Jujube, which is a favourite sweetmeat in Italy and Spain, is the fruit of some plants of this Order, *Zizyphus Jujuba*, and *Zizyphus vulgaris*. The Turks

plant the trees before their coffee-houses for the sake both of the fruit and shadow.

The celebrated Lotus of Homer, the plant which afforded food to the ancient *Lotóphagi*, or Lotus eaters, is the *Zizyphus Lotus* of the botanist. It is not so confined in its distribution as the Greeks imagined it to be, but grows wild in Persia, the interior of Africa, and on the sea-coast near Tunis. The fruits are eaten wherever they are found, and are sold in the markets of Barbary; but, we need hardly say, they have none of those effects which Homer describes as in his days following their use:—

“The trees around them all their food produce,
Lotos, the name divine, nectareous juice;
Thence called Lotophagi, which whoso tastes
Insatiate riots in their sweet repasts;
Nor other home, nor other care intends,
But quits his house, his country, and his friends.”

Mungo Park states that this fruit is converted by the natives of Africa into a sort of bread, by first exposing it to the sun, and afterwards pounding it in a mortar to separate the farinaceous portion from the stone; and that a kind of gruel made from it forms, for a large part of the year, the common breakfast of the majority of the people in many parts of Ludamar. A wine is also expressed from it, which has, by some writers, been thought to be the *Nepenthes* of Homer.

1. *RHÁMNUS* (Buckthorn).—*Calyx* cup-like, 4—5-cleft; *petals* 4—5, sometimes wanting; *stamens* 4—5, inserted with the petals into the throat of the calyx;

berry 2—4-celled. Name from the Greek *rhamnos*, a branch.

1. RHÁMNUS (Buckthorn).

1. *R. catharticus* (Common Buckthorn).—*Branches* with terminal thorns; *flowers* 4-cleft; *stamens* and *pistils* on separate plants; *leaves* egg-shaped, sharply serrated; *berry* 4-seeded. Plant perennial. This Buckthorn is a spreading shrub in woods, hedges, and thickets, where it is not uncommon. It is very densely branched, thus well meriting its name. Professor Burnet remarks of this:—"Rhamnus is taken from the Greek *rhamnos*; *ramus rame*, and the obsolete *reim*, being fancied to be the descendants of an old word *ram*, a branch; and Rheims, which is but a slight variation of *reim*, bears two branches intertwined as the arms of the town." The French call the Buckthorn *Le Nerprun*, and its German name, *Der Kreuzdorn*, refers to its thorny nature. This shrub is from six to ten feet in height, and its leaves are glossy and of dark green hue, strongly marked with from four to six lateral veins. The flowers, which appear in May, are small and green, and grow in dense clusters; they are succeeded by purple berries. These berries have very powerful properties, and were formerly much used medicinally, but are not now considered a safe remedy.

The berries, when thus employed, were made into a syrup with spices, but their use produced an intolerable thirst. They are still used by dyers and in making colours for artists. Their juice, before ripening, is of the colour of saffron, and these fruits are sold in

that state under the name of French berries ; and those of another species of Buckthorn, (*Rhamnus Clusii*), are called by the druggists Avignon berries. The juice of the berries of our common Buckthorn, in their ripened condition, thickened with gum-arabic and other ingredients, forms the *Vert de vessie*, or sap green, used by painters, and often, also, for staining maps and papers ; but if the berries are gathered very late in the season, their juice is of purple colour. The bark affords a good yellow dye. When this thorny shrub is in full berry, it is a very pretty object.

2. *R. Frángula* (Alder Buckthorn). — *Branches* thornless ; *flowers* 5-cleft, all perfect ; *leaves* entire, smooth ; *berry* 2-seeded. Plant perennial. The leaves without serratures, and the branches without thorns, enable us at once to distinguish this from the last species. It grows in woods and thickets, bearing its inconspicuous green blossoms in May. The foliage is not very abundant ; it is dark green, glossy, and strongly veined ; the stem is slender, and of purplish-brown hue, and the deep purple berries are about as large as currants. Its medicinal properties are similar to those of the Common Buckthorn, and like that, its bark affords a good dye. A very fine yellow colour may, indeed, be procured in greater or less degree from all the species of *Rhamnus*, some of the shrubs of which are natives of the southern countries of Europe, and the northern rocky coasts of Africa ; and these afford a richer colour than either of our own kinds. The wood of one of the foreign Buckthorns is of a deep orange tint, and that of another is a fine red. This latter plant, (*Rhamnus*

lycioides,) is, on account of its rich hue, used by the Monguls to make their images. The young shoots and leaves of our ornamental garden evergreen shrub, (*Rhamnus alaternus*,) give to wool a beautiful yellow dye; and the fishermen of Portugal stain their nets red with a decoction of its bark. Evelyn remarks of this plant, that its "honey-breathing blossoms afford a marvellous relief to bees," as they open in early spring ere flowers are numerous. The same praise might be awarded to the flowers of our Alder Buckthorn, which are particularly grateful to these insects. Charcoal made from the wood of this tree is considered of much value in the manufacture of gunpowder. Goats eat the leaves voraciously. The shrub is from six to ten feet high.

ORDER XXV. LEGUMINOSÆ.—PEA AND BEAN TRIBE.

Calyx 5-cleft, with the odd lobe in front; *petals* various, generally 5, and papilionaceous; *stamens* 10, their filaments either uniting into a tube, or forming two sets of 9 and 1; *ovary*, *style*, and *stigma*, single; *seed-vessel* a 2-valved, sometimes imperfectly-jointed pod, or legume; *seeds* on the upper seam of the pod-valves; *leaves* alternate, mostly compound and pinnated, having stipules, and often with tendrils. This is a very large and important Order of plants, and one with which all are familiar. The butterfly-shaped blossoms characterise a large number, and, with a few exceptions, they

have pods and pinnate leaves. Six thousand five hundred species of this Order have been described by botanists, varying from small herbaceous plants, like our Vetches, to trees like the Laburnums and Robinias of our shrubberies, or those immense Locust-trees, whose trunks are so large that fifteen Indians with outstretched arms cannot encompass one of them. Many are highly ornamental to our gardens; such are the Sweet-peas, Lupins, Milk-vetches, the Coronillas, and a variety of flowers; and the descriptions given by travellers of the forests of other lands have made us familiar with such plants as the magnificent Coral-trees, whose crimson flowers climb to the top of the highest trees; with the Bauhinias, whose snake-like stems are festooned with richest blossoms; and with the airy foliage and golden bloom of the Mimosas, which cast a charm over many a barren spot. But our own landscape owes much of its summer beauty to leguminous plants. The golden broom and prickly gorse, the tangling vetches, the ruddy clover, the crimson saintfoin, and the yellow lotus, contribute, with many more, to the grace and loveliness of our rural scenery. The field of beans sends its fragrance from afar, and those of tare and lucerne wave before the summer gale, yielding their foliage to the cattle, and giving seeds to the wild birds.

Very valuable products of commerce are furnished by the Leguminous tribe. The Indigo, (*Indigofera tinctoria*), is grown largely, both in the East and West Indies, for the use of the dyer. The Liquorice, (*Glycyrrhiza*), is much cultivated in Spain, whence we derive our largest quantity. It has also been grown in the

neighbourhood of London, and was formerly cultured at Pontefract, in Yorkshire. Stow mentions that the planting and growth of "Licorish" began about the first year of Elizabeth's reign. One hundred weight of the root will afford twenty-eight pounds of the extract commonly called Spanish liquorice, which is used in lozenges and pectoral medicines, as well as by the brewers of porter. The celebrated fish-wood, (*Piscidia erythrina*,) used for the purpose of intoxicating fish, is a plant of this Order. The fishermen take a quantity of this plant in baskets, which they hold over the sides of the boats till the water washes it out, and is impregnated with its intoxicating properties. In a short time the smaller fish are seen floating about around the boat apparently dead; and the larger fish, somewhat better able to resist its influence, swim wildly about, raising their heads above the poisonous atmosphere, and are then easily taken by the hand. This *Piscidia* is one of the best timber trees of Jamaica.

The peas, beans, scarlet runners, and other plants which supply our tables, need hardly be named as leguminous plants; their pods at once declare it. Some foreign leguminous plants have their pods somewhat in the shape of a drupe; others retain the pod, but have not the papilionaceous flowers. Not so with our native species; they have all the butterfly-shaped blossoms, and, except that their pods are occasionally, as in the Bird's-foot, jointed, or as in the Medick, spirally twisted, there is little variation in their characteristic features. They are mostly herbaceous, the Broom and Furze being the only British leguminous

plants which are shrubby. The Order is divided into several groups.

GROUP I. LOTEÆ.—THE LOTUS GROUP.

Legume not jointed; *leaves* simple, of 3 leaflets, or pinnate, with an odd leaflet.

* *Leaves simple, or of 3 leaflets; stamens all united by their filaments.*

1. ÚLEX (Furze).—*Calyx* of 2 sepals, with 2 minute bracts at the base; *legume* swollen, few-seeded, scarcely longer than the calyx. Name from the Celtic *ec* or *ac*, a sharp point.

2. GENÍSTA (Green-weed).—*Calyx* 2-lipped, the upper lip 2-cleft, the lower with 3 teeth; *standard* oblong; *style* awl-shaped; *legume* swollen, or flat. Name from the Celtic *gen*, a shrub.

3. SAROTHÁMNUS (Broom).—*Calyx* 2-lipped, the upper lip with 2, the lower with 3 teeth; *standard* broadly ovate; *style* thickened upwards; *legume* flat, many-seeded. Name, from *saroo*, to sweep, and *gamnos*, a shrub.

4. ONÓNIS (Rest-harrow).—*Calyx* 5-cleft, with very narrow segments; *keel* beaked; *style* thread-like; *legume* swollen, few-seeded. Name from the Greek *onos*, an ass, because eaten by that animal.

* * *Leaves of 3 leaflets; stamens in 2 sets of 9 and 1.*

5. MEDICÁGO (Medick).—*Legume* sickle-shaped, or spirally twisted. Name of Greek origin, signifying that some species was brought from Media.



Mimulus lewisii
 (Mimulus lewisii)
 (Mimulus lewisii)
 (Mimulus lewisii)

Mimulus lewisii
 (Mimulus lewisii)
 (Mimulus lewisii)
 (Mimulus lewisii)

6. MELILÓTUS (Melilot).—*Calyx* with 5 nearly equal teeth; *petals* distinct, soon falling off; *legume* of few seeds, longer than the calyx. Name from *mel*, honey, and *lotus*, the plant of that name.

7. TRIGONÉLLA (Fenugreek).—*Calyx* 5-toothed, teeth nearly equal; *petals* distinct; *legume* straight, or slightly curved, many-seeded, and twice as long as the calyx. Name from the Greek *treis*, three, and *gonia*, an angle, from the triangular appearance of its corolla.

8. TRIFÓLIUM (Trefoil).—*Calyx* with 5 unequal teeth; *petals* combined by their claws, and persistent; *legume* of few seeds, concealed in the calyx. Name from *tria*, three, and *folium*, a leaf.

9. LOTUS (Bird's-foot Trefoil).—*Calyx* with 5 nearly equal teeth; *legume* cylindrical, many-seeded, and imperfectly many-celled. Name from the Greek *lotos*.

* * * *Leaves pinnate, with a terminal leaflet.*

10. ANTHÝLLIS (Lady's Fingers).—*Stamens* all united by their filaments; *calyx* inflated, 5-toothed; *legume* enclosed in the calyx. Name from the Greek *anthos*, a flower, and *ioulos*, down, from the downy calyx.

11. OXÝTROPIS.—*Stamens* in 2 sets, 9 and 1; *keel* of the corolla pointed; *legume* more or less perfectly 2-celled. Name from the Greek *oxys*, sharp, and *tropis*, a keel.

12. ASTRÁGACUS (Milk-Vetch).—*Stamens* in 2 sets, 9 and 1; *keel* of the corolla blunt; *legume* more or less perfectly 2-celled. Name from the Greek *astrágalos*, a pastern bone, from the knotted form of the root of one of the species.

GROUP II. VICIÆ.—THE VETCH GROUP.

Legume not jointed ; *stamens* in 2 sets, 9 and 1 ; *leaves* pinnate, terminating in a tendril, or short point.

13. VÍCIA (Vetch).—*Calyx* 5-cleft ; *style* thread-like, with a small tuft of down beneath the stigma ; *leaves* with tendrils. Name from the Celtic, *gwig*.

14. LÁTHYRUS (Vetchling).—*Calyx* 5-cleft ; *style* flattened on the upper side, downy beneath the stigma ; *leaves* with tendrils, except in *Lathyrus Nissolia*. Name from the Greek *lathyros*, a plant so called.

15. ÓROBUS (Bitter-Vetch).—*Calyx* 5-cleft, swollen at the base, oblique at the mouth, its upper segments deeper and shorter ; *style* flattened on the upper side, downy beneath the stigma ; *leaves* ending in a short point. Name from the Greek *oro*, to stimulate, and *boas*, an ox, from its nutritious properties.

GROUP III. HEDYSARÆ —THE JOINT-VETCH GROUP.

Legume divided into 1-seeded joints, or cells ; *leaves* pinnate, with an odd leaflet.

* *Flowers simple, in umbels.*

16. ORNÍTHOPUS (Bird's-foot). — *Legume* curved, divided into many equal-sided joints, each of which contains a seed ; *keel* small, obtuse. Name from the Greek *ornis*, a bird, and *pous*, a foot, from the form of the seed-vessel.

17. ARTHROLÓBIUM (Joint-Vetch).—*Calyx* tubular ;

keel small, blunt; *legume* curved, jointed. Name from *arthros*, a joint, and *loxos*, a pod, from its jointed seed-vessels.

18. HIPPOCRÉPIS (Horseshoe-Vetch).—*Legume* composed of numerous crescent-shaped joints, so that each legume looks like a series of horse-shoes. Name from the Greek *hippos*, a horse, and *crepis*, a shoe.

* * *Flowers in racemes.*

19. ONÓBRYCHIS (Saintfoin). — *Legume* straight, 1-celled, 1-seeded, not opening, the lower edge fringed, or winged. Name from the Greek *onos*, an ass, and *brycho*, to bray, from the notion that its scent excites braying.

ÚLEX (Furze).

1. *U. Europæus* (Common Furze, Gorse, or Whin).—*Calyx* somewhat hairy, with slightly spreading hairs; *bracts* large, egg-shaped, not adhering closely to the calyx; *wings* longer than the keel; *leaves* few and narrow. Plant perennial. To those who often wander over the heath-lands of England no description of the prickly furze is needed; but it is not so common in all parts of the United Kingdom, large heathy tracts in the Highlands of Scotland being often without a bush of this plant, though its golden blooms enliven other portions of those regions. The furze-shrub is usually about three or four feet high, but, in some sheltered situations, it grows to the height of fifteen, or even eighteen feet; and its beautiful yellow flowers glow on the dark green stems, during the summer months, in profusion, begin-

ning to deck the shrub in lesser number as early as February. Indeed, there is no season of the year in which we might not find a furze-branch adorned with flowers ; and its perpetual bloom is alluded to in more than one of our familiar English country proverbs. In summer, when it contrasts with the purple Heath and Ling, and shadows the beautiful Harebells, few plants are more attractive. Hardy as the shrub seems on our open heaths, exposed to the coldest winds which sweep among the boughs, yet it is affected by climate more than some plants which we usually regard as tender. Both heat and severe cold are unfavourable to it ; and while, on the one hand, it rarely grows wild farther south than Provence, it is unknown in the north of Europe, except as a cultivated plant. In Sweden and Russia it is kept in the greenhouse, and Gerarde relates of it, in his day, that about Dantzic, Brunswick, and Poland, not a branch of it was growing, except some few plants and seeds which he had sent thither, and which “ were most curiously kept in their fairest gardens.” The delight of Dillenius on seeing it in profusion on the English common, and the rapture of Linnæus, when he knelt on the sod thanking God for its loveliness, can be well understood by the lover of flowers. Mary Isabella Tomkins, in a little poem, written for this volume, refers to the emotion experienced on this occasion by the great Swedish botanist :—

“ A strong man kneeling, and in tears,
Beneath June’s azure sky,
Strange is it, strange, when joy appears
Grief’s outward form so nigh !

Is it some exile who hath found
Again his native shore?
A stranger he—this heathy ground
He never trod before.

“Is it a pilgrim who hath sought
Some deeply hallow'd spot,
And sunk, o'erpower'd at the thought
Of faith that dieth not?
Is it a warrior on the plain
Where meeting myriads fell?
No, here the only purple stain
Is of the Heather-bell.

“No; none of these—the naturalist
By his true heart impell'd,
Could not this meed of praise resist
For what he then beheld;
An open heath, where thick was spread
The Gorse of golden hue,
With heavy perfume round it shed,
That well the wild-bee knew.

“And he that wept gave thanks to God
This glorious sight to greet,
And sank upon the thymy sod
That spread beneath his feet;
He who had scann'd wide Nature's page
With loving eyes, and keen,
Had yet attain'd to middle age
Before that sight was seen:
The thanks Linnæus gave that day,
I also would repeat,
When these gold blooms in rich array
On the rough heath I greet.”

The Furze-bush is sometimes planted for hedges; and the poor in the neighbourhood of a common frequently use it for fuel. In places where coals are very expen-

sive and peat rare, it has even been cultivated for that purpose. It gives a good degree of heat while burning. It is, in villages, esteemed a valuable remedy for jaundice, but probably this is owing to the colour of its flowers, many yellow objects, as oranges, yolk of eggs, &c., being popularly considered as cures for that malady. Many animals eat the young tops as food, and its seeds afford a good store for the birds. In autumn, when these are quite ripe, we hear their pods crackling, as they open to discharge their contents, sometimes making a loud report, and mingling with the gentle waving of the trees, and the singing of birds, the sounds seem sweet and musical to the wanderer on the heath, over—

“ Moors where hares abound,
While throbbing Furzes heart-struck burst their pods,
Scattering ripe seeds amidst the moss around.”

The plant is on some spots much entangled with the pink threads of the parasitic dodder, which form an entangling mass about its branches.

The French call the Furze *Ajonc*, or *Jonc marin*, the latter name alluding to its growth near the sea, for the bush thrives well on cliffs, or other rocky soils, visited by the sea-breeze. It has been found in Devonshire with double blossoms, the variety which is now so generally cultivated for the sake of its gorgeous masses of golden blossoms. It is the only papilionaceous plant which is known to have double flowers. The variety called Irish Whin is also a frequent shrub in gardens and nurseries. Our furze does not grow wild in Germany, but its name in that country is *Der*

Europäische stechginster, and it is the *Heybrem* of the Dutch.

2. *Ulex nanus* (Dwarf Furze).—*Calyx* downy, with the hairs lying close to the surface; *bracts* small; *wings* about as long as the keel. Plant perennial. This species, which is altogether smaller than the other, begins to flower in July, and remains in blossom till November or December. It has much of the general aspect of the Common Whin, though essentially different from it, its chief characteristics being its minute and scarcely perceptible bracts, and its shorter and more spreading wings. It differs also in not throwing its seeds out of the pod immediately upon ripening, as they remain closed on the shrub long after being fully matured. This species is from one to three feet high, and grows on many English and Irish heaths, especially in mountainous districts, and on some few Scottish lands.

2. GENÍSTA (Green-weed).

1. *G. tinctoria* (Woad-waxen, Dyer's-whin, Dyer's-weed, or Green-weed).—*Stems* and *branches* without thorns; *leaves* narrow, acute, nearly smooth; *flowers* in clusters; *legumes* flattened, smooth. Plant perennial. This low shrub is frequent in pastures, thickets, and field-borders of England, especially where the soil is of clay, but it is rare in Scotland and Ireland. It is about one or two feet high, its leaves of very dark but rich green hue, and its pale yellow flowers, which expand during July and August, are on short stalks. The milk of cows feeding on this plant is said to acquire a bitter

flavour, rendering the butter and cheese made from it very unpalatable. A decoction of the seeds was formerly used medicinally, and the ashes of the burnt twigs are considered a valuable remedy in some diseases. The latter medicine is prized in the Ukraine as a cure for canine madness, but its reputation for this malady cannot be regarded as established. Both the English and Latin names of the plant refer to its uses by dyers, for its young tops have long been employed to give a yellow colour to yarn. Mr. Knapp, in his "Journal of a Naturalist," remarks;—"Our poorer people, a few years ago, used to collect it by cart-loads about the month of July, and the season of 'Woad-waxen' was a little harvest to them; but it interfered with our hay-making. Women could gain each about two shillings a-day, clear of all expenses, by gathering it; but they complained that it was a very hard and laborious occupation, the plant being drawn up by the roots, which are strongly interwoven in the soil. The dyer gave them eight-pence for a hundred weight, but I fear the amount was greatly enhanced by the dishonest practice of watering the load for the specious purpose of keeping it green; and the old woad-waxers tell us that without the increase of weight which the water gave the article, they should have had but little reward for their labour. Greediness here, however, as in most other cases, ruined the trade; the plant became so injured and stunted by repeated pullings, as to be in these parts no longer an object worth seeking for: and our farmers rather discourage the practice, as the green-weed preserves and shelters at its roots a considerable quantity of coarse

herbage, which, in the winter and spring months, is of great importance to the young cattle browsing on the pastures." Cattle will not eat the plant itself, except when pressed by hunger.

2. *G. pilósa* (Hairy Green-weed).—*Stems* procumbent and thornless; *leaves* narrow, obtuse, the lower ones often inversely heart-shaped; *flowers* axillary, on short stalks; *legumes* downy. Plant perennial. This species, which is rare, is found on dry, sandy, and gravelly heaths. It grows about Bury, in Suffolk; near Malvern, in Worcestershire; near the Lizard, Cornwall; and in some other places, producing its small, bright, yellow flowers in May, and again in September. Its low prostrate stems are much gnarled and branched, and its leaves are densely clothed on their under surfaces with silky hairs.

3. *G. Ánglica* (Needle Green-weed, or Petty Whin).—*Stems* thorny, and leafless below; *leaves* narrow, smooth; *legumes* smooth, inflated. Plant perennial. This is not an uncommon plant on most heaths and moors. Its flowers, which expand in May and June, are bright yellow, and grow in leafy clusters on the upper branches of the shrub. Its stem is about a foot high, very tough, and bearing at intervals groups of thorns.

3. SAROTHÁMNUS (Broom).

S. Scopárius (Common Broom).—*Branches* angular, slender, and erect; *leaves* of 3 leaflets, stalked, upper ones simple; *leaflets* oblong; *flowers* shortly stalked.

Plant perennial. A beautiful shrub is our Common Broom, with its thousands of golden flowers, gleaming like so many butterflies with expanded wings on the summer boughs, and wafting a delicious odour. The "bonnie broom" has won the praise of many a poet, and gladdened many a heart full of a poetry which it knew not how to express. Mary Howitt apostrophises it pleasantly :—

"Oh, the Broom, the bonny bonny Broom,
On my native hills it grows ;
I had rather see the bonny broom
Than the rarest flower that blows ;
Oh! the yellow bloom is blossoming
In my own dear countrie ;
I never thought so small a thing
As a flower, my nerveless heart could wring,
Or have drawn a tear from me.

"It minds me of my native hills,
Clad in the heath and fern,
Of the green strath and the flowery brae,
Of the glen and rocky burn ;
It minds me of dearer things than these—
Of life with love entwined ;
Of humble faith, and bended knees,
Of home-joys gone, and memories
Like sere leaves left behind."

The usual height of the Broom is from three to six feet, but on some spots it grows much higher, and its stem becomes of considerable thickness. Mr. Johnston, in writing to his friend John Ray, describes one of these plants in his day. "Near Kendal," he says, "I saw to my great wonder a broom-tree, if I may so call it, adorned with very fine flowers, and its stem thicker than

my leg ; a very fair spectacle ! ” The plant grows well on dry hilly plains, and it is largely planted about Ghent, in order to improve the dry sandy soils, and hold them well together by its roots. Several of the species are serviceable in this respect, and the One-seeded Broom, (*Genista monosperma*,) is very valuable on the shores of Barbary, Egypt, Portugal, Spain, and some other countries, where it converts the barren soils into fragrant and beautiful spots like gardens. It spreads over most extensive districts, and is called by the Spaniards by its old Arabic name, *Rætum*. Professor Burnett remarks, “ Several other *Genistæ* are sand-fixing plants, and hence, perhaps, the final cause of their little importance to man, directly as food or medicine, may be perceived ; as they thus escape his aggressions, and are allowed uninterruptedly to pursue their constant labours as Nature’s pioneers, to the best advantage.”

Bees are very fond of the broom flowers, and the Heath land is an excellent neighbourhood for those who keep these insects. The young flower-buds of the plant, gathered just as they are becoming yellow, and pickled, make a good substitute for capers. The young shoots have from time immemorial been used by country people as a cure for dropsy, and Dr. Cullen highly recommends this decoction. Every part of the plant, seeds, leaves, flowers, root, had, according to the old herbalists, some peculiar virtues, and were praised in their quaint statements for “ helping pains,” “ altering fits of the ague,” and curing gout, and many an other ill ; while an oil procured from the green stalks, when heated by the fire, was pronounced an infallible cure for the

tooth-ache, the malady which, according to Shakespere, not even the philosopher could endure patiently. The plant yields, when burnt, a good alkaline salt, and its name indicates one of its uses for domestic purposes. One of the old writers on plants says, "To spend time in writing a description of the plant is altogether needless, it being so generally used by all good housewives, almost throughout the land to sweep their houses with, and therefore very well known to all sorts of people." The French also term it *Genét à balai*. The wood, when old, furnishes to the cabinet-maker an excellent material for veneering, and the young boughs may be used in tanning leather. The branches have when bruised a disagreeable odour, which, Mr. Curtis remarks, is the cause probably why they are rejected by cattle. They have also an unpleasant and bitter flavour, but the goats browse freely upon the young shoots. This plant is believed to be the *Cytisus* of Virgil.

Willsford in his "Nature's Secrets" says, "The Broom having plenty of blossoms, or the Walnut-tree, is a signe of a fruitfull yeare of corne;" and he adds that great store of nuts and almonds, especially filberts, afford a like assurance.

The Broom, formerly called *Planta genista*, was the *Gen* of the Celts, and the *Genet* of the French. It was the badge of a long race of British kings, the Plantagenets. Geoffry earl of Anjou, the father of Henry II., and the husband of Matilda, Empress of Germany, was in the habit of wearing a branch of this in his cap, or as an old historian says, "He commonly wore a broom in his bonnet." Some early and interesting association

with the flower, doubtless, led to its place as a plume to the cap of this earl, and old legends tell that he first put it there on the day of battle, plucking the golden branch on his way when passing on to the scene of contest. His son Henry has been called the Royal Sprig of Genista, and the Broom was worn by all his descendants, down to the last of the Plantagenets, Richard III.

4. ONÓNIS (Rest-Harrow).

1. *O. arvensis* (Common Rest-harrow).—*Stem* shrubby, *branches* hairy, often spinous; lower leaves ternate, *leaflets* oblong, flowers axillary; *calyx* much shorter than the corolla. Plant perennial. The Rest-harrow bears, throughout the summer, a number of rose-coloured flowers, much resembling the sweet pea of the garden, though considerably smaller. The leaves of the plant are sometimes slightly notched, and somewhat viscid, and the flowers vary from a red or deep rose colour, to a paler hue, and in some instances to white. This plant which grows on field borders, where the soil is sandy, or on rocky dry places, is especially luxuriant near the sea. On the cliffs of Dover its pretty flowers are most abundant from the end of May until September, and having there the full benefit of shelter from north winds, and receiving all the sunshine of a southern aspect, the plant may sometimes be found in blossom even at Christmas. It is so variable that some writers consider that several forms included in one general name, should be regarded as so many distinct species. Professor

Burnett remarks on this plant, that it has hitherto been merely regarded as a troublesome weed; but that its physiological history is replete with interest, an interest, however, which it shares with other thorny plants, the warriors of the vegetable world. From the works of this admirable writer, we may be permitted to make a long extract, the more especially as his writings are familiar to few save botanists. "In barren uncultivated tracts of heath or common land, thorny plants abound, *e.g.* the sloe, the rest-harrow, the hawthorn, the buckthorn, the cockspur thorn, and many others. These vegetables, when removed into gardens and cultivated with care, lose all the thorns, which so thickly beset them when wild, and bear fruitful branches in their stead; becoming, as Linnæus expressed it, *tamed plants*, (*Plantæ domitæ*,) instead of the *Milites or warriors*, to use his language, that they were before. Wildenow was the first who explained the rationale of this metamorphosis, the first who showed that thorns were abortive buds; buds which a deficiency of nourishment prevented becoming developed into branches, and which, when the requisite supply of food is present, speedily evolve their latent leaves and flowers. But Wildenow did not perceive the beautiful adaptation of means to ends, which forms, in my opinion, by far the most interesting part of the phenomenon.

"In open barren tracts of country, the very circumstance of the sterility of the soil must prevent the production of many plants, and of those which grow, few will be enabled to perfect many seeds. It is necessary, therefore, to protect such as are produced, from exter-

mination by the browsing of cattle, otherwise not only would the progeny be cancelled, but also the present generation cut off. And what more beautiful and simple expedient could have been devised, than ordaining that the very barrenness of the soil, which precludes the abundant generation by seed, should at the very same time, and by the very same means, render the abortive buds (abortive for the production of fruit) a defensive armour to protect the individual plant, and to guard the scantier crop which the half-starved stem can bear?

“That such an armature is produced by the abortion, or partial development of buds and branches, there is abundant proof. For not only are thorns found in every stage, varying from their simple dormant or winter state, when if opened they contain the rudiments of leaves, through leaf-bearing spines to rigid thorns on the one hand, or leaf-clad branches on the other; but the very organs, *i.e.* the buds, which when the plant is half starved, are partly developed as spines, and part only as branches, become when an abundant supply of nourishment is provided altogether leafy branches; the buds have all been wholly developed, none have degenerated into thorns, and the plant has been tamed. The Rest-harrow is a familiar example immediately in point, for of it there are two well-known varieties called *Ononis spinosa*, and *Ononis inermis*, from the circumstance of this being smooth and destitute of thorns, while that is covered with them.” These two varieties, the Professor adds, he has often found on the same heath; the one clad with its offensive and defensive arms, and furnished with few leaves to tempt the appetite of cattle; the

other, which had accidentally received a larger portion of manure, replete with leaves and blossoms, but wholly destitute of thorns, and just in such a state as to furnish an agreeable repast to animals.

This plant has the name of Rest-harrow, as well as its French name, *Arrête bœuf*, because its long roots were formerly very troublesome in arresting the course of the plough or harrow in the corn-field. Cultivation, however, has greatly lessened its frequency in our fields. Its scientific name is given, on account of the fondness of asses for this plant, for to this animal thorns and thistles seem alike agreeable. It had the old English name of Cammock, and in France it was also termed *La Bugrane*. It is *Die Haukechel* of the German, the *Stalkruid* of the Dutch, the *Ononide* of the Italian, and the *Detiene bucy* of the Spaniard. The young sweet and succulent shoots may be used as a pickle, or as a culinary vegetable, and the long roots have the sweet flavour of liquorice, and are sucked both by children and country labourers to quench thirst. The author has often seen these roots thicker than a finger, and she is informed by Calder Campbell, that in Inverness the roots are often as large as a wrist, and that the children there sometimes suck them all day long. Old physicians considered that a use of the plant cured delirium, and some other maladies; and the Yellow Shrubby Rest-harrow of the South of Europe, (*Ononis Natrix*), is said by Pliny to be obnoxious to snakes, and to drive them away from the places where it grows.

2. *O. reclináta*. (Small spreading Rest-harrow.)—*Stems* herbaceous, *spreading* viscid and hairy; *leaves* all composed of three *leaflets*; *stipules* broadly egg-shaped,



flowers solitary ; *calyx* about as long as the corolla. Plant annual. This species is found but in one British locality, near Tarbert in Galloway ; and it also occurs in one of the Channel Isles. The chief place of its growth, as a wild plant, is in the fields of the South of Europe, and it was probably brought among ballast to both the places here named.

5. MEDICÁGO (Medick).

1. *M. lupulína* (Black Medick, or Nonsuch). *Leaflets* inversely egg-shaped, finely toothed ; *stipules* scarcely notched ; *flowers* in dense oblong heads ; *legumes* rugged, 1-seeded, kidney-shaped. Plant annual. This species, which is also called *Hop Medick*, may be very commonly seen flowering from May to September, both on waste and cultivated lands. It very much resembles the common yellow Trefoil, but it is distinguished from the Trefoils by its legume, which is not like theirs enclosed within the calyx. The legumes are black, not curved as in some species in a spiral form, but rough, with veins running lengthwise. This has been considered a very useful plant in agriculture, and was once deemed the most valuable of all those plants known to farmers as “artificial grasses,” but its culture is now out of repute. The leaves are said to have some medicinal properties, and the roots are sometimes used for cleaning the teeth. The French term this *Medick Lupulina*, the Germans *Hopfinluzerne*. It is the *Hoppige rupslaver* of the Dutch. Country people of Norfolk call it Black Nonsuch, and Shamrock.

2. *M. maculáta* (Spotted Medick).—*Leaflets* inversely

heart-shaped; *stipules* toothed; *flowers* 2-4 together; *legumes* spirally twisted into a prickly ball; *prickles* curved. Plant annual. This is not an unfrequent species on grassy lands in the middle and south of England, where gravel prevails in the soil. It has small yellow flowers from June to September, and its leaves are rendered conspicuous by the little purple heart-shaped spot in the centre of each leaflet. The Rev. C. A. Johns says that this plant, which is in Cornwall called spotted clover, is there considered very injurious to the pasturage. The coiled and prickly seed vessel is very curious, and many of the Medicks have seed vessels still more so. The Snail-shell Medick of the South of Europe, (*Medicago scutellála*), has a large seed vessel formed of numerous coils; and the still more singular legume of the Hedgehog Medick, (*Medicago intertexta*), has led to the frequent culture of this plant in our gardens. The Moon Trefoil, or Tree Trefoil, (*Medicago arborea*), which grows wild in Abruzzo and many parts of the kingdom of Naples, is an exceedingly pretty shrub, with hoary leaves and yellow flowers, which continue long in bloom. This plant abounds in several of the islands of the Archipelago, and the Greek monks make the beads for their rosaries of its wood, which is, in the interior of the stem, hard like ebony. Many writers consider this plant to be the Cytisus of Virgil, Columella, and other ancient writers on husbandry. It is the largest of all the Medicks, and frequently grows to the height of fifteen feet.

3. *M. mínima* (Little Bur-medick).—*Leaflets* inversely heart-shaped, downy; *stipules* very slightly toothed; *flowers* 2-4 together; *legumes* spirally twisted into a

prickly ball; *prickles* hooked. Plant annual. This is a rare species, found in sandy fields in Cambridgeshire, on some parts of the coast of Suffolk, at Pegwell, near Ramsgate, in Kent, and a few other spots of this kingdom. Its yellow flowers are produced from May to August. A variety occurs in which both leaves and stems are hoary.

4. *M. denticuláta* (Toothed Medick).—*Leaflets* inversely heart-shaped, nearly smooth; *stipules* jagged; *flowers* 2-4 together; *legumes* loosely spiral, flat, and prickled. Plant annual. This species, with its small yellow flowers, opening from May to July, is very rare. It is found occasionally in the Southern and Eastern counties of England. Its seed-vessel is different from that of any other of our wild kinds. It is broad, flat, and loosely spiral, beautifully netted with veins. In one variety the prickles are awl-shaped, and often curved; and in another they are small and straight.

5. *M. satíva* (Purple Medick or Lucerne).—*Stem* usually erect; *leaflets* oblong and toothed; *flowers* somewhat racemed; *flower-stalks* generally shorter than the bracts; *legumes* downy and loosely spiral. Plant perennial. The purple, violet-coloured, or yellow flowers of this Medick, are not uncommon in hedges, pastures, and field borders, during June and July; but the plant is not truly wild. It has escaped from the field of Lucerne, which is an occasional object on our landscape. Columella and several Roman writers highly extolled this plant, generally agreeing that it was superior to clover as food for domestic animals, and its culture is of unknown antiquity in Spain, Italy, and the South of

France. It is still grown to great extent in Persia and Peru, and mowed in both countries all the year round. British writers on agriculture mention it as occasionally grown in this kingdom in the olden times; but its culture was not general till about the middle of last century. Our name of Lucerne is derived from the patois of Languedoc, in which the plant is called *Lau-serda*. The species is also known in France as *le Fois de Bourgogne*; and in Spain is called *Alfalfa*. It is a deeply-rooting plant, but being less hardy than red clover, and requiring longer time for its full growth, is less frequently sown by farmers. This plant is very widely diffused in Afghanistan, and grows in profusion with several of the Trefoils in the meadows near Cabul. These are rendered quite beautiful in the summer season by the abundance of the handsome clover called *Trifolium giganteum*, and which, with the Lucerne, furnishes abundant crops of hay to the people of the country.

6. *M. falcáta* (Yellow Sickle Medick).—*Stem* bending, slightly hairy; *leaflets* oblong, toothed; *flowers* numerous in racemes; *legume* flat, downy, sickle-shaped, or once twisted. Plant perennial. This Medick is very similar to the Lucerne, but it is a larger plant, and its flowers are usually yellow, though occasionally violet-coloured. It is sometimes called Swiss Lucerne, because it is often cultured in some poor soils in Switzerland. It is rare in our country, and is not truly wild, though found in some counties on dry gravelly banks, or on old walls. Its flowers appear in June and July.

6. MELILÓTUS.

1. *M. officinális* (Common Yellow Melilot).—*Stems* erect; *leaflets* narrow, inversely egg-shaped, and serrated; *flowers* in one-sided stalked racemes; *petals* equal in length; *legumes* two-seeded, wrinkled. Plant annual. This can hardly be called a common plant, though growing abundantly in some places, as in several parts of Cambridgeshire. It has an herbaceous branched stem, two or three feet high, its pale yellow flowers are produced from June to August, and the seed vessels are long and large in proportion to the flowers. When growing it has a strong and somewhat disagreeable odour, but while drying, its scent is very sweet, and like that of new-mown hay; nor is this scent lost for some years when the plant has been placed in the herbarium. The hay made from this Melilot is more fragrant than that usually made of the meadow grasses. This pleasant odour is owing to a volatile principle, called Coumarin, which is well known as giving to the Tonka bean its powerful aroma, and which exists abundantly in the flower of this species, and of the blue Melilot. A distilled water made of the flowers, and slightly perfumed, was formerly sold by druggists in France, and praised for its medicinal virtues, though these must have been very slight. An infusion of the blossoms was in that country also much used as a remedy for ophthalmia, and the author saw the plant a few years since, hanging on strings to dry, in the shops at Paris, and was told that it was used for a variety of maladies. The plant is found by waysides and among

bushes, and it may sometimes be seen growing plentifully in the midst of corn-fields. Bees are exceedingly fond of the flowers. This species is called by the French *Le Melilot commun*, and also, *Mirlilot*; by the German, *Der Gemeine steinklege*; and by the Dutch, *Melote*. It was formerly very generally used as an ingredient in emollient fomentations. Though its flavour is somewhat bitter and disagreeable to our palates, yet it is liked by cattle, and horses are so fond of it that the Italians call the plant *Trifolium caballinum*. Ray mentions that it was at one time planted as food for cows and horses. The celebrated Gruyère cheese owes its flavour partly to the flower of this, and the blue Melilot, both of which mingle with the herbs of the mountain pasturages, and are abundant in the valley of Gruyère. The seeds and flowers of these plants are bruised, and mixed with the curd before it is pressed.

2. *M. vulgaris* (White Melilot).—*Stem* erect; *legumes* egg-shaped, one or two-seeded, blunt, and tipped with a short point; *flowers* loosely racemed; *corolla* twice as long as the calyx. Plant biennial. This is not truly wild, though occurring in many parts of England and Scotland. Its flowers are white, and appear in July and August. This species is often called *Medicágo leucántha*.

3. *M. arvensis* (Field Medick).—*Stem* ascending, branched from the base; *legumes* egg-shaped, one or two-seeded, rugged, obtuse, and tipped with a sharp spine. Plant annual. This is a yellow flowered species, found near Thetford and Cambridge in July and August. It is easily known from the other species by its legumes, which are transversely plaited.

7. TRIGONÉLLA (Fenugreek).

1. *T. ornithopodioides* (Bird's-foot Fenugreek).—*Stems* decumbent; *flowers* about two or three together; *legumes* compressed, twice as long as the calyx, and having about eight seeds; *leaflets* inversely heart-shaped. Plant annual. This is a very little plant, and not a very common one, growing in sandy and dry pastures, and heaths, often in the neighbourhood of the sea, and bearing very small yellow flowers in June and July. The spreading stems are from two to five inches long, and its seed-pods are very large for the size of the plant. This is our only wild species, and is too small to be of any use; but a species of the south of Europe, which is very common on fields and waste places about Montpellier, the Common Fenugreek, (*Trigonella Fœnum-Græcum*), was so called by the Romans from their having adopted from the Greeks the practice of cutting and drying it for fodder. This plant was formerly very extensively cultivated in Italy, and is still sown by farmers in the south of Europe. The seeds are farinaceous, slightly bitter, and of a strong and disagreeable odour. The species is thought, however, by Professor Burnett, to be the *Hedysarum* of Theophrastus and Dioscorides; the odour which we find so disgusting being then considered, as its name imports, a sweet perfume. An oil extracted from the seeds of this species was formerly used by the Hindoos to scent their unguents.

8. TRIFOLIUM (Trefoil).

* *Legumes with several seeds.*

1. *T. répens* (White or Dutch Clover).—*Flowers* in roundish heads, stalked, finally bent back; *calyx* teeth unequal; *legumes* 4-seeded; *stems* creeping. Perennial. The Dutch Clover is too common on our meadows, and by our every country walk, to need minute description. Its white blossoms are to be seen from May till September, tinged sometimes with delicate pink, at others with chocolate colour. The flower is on a partial stalk, and when it fades this footstalk bends down, and the legumes droop among the brown withered corollas. The blossom has a sweet odour, which, however, is not so powerful as that of the purple clover. The leaflets have often a dark spot in the middle, and very generally a white line also, and their edges are slightly serrated.

This and the purple meadow clover are most valuable fodder plants. They are commonly cultivated in this country for pasturage, and one acre of land sown with clovers is found to give as much food to horses and cattle as would be yielded by three or four acres of land sown with grasses. Chalky soils are peculiarly favourable to their growth, and several of the trefoils are found remarkably united with the superstratum of mountain lime. If lime is powdered and thrown upon the soil, a crop of white clover will sometimes arise where it had not been previously cultivated or known to exist. Mr. Moore stated, some years since, to the Philosophical



Society of Manchester, that wherever the brushwood of the lime district in Derbyshire is burnt down, the Common White Clover springs up; and that lime strewed over some chalk soils, in which clover seeds had been lying dormant, had called them into action, and produced a luxuriant pasture; on the grass land around Stonehouse at Plymouth, clover was produced by throwing over the land the crumbled soil of the harbour rock, which is of the substance commonly called Devonshire marble, and which is a species of mountain or primitive lime.

has been long a disputed point among botanists and antiquaries, whether the national badge of the Irish, the Shamrock, is the leaf of the Wood-sorrel, or that of one of the Trefoils. The Shamrock has been worn by the Irish for many centuries on the seventeenth of March, which is the anniversary of their patron saint, St. Patrick. The original name of this missionary is said by Mr. Jones, in his "Historical Account of the Welsh Bards," to have been Maenwyn; his name of Patricius having been given by Pope Celestine, when he sent him to preach the gospel to the Pagan Irish. When this missionary landed at Wicklow, A.D. 433, the people were at first ready to stone him. He entreated a hearing, and, while stating to his audience the doctrine of the Holy Trinity, he is said to have plucked a trefoil from the ground, and said, "Is it not as possible for the Father, Son, and Holy Ghost, to be one, as for these three leaves to grow upon a single stalk?" The act and word were well adapted to fix the attention and convey the idea to an ignorant, but

imaginative people, and thus to fix on their memories the important truth of Revelation, though the solemn mystery itself can be explained by no earthly tongue, nor fully symbolized by any earthly emblem.

What this leaf may have been, this ancient Shamrog or Seamrog, learned men after all their researches cannot fully prove, and the same arguments addressed to different minds, have brought to one antiquary the conviction that it was the Wood-sorrel, to another that it was a Clover leaf. The leaf of the White or Dutch Clover seems to be the plant often worn by the modern Irish, and Irish students at the colleges of Edinburgh have sometimes cultivated this clover in little patches, that a leaf might adorn their hats ; but many Irishmen gather indiscriminately a handful of the leaves of any species. M. Bicheno, who some years since investigated the subject very fully, believed that the original leaf was that of the wood-sorrel. He remarks, "The term shamrock seems a general appellation for the Trefoils, or three-leaved plants. Gerard says, 'the Meadow Trefoils are called in Ireland shamrocks,' and I find the name so applied in other authors. The Irish names for *Trifolium repens* are, seamar-oge, shamrog, and shamrock. In Gaelic the name *seamrog* is applied by Lightfoot to the *Trifolium repens* ; while in the Gaelic dictionary, published by the Gaelic Society, under the word *seamrog*, many plants are mentioned to which the name is prefixed as a generic term, as *seamrog chapuilli*, purple clover ; *seamrog chré*, small speedwell ; *seamrog m' huiré*, pimpernel. I conclude from this that shamrock is a generic word, common to the Gaelic and Irish

languages, and consequently not limited to the *Trifolium repens*."

In Fynnes Morison, a notice occurs so late as the year 1598, in which the "wilde Irish" are said to "willingly eat the hearbe shamrocke, being of a sharp taste, which as they run and are chased to and fro, they snatche like beastes out of the ditches." M. Bicheno infers that this author alluded to the wood-sorrel, and the "sharp taste" would certainly indicate this herb, only that as wood-sorrel never grows in ditches, it is quite as likely to refer to the water-cress. The wood-sorrel is not now common in Ireland, but this author justly observes that it may in former years have been so, the woodlands of Ireland having now been so much cut down, partly by the natives to supply their wants, and partly also by the government to prevent their enemies from taking refuge in the wars; and with the woods would go the woodland sorrel.

We confess that we incline to the opinion that one of the Trefoils is the true shamrock, nor do we believe it possible to infer which particular species was selected. Men of those days were no botanists; one triple leaf was the same to them as another; nor by the middle of March are the leaves of any of the clovers sufficiently developed for any but an accurate observer to decide the species to which they belong. Wood-sorrel may or may not have been a common Irish plant, but trefoil leaves abound by every way-side. Nor can we attach any importance to an argument inferring that the shamrock was the wood-sorrel, because it was eaten, since the clover leaves have, in various times and countries, been

used as food; and a starving man would find as much nutriment in them as in the wood-sorrel. Whatever the plant might be, it appears to have been eaten. In Wythiers' "Abuses stript and whipt," published in 1613, we find this couplet:—

" And for my cloathing in a mantle go,
And feed on shamroots as the Irish doe; "

and Spenser, in his "View of the State of Ireland," published 1596, speaking of "these late warres of Mounster," says that it was before "a most rich and plentifull countrey, full of cornc and cattle," but that the inhabitants were now reduced to so much distress, that if they found "a plot of water-cresses or sham-rocks, there they flocked as to a feast for the time."

Many of us have in childhood looked diligently among the grasses of the meadow to find "a four-leaved shamrock," though we know from experience that such shamrocks are not plentiful. The child, who hopes to gain good fortune by finding it, knows not that he is acting upon an old superstition. Melton, in his "Astrologaster," says, that "If a man walking in the fields finds any four-leaved grass, he shall, in a short while after, finde some good thing." In Herrick's "Hesperides," too, we find a slight allusion to this:—

" Glide by the ranks of virgins then and passe
The shoures of roses, lucky four-leaved grasse;
The while the crowds of younglings sing,
And drown ye with a flourie spring."

Our fathers tell how the Clöver "was not only good for cattle, but noisome to witches;" and in those dark days, when every lonely woman was deemed a witch, the

trefoil was prized as a protection, not alone by the peasant, but by the soldier and philosopher :—

“ Woe, woe to the wight, who meets the green knight,
Except on his faulchion arm,
Spell-proof, he bear, like the brave St. Clair,
The holy trefoil’s charm.”

We wonder not that its old associations endear to an imaginative and warm-hearted people, like the Irish, the badge of their nation. It is not difficult to sympathize with the feelings expressed by an Irish lady, in a little poem written on the Shamrock for this work :—

“ And yet no warrior-cresset thou,
A higher, holier spell is thine ;
Sign of her early faith, the Church
Still claims thee for her hallow’d shrine :
Symbol to her of mystic truth,
Link of the golden chain first given ;
Dew-drop embosoming a star,
Silent, but eloquent of Heaven.

“ Well may the child of Erin deem
His Shamrock precious in his eyes ;
Its spell can wake the hidden spring,
Bid Hope from Memory arise :
And whisper that the ‘ Isle of Saints ’
Shall know a purer sanctity,
When Glory shall illumine the land,
And Truth shall make her children free.”

The White Clover is very general throughout Europe, but is not so in North America. Mr. Lyell, who saw it growing in abundance near New Orleans, on the banks of the Mississippi, says, “ Yet it is not a native of Louisiana, and some botanists doubt whether any of the English species, now growing wild in this State, are

indigenous." The power of vegetating, after having many years existed in a dormant state, is not peculiar to the White Clover. Several seeds have been known to do so in a wonderful manner, and though the statement that wheat found enveloped in the mummy cases afterwards germinated, is now known to be erroneous, yet some well-authenticated instances prove that seeds have a wondrous power of retaining their vitality. Tournefort has recorded a case in which beans, that had been kept a hundred years, grew when planted; and Wildenow mentions one of a sensitive plant, in which the seed had been kept sixty years. Mr. Babington related to the British Association an instance in which M. Fries, of Upsala, succeeded in growing a species of Hawkweed (*Hieracium*), after it had been in an Herbarium for fifty years. Dr. Cleghorn states, that after clearing or burning down the forests of India, there invariably spring up a new set of plants, which were not known there before, but the seeds of which must have been lying in the soil. So in Virginia, the Thorn-Apple is called Fireweed, because it rises on spots where the fire has levelled the forest trees. Professor Henslow, during the year 1850, planted several seeds which had been sent to the Committee of the British Association appointed to report on this subject. Two plants of the leguminous tribe grew from seeds, one of which had been kept for seventeen, and the other for twenty years; and, after much examination of the subject, the Professor concludes, that the seeds of plants of this order have a greater power than others of retaining the germinating principle.

* * *Legumes one or two-seeded; standard falling off, or remaining unaltered; calyx not inflated.*

2. *T. pratense* (Common Purple Clover).—*Flowers* in dense roundish oblong heads; *calyx* hairy; its bristle-like divisions half as long as the corolla; *stipules* broad, terminating abruptly in a bristle-point; *leaflets* broad, oval, or inversely heart-shaped, notched or entire, often marked with a white crescent-shaped spot. Plant perennial. The field of Clover may vie with the Bean-field or the Hop-garden, in sweetness of odour. The plant flowers all the summer, and in June, when skies are bright, and its fragrance is most powerful, it is the resort of bees and butterflies innumerable. Pliny remarked how fond the bees were of this flower; and the modern bee-keeper knows well that it is fortunate for him when the farmer in his neighbourhood sows his land with clover. Every one who in childhood has run about the meadows gathering flowers, can tell how sweet a honey lurks within its petals; and we wonder not that our fathers called them honeysuckles; or, as in Shakspeare's time, honey-stalks:—

“Give honey-stalks to sheep.”

In Sweden the Clover heads are used to dye wool green; when mixed with alum they give a light tint of this colour, while a rich dark dye is obtained by mixing them with copperas.

In this country Clover is sown for the food of cattle, but in some other lands it is cultivated for other uses. Mr. Fortune remarks, in his “Wanderings in China,” that after the last crop of rice has been gathered in, the

ground is immediately ploughed up, and prepared to receive certain hardy green crops, such as Clover, the oil plant, and other varieties of the cabbage tribe. "The Trefoil or Clover," says this writer, "is sown in ridges, to keep it above the level of the water, which often covers the valley during the winter months. When I first went to Chusan, and saw this plant cultivated so extensively in the fields, I was at a loss to know the use to which it was applied, for the Chinese have few cattle to feed, and these are easily supplied from the roadsides and uncultivated parts of the hills. On inquiry, I found that this crop was cultivated almost exclusively for manure. The large fresh Trefoil leaves are also picked and used as a vegetable by the natives."

The Clover field presents a singular appearance in the early morning, before the sun is fully risen, as well as at evening twilight. The leaves are all folded together, showing the pale green tint of their under surfaces, often well-besprinkled with the pearls of dew. In wet weather the same appearance is presented by the plants. Pliny told how the Clover leaves were influenced by storms, and Willsford, in his "Nature's Secrets," says, "Trefoile or Claver grasse, against strong or tempestuous weather will seem rough, and the leaves of it stand and rise up as if it were afraid of an assault." The same author quaintly remarks, that the leaves of trees and plants in general will shake and tremble against a tempest more than ordinary; and that all tender buds, blossoms, and delicate flowers, against the incursion of a storm, "doe contract and withdraw themselves within their husks and leaves, whereby each may preserve itself from the



injury of the weather ;” and he adds, that “ leaves in the wind, or down floating on the water, are signs of a tempest more than ordinarie.”

This Clover is pretty general throughout Europe, as are most of the British Trefoils. It has been remarked, that in the distribution of the leguminous plants in the south of Europe, the Brooms have their maximum in Spain ; that the Vetches increase in Greece ; and that the various Trefoils are most abundant in Italy. The species of the *Astragalus*, or Milk Vetch, first begin to preponderate in Asia Minor. The Trefoil is called *Trèfle* by the French, and *Der Klee* by the Germans. The old Anglo-Saxon word from which our modern clover is derived, was *Cloefer*, from *Cleof-an*, to cleave, and refers to the cleft leaf. The Dutch still call it *Klaver*, and many of our writers of the sixteenth century called it Claver-grass, though Michael Drayton always calls it Clover :—

“ So that my poorest trash, which men call rush and reed,
Doth like the penny grass or the pure Clover show.”

Shakspeare speaks of the

“ Freckled Cowslip, Burnet, and Sweet Clover ;”

and few of us can see the Clover flower without the thought of some pleasant meadow land, in which we may, in other days, have seen it growing in all its ruddy beauty and sweetness :—

“ It doth remind me of an old low strain
I used to sing in lap of summers dead,
When I was but a child, and when we play'd
Like April sunbeams, 'mong the summer flowers ;
Or romped in the dews with weak complaining lambs,

Or sate in circles on the primrose knolls,
 Striving with eager, and palm-shaded eyes,
 'Mid shouts and silver laughs, who first should catch
 The lark, a singing speck, go up the sky."

3. *T. médium* (Zigzag Clover).—*Flowers* on stalked loose round heads; *calyx-teeth*, bristle-like, the two upper shortest; *stipules* narrow, tapering to a point; *leaflets* elliptical narrow; *stem* zigzag. Plant perennial. This, though not an unfrequent species, is not so common as the Purple Clover, which it much resembles. It is, however, quite a distinct plant, and well marked by its very zigzag stem. It is also more slender, the heads of flowers larger, and of darker purple; its leaflets and stipules narrower, and the former without any white spot. It is in flower from June to September in pastures, and though not so nutritious for cattle as is the Common Clover, yet it is better adapted for thriving in light soils. It has a similar sweet odour to that of the Meadow Clover, and resembles it in flavour.

4. *T. ochroleúcum* (Sulphur-coloured Trefoil).—*Flowers* in dense stalked, terminal heads, which are at first hemispherical, and afterwards egg-shaped; *calyx-teeth* awl-shaped; upper *leaflets* oblong, lower heart-shaped. Plant perennial. This species is by no means so generally diffused among our grassy places as is either of the foregoing, but it is common in the eastern counties of England, and especially on the clayey pastures of Norfolk and Suffolk. It grows in fields and by waysides, bearing, in July and August, flowers of a cream-colour, more or less tinged with yellow, which turn to brown as they fade. The stem is a foot or more high, and the lower leaves are on long stalks.

5. *T. arvense* (Hare's-foot Trefoil).—*Flowers* in terminal and axillary heads, covered with soft downy hairs; *calyx-teeth* hairy, much longer than the corolla; *stem* branched, erect; *leaflets* lanceolate, blunt; *stipules* egg-shaped, pointed. Plant annual. This is a very pretty Trefoil, its pale pink blossoms just peeping through the soft grey down which surrounds them, and which well might remind us of the delicate fur on the hare's foot. It is very distinct from any other British species, and grows on a stem from six to twelve inches high. It thrives particularly well near the sea, and often forms large masses on dry pastures or corn-fields, or, as at Sandgate, Kent, on the base and sides of high banks overlooking the ocean. Its heads are like velvet to the touch, and when growing in any quantity the mass might convey the impression that it was composed of the downy balls which are the appendages to the seeds of some plant of the Composite order. As Mr. E. Gerard Smith has observed, in his "Flora of South Kent," that coast is very rich in Trefoils, "which are its prominent, though humble ornaments. Upon the sandy undercliff near Folkstone, they acquire an unusual size and perfection; and for these alone, not to mention the singular Medicks, this place is well worth the visit of the botanist."

6. *T. maritimum* (Teasel-headed Clover).—*Flowers* in terminal roundish heads; *calyx-teeth* at first rigid, awl-shaped, and erect; the lower one much longer and broader than the rest, all of them spreading when in fruit; *stipules* very long, and awl-shaped. Plant annual. This is a rare species, found on some salt marshes on

the east coast of England, and at Newport, Monmouthshire, as well as near Kilbaric Church, in Ireland. It has small pink flowers, in June and July, on a spreading stem.

7. *T. incarnátum* (Crimson Clover).—Heads of *flowers* egg-shaped, stalked, solitary, and terminal; *calyx* hairy, the teeth somewhat awl-shaped, shorter than the corolla; *stipules* egg-shaped; *leaflets* inversely heart-shaped. Plant annual. This beautiful crimson Clover is often planted in the garden as a border flower. It rarely adorns our fields or meadows; and in most places where it occurs, it is rather to be regarded as naturalized, than as truly wild. A variety, however, with light pink flowers, occurs on the Lizard Point, Cornwall, which is undoubtedly wild. This has been named *T. Mohlinerii*. It flowers in June and July, and is common in the countries in the south of Europe.

8. *T. stellátum* (Starry-headed Trefoil).—Heads of *flowers* terminal, globose, stalked, and shaggy with long loose hair; *calyx* hairy, the teeth longer than the corolla, bristled, finally enlarging and spreading, its tube closed with hair; *stipules* broadly egg-shaped, ribbed, and roundly notched at the margin; *leaflets* inversely heart-shaped. Plant annual. One habitat only in England is known for this Trefoil. It grows in great abundance near Shoreham, in Sussex. It is a very singular and pretty plant, with very long calyxes, which at first hide the small cream-coloured corolla among their bristly teeth, but which afterwards spread out in a star-like form. It is in blossom from June to August. It is, probably, not truly indigenous.

9. *T. striátum* (Soft Knotted Trefoil).—Heads of *flowers* terminal and axillary, egg-shaped, and downy; *calyx* swelled when in fruit, very rigid, hairy, with straight but unequal small bristly teeth; *leaflets* inversely heart-shaped, or inversely egg-shaped; *stipules* egg-shaped, and tapering at the point. Plant annual. The small downy heads of this Trefoil grow among the grass of our dry fields and pastures, in June and July, especially near the sea; the blossoms are of reddish-purple, and the calyxes furrowed. It is a silky downy-looking Clover, long hairs being more or less scattered over every part of it. The stem is from four to nine inches long. It is quite a common plant, and has the sweet smell of the Clover, appearing among the grass on spots where we might say with Thomson—

“’Tis beauty all, and grateful song around,
Join’d to the low of kine, and numerous bleat
Of flocks, thick nibbling through the clover’d vale.”

10. *T. Boccóni* (Boccone’s Trefoil).—Heads of *flowers* in pairs, roundish; *calyx* cylindrical in fruit, the teeth straight, unequal, awl-shaped; *leaflets* inversely egg-shaped, or narrowly lanceolate, toothed, smooth above; *stipules* oblong, with a long awl-shaped point. Plant annual. This very rare species was, until recently, believed to be a plant of Southern Europe, and not indigenous to our shores; but it is now known to be truly wild in some dry places in Cornwall, as between the Lizard Point and Kynance Cove. Its stem is from two to four inches in height, and its pink and white flowers appear in July.

11. *T. scábrum* (Rough Rigid Trefoil).—*Flowers* in short prickly heads, terminal and axillary; *calyx-teeth* unequal, very rigid, finally spreading; *leaflets* with very thick nerves; *stems* prostrate. Plant annual. This species often grows with the Soft Knotted Trefoil, on barren, chalky, or sandy fields, near the sea. It is a small spreading plant, producing its inconspicuous whitish flowers in June and July. It is remarkable for its prickly calyxes, especially when in fruit.

12. *T. glomerátum* (Smooth Round-headed Trefoil).—Heads of *flowers* terminal and axillary, sessile, roundish; *calyx-teeth* broad, very acute, finally turning downwards; *leaflets* inversely heart-shaped and toothed; *stems* prostrate. Plant annual. This, which is not a common Trefoil, is very similar in appearance to the last described species, but its heads of flowers are rounder, and the teeth of its calyxes more spreading and leaflike. It flowers in June, on gravelly open places, in the east and south of England.

13. *T. subterráneum* (Subterranean Trefoil).—*Flowers* 3—5 together, in axillary heads, erect, but bent down when in fruit, and sending out branched fibres from their centre, which penetrate into the ground. Plant annual. This is not an uncommon flower during May and June, on dry and gravelly pastures of England, having long slender white blossoms. It is a singular little species, a few inches long, its stems branching and lying over the ground. The flower-stalks gradually lengthen, till, at last, the blossom reaches the earth; the young fruit then bends down, and a number of thick stout fibres rise from the top of the fruit-stalk and bury

the seed in the soil while yet attached to the plant. The pods are large and roundish.

14. *T. suffocatum* (Suffocated Trefoil).—Heads of flowers sessile and roundish; *calyx* membranaceous, with broadly awl-shaped teeth, bending backwards; *petals* shorter than the calyx. Plant annual. This rare little Trefoil grows on the coasts of Norfolk and Suffolk, among the plants of the sand which borders the sea. Its stem is about three or four inches high. The heads of flowers are dense and inconspicuous. They are produced in June and July. The whole plant is smooth.

15. *T. strictum* (Upright Round-headed Trefoil).—Heads of flowers terminal and axillary, stalked and round; *calyx* at length shaped like a bell, with spreading awl-shaped teeth; *leaflets* long, narrow, and toothed; *stems* erect. Plant annual. The little globular heads of whitish flowers, and the smooth leaves marked with beautiful lines, render this a pretty species. It is very rare, growing on rocky banks near the sea, in Cornwall. The Rev. C. A. Johns, who has given an account of this plant in his “Week at the Lizard,” remarks, that it is well distinguished from the other species of Trefoil by its 2-seeded pods, which are bulged near the summit, and by its narrow-toothed leaflets, resembling in shape those of the Common Melilot. It grows at Old Lizard Head, and at Landewednack, in Cornwall, and is in flower during June and July.

*** *Calyx inflated after flowering.*

16. *T. fragiferum* (Strawberry-headed Trefoil).—Heads globose, on long stalks; *calyx* becoming mem-

branaceous after flowering, downy, and remarkably inflated; *stem* creeping. Plant perennial. Any one who noticed this Trefoil would at once think of a strawberry. Its heads of flowers are small, of deep purplish red, roundish, and becoming, when in fruit, larger, sometimes an inch in diameter, and more decidedly globular. It is not a very common plant on our pasture lands, but the author has found it most abundant on some salt marshes. On the marshes near Pegwell, in Kent, as well as on those about Sheerness, in the same county, it is a frequent flower in July and August.

17. *T. resupinátum* (Reversed Trefoil).—Heads of *flowers* at first hemispherical, gradually becoming round, stalked; *corollas* inverted from the ordinary position, the front becoming the back part; *calyx* membranaceous, hairy, and acute, inflated after flowering; *leaflets* inversely egg-shaped; *stem* prostrate. Plant annual. This species, which was probably introduced by ballast, has been found in meadows, near Bristol, and near the quay at Ham, in Dorsetshire, blossoming in July.

* * * * *Standard withering, but not falling off; finally bending down and covering the pods; flower yellow.*

18. *T. procúmbens* (Hop Trefoil).—*Flowers* in dense, roundish, oblong heads; *leaves* stalked; *leaflets* inversely heart-shaped. Plant annual. This Trefoil is very abundant, bearing yellow hop-shaped flowers from June to August, on most of our pasture lands and grassy banks, or field-borders. Several of our Trefoils require a great degree of attention to their characters in order to iden-

tify the species, but this may be known at a glance by its yellow oval heads. The only plant for which it could possibly be mistaken would be the Hop Medick, but that is well distinguished from this by its rugged legume. It is usually about four inches high, and is sometimes sown in fields for fodder, but it is not so nutritious as the common purple or white clover.

19. *T. minus* (Lesser Yellow Trefoil).—*Flowers* in dense heads, 6 to 15 together; *leaves* scarcely stalked; *leaflets* inversely heart-shaped, the central one on a longer stalk; *stems* prostrate and hairy. Plant annual. This is a common little Trefoil, on dry grassy places, as meadows and roadsides, its small yellow flowers appearing in June and July. It is doubtful if it is essentially distinct from the next species. It differs from it chiefly in having its partial flower-stalks much shorter, and in its standard covering the ripened pod; whereas in the next species the standard is narrower, and does not cover the legume.

20. *T. filifórmé* (Slender Yellow Trefoil).—Heads of *flowers* loose, from 2 to 5 together; *leaf-stalks* all of the same length, and scarcely longer than the stipules; *leaflets* inversely heart-shaped; *stem* smooth. Plant annual. This species, which is the *Trifolium micranthum* of some botanists, is exceedingly common all the summer months, its yellow flowers springing up on every little grassy patch beside walls, or on open heaths, meadows, or banks. It is one of our commonest wild flowers.

9. LÓTUS (Bird's-foot Trefoil).

1. *L. májor* (Greater Bird's-foot Trefoil).—*Flowers* in umbels, from 8 to 10 together; *calyx-teeth* awl-shaped, spreading like a star when in bud; *leaflets* inversely egg-shaped; *stems* nearly erect, tubular. Plant perennial. This is a common plant in damp hedges near streams, sometimes entangling itself, almost like a vetch, among the bushes and other plants, its stem being from one to three feet in height, and very weak. The leaves are sometimes smooth, but usually they are covered more or less with soft silky hairs. Its deep yellow flowers appear in July and August. It is by many botanists considered to be but a form of the following species, acquiring a greater development in consequence of growing on a more moist soil.

2. *L. corniculátus* (Common Bird's-foot Trefoil).—*Flowers* in umbels, 8 or 10 together, bending somewhat downwards; *flower-stalks* very long; *calyx-teeth* straight in the bud, the 2 upper teeth bending inwards; *stem* prostrate; *leaves* inversely egg-shaped, nearly smooth. Plant perennial. Every one knows the pretty little Bird's-foot Lotus, which is so abundant during May on our pastures, and which is commonly called Lady's Slipper, and in some counties Shoes-and-Stockings, Butter-jags, or Cross-toes. The flowers are bright yellow, some of them rich brown or orange; and the young buds are often of a deep crimson tint. The foliage, though generally smooth, is, in one variety, (termed *villosus*,) thickly clothed with long spreading



hairs, which invest also the stem and the calyx. A variety occurs also in which the plant has fleshy leaves; and in another, the leaflets are much longer and narrower than in the ordinary form, so that the plant, in these circumstances, has been described as a different species, under the name of *Lotus tenuis*. Our pretty flower enlivens not only the rich grass of the green meadow during all the summer months, but adorns also many a sunny slope whose short grass gives a fainter tinge of green to the sward. Charlotte Smith mentions it among the flowers of such a spot on Beachy Head, and her description is so truly graphic, that the mind involuntarily pictures one of the chalky downs surrounded by such scenery:—

“ Let us turn

To where a more attractive study courts
 The wanderer on the hills; while shepherd girls
 Will from among the Fescue bring him flowers
 Of wondrous mockery, some resembling bees
 In velvet vest, intent on their sweet toil;
 While others mimic flies, that lightly sport
 In the green shade, or float along the pool,
 But here seem perch'd upon the slender stalk,
 And gathering honey-dew. While in the breeze
 That wafts the thistle's plumed seeds along,
 Blue-bells wake tremulous. The mountain thyme
 Purples the tassock of the heaving mole,
 And the short turf is gay with tormentil,
 And bird's-foot trefoil, and the lesser tribe
 Of hawkweeds, spangling it with fringed stars,
 Near where a richer tract of cultured land
 Slopes to the south; and burnish'd by the sun
 Bend in the gale of August floods of corn;
 The shepherd of the flock with watchful care
 Repels by voice and dog the encroaching sheep,

While his boy visits every wired trap
That scars the turf; and from the pitfalls takes
The timid migrants, who from distant wilds,
Warrens, and stone quarries are destined thus
To lose their short existence."

The leaves of the Bird's-foot Trefoil become blue when drying for the Herbarium; they would, probably, afford a dye resembling indigo, which is the produce of a leguminous plant. The French call the flower *Le Lotier*; the Germans, *Der Schotenklee*; the Dutch, *Rolk-laver*; and it is the *Loto* of the Italian and Spaniard. "The name of Lotus," says Professor Burnett, "is probably of Egyptian origin, and has been given to several different plants. The ancients seem to have distinguished three sorts; the tree lotus, the marsh lotus, and the herb lotus; the two former of which, the *Zizyphus Lotus*, and *Nymphæa Lotus*, retain the original name as a specific, and the latter as a generic name." Both our common Lotus and the larger species have been recommended by good writers on agriculture as suitable for sowing with white clover. Dr. Henderson wrote much in favour of these plants; and Sinclair, in his work on "British Grasses," mentions this as a valuable addition to the pasturage of a moist meadow. The pods of one species, the *Lotus edulis*, are eaten by the poor people of Candia; and the *Lotus rectus*, which we see in our greenhouses, and receive from the south of Europe, is by some writers supposed to be the Cytisus of Virgil. The dark-flowered *Lotus Jacobæus*, as well as its yellow variety, are favourite greenhouse flowers, and are in bloom all the year.

3. *L. angustissimus* (Slender Bird's-foot Trefoil.—*Heads* from 1 to 4-flowered; *flower-stalks* about twice as long as the leaves; *leaflets* broadly lanceolate; *calyx-teeth* straight in the bud; *stems* prostrate; *legumes* slender. Plant annual. The whole of this plant is covered with soft hairs, and its legumes are generally long, in one variety very long, but in another broad and short. It is a rare plant, occurring in Devonshire, Cornwall, and some other counties. Its flowers are much smaller than those of the other species, and its whole appearance very different from them. Its varieties have by some botanists been described as species, and called *Lotus diffusus*, and *Lotus hispidus*.

10. ANTHÝLLIS (Lady's Fingers).

1. *A. Vulnerária* (Lady's Fingers, or Kidney-Vetch).—Herbaceous; *leaves* pinnate; the terminal leaflet largest; heads of *flowers* in pairs; *bracts* large, digitate, or palmate. Plant perennial. The swollen white calyxes, covered with woolly down, are the most conspicuous feature in the blossom of this plant, and procured for it in our rural districts the name of Lamb's Toes; while another species, growing in the south of Europe, which has a still thicker down on its cups, is on this account called Jupiter's Beard. The leaves are of a pale sea-green colour, smooth at the edges, very thick, and remaining green for some months after the flower is dead, these sprays forming a pretty ornament to the inland or sea-side chalky cliff, on which they are often abundant. They are common on the sea-cliffs both of Dover and

of the Cornish shores, becoming in the latter somewhat stunted, but being luxuriant on the former spot. The flowers are small, but in dense clusters; they are most generally yellow, but are sometimes white, crimson, or cream-coloured. Linnæus remarked of it that in Æland, where the soil is of red calcareous clay, the flowers are red, but that on the white chalky soil of Gothland they are white. This plant, as well as several of the species of other countries, affords a good pasturage for cattle. Mr. Young, who recommended its culture, says, that it is very abundant on the best meadows of the Pyrenees, where it is of smaller growth, and less astringent in property. Some of the best pasture lands of the south of Europe abound with the Kidney-vetch, and many agriculturists have thought that it would repay the attention of British farmers, as it flourishes so well on dry barren soils. It was of old used as a vulnerary; and Gesner having recommended it as an application for stanching the effusion of blood, it shared, with several of our plants, the name of Woundwort, and was also called Staunch. In the early part of the eighteenth century, it was commonly sold in Ireland under that name. The French call it *L'Anthyllide*; the Germans, *Die Wollblume*; the Dutch, *Wund Kruid*; and it is the *Antillide* of the Italians and Spaniards. It is known to the Danes as the *Vundurt*, and to the Swedes as *Ullblomster*. It is very common in the north of Europe. A good yellow dye may be procured from its flowers.

11. OXYTROPIS.

1. *O. Uralénsis* (Hairy Mountain Oxytropis).—*Leaves* and *flowers* rising directly from the roots ; *flower-stalks* longer than the leaves ; all parts of the plant covered with silky hair. Plant perennial. This is a very lovely ornament of some pasture lands in Scotland. Its leaf spray is composed of from eight to twelve pairs of leaflets, which are thickly clothed with silky hairs, so as to give them a glossy, almost metallic appearance, especially when they are only half unfolded, and when the silky hair is most dense. The flowers are in close heads, of a bright purple colour, appearing in June and July.

2. *O. campéstris* (Yellowish Mountain Oxytropis).—*Stemless* ; *leaflets* having silky hairs scattered over them ; *legume* imperfectly two-celled. Plant perennial. This is a rare flower of the Clova Mountains. Its heads of blossoms are of pale yellow, tinged with purple.

12. ASTRAGÁLUS (Milk-Vetch).

1. *A. glycyphýllus* (Sweet Milk-vetch). — *Stem* prostrate ; *leaflets* oval ; *leaves* longer than the flower-stalks ; *stipules* large, egg-shaped, and pointed ; *pods* somewhat triangular, smooth and curved. Plant perennial. This is not a very common plant in England, and it is still more unfrequent in Scotland. It would, however, immediately attract the notice of any one at all observant of wild flowers, by its large leaf, so much larger than that of any of our native vetches. The author can remember, that when she first met with this plant in a green lane, near Higham, in Kent, she thought that

these leaves must be those of a young shoot of the garden *Robinia*, False Acacia, as it is commonly called, which had sprung up from seeds brought from some neighbouring garden. Both in form and colour they resemble such a shoot, but their large stipules, free from each other, and from the leafstalk, form a marked feature of this leaf, and in more fully grown specimens of the Milk-vetch, the prostrate stems, sometimes two or three feet long, and the dull yellow flowers, render this plant easy of distinction from all others. The legumes are sometimes an inch and a half long, and are curved in the form of a sickle.

This plant is called Sweet Milk-vetch, from the sweetness of its leaves and roots, which are on the first taste pleasant, but leave a bitter and disagreeable flavour on the tongue. This causes them to be disliked by cattle, and they are left quite untouched when occurring among the pasture. Were it not for this, the plant would doubtless have been cultivated, yielding, as it does by its large leaves, so great an amount of herbage. Several species of *Astrágalus*, in other lands, have the sweet flavour without the succeeding bitterness. Thus the roots of *Astrágalus Aboriginórum* are long and yellow, like liquorice roots, and in Arctic America, where it grows wild, it is collected as an article of food by the Crees and Stone Indians. The roots of another species, *Astrágalus ammodytes*, which is also sweet, are used in Siberia instead of liquorice.

We have but three native species of *Astrágalus*, none of which are sufficiently important to form a feature in our landscape. There are vast tracts, however, in other



countries, of which the different species form the chief feature. Mount Etna, celebrated by the ancients for its odoriferous productions, and said by Plutarch to emit so strong a scent from its varied flowers, that the hunter was overcome by their fragrance, has thick half globular mounds in great abundance, formed by the growth of a species of Milk-vetch. The *Astrágalus Siculus* is the predominant plant amid its varied vegetation, and these singular mounds are sometimes five feet in diameter and two and a half in height, this thick and dwarfed mode of growth resembling that of several plants found in the Alpine regions of the Cordilleras. On the open plains of the Asiatic steppes, however, they attain considerable height. Baron Humboldt remarked of some of these steppes, in the temperate zone, that they were full of flowering herbaceous plants, especially of a papilionaceous kind, in which hosts of species of *Astrágalus* immediately attracted the attention. In traversing pathless portions of these steppes, the traveller, seated in his Tartar carriage, sees the thickly crowded plants bend beneath the wheel, while others rise up so closely around him that he cannot look beyond them to see the direction in which he is moving. Species of Hawthorn, Dropwort, and Saussurea, as well as the Sloe and dwarf Almond-tree, mingle their flowers with those of the still more abundant Milk-vetch; and occasionally the Crown Imperial towers above the *Cypripediums*, and bright tulips rejoice the eye by their variety of colours. Our sweet milk-vetch is the largest of the British species, but our gardens exhibit some very pretty shrubby kinds. The seeds of several of the

foreign species are roasted and used as coffee, but this cannot at all rival, either in flavour or in refreshing properties, the produce of the Arabian berry. Gum Tragacanth is also yielded by some kinds of *Astrágalus*; and its power to render water viscid, is about twenty-four times as great as that of the Gum Arabic. Several of these plants are used medicinally.

2. *A. hypoglóttis* (Purple Mountain Milk-vetch).—*Stem* prostrate; *flower-stalks* longer than the leaves; *leaflets* oval, hairy; *stipules* united; *Pods* erect, stalked, hairy, and two-seeded. Plant perennial. This milk-vetch is very different in appearance from the last, as its stems are slender, and not more than two or three inches long. The heads of flowers are very large in proportion to the size of the plant. They occur in June and July, and are of dark bluish purple, or sometimes pale lilac, or white. The plant, though somewhat local, is abundant on some dry gravelly and chalky pastures chiefly in the south of England. It grows plentifully on Royston Heath, in Cambridgeshire. The French call the Milk-vetch *L'Astragale*; the Germans, *Tragant*; the Dutch, *Kootruid*; and it is the *Astragalo* of the Italian and Spaniard.

3. *A. alpinus* (Alpine Milk-vetch).—*Stem* ascending; *leaflets* oval; *stipules* egg-shaped, free; *legumes* stalked, drooping, two or three-seeded, and clothed with black hairs; whole plant downy. This, which like the other species is perennial, is exceedingly rare. Its recorded places of growth are the Glen of the Dole, Clova, and Little Craigindal, Braemar. It bears clusters of few spreading or drooping flowers in July, which are white

and tipped with purple. This plant is by some writers called *Phaca Astragalina*.

13. VÍCIA (Vetch, Tare).

* *Flower-stalks lengthened sometimes longer than the leaves; calyx gibbous at the base.*

1. *V. sylvática* (Wood-vetch).—*Flower-stalks* many flowered, longer than the leaves; *leaflets* in about eight pairs, elliptical, abrupt, with a sharp point; *tendrils* branched; *stipules* crescent-shaped, deeply toothed at the base. Plant perennial. Few of our wild flowers are more ornamental to our hedges in summer than the vetches which tangle among the bushes, holding themselves by leaning on their stronger neighbours; and as Cowper says, repaying

“The strength they borrow with the grace they lend.”

Of all our wild vetches this is the loveliest, its beautiful white flowers, streaked with bluish veins, being very numerous and large. It is not, however, a common plant, growing chiefly in mountainous woods, or in bushy places of mountainous districts in Scotland, the north and north-west of England, Ireland, and Wales; though it has been found in Kent, Oxfordshire, and other counties away from mountains. Walter Scott thus describes it—

“Where profuse the wood-vetch clings
Round ash and elm in pencill'd rings,
Its pale and azure pencill'd flower
Should canopy Titania's bower.”

It flowers in July and August, and its long stem climbs

sometimes to the height of six feet, its branching tendrils entwining themselves on the woodland boughs.

Mr. Lees remarks, while objecting to the practice of scattering the seeds of garden-flowers in wild places—"Last week I passed through a wood covering one of the transition limestone hills, near Ledbury, which was most profusely ornamented by the beautiful *Vicia sylvatica*, festooning the trees on all sides. I was delighted in the extreme at this wild production of nature, so strikingly lovely, though," adds this botanist, "had it been in the power of any person to have informed me that some ornamentor of wilds had been profusely sowing the plant in the wood, my pleasure would have been much abated; nor could I in that case have concluded that a calcareous soil was the natural home of the plants." We share with Mr. Lees in his dislike of the practice of scattering the seeds of exotic plants among the wild woods and rocks. In the progress of man's mechanical skill we shall soon have little left to us of the true country; we would fain preserve its wild flowers in all their native beauty, unmingled. The garden, the plantation, and the pleasure ground, are, as Mr. Lees remarks, the proper places for man's sportive and improving hand. Many of our wild plants have been, and deserve to be, admitted within its enclosure. The Rev. W. T. Bree, asks of this Wood-vetch, "Why is not this beautiful climber, certainly one of the most charming and elegant of our native plants, more frequently cultivated in the garden? Is it on account of any peculiarity of the soil which it requires? or the difficulty of making it succeed in a state of cultivation?"

It generally prefers a chalky or calcareous soil ; thus I have observed it in beautiful luxuriance in the neighbourhood of Clifton and Bristol, also in the vicinity of Oxford, and lately near Dover. But it also occasionally occurs in a light sandy soil, as in Bentley Park, near Atherstone, in Warwickshire. I have more than once sown the seeds in the garden, and seldom succeeded in making them come up, or at least raising them to perfection. What is the cause of the failure ? ”

A writer in Loudon's Magazine of Natural History, commenting on this, remarks—“ I was rather surprised to find a query as to the difficulty of cultivating the *Vicia sylvatica*. It grows in thousands, perhaps tens of thousands, on Hort's Hill, Hey's Wood, just ten miles from Coventry, festooning the underwood with its beautiful chocolate-striped petals most delightfully. It is a sight well worth walking miles to see. In a garden in that village, this plant and the Crimson Vetchling (*Lathyrus Nissolia*), found wild in that neighbourhood, have been cultivated for many years without difficulty, and there is always an abundance of self-sown plants.”

This is a valuable herbage plant, furnishing by its bulk a large amount of food, which is very nutritive. Many agriculturists have recommended that it should be sown in fields ; but Mr. Curtis was of opinion, that if cultivated alone, the plants would become entangled and perish for want of support.

2. *V. Cracca* (Tufted-vetch).—*Flower-stalks* elongated, many-flowered ; *leaves* of about ten pairs ; *leaflets* lanceolate, with a spiny point, silky ; *stipules* entire, half arrow-

shaped ; *calyx-teeth* shorter than their tube ; *Pods* linear, oblong, smooth. Plant perennial. During the months of July and August, the handsome crowded spikes of the Tufted-vetch climb to the topmost bough of the hedge, or droop down in luxuriance among the branches of the wood. They are of a rich purplish blue, the flowers all turning one way, and the spikes often two or three inches long. The lover of flowers is glad to see this lovely vetch, clinging to the hedges by the meadow ; and the farmer welcomes it there too, knowing that it affords a large amount of fodder to the animals grazing on his pasture. Dr. Plot, in his "History of Staffordshire," says of this nutritious plant, and the *Vicia sylvatica*, that they "advance starven or weak cattle above any thing yet knowne." Its culture has been often recommended. It might have been this flower to which Charlotte Smith alludes in the lines which so well describe the summer hedge :—

"An early worshipper at Nature's shrine,
 I loved her rudest scenes—warrens and heaths,
 And yellow commons, and birch-shaded hollows,
 And hedgerows bordering unfrequented lanes ;
 Bower'd with wild roses, and the clasping woodbine
 Where purple tassels of the tangling Vetch
 With bittersweet, and bryony inweave,
 And the dew fills the silver bindweed's cups.
 I loved to trace the brooks whose humid banks
 Nourish the harebell, and the freckled pagil ;
 And stroll among o'ershadowing woods of beech,
 Lending in summer, from the heats of noon,
 A whispering shade, while haply there reclines
 Some pensive lover of uncultured flowers."

The seeds of the Tufted-vetch are roundish and black,

doubtless they, with those of the other vetches, contribute to furnish food for our wild birds.

3. *V. Órobús* (Wood Bitter Vetch).—*Leaves* pinnate, hairy; with from seven to ten pairs of egg-shaped, somewhat oblong acute *leaflets*; *stipules* half arrow-shaped, slightly toothed at the base; *flower-stalks* many-flowered; *stem* branched, prostrate, hairy; *tendrils* reduced to a point. Plant perennial. This Wood-vetch or Wood-pea, as it is often called, flowers in May and June, having one-sided clusters of cream-coloured blossoms with purple streaks. It is not common in the South of England, but in the woods and mountainous and rocky places in the North, it is not an unfrequent plant among bushes.

4. *V. Bithýnica* (Rough-podded Purple Vetch).—*Flower-stalks* shorter than the leaves, one or two flowered; *leaflets* either linear or lanceolate, acute, upper leafstalks having two pairs; *stipules* half arrow-shaped and toothed; *calyx-teeth* lanceolate, somewhat awl-shaped. Plant perennial. This rare species is found where the soil is of gravel, occurring chiefly near the sea. The flower is of purplish colour, with paler, almost white wings, and the round seeds are speckled with black and grey. The blossoms are most often solitary, and appear in July and August.

* * *Peduncles* short, axillary, few-flowered; *calyx* equal at the base.

5. *V. lathyroídes* (Spring Vetch).—*Flowers* solitary, sessile; *Pods* smooth; *leaflets* in two or three pairs, inversely egg-shaped or oblong, tipped with a spine; *calyx-teeth* awl-shaped; *stipules* entire, not marked with a dark

spot; *Pods* linear, smooth; *seeds* nearly cubical, roughish. Plant annual. This species is very nearly allied to the next, looking like a dwarfed specimen of it. Its stem is prostrate, and usually about six inches long. The flowers are of bright purple, and expand in April and May.

* * * *Flowers axillary, scarcely stalked; calyx swelling at the base on one side.*

6. *V. sativa* (Common Vetch).—*Flowers* solitary or in pairs, nearly sessile; *leaflets* in from four to seven pairs, oblong or inversely heart-shaped, the upper ones narrowest, all tipped with a spine; *calyx-teeth* equal; *Pods* slender, somewhat silky; *stipules* half arrow-shaped, toothed at the base, marked with a sunken dark spot; *seeds* round and smooth. Plant annual. This vetch is often found growing apparently wild in fields, but it is a doubtful native, and has most probably escaped from cultivation. The plant is very extensively sown for cattle, and is the summer and winter tare of the agriculturist. These two tares were long regarded as different species, but Professor Martyn, on cultivating them both, found that they were not even distinct varieties, only requiring that the one should be sown in the Spring, the other in October. This is the only species of the genus, except the Bean, which is cultivated to any extent in this country.

The Tare crop is of so much importance in our own land, that Mr. Young observed, that not one-tenth of the animals reared for the use of man could be supported without it. "This common vetch," he says, "maintains more animals than any other plant whatsoever, no arti-

ficial food being to be compared with it." Another advantage of the tare to the cultivator is mentioned by Professor Thaers, which is, that when cut green it does not exhaust the soil; and that when made into hay it is more palatable and nutritive to cattle than any other food. Vetches are generally cut down before ripening their seeds, but these are sometimes allowed to ripen, either for sowing or for feeding pigeons. The plant is usually about two feet high, and has purple, blue, or reddish flowers in June. A variety termed *angustifolia* has sometimes been described as a distinct species. Its upper leaflets are narrow, its flowers solitary or in pairs, generally smaller and of a brighter red than in the ordinary form, and its pods spreading; it is found in dry places. Another variety has also been termed *Vicia Bobartii*; in this the flowers are solitary, the stem prostrate, and the pods spreading.

7. *V. lútea* (Rough-podded Yellow Vetch).—*Flowers* solitary, sessile; *standard* smooth; *leaflets* lanceolate in four or five to eight pairs; *stipules* marked with a deep red spot; *calyx-teeth* unequal, upper ones very short and curved upwards; *Pods* hairy. Plant perennial. This is a rare species, growing in rocky or pebbly lands, especially near the sea, in England and Scotland. It is about two feet in height, and its flowers, which are produced in June and July, are large, and of pale yellow.

**** *Flower-stalks long; calyx equal at the base.*

8. *V. híbrida* (Hairy-flowered Yellow Vetch).—*Flowers* solitary, axillary; *calyx-teeth* unequal, spreading; *standard* hairy; *Pods* oblong and hairy; *stipules*

egg-shaped and without spot ; *leaflets* abrupt ; *stem* ascending. Plant perennial. This yellow-flowered species is very similar to the last, and differs from it chiefly in the standard of its flower, which is covered with an abundance of glossy yellowish hair. It is in blossom in July and August, and is found on Glastonbury Tor Hill, and at Swan Pool, Lincoln.

9. *V. sépium* (Bush Vetch).—*Flowers* from four to six in a small sessile cluster ; *leaflets* egg-shaped, obtuse, gradually decreasing in size towards the end of the leaf-stalk ; *stipules* half arrow-shaped, undivided or lobed ; *Pods* smooth ; *seeds* round, marked with black and grey. Plant perennial. This species is very common in woods or under hedges, but it is not one of the prettiest of our vetches. Its clusters of pale pink or blue flowers are of a somewhat dull tint. They are to be found from April to June, for this is the earliest blooming of all our vetches ; and in mild springs it will often put forth its blossoms even in March, while its young shoots are, as early as February, arrayed with tender green leaves, the first spring food of cattle. This plant also vegetates later in autumn than any other vetch, and remains green the greater part of the winter. Its culture, as food for animals, has been warmly recommended. A patch of the Bush Vetch, sown in a garden, has been cut five times in the course of the second year and produced a large amount of green herbage. Mr Swayne observes that it is palatable to all kinds of cattle, but that it is difficult of cultivation on a large scale, the seeds being greedily devoured by the larvæ of some insect.



Several of the vetches are grown to great extent in other countries of Europe. In Germany, the Broad-leaved Vetch, *V. Narbonensis*, and the Saw-leaved Vetch, *V. serratifolia*, are much cultivated; and our garden and field beans are species of Vetch. The sweet bean-field furnishes us with a pleasanter and more powerful odour than any other portion of our rural landscape. The bean, *Vicia faba*, said to have been introduced from Egypt, affords a large quantity of nutritious matter. The Windsor, Sandwich, and other garden beans are but varieties of the field plant. The reasons why Pythagoras forbade his disciples to eat the bean, have led to many ingenious speculations among learned men. "Some persons," says Professor Burnett, "affirm that he believed the bean to be the retreat of the soul after death, and there were many superstitions connected with the seed, which was by some nations consecrated to the gods. Others suppose that the prohibition was founded merely on sanitary principles, and that Pythagoras, like Hippocrates, considered that beans were unwholesome, and weakened the eyesight. Even in our day it has been observed that mental alienations are more frequent during the blossom of the bean than at other seasons; a circumstance, however, explicable from the excessive summer heats that usually occur, and not attributable to the bean, although its black flowers were supposed, by the signature physicians, to be a prophetic mourning for the maladies to ensue. Other commentators, however, and with more seeming probability, affirm that when Pythagoras said 'abstain from beans,' he merely

meant to restrict his disciples from intermeddling in political affairs, for it is well known that votes were formerly given by beans, and vestiges of this practice, at least in words, remain with us at the present day."

10. *V. lævigata* (Smooth-podded Vetch).—*Flowers* solitary, axillary, nearly sessile; *calyx-teeth* nearly equal, awl-shaped; *Pods* compressed, oblong, and smooth; *stems* ascending; *leaflets* in about four pairs smooth; *stipules* eloven, without spot. Plant perennial. This species is now lost from the one spot in the world on which it formerly grew; but as, in some rare instances, plants which had been considered as extinct from our Flora, have again sprung up on our soil, it is not impossible that some future botanist may find this. There are writers who consider it, however, but a variety of one of the other species. The stem is from three or four inches to a foot long, the flowers pale purple, the seeds brown and oblong. The pebbly shore of Weymouth, in Dorsetshire, is the spot on which it was found, its blossoms expanding in July and August.

11. *V. hirsuta* (Hairy Tare).—*Flowers* about six together; *Pods* hairy, 2-seeded; *leaflets* linear, oblong, in six or eight pairs; *stipules* half arrow-shaped. Plant annual. This straggling slender plant, the Tine Tare, as it is called in some counties, is very common in fields and hedges in England, though rare in Scotland. Its much branched stem and leaves make tangled masses among the corn, and in June and July we may find its tiny bluish-coloured flowers. This plant and the next, form the British genus *Lycum* of some botanists, the

name being said to have been derived from *Erw*, which signifies in Celtic, tilled land; and it is on such places that these little plants are often very plentiful and troublesome. This Tine Tare will, in wet seasons, sometimes destroy whole crops by entwining itself amongst them, and hence the peasant often calls it *Strangle Tare*. It is not, however, a useless plant in the hedge, for it is nutritive to cattle, and much relished by them, and the birds feast on its little reddish seeds which are dotted with black. These seeds were formerly said to produce debility in the limbs if they happen to be mingled with the flour made into bread, but this statement has been quite disproved, though they impart to the flour a strong and disagreeable flavour. Dr. Withering remarked, that both the Tine Tare and the four-seeded species increase with superabundant fertility; for it appears from experiments, that a single seed will, by the produce of one plant only, multiply a thousand-fold in a short time.

12. *V. tetraspérma* (Slender Tare).—*Flowers* from one to seven together; *leaflets* in from three to six pairs; *Pods* slender, oblong, smooth, containing from four to eight seeds; *stipules* half arrow-shaped, entire. Plant annual. This tare has very small pale purple flowers in June and July, and is the most slender of all our vetches. It is not unfrequent in corn-fields and hedges in England, but is more rare in Scotland. Mr. Babington and other botanists describe also a species under the name of *Vicia gracilis*, in which the flowers are twice as large as in *V. tetraspérma*; but Sir Wm. Hooker and Dr. Arnott consider this plant but one of the

several varieties, differing slightly from the ordinary form of the species.

The Lentil, *Ervum Lens*, is one of the genus *Vicia*, and has been from high antiquity an important article of human food. The boiled Lentil formed the red pottage for which Esau sold his birthright. Several varieties of this plant are cultivated in Italy, France, and Germany; and the use of this pulse is very common on the Continent, especially by the Roman Catholics during Lent. Lentils are also used in this country in sauces and soups.

14. LÁTHYRUS VETCHLING (Everlasting Pea).

1. *L. pratensis* (Meadow Vetchling).—*Flower-stalks* many flowered; *leaves* of one pair of lanceolate, three-nerved, slightly silky leaflets; *stipules* arrow-shaped, as large as the leaflets; *calyx-teeth* awl-shaped; *pods* veined; *seeds* round and smooth. Plant perennial. The bright yellow flower of this handsome Vetchling may be seen, during July and August, in most bushy grassy places, the stems acquiring greater length, and the flowers an additional luxuriance, when the plant grows on the moist meadow, or among the bushes through which the brook is murmuring its music. The stems are angular, but not winged, and are often two or three feet long, climbing, by means of their tendrils. Cattle are said to be very fond of this plant.

2. *L. sylvestris* (Narrow-leaved Everlasting Pea).—*Leaf* of two sword-shaped leaflets; *flowers* four or five together; *stipules* half arrow-shaped; *calyx-teeth* triangular and awl-shaped, two upper ones short; *stems* winged; *pods* netted with veins; *seeds* smooth. Plant

perennial. This is not a very frequent flower in our woods and thickets. It is very much like the Everlasting Pea of the gardens, but a much smaller plant. The blossoms are large, of a somewhat dull pinkish purple colour, more or less tinged with green, and marked with purple veins. They are produced during June, July, and August. This pea is found in the middle and south of England, but it is doubtful if it is truly wild. Salisbury Craigs is a well-known habitat of the plant, and the author has found it in several places in Kent, as at Higham near Rochester, and about Lymne Castle near Hythe. It occurs also in some places in Scotland and in North Wales. The stem, which is almost flat, climbs to the height of six or seven feet by means of its tendrils.

3. *L. latifolius* (Broad-leaved Everlasting Pea).—*Flowers* growing several together; *leaves* of one pair of narrowly egg-shaped pointed leaflets; *stipules* broad, half arrow-shaped; *Pods* veined; *seeds* rough; *stem* winged. Plant perennial. This handsome flower is found in some woods in Cambridgeshire, Cumberland, Worcestershire, and other counties, but it is a very doubtful native, and is generally, if not always, the outcast of a garden. It is a well-known and showy climber, often in its cultivated state adorning the cottage porch or summer arbour, making it gay with its profusion of bright green foliage and its purple and pink flowers. The leaves are so abundant, and the seeds so numerous, that some agriculturists have thought that the plant would be worth cultivation for fodder. The Sweet-peas, Tangier-peas, and some other

lovely flowers of the garden-bed, are species of *Lathyrus*. In Switzerland large fields are sown with another species, the Chickling Vetch (*Lathyrus sativus*), which is cultivated as food for horses; and on several parts of the Continent a white and well-flavoured bread is made from the seeds. In the seventeenth century, however, when this bread came into general use, very sad effects followed upon eating it as daily food. A great rigidity of the limbs ensued, causing a loss of muscular power, beyond the reach of cure. No pain served as a premonitory symptom, the sufferer experienced little more than a slight diminution of strength, when he suddenly found his limbs rigid, and movement impossible. Several of the lower animals were found, when fed on this diet, to lose all use of the limbs, and even pigeons which ate the seeds shortly became unable to walk, though geese could eat them with impunity. George, Duke of Wirtemberg, published, in 1671, an edict prohibiting the use of the bread in his dominions, but the peasantry still continued to eat it, till his successor, Leopold, by two edicts, in 1705 and 1714, abolished its use. A variety of this *Lathyrus sativus*, called the Poisonous Pea of Barbary, is highly deleterious, and the government of Florence forbade the use of the seeds in bread, in 1787; but Fabroni says, they are still used by the poor, boiled and mixed with wheaten flour, and that, thus prepared, they do not seem to leave any bad effects. The roots of *Lathyrus tuberosus*, a plant growing wild in many parts of Germany, are called Earth-nuts. This species is cultivated in Holland, and in some districts on the borders of the Rhine, for these tubers.

4. *L. marítimus* (Sea-side Everlasting Pea).—*Flower-stalks* many-flowered, shorter than the leaves; *leaves* of from 3 to 8 pairs of oval leaflets; *stipules* as large as the leaflets, halberd-shaped, with their angles acute; *stem* angular, but not winged. Plant perennial. On some of our pebbly beaches this pretty pea may be found, during July and August, straggling over the stones with its short stems adorned with their numerous flowers. These are large and handsome, and are of a purplish or crimson hue, varied with blue. This pea is very rare. It occurs more frequently on the southern coast than in any other part of England, and the pebbly beaches of Lincolnshire and Suffolk are occasionally made gay with it, as it sometimes grows there in great abundance.

There is little reason to doubt that this is a truly wild flower; but the legend is still told in Suffolk, that it sprang up on the coast there for the first time in a season when greatly needed. The wonderful appearance of this pea is mentioned both by Stowe and Camden, who believed it to have grown from seeds borne out of some foundered bark by the rushing waves. Doubtless, many of the plants on our shores have such an origin, and would as well deserve as does the Guernsey Lily to be called the Flower of the Wreck. Fuller says of this pea:—"In a general dearth all over England, plenty of peas did grow on the sea-shore near Dunmow in Suffolk, never set or sown by human industry, which, being gathered in a full ripeness, much abated the high price in the markets, and preserved many hungry families from perishing." It is probable

that they were usually plentiful on that coast in the summer season, but that not having been needed, they had been little noticed. Meyen says that these peas are eaten in Iceland, and considered to be well-flavoured. Climate often affects the properties and flavour of plants, and it may be so in this case, for the seeds of our Sea Pea are bitter and unpalatable, and could only be eaten by those who were suffering with hunger, though, perhaps, if mixed with wheaten flour they might be tolerable.

This species was called by Linnæus *Pisum marítimum*, but Bigelow placed it in this genus. The pea which we see waving its purple or white flowers by thousands in the summer fields, is the common pea of the south of Europe, *Pisum sativum*,—the *Pisello* of the Italians; and the different edible garden peas are, by some writers, thought to be all varieties of this species. The noble Roman family Pisones received their name from the Pea plant, as did the high families of the *Fabii Lentuli*, and some others, from other plants of the leguminous family. Excellence in war and agricultural skill being the chief virtues of the Roman citizen, and a good agriculturist being among them synonymous with a good man, it is no marvel that they took names identifying them with the introduction of useful plants, or some improvements connected with their culture. The seeds of the Cape Horn Pea, some of which were brought to England by Lord Anson's cook, afforded great relief to the sailors during the voyages of that great navigator, though far inferior to those in ordinary cultivation.

5. *L. palústris* (Blue Marsh Vetchling).—*Flowers*

from 3 to 6 together ; *leaf* of from 2 to 4 pairs of very narrow acute leaflets ; *stipules* lanceolate and half arrow-shaped ; *stem* winged. Plant perennial. This rare species occurs in moist boggy meadows and thickets in several parts of England and Wales, and at Galloway in Scotland, and may be seen in such spots as Keats has described :—

“ Its taper fingers, catching at all things
 To bind them all about with tiny rings,
 Linger awhile upon some bending planks
 That lean against a streamlet’s rushy banks,
 And watch intently Nature’s gentle doings :
 They will be found softer than ringdove’s cooings.
 How silent comes the water round that bend !
 Not the minutest whispers does it send
 To the o’erhanging salallows : blades of grass
 Slowly across the chequer’d shadows pass :
 Why, you might read two sonnets ere they reach
 To where the hurrying freshnesses aye preach
 A natural sermon o’er their pebbly beds.

* * * * *

The ripples seem right glad to reach those cresses,
 And cool themselves among the emerald tresses ;
 The while they cool themselves, they freshness give,
 And moisture, that the bowering green may live :
 Thus keeping up an interchange of favours,
 Like good men in the truth of their behaviours.”

The stem of this plant is about two or three feet high, the leaflets about two inches in length, and the flowers, which are produced from June to August, are bluish purple.

6. *L. hirsútus* (Rough-podded Vetchling).—*Leaf* of one pair of long and narrow leaflets ; *flower-stalks* 2-flowered ; *Pods* hairy ; *seeds* round, and rough with

tubercles; *stem* and *leaf-stalk* winged. Plant annual. This is a very rare Vetchling, having pale blue flowers with a crimson standard. It blossoms in July and August, and has been found in cultivated fields in Essex, and in the neighbourhoods of Bath and Bristol.

7. *L. Aphaca* (Yellow Vetchling). — *Flower-stalks* single-flowered; *leaf-stalks* leafless, bearing tendrils; *stipules* arrow-shaped, and heart-shaped, very large, and looking like leaves. Plant annual. This singular plant is described as leafless, because, though in the young seedlings small tender leaves are occasionally developed, and consist of a single pair of leaflets, yet, in the full grown state of the plant, the leaf-stalk spreads into a tendril, and the plant is then justly termed leafless, as the expanded plane of the leaf is not present. The pair of stipules at the base of each tendril are, however, as ornamental as leaves would be; and this is a pretty little plant, its yellow flowers appearing from June to August on its slender, weak, climbing stem. It is very rare, but grows in the borders of sandy or gravelly fields in some parts of England, especially Warwickshire, Norfolk, and Gloucestershire. The author has received very luxuriant specimens from the Forest of Dean, in the latter county. The seeds of this species are very unwholesome, and if eaten are said to cause intense head-ache.

8. *L. Nissolia* (Crimson Vetchling). — *Leaflets* wanting, a simple, long, narrow, sessile, leaf-like leaf-stalk supplying their place; *stipules* very small, and awl-shaped; *Pods* cylindrical; *seeds* round and rough; *stem* generally erect. Plant annual. This very pretty species,



which is often called Grass Vetch, is not common. It grows in grassy and bushy places about fields and parks ; its stem is about a foot high, and it may easily be distinguished from any other of our wild vetches by its grass-like leaves. Though not climbing in graceful convolutions, yet it is peculiarly elegant in form, and the small flowers are light crimson. The author has found it in meadow-lands about Tunbridge Wells. It blossoms in June and July.

15. ÓROBUS (Bitter Vetch).

1. *O. tuberósus* (Tuberous Bitter Vetch).—*Leaflets* in from 2 to 4 pairs, smooth, without tendrils, and glaucous on the under surface ; *stipules* half arrow-shaped, toothed at the base ; *stem* simple, erect, winged ; *Pods* cylindrical ; *seeds* round. Plant perennial. This pretty Vetch is not uncommon in woods and thickets, especially in mountainous districts. It has clusters of the purple and pink veined flowers on long stalks, in the axils of its leaves, and has much of the general aspect of the Vetches, but it is without tendrils. It flowers in May and June, and after the blossoms have died, the long, black, drooping pods are very conspicuous. In country places it is often called Peaseling, or Wood Pea. The French term it *L' Orobe*, the Germans *Die Bergerbse* ; it is the *Erben* of the Dutch, and the *Orobo* of the Italian and Spaniard. There is a variety of this plant with linear leaves, called *tenuifolius*. Some botanists, as Babington, place both this and the next species in the genus *Lathyrus*.

The tuberous roots of this plant constitute the *Cor-meille* of the Highlanders, and are very highly esteemed by them. They are dried in the sun, and afterwards chewed, in order to add a relish to their whiskey ; and, according to the Highlanders, they have the power of allaying both hunger and thirst. Like the roots of several of our leguminous plants, they have a sweet flavour, resembling liquorice, and they are, when boiled, very nutritious and palatable. They have often been substituted for bread in times of famine, and many think that this plant is the *Chara* mentioned by Cæsar as affording temporary food to the famished soldiers at the siege of Dyrrhachium, and also believe it to be the ancient Caledonian food described by Dio. In Holland, the roots are commonly boiled and eaten, or they are brought to table after being roasted, like chestnuts, and the flavour is then so similar to that fruit, that one could scarcely detect the difference. Dickson recommended their culture for the kitchen garden, remarking, that by the end of the second year the roots would be fit for gathering. Country children, where the plant is common, make many a meal of them.

2. *O. niger* (Black Bitter Vetch).—*Stalks* many-flowered ; *leaves* of from 3 to 6 pairs of lanceolate or oblong leaflets, without tendrils ; *stipules* narrow, somewhat awl-shaped, lower ones half arrow-shaped ; *pods* containing oval seeds ; *stem* angular, branched, not winged. Plant perennial. This species is rare, and found only on shady rocks in Scotland. Its blossoms are very similar to those of the last species, and appear in June and July. The plant turns black in drying.

16. ORNÍTHOPUS (Bird's-foot).

1. *O. pupusillus* (Common Bird's-foot). — *Flower-stalks* longer than the leaves; *calyx-teeth* triangular, acute; *leaves* pinnate, with from 6 to 9 pairs of oval leaflets, and a terminal one; *Pods* curved, jointed, and wrinkled; *flowers* nearly sessile. Plant annual. This is a very pretty little plant, common on dry, sandy, gravelly soils; often the companion of the harebell on open heath or sunny bank. It is the smallest of our leguminous plants, sometimes so small that its spreading prostrate sprays of downy leaves, and its tiny flowers, might all be covered by a crown piece, though often the stems are five or six inches in height. The plant is in flower from June to August, the little cream-coloured blossoms being veined with crimson, and having a leaf under each cluster. The pods are very singular, bending round, as they ripen, into a curve, and at once suggesting the idea of a bird's foot. This genus shares in other countries the name given from this resemblance, and is the *Pied d'oiseau* of the French, the *Piede d'uccello* of the Italians, the *Vogelfuss* of the Germans, the *Vogelpoot* of the Dutch, and the *Serradilla* of the Spanish and Portuguese, though they also call it *Pé de passaro*. The Spanish Bird's-foot, under the name of *Serradilla*, is cultivated in fields, and is the *Ornithopus sativus* of the botanist. It was introduced into our own country, for field-culture, from Portugal, about the year 1818, and is a very valuable plant for this purpose. It produces a large amount of herbage fitted for cattle; and

on the barren soils of the sandy downs of Thetford in Norfolk, where other plants would not thrive, this has been cultivated with advantage. It is not, however, like our wild species, a small plant, but commonly attains the height of two feet. Our Bird's-foot was said by herbalists to be of "a binding drying quality, and very good for a wound-drink, as also for an outward application in cure of wounds."

17. ARTHROLÓBIUM (Joint Vetch).

1. *A. ebracteátum* (Sand Joint Vetch).—*Flower-stalks* about as long as the leaves, from 2 to 4-flowered; *stipules* very small; *leaves* pinnate, with many pairs of oblong leaflets, the lowest pair remote from the stem; *pod* curved upwards, jointed, and rough. This little Vetch is very similar to the Bird's-foot, but has no floral leaf. It is exceedingly rare, being found in this kingdom only in the Scilly Islands. It has small yellow or yellowish-white flowers, with red lines, and its stem is prostrate, and scarcely thicker than a thread.

18. HIPPOCRÉPIS (Horseshoe Vetch).

1. *H. comósa* (Tufted Horseshoe Vetch).—*Flowers* from 5 to 8, in an umbel, their stalk longer than the leaves; *pods* curved, rough, having smooth joints and semicircular notches. This is a common annual plant, on chalky and limestone soils, and well known in such districts of England, though rare in Scotland. It might be mistaken for the Bird's-foot Lotus, but for its sin-

gular pods, which look so like a number of horseshoes united together at their extremities, that we wonder that the old herbalists did not consider them as indicative of some uses in farriery. We have one or two pretty species of this flower in the garden, brought from the South of Europe. The blossoms of the tufted species are yellow, and are produced from May to August.

19. ONÓBRYCHIS.

1. *O. sativa* (Common Saintfoin).—*Leaves* pinnate, nearly smooth; *leaflets* oblong, entire, in about twelve pairs; *legumes* wrinkled and toothed; *wings of the corolla* as short as the calyx; *stem* ascending. Plant perennial. The very handsome crimson flowers of the Saintfoin are, during June and July, familiar to those who live in those counties in which chalk or limestone prevails. It is not only to be commonly found wild in such districts, but it is often largely cultivated on chalk soils, where it is of great duration and worth, its especial value being that it may be grown on lands unfit for being constantly under tillage, and which would yield little produce if laid down in pasture. On many a sunny slope its richly tinted spikes form a wide mass of crimson, and we know of no cultivated field which is more truly ornamental to the landscape than the field of Saintfoin. The long descending roots of this plant can penetrate the fissures of rocky or chalky substrata, which the roots of other plants of field culture could not reach. Its herbage is equally fitted for pasturage, or for making into hay. Arthur Young says, that upon

soils proper for it, no farmer can sow too much of it; and in the code of agriculture it is pronounced to be one of the most valuable herbage plants which we owe to the bounty of Providence. Fuller, in his "Worthies of England," remarks of it, "Sainte-foin, or Holy Hay: Superstition may seem in the name, but I assure you there is nothing but good husbandry in the sowing thereof. Some call it the small clover-grass, and it profiteth best in the worst ground. It was first fetcht out of France from about Paris, and since is sown in divers places in England, but especially in Cobham Park, in the county of Kent, where it thriveth extraordinary well on dry chalky banks where nothing else will grow. It will last seven years, by which time the native grasse of England will prevaile over this forraigner if it be not sown again." This old writer was pretty nearly correct in this latter statement. The Saintfoin comes to perfection in about three years, and begins to decline about the seventh or eighth year on gravelly soils, though it will last two or three years longer on chalk. In some rare cases, however, there are fields of Saintfoin, which having been long neglected, were mostly, as Fuller says, "prevailed over by the native grass," in which single plants have yet remained fifty years after sowing. It has been cultivated upwards of a century on the Cotswold hills, and on these soils roots of the Saintfoin have been traced down into stone quarries from ten to twenty feet in length. Von Thaers has found them in Germany attaining the length of sixteen feet.

The Saintfoin is called *Le Sanfoin* and *L'Esparçet*

by the French, *Esparette* by the Germans, and *Hannekammetjes* by the Dutch. It was formerly included in the genus *Hedysarum*, the plants of which it much resembles. The French Honeysuckle of our gardens, and the False Saintfoin of southern Europe, are well-known allies of our wild flower. The former, *Hedysarum coronarium*, which looks like a very large Saintfoin, grows wild in great luxuriance in Calabria, where it attains the height of nearly four feet, and affords abundance of food to horses. Osbeck says, that he saw large bundles of it brought to Cadiz as fodder for cattle. Another species is extremely useful for fixing the loose sands of some countries of the south of Europe, and various exotic kinds are prized in those lands as affording valuable tonic medicines. The roots of one species, the Senna-like Saintfoin, *H. sennoïdes*, are stimulating, and are sold in the bazaars of India, and administered by the native practitioners in cases of fever. Our herbalists call our Saintfoin, Cock's Head, Red Fitching, and Medick Fetch. One of them says of it, "It hath power to rarify and digest, and therefore the green leaves, bruised and laid as a plaister, disperse swellings;" though we might add, as Gerarde did to the account given of the virtues of some other plant, "Whereof they had those notions I know not; it may be of some doctor who never went to school."

The celebrated *Churra Borrum* of the Hindoos, the Moving Saintfoin, *Hedysarum gyrans*, is well known as the most singular of all sensitive plants. Its movements are not occasioned by any touch or vibration of the air: no sooner have the young seedlings acquired their triple

leaves than this mysterious movement commences, never to cease wholly till life is extinct. No apparent influence directs the motion ; one leaflet moves while all others are quiescent ; or a few leaflets only are in agitation ; or all are in movement at once. Grasp the leaflets in your hand, and they are compelled to rest ; but release them, and they are restless as the sea-wave, or fluttering wing of the bird. Heat quickens the movements and cold retards them, but they offer the most singular instance of spontaneous action exhibited by any vegetable, save by some microscopic plants.

ORDER XXVI. ROSACEÆ.—THE ROSE TRIBE.

Calyx with 4 or 5 divisions, or twice as many, in 2 rows ; *petals* 5, regular, inserted on the calyx ; *stamens* generally more than 12, but indefinite in number, inserted on the calyx, curved inwards before the expansion of the petals ; *carpels* many, or solitary, either distinct or combined with each other and with the calyx ; *styles* distinct, often lateral ; *fruit* either a drupe, as the cherry ; an assemblage of erect capsules opening at the side ; or a number of nut-like seeds inserted into a fleshy receptacle, as the strawberry ; or the seeds are enclosed in the fleshy tube of the calyx, as in the rose ; or lie in the midst of a fleshy substance, and form a pome, as in the apple.

This very large and important Order contains herbs, shrubs, and trees, natives chiefly of the temperate or

cold climates of the northern hemisphere. The fruits are, in all our British species, wholesome and mostly agreeable, but many of the plants which furnish them are poisonous from the hydrocyanic or prussic acid contained in their leaves, bark, flowers, and seeds. To this Order belong our apples, cherries, raspberries, strawberries, and a variety of other valuable fruits; and almonds, peaches, nectarines, and the apricot, which the Persians call the Seed of the Sun, are among the rosaceous fruits introduced into our gardens. The valuable evergreens, the cherry laurels and Portugal laurels, are also familiar instances of shrubs of this Order, and contain the poisonous principle to a great extent in their leaves. These leaves should be used in confectionary with great caution, as the dangerous principle contained in laurel-water has proved fatal in some cases. The fruit, however, of the cherry laurel is quite harmless, though not of particularly good flavour. This plant was first introduced into England from Asia Minor, and called the Date of Trebisonde, from the use of its berries in that city, in the neighbourhood of which it grows wild. Roses, hawthorn, flowering plum, apple, and other trees, are also among the fragrant and delightful plants furnished by this Order to the garden.

The plants of the Rose Tribe afford, by their variously formed fruits, a facility of arrangement to the botanist, and are divided into five Sub-orders, or Groups.

SUB-ORDER 1. AMYGDALÆ.—THE ALMOND GROUP.

In this Group the *calyx* is inferior, and soon falls off; the *pistil* is solitary; and the *fruit*, when ripe, is a drupe—that is, a fleshy or juicy pulp, with an external rind or cuticle, and one *seed* in the midst enclosed in a hard case. They are shrubs or trees, with simple leaves and stipules free from the leaf-stalk; the bark often yields gum, and prussic acid usually abounds in the seeds and leaves. The Laurel belongs to this Group, as does the beautiful Almond-tree, the first in the spring to adorn our shrubberies with its flowers, and which is connected with the associations both of Sacred Writ and of oldest poetry. The classic poet could predict the future crop from its bloom.

“Mark well the flowering Almond in the wood;
If odorous blooms the bearing branches load,
The glebe will answer to the sylvan reign,
Great heats will follow, and large crops of grain;
But if a wood of leaves o’ershade the tree,
Such and so barren will the harvest be.”

The bitter oil of almonds is well known to be poisonous, but in the ordinary form of this, as in many of the seeds of this Group, the prussic acid exists in so small a proportion to the sugar, mucilage, and other harmless materials which compose them, that they may be safely used in cookery. Some of our best confectionary and liqueurs are flavoured by these kernels. The poisonous properties of the seeds or leaves are thought by chemists not to exist ready formed in these parts of the plant, but to be developed only when they are broken

up, and principles of a different kind seated in distinct cells are brought into contact with one another, or with water.

1. PRÚNUS (Plum and Cherry).—*Nut of the drupe* smooth, or slightly seamed. Name from the Greek *prouné*, a plum; *Cérasmus*, a name given to one division of the genus, is from Cerasus, a city of Pontus.

SUB-ORDER II. SPIRÆÆ.—MEADOW-SWEET GROUP.

This division contains a small number of herbaceous or shrubby plants; they bear their seeds in dry erect capsules, opening at the side, termed follicles. Several species, as the shrubby *Spiræas*, and the herbaceous Meadow-sweets, are attractive garden plants.

2. SPIRÆA (Meadow-sweet and Dropworth).—*Calyx* 5-cleft; *stamens* numerous; *follicles* from 3 to 12, bearing few seeds. Name of Greek origin.

SUB-ORDER III. DRYADEÆ.—THE STRAWBERRY GROUP.

In this division there is considerable variation in the form of the fruit. In all cases the calyx is permanent, and contains a number of nut-like seeds, with or without awns, placed on a pulpy, spongy, or dry receptacle; in the Bramble each grain is enveloped in pulp, the fruit being a collection of little drupes. In Agrimony alone there are but two seeds, which are enclosed in a bristly hardened calyx. This division is composed chiefly of herbs, but a few shrubs are found in it

They are all free from any unwholesome properties, and our strawberries, raspberries, and blackberries, are common instances.

3. DRÝAS (Mountain Avens).—*Calyx* in 8—10 equal divisions, which are all in one row ; *petals* 8—10 ; *styles* finally becoming feathery ; *tails* not hooked at the extremity. Name from the Greek *drys*, an oak, from some imagined similarity in the leaves of the two plants.

4. GÉUM (Avens).—*Calyx* 10-cleft, in 2 rows, the outer division smaller ; *petals* 5 ; *styles* finally becoming jointed ; *awns* hooked at the extremity. Name from the Greek *geyo*, to taste.

5. POTENTÍLLA (Cinquefoil).—*Calyx* 10-cleft, in 2 rows, the outer division smaller ; *petals* 5 ; *seeds* without awns, on a dry receptacle. Name from the Latin *potens*, from some powerful virtues supposed to exist in some of the species.

6. SIBBÁLDIA.—*Calyx* 10-cleft, in 2 rows, the outer division smaller ; *petals* 5 ; *stamens* 5 ; *seeds* about 5, without awns, on a dry receptacle. Named after Robert Sibbald, a Scottish naturalist.

7. CÓMARUM (Marsh Cinquefoil).—*Calyx* 10-cleft, in 2 rows, the outer division smaller ; *petals* 5 ; *seeds* without awns, on an enlarged spongy receptacle. Name from the Greek *cómaros*, anciently applied to another plant.

8. FRAGÁRIA (Strawberry).—*Calyx* 10-cleft, in 2 rows, the outer division smaller ; *petals* 5 ; *seeds* without awns, on an enlarged fleshy receptacle. Name from the Latin *fragum*, a strawberry, that being derived from *fragrans*, fragrant.



Prunella
Prunella

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9. *RÚBUS* (Bramble).—*Calyx* 5-cleft ; *petals* 5 ; *fruit*, an assemblage of small drupes, arranged on a spongy receptacle. Name from the Latin *ruber*, red.

10. *AGRIMÓNIA* (Agrimony).—*Calyx* 5-cleft, top-shaped, covered with hooked bristles ; *petals* 5 ; *stamens* about 15 ; *seeds* 2, enclosed in the tube of the hardened calyx. Name of Greek origin.

SUB-ORDER IV. SANGUISORBEÆ.—THE BURNET GROUP.

In this group the *calyx* is cleft into from 3 to 8 divisions ; the *stamens* are usually few in number, and the *petals* are absent ; one or two nut-like seeds are enclosed in the hardened tube of the calyx. These plants are chiefly herbs or shrubs, often with compound leaves.

11. *ALCHEMÍLLA* (Lady's Mantle).—*Calyx* 8-cleft, in two rows, the outer divisions smaller ; *petals* none ; *stamens* 1—4, opposite the smaller divisions of the calyx ; *seeds* one or two enclosed in the dried calyx. Name, from its imagined worth in Alchemy.

12. *SANGUISÓRBA* (Burnet).—*Calyx* 4-cleft, coloured (not green), with 2—4 scale-like bracts at the base ; *petals* none ; *stamens* 4 ; *stigmas* tufted. Name from the Latin *sanguis*, blood, and *sorbeo*, to stanch, from its supposed properties.

13. *Potérium* (Burnet-Saxifrage).—*Stamens* and *pistils* in separate flowers ; *flowers* in heads ; *calyx* 4-cleft, coloured, with 3 bracts at the base ; *petals* none ; *stamens* numerous ; *stigma* tufted. Name from the Greek

potérion, a drinking cup, from the use of the plant in the preparation of a celebrated beverage.

SUB-ORDER V. ROSEÆ.—THE ROSE GROUP.

Calyx urn-shaped, fleshy, terminating in 5 segments ; *petals* 5 ; *stamens* numerous ; *fruit* consisting of a number of nut-like hairy seeds, enclosed in the tube of the calyx. The plants are prickly shrubs, with pinnate leaves. Neither the beauty nor fragrance of the Rose tribe need be insisted on here. To the Rose our gardens owe much of their beauty, while our summer hedges are rendered sweet and attractive by the wild dog-roses, of red or white hue, which are scattered among the leafy boughs. Rose-water, attar of roses, and conserve of roses, are yielded by preparations of the petals and the hips. The flowers of *Rosa Gallica* and *Rosa Damascena* are collected for making both infusions and confections, and rose-water and attar of roses are furnished chiefly by *Rosa centifolia*.

14. RÓSA (Rose).—*Calyx* urn-shaped, contracted at the mouth, and terminating in five leaf-like divisions ; *petals* 5 ; *stamens* numerous ; *seeds* numerous. Name from the Latin *rosa*, which was taken from the Greek *rhodon*, a rose.

SUB ORDER VI. POMEÆ.—THE APPLE GROUP.

In the plants in this group the *petals* are several, the leaves alternate, simple or divided ; *seeds* one or more. The fruit is a pome, the *calyx* having gradually enlarged into a fleshy or mealy fruit, in the centre of which are

five cells, which are horny, as in the core of the apple, or bony, as in that of the medlar. It consists of trees, many of which furnish us with important fruits, as the apple, pear, medlar, and quince. The leaves of several plants of this group contain prussic acid, and occasionally this substance is found in the flowers, bark, and seeds.

15. PÝRUS (Pear, Apple, Service, and Mountain Ash).—*Calyx* 5-cleft; *petals* 5; *styles* 2—5; *fruit* fleshy, or juicy, with 5 horny 2-seeded cells. Name from the Latin *pyrus*, a pear.

16. MÉSPILUS (Medlar).—*Calyx* 5-cleft, divisions leaf-like; *petals* 5; *styles* 2—5; *fruit* fleshy, top-shaped, terminating abruptly, with the ends of the hard cells exposed. Name from the Greek *mespilé*, a medlar.

17. CRATÉGUS (Hawthorn).—*Calyx* 5-cleft, divisions acute; *petals* 5; *styles* 1—5; *fruit* oval, or round, concealing the ends of the bony cells. Name from the Greek *cratos*, strength, in allusion to the hardness of the wood.

18. COTONEÁSTER.—*Calyx* top-shaped, with 5 short teeth; *petals* 5, small, erect; *stamens* numerous, erect; *fruit* top-shaped, with its nuts adhering to the inside of the calyx, but not joined in the centre.

1. PRÚNUS (Plum and Cherry).

1. *P. comúnis*. (Common Plum, Bullace, and Sloe.)—*Fruit* covered with bloom; young leaves rolled together; *flower-stalks* single, or in pairs; *leaves* elliptic or lanceolate, and somewhat egg-shaped, rather downy beneath. Plant perennial. In the form sometimes

termed *P. spinosa*, the Sloe, the branches are spinous, the flower-stalks and leaves smooth; in the variety termed *P. insititia*, the Bullace, the branches are straight and slightly thorny, the flower-stalks and under sides of the leaves downy; in the wild plum, *P. domestica* of some writers, the flower-stalks are smooth, and the older leaves smooth beneath, while the branches are without thorns. Some botanists treat these three as distinct species; but they appear to be all so closely allied as not to admit of accurate specific distinction. All lovers of wild-flowers welcome the Blackthorn spray, when its black woody leafless boughs are whitened with the snowy blossoms. We may wander forth to see them even as early as March, when winds are blowing, and whirling the few dried leaves which are yet left of the multitude which strewed the pathway of the wintry wood. There is a wild music among the boughs, as they bend downwards in graceful motions, while the thrush and the blackbird are singing to the rich accompaniment. Young flowers peep up from among dry leaves, but as yet no flowering tree or shrub enlivens the wood, save the Blackthorn. Old country people call the winds of March the black winds, and say that the Blackthorn is so called because it flowers at that season; but there is reason enough for its name in the dark wood of the boughs, contrasted, too, as it is by the flowers. A cold March is, however, called in villages a Blackthorn winter. Graham thus alludes to the Sloe:—

“What though the opening spring be chill,
Although the lark, check'd in his airy path,

Eke out his song, perch'd on the fallow-clod
That still o'ertops the blade? although no branch
Have spread its foliage, save the willow-wand,
That dips its pale leaves in the swollen stream!
What though the clouds oft lower? these threats but end
In sunny showers, that scarcely fill the folds
Of moss couch'd violet, or interrupt
The merle's dulcet note, melodious bird:
He, hid beneath the milk-white, sloe-thorn spray,
Whose early flowers anticipate the leaf,
Welcomes the time of buds, the infant year."

The blaekthorn bush is very frequent in our woods, coppices, and hedges, gradually aequiring its leaves in April and May, so that when the flowers are disappearing, it is clad in delieate verdure. These leaves have been dried for tea, and mixed in large proportions with the Chinese leaf. "From the result of a Parliamentary investigation, in 1835," says Professor Burnett, "it appears that upwards of four million pounds of fietitious tea are on an average eommonly made in this country, and used to mix with that brought here from China. Within a few years this illicit praetice, which had previously been earried on by stealth, was attempted to be legalised by taking out a patent for the preparation of British leaves as a substitute for tea, and an extensive manufaetory established for this purpose." It soon beeamе notorious, however, that this prepared leaf was purchased and mingled with the tea sold as Chinese, and it was consequently suppressed; and a large quantity, deteeted in the progress of preparation, was burned.

The dark-purple fruit, the Sloe, is well known to every school-boy, nor is its austere flavour unpleasing to

“boyish appetite.” Its rich dark hue has made it a favourite comparison ; and eyes as black as sloes have been sung by poets without number. Chaucer alludes to its colour :—

“Ful crooked was that foule’ sticke,
And knottie here and there also,
And blacke as berrie of any slo.”

In early days we were wont to gather these fruits in large numbers, and, enclosing them in a bottle, to bury them deeply in the earth till Christmas, when they formed a preserve, which, to childish taste, at least, was delicious, though its astringent property must render it a very objectionable one to be eaten in large quantities. Many a time, too, the roasted sloe, prepared by placing a branch over the fire, serves as a luxury to country children, though the process usually fails to remove the austerity of the fruit, since it is seldom thoroughly roasted. The sloe has been very extensively employed in adulterating port wine, and books openly avowing this adulteration, and recommending various ingredients and methods of preparing it, have been, a few years since, published in England. Two gallons of sloes was one of the articles directed to be employed for this purpose. The Rev. C. A. Johns remarks, in his volumes on the Forest Trees of Britain,—“So impudently and notoriously is this fraud carried on in London, and so boldly is it avowed, that there are books published, called Publicans’ Guides, &c., in which recipes are given for the manufacture of port wine from cider, brandy, and sloe juice, coloured with tincture of red sanders

and cudbear. This villanous compound may be concocted into 'Old Port,' in a few days by the admixture of catechu. The corks may be stained by being soaked in a strong decoction of Brazil wood and a little alum; and even bottles are manufactured to contain a sufficient quantity of lime to be sensibly acted on by the acid, and to produce a counterfeit crust." Scarcely any article of human consumption has been so much mingled with spurious ingredients as wine, and few adulterations have been more deleterious in their nature than some of these. Beckmann says, "The inventor of these practices deserves, for making them known, as severe a reprobation as Berthold Schwartz, the supposed inventor of gunpowder." The thickened juice of the unripe sloe is used in Germany for making an ink for marking linen, and its tracings are permanent. In France the sloes in a green state are prepared as olives, and eaten at desserts; and in Russia the matured fruit is crushed and made into a fermented liquor.

The Blackthorn has some straight stems, and these having no thorns at their lower parts, are sometimes used as walking-sticks, and afford by the marking of their knots a pretty material for this purpose; but the wood is not often sufficiently large to be of much use. The ordinary height of a sloe-bush is about two or three feet, though in some instances the stem is fifteen or twenty feet high. Loudon mentions that about Montargis the tree is called *Mère du bois*, because it has been remarked there that when it was growing on the borders of woods, "its underground shoots, and the suckers which sprung from them, had a constant ten-

dency to extend the wood over the adjoining forests ; and that if the proprietors of lands near the forests where the sloe-thorn formed the boundary did not take the precaution of stopping the progress of its roots, these would in a short time spread over their land, and the suckers which arose from them would, by affording protection to the seeds of timber trees, which would be deposited among them by the winds or by birds, ultimately, and at no great distance of time, cover the whole with forest trees.’’

The bark of the sloe-tree is taken medicinally, and forms no bad substitute for the Jesuits’ bark ; it is also used for tanning leather.

The variety termed *Prunus insititia* is the Bullace ; it has often scarcely any spines, and is then chiefly to be distinguished by having more downy leaves. The fruit is also much larger, and the leaves appear with the flowers in April and May. It is not nearly so common a plant as the Blackthorn. From this bush, or from the variety called Wild Plum-tree (*Prunus domestica*), we derive the cultivated plums. The latter tree is seldom found wild, and resembles the bullace, but that it has no spines on its branches, and the under part of the leaf is not downy, except in some cases, where a slight degree of down is on the midrib. These three forms of wild fruit trees apparently run into each other. There are upwards of three hundred varieties of the garden and orchard fruits. Apricot plums, greengages, magnum bonum, mussel, Orleans, Catherine, and a number of others, are well known ; and many sorts of bullace and damson are in general culture. It is pro-

bably the frequent habit of eating these fruits in a half-ripened state which has led to the belief that they are unwholesome; but well-ripened plums, as well as the French plums and prunes which we receive in a dried state from the Continent, are valuable additions to the dessert. Plum-trees generally thrive best in an open situation. Their wood is useful to turners, and the bark yields a good yellow dye. The French call the Plum-tree *Le Prune*. It is the *Prugnon* of the Italians, and the *Pflumen* of the Germans.

* *Fruit without bloom, young leaves folded together.*

2. *P. Pádus* (Bird-cherry).—*Flowers* in drooping clusters; *leaves* narrow, inversely egg-shaped, or oval, smooth; *fruit* oblong. The Bird-cherry is a handsome shrub, or small tree. It grows in woods and coppices, being most frequent in the north; and its dark green leaves are much like those of the Portugal Laurel, and notched with large serratures, which are again serrated. The white flowers appear in May, and are, as well as the foliage, so ornamental, that the plant is often placed in shrubberies. In many parts of Lapland it is one of the most attractive trees of the landscape, and Von Buch describes it on the borders of the Muonio river as of great beauty, growing among the dark spruce firs, and the lighter tinted willows, and sombre alders. The small cherries, while in their unripened state, are of a rich red tint, but when matured they are black. They are eaten by birds, and the tree is on this account called Fowl-cherry. Cluster-cherry is another name of the

plant, and this fruit is the Hagberry of the Scotch. Though positively nauseous to most palates, yet it is commonly eaten in Siberia, and when steeped in spirits it imparts to them the flavour of some of the foreign liqueurs, as it contains, in some degree, the principle of prussic acid. In Gerarde's time, the Kentish eherry-growers were accustomed to graft eherries on it; and it appears formerly to have been a much more frequent plant in the Kentish woods than it now is. The tree is very leafy, and the wood so beautifully veined, that it is much used in France for ornamental cabinet-work.

3. *P. Avium* (Wild Cherry, or Jean).—*Flowers* in umbels, with cleft petals; *leaves* drooping, oblong, somewhat egg-shaped, serrated; *calyx-tube* contracted beneath the entire sepals; *fruit* heart-shaped. This is a large and beautiful tree, frequent in woods and hedges, making them gay with its white and slightly fragrant flowers, which tower in May above the snowy elusters on the hawthorn-bush. Many a joyous bird finds shelter on its leafy bough, or comes to pick the young buds, and stays to sing his thanksgiving for the meal. In summer the small black or red eherries furnish a no less welcome repast to the birds which are shortly to depart to warmer regions. In a still later season the tree is rendered conspicuous by the rich red tint of its leaves. If we except those of the Cornel, which are usually of deeper red mingled with purple, we know of no native tree whose foliage exhibits so much of that crimson and orange tint so common in the woods of America, and so comparatively rare in those of our own land. This is generally called the Jean Cherry, and in Kent the fruits

are termed Gaskins; they are slightly bitter, though not disagreeably so, and the large stones adhere very closely to the fleshy part of the cherry. The name of Gaskin should probably be Gascon, as that of Gean appears to be a corruption of Guignes; and another of its names, Merries, is probably also from *Merisier*, by which it is commonly called in France, and which is said to be derived from *amère*, bitter, and *cerise*, cherry. The French call the tree also *Cerisier*, and in some of our country places it is termed Blackhead Cherry. The black corone cherries and the jean cherries of the garden are all varieties of it.

This tree is, when fully grown, from twenty to thirty feet in height, and the gum which exudes from it is considered to be equal in value to gum-arabic, though differing from it in its chemical qualities. It is very nutritious, and Hasselquist relates that, during a siege, more than one hundred men were kept alive for nearly two months without any other nutriment than that of a small piece of gum sometimes taken into the mouth and then suffered gradually to dissolve. "It is remarkable," says Baxter, "that the barks of all the trees yielding this bland mucilaginous substance are highly astringent. That of the acacia itself, from a certain species of which gum-arabic is obtained, is used in India for tanning." The bark of our wild cherry is very much so, and its wood is very tough and close grained. This is used by turners, and being of a bright red hue, and susceptible of a high polish, it is a valuable material for ornamental furniture, which is scarcely inferior, either in beauty or durability, to that made of

mahogany. The tree is more frequent in the woods of France than with us; and the French plant it more extensively, and use its wood for a greater variety of purposes, than the English. It is sometimes grown in Scotland for the sake of its timber. Of the various uses of the fruits, little need be said. To them we are indebted for puddings, tarts, and preserves; they are used also in flavouring various liqueurs; and ratafia, maraschino, kirchwasser, wine, brandy, and vinegar, as well as marmalade and lozenges, are improved by the addition either of their juicy portion, or their kernels.

The Rev. C. A. Johns, in his "Forest Trees of Great Britain," remarks: "In England, cherries are to be considered rather as a luxury, than a staple article of food; but on the continent, particularly in France, they are highly prized as supplying food to the poor; and a law was passed in that country in 1669, commanding the preservation of all cherry-trees in the royal forests. The consequence of this was, that the forests became so full of fruit-trees that there was no longer room for the underwood; when they were all cut down, except such young ones as were included among the number of standard saplings required by the law to be left to secure a supply. This measure was a great calamity to the poor, who during several months of the year lived, either directly or indirectly, on the fruit. Soup made of cherries, with a little bread and a little butter, was the common nourishment of the wood-cutters and charcoal-burners of the forest. Of late years, the practice of planting cherries by the road-side has been extensively adopted in Germany, and one may now travel from

Strasburg to Munich, a distance of two hundred and fifty miles, through an avenue of cherries, interspersed with walnuts, plums, and pears. By far the greater part of the first are ungrafted trees, which succeed in the poorest soil, and in the coldest and most elevated situations. A large portion of the tract of country which bears the name of the Black Forest, is an elevated irregular surface, with no other wood than the cherry-trees which have been planted by the road-side."

Those who live in our cherry counties, as in Kent, are accustomed to hear much regret expressed when this fruit is not plentiful, for in fertile seasons the gathering the cherries from the trees is a source of employment to women, and even children, who ascend the slight ladders to pluck the ruddy fruit. The orchard is a pleasant and cheerful scene of labour, and the baskets of glittering cherries, packed up with sprays of green bracken above and around them, are bright and beautiful objects, and are often carried off amid the merry songs or jocund laughter of the gatherers. Many of the poor also gain a temporary increase to their means of support by selling the fruit; and little cottage children, to whom luxuries are rare, hail the cheap cherry pudding with great delight. This fruit was first extensively cultivated in Kent in the time of Henry the Eighth, when orchards near Teynham were stocked with the trees. The first orchard then planted was called the New Garden; and the name of the fruiterer who introduced this culture was Harris, and not Haines, as is generally stated. Michael Drayton, the tediousness of whose poem, the "Poly-olbion," is somewhat compensated by the singular accuracy of its

detail, as well as by the general evenness of the versification, alludes to these cherry-orchards. In his praise of the "dear soil" of Kent, he says :—

"When Thames-ward to the shore which shoots upon the rise,
Rich Tenham undertakes thy closets to suffice
With cherries which we say the summer in doth bring,
Wherewith Pomona crowns the young and lustful Spring;
Whose golden gardens seem the Hesperides to mock;
Nor here the damson wants, nor dainty Apricock."

Peachem, in his "Emblems," published in 1612, thus describes an English fruit-garden :—

"The Persian peach and fruitfull quince,
And there the forward almond grewe,
With cherries knowne no long time since;
The winter warden, orchards' pride,
The philibert that loves the wall,
And red queen apple, so envide
Of school-boys passing by the pale."

This culture of the cherries was, however, at this time only reintroduced into England. It is pretty certain that the tree was planted here in the time of the Romans. We know that the word *cerasus* is derived from *Cerasus*, a city of ancient Pontus, in Asia, now called Kerasoun. The cherry-tree was brought into Europe from thence, by the Roman general Lucullus, 67 B.C., at the termination of the Mithridatic war. When a triumph was afforded to this warrior, he placed the cherry-tree in the most conspicuous station among the royal treasures, justly deeming it of more real worth to the country than the spoils of gold, or silver, or gorgeous array, won by

conquest. A hundred and twenty years after, this tree was grown in Britain. That the fruit was well known in early times in this country is evident, from lines in Gower's "Prologue":—

"And so hope cometh in at laste,
When I none other foode knowe;
And that endureth but a throwe,
Right as it were a cherie feste:"

while near the same early period we find Chaucer describing a garden thus:—

"And manie homely trees were there,
That peches, coines, and aples bere;
Medlers, plommis, peres, chesteines,
Cherise, of which manie one faire is;
Notis, and aleis, and bolas,
That for to sene it was solas;
With manie high laurer and pine,
Was ranged clene all that gardine,
With cipris and with oliveris,
Of which that nigh no plenty here is."

Our Jean Cherry is, by many writers, termed *Prunus cerásus*, or *Cerásus vulgaris*, but the former name is now more generally applied to the Morello Cherry. Various kinds of cherry are largely grown on the Continent, and cherries are associated there with many common proverbs and old legends. The German says, that the cuckoo never sings till he has thrice eaten his fill of cherries; but if so, the bird must have made his meals on the half-ripened fruit, unless his first song is later in the year than in our country. There are legends which tell how our Saviour gave a cherry to St. Peter,

and with the fruit gave, too, a gentle counsel not to scorn small things ; but we forbear to put faith in tale or legend connected with him of whose life and words we know so little, save that which has been taught in Holy Writ. Even yet, however, an annual festival at Hamburgh tells of an interesting incident which occurred in connexion with cherries. This is called the Feast of the Cherries ; and on this occasion, little children walk about the streets carrying boughs, from whose green leaves glisten the ruby fruits. It is an old observance, and one which tells of a touching story. In the year 1432, the Hussites were planted in battle array around the city of Hamburgh, threatening its immediate destruction, when one of the citizens, named Wolf, proposed that all the children from seven to fourteen years of age should be clad in mourning, and sent out to plead with the enemy. The chief of the Hussites, Procopius Nasus, had human sympathies, and the sight of these innocent and helpless beings perchance reminded him of loved and innocent ones far from the scene of danger. To the honour of the warrior, his heart forbade all resistance to the appeal, and, promising to spare the city, he sent back the children, after having regaled them with cherries. With loud shouts of victory, the happy band returned homewards, crowned with green leaves of the tree, and waving in their hands the boughs laden with cherries. Long before Shakspeare had expressed the truth, the thoughtful man had discovered that—

“One touch of nature makes the whole world kin.”

The Romans possessed only eight varieties of cherry ; but upwards of two hundred are now known, and more than fifty commonly cultivated in Britain ; affording thus one of those instances of a fact familiar to the botanist, of the use of culture, and the triumphs of skill and industry. Besides the Bigarreaux, the Black Eagles, and Bleeding Hearts, the May-Dukes, Arch-Dukes, Honey, and Kentish varieties, the All Saints and Weeping Cherries, we might adduce many another which contributes to the valuable supply of our tables. Many cherry-trees, too, of great beauty are reared entirely that their snowy flowers and glowing fruits may serve as ornaments to the garden wall or shrubbery, or on account of the wood furnished by their trunks and boughs. The Perfumed Cherry (*Prunus Mahaleb*) bears a profusion of beautiful flowers, dispensing far around its odour, which resembles that of the sweet Garden Clematis. Its shining black fruits are so hard, that they are often pierced for rosaries. The wood is also fragrant, and is used by the French in cabinet-work, especially in the village of St. Lucie, near Commerey, hence it is often called *Bois de Commerey*. *Prunus capricida* is the Goatbane of Nepaul, and contains so much prussic acid, that it is said to destroy goats which feed upon it.

4. *P. Cérasus* (Morello Cherry).—*Flowers* in nearly sessile umbels ; *leaves* not drooping, inversely egg-shaped, somewhat oblong, or egg-shaped and somewhat lanceolate, crenulate and serrate, smooth ; *calyx-tube* not contracted. This is an erect bushy shrub, about six or eight feet in height, which throws out to a considerable distance a number of underground shoots. The erect

leaves give the plant a different aspect altogether from the wild cherry, the whole foliage having a stronger, firmer character. The plant bears white flowers in May, and the cherries are red and very acid. The inner scales of the flower-bud are leafy, and the outer scales of the leaf-bud are erect. It is the origin of the Morello Cherry of the garden; it is very doubtful if it is truly distinct from the preceding species. It grows in woods and hedges in various parts of England. It never in a wild state attains the height of the other cherry, and rarely exceeds eight feet.

2. SPIRÆA (Meadow-sweet Dropwort).

1. *S. ulmária* (Meadow-sweet).—Herbaceous; leaves pinnate, the alternate leaflets smaller, white with down beneath, terminal leaflet very large, and lobed; flowers in compound cymes. Plant perennial. The generic name of *Spiræa*, given because the flowers which compose the genus were fitted for garlands, is a very old one, as Pliny called some plant *Spireon*, garland-flower, and the name was transferred to this genus. In all probability, too, a plant so sweet and so common was gathered in summer-time from our own meadows, in days when chaplets were in general use. "Often," says a learned writer, "did Chepe, and Cornhyll, and Byshopgate, resound with the waytes playing, and the quire singing *Salve feste dies*, as the fellowshyppe of clerkes went their procession, two and two together, each having a surplise and a riche cope, and garland." Perchance this flower, in the olden time, was strewed in the church



1. *Primula vulgaris*

2. *Primula vulgaris*

3. *Primula vulgaris*

4. *Primula vulgaris*

5. *Primula vulgaris*

6. *Primula vulgaris*

for the bride to walk upon, and hung over the pew where she lately sat, when death had changed her bridal suit to the shroud.

The Meadow-sweet, or Meadow-queen, as it is often called, is one of the loveliest of wild flowers. Its white blossoms, tinged with yellowish green, are in crowded clusters, and are so light and feathery, that the slightest wind ruffles them, and while it wafts their odour, bids them nod and bow gracefully before it. The stem is usually about two or three feet high, but occasionally it is a foot higher. Every one admires

“ The almond-scented Meadow-sweet, whose plumes
Of powerful odour incense all the air.”

The French call it *La reine des prés*, the Germans *Wiesenkönigen*, and the Dutch language, not always harmonious in its terminations, has for this plant the pretty name of *Reynette*. It is the *Ulmæria* of the Spanish and Portuguese, and is called by the Russians *Medunischnik*. The plant is found pretty generally throughout Europe, and in some of the northern countries of Asia various species of *Spiræa* are very ornamental and frequent. A gregarious species, the *Spiræa Kamschatika*, is called by the people of Kamschatka *Schalameynik*, and throughout the summer quite characterises the vegetation of that land by its abundance and peculiar appearance. It is a plant of wonderfully rapid growth, acquiring in the course of a few weeks the height of ten feet, and disappearing in autumn without leaving a single trace, as one frosty night will level the whole with the ground. Its stems display in July their white

bunches of flowers, which subsequently acquire a grey tint.

The blossoms of the Meadow-sweet appear in July and August, when they quiver beside many a stream, or grace many a damp wood or meadow. The fragrance has much of that odour of prussic acid which is found in sloe, almond, and several other flowers contained in the Order. In the open air it is not only delicious, but harmless; but it is very deleterious in a close room, and has proved the cause of severe illness to some who slept with it in their apartment. The whole plant is bitter and astringent, and was formerly used as medicine, and its properties are, doubtless, tonic. A very pleasant and fragrant water may be distilled from its flowers. The roots are very much sought out by swine, and the dried knobs, beaten or ground with meal, are said, by Linnaeus, to afford no bad substitute for flour. The blossoms are too fragile to survive long after being gathered. Mrs. E. W. Cox has written for this volume the following little poem on this flower:—

“ In thy wild gatherings shouldst thou chance to meet
 With the white Meadow-sweet,
Inhale its honied breath, and pass it by;
Bind it not in thy wreath, for it would die,
 Pluck'd from its river-home;
And the poor sighing bee would vainly roam,
Wandering about its desolate retreat.

“ But let it live, and by to-morrow's dawn,
 On its soft bosom borne,
Thou shalt behold the little buds thy care
From early death within its breast did spare;
 And in the evening hour,

As there thou passest, shall the grateful flower
Lower before thee bend its waving form.

“ Oh ! I have lived a woodland queen to see,
For whose wild destiny
Fond Nature craved ;—with thoughtless fondness torn
From off her breast, some new scene to adorn ;
With what strange pride they moved
That gentle one from all on earth she loved,
Her birds, her flowers, a beauty-queen to be.

“ ’Mid brighter hues her loveliness but made
Small show, and she did fade
So quickly, that her little vacant place
Was hardly mark’d, and I alone could trace,
When through entwining sprays
The calm moon dropp’d adown her silver rays,
Her wandering spirit in the woodland shade ! ”

The old herbalists had much to say in praise of the Mead-sweet, as they called it. It was of power to “alter and take away fits of the ague,” and to “make a merry heart,” for which purpose leaves and flowers were to be used. It cured, besides, so many forms of sickness, that he must indeed have been in evil case, who was like one whom Chaucer described—

“ Ne drinke of herbes may ben his helping.”

2. *S. Filipéndula* (Common Dropwort).—Herbaceous; leaves pinnate, with alternately smaller leaflets; leaflets all oblong, deeply cut and serrate; flowers in a panicled cyme. Plant perennial. We do not find this flower in company with the last species, for it thrives in places too dry for the Meadow-sweet, and occurs on pastures where the soil is of chalk or gravel. It usually grows

on a stem about a foot in height, and its flowers, which expand from July to September, form a smaller and flatter tuft, and are individually larger and whiter than those of the Meadow-sweet. Before expansion they are of a beautiful deep rose-colour, and mingling with the fully blown and snowy blossoms are very pretty, but they are not fragrant. The leaf is altogether different, too, for it is cut into many fine segments, and is of a rich dark green.

3. *S. salicifolia* (Willow-leaved Spiræa).—Shrubby; *leaves* oval, somewhat lanceolate, unequally serrated, smooth; *flowers* in dense, erect, terminal racemes. Plant perennial. This species, with its willow-like leaves, is not truly wild, but is naturalized in several woods in the north of England and Scotland. Its clusters of rose-coloured or flesh-coloured flowers are found in July, and though compact, look very light, from the circumstance of the numerous stamens being longer than the petals. The shrub is so often planted in gardens and shrubberies, that it is doubtless, in many cases, an outcast from some cultured spot. Several species of the genus are ornamental shrubs, and the Siberian Spiræa (*S. lævigata*) has fragrant leaves, which form a tolerable substitute for tea.

3. DRÝAS (Mountain Avens).

1. *D. octopétala* (White Mountain Avens).—*Leaves* oblong, deeply cut with roundish serrated notches; *sepals* three or four times as long as broad, more or less pointed; *petals* 8. Plant perennial. This is not a com-

mon plant, for it belongs to the mountainous regions only of England, Scotland, and Ireland, growing especially on limestone soils. It may easily be known from any other plant of the order by its oblong deeply cut evergreen leaves on stalks, which are quite white on the under surface with thick woolly down. The woody stem is like those of mountain flowers in general, raised but a small height from the ground, or lying upon it. The large white blossoms unfold in June and July. The Germans call the plant *Silberkraut*, the French *Driade*, the Dutch *Hertenkruid*, and in Iceland it is termed *Holta-soleyg*. It will grow in gardens of level countries, but needs great care to preserve it any length of time.

This *Avens* has all the usual characteristics of plants which grow on mountain heights. The large blossoms and short stems would at once suggest to those accustomed to elevated regions that this was a mountain flower. Alpine plants grow more socially than almost any others, so that one kind of plant may often be found forming extensive tufts or patches several feet in circumference. Meyen says that this Alpine mode of growth is nowhere more striking than in the Alpine Flora of the Cordilleras, where the plants first fasten on projecting rocks, and where, in the course of time, their outspread branches cover the surface of rocks twelve, or even twenty feet square. He remarks, that frequently in these regions vast blocks of rock are wholly overgrown with a thick and extremely hard turf, which is composed of a single species of plant, and the prostrate branches have formed so hard and entangling a mass, that it is

extremely difficult to cut through it even with the sharpest instrument. The stem of such a family of plants, which is doubtless often a monument of many centuries, seldom, he says, attains the length of a foot, but is sometimes as much as five or six inches in thickness, and has from its base an infinite number of twigs and branches. The higher we ascend on the mountains of our own land, till we gain the regions of perpetual snow, the more these characteristics of vegetation become apparent. Most Alpine plants are perennial, and the root, which is destined to endure a rigorous winter several months long, is usually very woody, and well shielded by a number of skins. Alpine plants of all countries are remarkable for their large flowers, which render them very conspicuous. The beautiful primroses and auriculas, gentians, saxifrages and avens, are all showy flowers, and combine with many yellow and white compound flowers to render the spot very beautiful. Meyen remarks, that he cannot fix on any particular colour as predominant in the Alpine Flora. It has long been said that white was the general hue of the flowers, but the learned German botanist, Schouw, has proved that this is not the case in the mountains of Europe; and Meyen adds, that on the heights of the Cordilleras of South America he rarely met with a white flower, and at the limits of perpetual snow never found one of that hue, though he saw blue, yellow, and violet blossoms even there in abundance. What heart cannot respond to the expressions of Coleridge, when at Chamonix he marked the brilliant blue gentians glittering on the very verge of the snow-clad peaks?—

“Ye ice-falls, ye that on the mountain’s brow
Adown enormous ravines slope amain—
 Who bade the sun
Clothe you with rainbows? Who with living flowers
Of loveliest blue spread rainbows at your feet?
God! let the torrents like a shout of nations
Answer, and let the ice-plains echo, God!
God! sing, ye meadow streams, with gladsome voice,
Ye pine-groves, with your soft and soul-like sounds;
And they too have a voice, yon piles of snow
And in their perilous fall shall thunder, God!

Ye living flowers that skirt the eternal frost,
Ye wild goats sporting round the eagle’s nest,
Ye eagles, playmates of the mountain storm,
Ye lightnings, the dread arrows of the clouds,
Ye signs and wonders of the elements,
Utter forth, God! and fill the earth with praise.”

In all parts of the world the greater number of Alpine plants abound in aromatic, bitter, or resinous principles, and it is well known that they secrete these properties far more powerfully on their native hills than in gardens. So, too, in our gardens, the large flowers gradually diminish, and the plants soon lose much of the dwarfed appearance which is one of the features to which plants of elevated regions owe so much of their peculiarity.

Besides the great development of root and flower, a very singular character of Alpine plants is a great imperfection of the leaves. They are said to crumple together, and become puckered on their upper surface, the leaves early acquiring, partly or entirely, a yellowish tint, and also losing the green substance, so as to become membranous. Meyen, in his “Geography of Plants,” quotes the opinion of Parrot, “that the peculiar character of Alpine vegetation consists in this, that the plants

during their whole growth are continually striving not to rise above the ground, and consequently form a short and strong, or crooked and prostrate stalk, on which branches, leaves, and flowers are closely pressed on each other." A large number of Alpine plants have also, like the *Dryas*, wool or hair on their leaves, though some are smooth and leathery.

The matured fruit of the Mountain Avens is an exceedingly pretty object, and looks like a silken plume rising from the flower-cup. Dr. Lindley, in his admirable work, called "Ladies' Botany," says of it, "that as it waves about in the wind, one might fancy it a tuft of feathers accidentally fastened to the flower-stalk. A botanical examination, however," he adds, "soon dispels the illusion, and shows that the appearance is caused by the carpels having preserved their styles, which have become very long, and covered all over with loose silky hair, which has grown since they were young. A similar phenomenon occurs in Virgin's Bower (*Clematis Vitalba*), and in the Pasque Flower (*Anemone pulsatilla*); but the most remarkable instance in the production of hairs, so as to change the whole appearance of a part, is met with in the Venetian Sumach (*Rhus Cotinus*), which the French call *Arbre à perruque*, or the Wig-tree. This plant is by no means uncommon in shrubberies, shaking its hoary locks at you as the breeze waves the branches and sets the wigs in motion, in the midst of a crowd of blood-stained leaves; for it is in the autumn only that it seems to wear its wig, as in spring and summer it does not want it, and will not put it on."

4. GÉUM (Avens).

1. *G. urbánum* (Common Avens).—*Flowers* erect ; *awns* rigid ; *calyx* of the fruit turned downwards ; *root-leaves* pinnate, with alternate smaller leaflets, and lyre-shaped ; *stem leaves* ternate ; *stipules* large, rounded, lobed, and cut. Plant perennial. All who love to wander in the green woods and by the hedgerows of England know this common plant, which, however, requires the sunshine, and will only grow well where the trees are not high and thick enough to cast a broad shadow. The yellow flowers appear from June to August, and the stem of the plant is from one to three feet in height. The blossoms are small in proportion to the leaves, and the petals soon fall off, and leave the round spiny ball, which is composed of awned fruits, destined to adhere to the sheep or other animal which may come near it to browse, or to the clothing of man, and thus be borne away to grace another summer :—

“ Each is commission’d, could we trace
 The voyage to each decreed,
 To convoy to some distant place
 A pilgrim seed ;

“ As surely charter’d as yon sail-
 Like white-wing’d butterfly,
 Before the gently drifted gale
 That glideth by.”

The leaves of this plant are rich glossy green, and grow on long foot-stalks. The flower has several country names, as Goldy, Star of the Earth, City Avens, Wood Avens, and Herb Bennet. This last name is also common in several countries of Europe, as it is the

Benoite commune of the French, and the *Erba Benedetta* of Italy, all doubtless corruptions of the word Benedicta. It was evidently considered in some sort a sacred herb, as we find it associated with old church paintings and church architecture, of which it was a frequent ornament. Whether the ornament is truly intended as a representation of the flower is certainly questioned by some, but the belief that it is so seems very general. Mr. Orlando Jewett, in his "Description of Mural Painting," considers that it referred to this blossom. Alluding to paintings in Berkeley Church, Oxfordshire, which appear to have been executed at four or five different periods, from the close of the thirteenth century to the time of George III., he says: "The most ancient of them is one in the belfry, which occupies a space of about six feet from the level of the original floor on the east wall. The pattern consists of stems, leaves, and flowers, rudely drawn with a brush in an irregular manner on the original plaster of the wall. The plant is evidently intended for the *Herba Benedicta*, Herb Bennet, or Avens, which seems to have been a great deal used at this period as an architectural decoration. As the tower, piers, and the trefoil-headed lancet of the belfry appear to be of the time of Edward I., it may fairly be presumed that this painting is coeval with the building of the tower, which is the earliest part of the church. The stems and branches are laid in with brown oxide of iron, very similar to what we now call Indian red; for the leaves and flowers red-lead has been used, as is evident from the atmosphere having in some parts turned them black."

The old herbalists call this plant Cow-wort; and it would well deserve the name of Blessed Herb if it would only cure half the maladies for which they recommend it. One of them describes it as “a good and wholesome herb, excellent for diseases of the chest, by its sweet savour and warming quality; the roots, whether green or dry, boiled in wine and drank, being fit to cure all inward wounds;” while the external application was thought to remove all spots, bruises, and freckles from the face. “The root in the spring time steeped in wine,” says this old author, “doth give it a delicate savour and taste, and being drunk fasting every morning, it comforteth the heart, and is a good preservative against plague or any other poison.” He adds, “It is very safe, you need have no dose prescribed, and it is very fit to be kept in any body’s house.”

Besides the old names already stated, this plant was called *Caryophyllata*, from the clove-like scent of its root; and there is no doubt that the root has both mildly astringent and tonic properties, having been compared in this respect to Peruvian bark. It is still used in country places for giving a relish to various articles of food, and yet more often to some wines made from the different berries which our native land affords. It is also gathered in the spring and put into ale, and not only improves the flavour of the liquor, but prevents its turning sour. Like many another plant, however, it was more valued in the olden time than now, when spices are cheap, and easily procured.

Although it has a long-established repute as being, when infused in fermented liquors, a valuable stomachic,

yet Baron Haller says of this root, that if mingled with water, and given, as it formerly was, in malignant fevers, it causes delirium. Its use for putting among linen to preserve from moth, and to impart a pleasant odour, however, is much more general in these days than for any medicinal purposes ; and for this the root should be taken from a dry sunny spot, just at the season when it is coming into flower ; for if these conditions are not observed, it will be found to want the aromatic odour for which it has become so celebrated.

2. *G. rivale* (Water Avens).—*Flowers* drooping ; *awns* feathery ; *root-leaves* pinnate, with the alternate leaflets and those at the base smaller ; *stem-leaves* ternate. Plant perennial. This species has altogether a very different habit from the preceding. It is a much shorter and stouter plant, with larger flowers, of a dull purplish hue, veined with darker purple, and the calyx is also deeply tinged with this colour. It is sometimes found very high up mountains, so as to be quite an Alpine plant, and it is not uncommon in wet mountainous woods, or on marshy and moory grounds, flowering from May to August. Its root is said to be stomachic, and to be very serviceable as an astringent medicine. Professor Lindley thinks it probable that this is the Indian chocolate, as the plant is much used medicinally in North America. The Canadians administer both species of Geum in agues.

Some botanists enumerate a third species, called *Geum intermedium*, which is not an unfrequent plant in damp woods. Its stem is one or two feet in height ; its flowers larger than those of *Geum urbanum*, and smaller



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than those of *Geum rivale*. The blossoms are in some cases drooping, and in others erect; the heads of fruit usually sessile; but it varies so much between the form of one or the other species, that Sir William Hooker and Dr. Arnott consider it to be a hybrid between the two.

5. POTENTILLA (Cinquefoil).

* *Leaves pinnate.*

1. *P. anserina* (Silver-weed).—*Stem* creeping; *leaves* pinnate, with alternate smaller leaflets; *leaflets* numerous, oblong, acutely serrate, silky on both sides; *flower-stalks* solitary; *root* perennial. This is one of the prettiest plants of this large genus, and one of our most common flowers. It grows in moist meadows, and is very frequent on banks by the road-side, especially such as are kept verdant by some stream which trickles by. Large masses of its beautiful leaves, shining and silvery with the silky down which is always to be seen on the under surface in profusion, and which often covers both sides, seems scarcely to need the adornment of the large yellow velvety flowers which, in June and July, stand on short stalks among them. Few plants lose less of their beauty in drying for the Herbarium than this, and little bouquets of the blossoms and foliage, arranged on paper, will retain their beauty for years, and often serve as mementos of friendship, or help to carry away the thoughts to some pleasant spot whence the flower was gathered:—

“The precious things of Heaven—the dew
 That on the turf beneath it trembled,
 The distant landscape’s tender blue,
 The twilight of the woods that threw
 Their solemn shadows where it grew,
 Are at its potent call assembled.

“And while that simple plant for me
 Brings all these varied charms together,
 I hear the murmurs of the bee,
 The splendour of the skies I see,
 And breathe those airs that wander free
 O’er banks of thyme and blooming heather.”

The silvery foliage is so much relished by geese, that the plant is often called goose-grass; it is occasionally boiled for the cottage meal. The roots are eagerly eaten by swine. They are somewhat like parsneps in their sweet flavour, though smaller, and paler in colour; and are much relished by children, who roast them over the fire; while the Scottish housewife sometimes boils them for the family dinner. They contain a good amount of nutriment, and in times of scarcity the people of the islands of Tiray and Col have used them for bread, and have been supported for months together almost entirely on this food.

2. *P. fruticósa* (Shrubby Cinquefoil).—*Leaves* pinnate; *leaflets* mostly 5, oblong, acute, entire, hairy, with margins rolled under; *stem* shrubby. Plant perennial. This is a rare species, growing among bushes in the rocky parts of Cumberland, Yorkshire, and other northern counties, as well as at Clare and Galway in Ireland. Its stem is three or four feet high, its large yellow flowers growing several together at the end of the stems, and expanding in July and August.

3. *P. rupéstris* (Strawberry-flowered Cinquefoil).—*Stem* erect, forked; *leaves* pinnate; *leaflets* egg-shaped, their bases wedge-shaped, serrated, and hairy, from 5 to 7 on the lower leaves, and 3 on the uppermost. Plant perennial. This very rare species bears large white flowers in May and June, and has a stem one or two feet high. Its only recorded British habitat is Craig Breidhin, Montgomeryshire.

* * *Leaves digitate.*

4. *P. argétea* (Hoary Cinquefoil).—*Stem* prostrate, or ascending; *leaves* quinate; *leaflets* wedge-shaped, cut, white, and downy beneath, their margins rolled. Plant perennial. Though not a very common species, this is found on many road-sides and pastures, where the soil is of gravel. Its small yellow flowers grow several together, at the ends of the stems, in June and July.

5. *P. réptans* (Creeping Cinquefoil).—*Stem* slender, creeping, rooting at the joints; *leaves* quinate, stalked, their leaflets inversely egg-shaped, tapering at the base, and bluntly serrated; *flower-stalks* axillary, single-flowered, longer than the leaf. Root perennial. Not one of the genus is more common than this, for it grows on almost every way-side bank, or creeps with slender stem along the meadow grass, or en vens the side of the dusty road. The yellow flower, of soft and velvet-like texture, expands in June and July, and is often called in the country yellow strawberry flower; but long ere flowers have begun to peep forth from their winter covering, the fingered leaves of this Cinquefoil

lie in wreaths on the bank. Even in February we may see them almost fully unfolded, and winding among the rounded leaves of the ground ivy, or the deep crimson foliage of the Herb Robert. The name of *Potentilla*, given on account of the potential virtues which some of the species were supposed to possess, was probably won by this and some nearly allied species; for this is the medicinal *potentilla* of the ancients, and was referred to by one of the oldest writers on plants, Theophrastus. Though none of the genus are deleterious, yet they are by no means possessed of active or potent properties. They are generally more or less astringent and bitter, and this creeping species is still reputed to be a febrifuge, and would doubtless be used as such by modern practitioners but that more powerful drugs are now more easily obtained. The writers on plants in Queen Elizabeth's time thought very highly of its remedial effects. One of our herbalists, who describes it very accurately, and calls it the Cinquefoil, or five-leaved grass, desires his readers to give twenty grains of it either in white wine, or white-wine vinegar, "when," he says, "you shall very seldom miss the cure of an ague, be it what ague soever, in three fits, as I have proved to the admiration both of myself and others: let no man despise it because it is plain and easy; the ways of God are all such." It was commended as an especial herb to be used in fevers and inflammations, whether infectious or pestilential, and also for diseases of the lungs. The distilled water of the leaves and roots seems to have been a very favourite preparation, and the author adds: "If the hands be often washed therein, and it be suffered

every time to dry in of itself, without wiping, it will in a short time help the palsy or shaking in them." Doubtless the plant mingled with wine might have been beneficial in agues, but one loses all one's reliance on these old prescriptions as we come to the conclusion of the matter. "Some hold," he says, "that one leaf cures a quotidian, three a tertian, and four a quartan ague, and a hundred to one if it be not Dioscorides, for he is full of whimsies. The truth is, I never stood much upon the number of the leaves, or whether I gave it in powder or decoction. If Jupiter were strong, and the moon applying to him, and his good aspect at the time of gathering, I never knew it miss the desired effects."

The form of the leaf gives its familiar name to the plant in many countries besides our own. Thus the French term it *Quintefeuille*; the Germans, *Fünffingerkraut*; the Dutch, *Vyfvingerkruid*; the Italians, *Cinquefoglio*; and the Spaniards, *Cinco en rama*.

6. *P. verna* (Spring Cinquefoil).—*Stem* prostrate; lower *leaves* of from 5 to 7; inversely egg-shaped; *leaflets* serrated towards the end, bristly on the margin, and ribbed beneath; lower *stipules* narrow and acute. Plant perennial. This species bears small yellow flowers, two or three together, at the end of its weak prostrate branches, and is, as its name implies, the earliest flowering species, blossoming from April to June. The leaves are green on both surfaces. It is found occasionally on dry pastures, but is not a frequent plant.

7. *P. alpéstris* (Orange Alpine Cinquefoil).—*Root-leaves* of 5 wedge-shaped leaflets, somewhat hairy, and

deeply cut in the upper portion ; *stipules* obtuse, upper ones egg-shaped, lower ones lanceolate ; *stem* ascending. Plant perennial. This Mountain Cinquefoil, which grows in the north of England and Wales, and on some of the Scottish mountains, is somewhat larger than the Spring Cinquefoil, and is more upright in its mode of growth ; but many botanists doubt if it is distinct from the last species. It is called *P. salisburgensis* by many botanists.

8. *P. opúca* (Saw-leaved Hairy Cinquefoil).—*Root-leaves* of 7 narrow wedge-shaped leaflets, deeply serrated ; *stem-leaves* ternate, mostly opposite ; *stems* ascending. Plant perennial. This plant, which has also been called *P. intermedia*, is a very doubtful native, but was described by Mr. Don as growing on the hills of Clova, the braes of Balquhiddy, and the sea-shore opposite Dundee.

9. *P. Tormentilla* (Common Tormentil).—*Stem* procumbent or ascending ; *leaves* ternate, sessile, or shortly stalked ; *lower leaves* quinate on long stalks ; *leaflets* lanceolate, deeply serrate, or inversely egg-shaped and wedge-shaped. Plant perennial. Two varieties of this plant are commonly found. In one, the leaves are all sessile, except those of the root, and the stem is ascending ; in the second, the lower stem leaves are stalked and blunt, and the stem prostrate and somewhat rooting. The Tormentil is a pretty little plant in the months of June, July, and August, when its yellow flowers are in great abundance among the short grass of moors and heaths. Its petals are usually four in number, but they are sometimes five ; and in the variety which has a

prostrate stem, it is so like the Creeping Cinquefoil that many believe the plants to be identical. In the common form of the Tormentil the stem is usually three or four inches high, and the flowers are of a very bright yellow. It is thought to be one of the most astringent plants of the genus, and it is still retained in the modern lists of medicines. So astringent, indeed, are the root-stocks of this plant, that they are used in the Hebrides and Orkney Islands for tanning leather, and are even said to be superior to oak bark for that purpose, one pound being equal in strength to seven pounds of ordinary tan. In Lapland the roots are used for dyeing skins, harnesses and gloves of a red colour : and in Killarney they are given as food to swine. The plant is very abundant in the Western Islands of Scotland, and the land was some years since so much injured by digging up these roots that the practice was prohibited. Sheep are very fond of the Tormentil. This plant and its varieties until recently were classed under a distinct genus, called *Tormentilla*, founded chiefly on the number of petals in the flower; but this is found to vary too much to afford a distinction.

* * * *Leaves quinate or ternate. Flowers white.*

10. *P. álba* (White Cinquefoil).—*Stem* weak, ascending; *root-leaves* quinate, upper ones ternate; *leaflets* oblong, with converging serratures, silky beneath. Plant perennial. This Cinquefoil is said to have been found in Wales, but is little known as a British flower, and its being so is doubted by some of our best botanists.

11. *P. tridentáta*.—*Stem* woody, creeping at the

base ; *leaves* ternate ; *leaflets* oblong and wedge-shaped, 3-toothed at the extremity, smooth above, hairy beneath. This, which is a North American species, is a doubtful native of Britain. It was found by Mr. Don on Werron Hill, and East rocks, Loch Brandy, Clova.

12. *P. Fragariástrum* (Strawberry-leaved Cinquefoil). — *Leaves* ternate ; *leaflets* roundish, inversely egg-shaped, serrated, silky on both sides ; *stems* procumbent ; *petals* as long as the calyx. Plant perennial. Have our readers ever set forth, as we have often done, to search under the hedges for a wild nosegay amid the chill gusts of early spring? How the winds raved among the branches, sweeping down the long flexible boughs of the willows, swaying those of the pensile birch to and fro, and bearing from the young oak many a brown leaf which had hung through the winter on its branches ! How brightly the sunbeam of March was reflected by the glossy leaf of ivy or holly ; while beneath their shelter the silver daisy boldly expanded, and a primrose bud, half hidden among its wrinkled leaves, peeped forth ; and the speedwell, or winter-weed, bore its tiny flowers of blue, or the golden dandelion or glossy celandine contrasted with the snowy wreath on the blackthorn. Hidden close among the bright green mosses some purple violet bud was securely sheltered, and funguses of deep crimson, or pale yellow, or ivory whiteness, upreared their heads. The scarlet peziza, like a ruby cup, was seated on the withered bough ; the cup-moss grew in grey clusters, and the peacock fungus, so like the rayed plumes of the bird after which it is called, seemed emerging from every

crevice of the fallen tree. There, too, the white flowers of the Strawberry-leaved Cinquefoil lay in abundance on every sunny hedge, and all, save the botanist, would believe that these early blossoms belonged to the true strawberry, and only needed the suns of summer to turn them into the glowing fruits. Both leaf and flower are almost exactly like those of the woodland strawberry; the silvery hue of the young leaves, and even the strongly marked veins of the more developed foliage, being to be seen here. But the plant is, as our fathers called it, but the barren strawberry; and marked differences from the fruitful plant exist in the prostrate stems, the smaller flowers, and notched petals of the Cinquefoil. This plant is common throughout England on woods and banks, sometimes in mild seasons flowering even as early as January, very soon after the snow has melted from the bank. It continues in blossom till May. It was formerly placed in the genus *Fragaria* with the strawberry.

6. SIBBÁLDIA (Sibbaldia).

1. *S. procumbens*.—*Leaves* ternate; *leaflets* wedge-shaped, with 3 teeth at the end; *flowers* corymbose; *stem* procumbent. Plant perennial. This little plant is abundant on the Highland mountains, even at their very summits. It bears small yellowish flowers in June and July, and its leaves are slightly hairy, and pale green. It is very nearly allied to the *Potentillas*, but its general aspect is somewhat like that of the Lady's Mantle. The petals are often absent, and the number of pistils and stamens is very variable. We have one or two garden

species, which are natives of Siberia, and much like this Alpine plant.

7. CÓMARUM (Marsh Cinquefoil).

1. *C. palústre* (Purple Marsh Cinquefoil).—*Stems* ascending; *leaves* pinnate; *leaflets* from 5 to 7, lanceolate, deeply serrated; *flower-stalks* branched. Plant perennial. This plant is so nearly allied to the Cinquefoils, that it is by some writers called *Potentilla Cómarum*, but it differs from that genus by having an enlarged spongy receptacle. It is not unfrequent on bogs and marshes, bearing large flowers in July, of a dingy purplish colour. It is in some parts of England called Cowberry. It is the *Comaret* of the French, and the *Fünblatt* of the Germans; while the Dutch call it *Rood waterberie*. Its name of Cowberry probably originated from a practice, common among the Irish, of rubbing the inside of milking-pails with this plant, in order that the milk may seem richer and thicker. Its roots are of sufficient astringency to be used in tanning, and they will dye wool of a yellow colour.

8. FRAGÁRIA (Strawberry).

1. *F. vésca* (Wood Strawberry).—*Calyx* of the fruit spreading, or bent backwards; hairs on the general flower-stalk widely spreading, on the partial flower-stalks erect, or close pressed; *petals* slightly notched. Plant perennial. The pretty white flowers of the strawberry plant stand up among the bright green hairy leaves from May to July. They are common in most



woods and hedges, and the ripened fruit of June supplies a store for the country children, and is very wholesome and pleasant. It is, like many other berries, still more abundant in the woods of Northern Europe than in ours. In Sweden it is so plentiful that the tables are constantly supplied during the season with wood strawberries, and large baskets full are daily carried about the towns for sale. Linnæus, who considered it the most wholesome of all fruits, and who believed that eating strawberries had cured him of a fit of the gout, used to desire his servant to purchase all that were brought to the door, and daily ate large numbers of them. Hoffman has also recorded the cure of some dangerous disorders by eating strawberries; and Boerhaave accounted this fruit as one of the principal remedies in putrid fevers. There is no doubt that it is an excellent dietetic fruit for persons liable to inflammatory or bilious disorders. From the pleasant odour of the strawberry we not only derive our botanic name, made from the word *fragrans*, but the French have also their word *fraise*; and one of the common comparisons in use in France is not merely as with us, "fresh as a rose," but also "*fraiche comme une fraise*." The Germans call the plant *Erdbeere*, and the Italians *Tragolo*. The English name of Strawberry is said by some writers to have been derived from an old practice, which has again in late years much prevailed in gardens, that of placing straw among the ripening fruits to prevent their being soiled. Another more probable derivation has been from the practice, still so frequent among country people, of threading the strawberries on the slender stem of

a grass. That this was done some centuries since, we know from a passage in Browne's "Pastorals":—

"The wood-nymphs oftentimes would busy be,
And pluck for him the blushing strawberry,
Making of them a bracelet on a bent,
Which for a favour to this swain they sent."

As Professor Burnett, however, remarks, the word is more likely to be a corruption of *stray-berry*, from the trailing or wandering of its runners, which stray to great distances from the parent plant, and establish colonies all around. John Lydgate, who died in 1483, writes the word *straberry*, in his poem called "London Lyckpenny;" but the orthography of words in those days was too uncertain to afford much ground for ascertaining exactly their origin, and the poet would have been likely enough, had he been writing the word a year after, to spell it in some other way.

The strawberry is much cultivated both in our own country and also in those of the Continent. In the Isle of Jersey the plants are covered over during cold weather with layers of sea-weed, a plan which is said to increase the size and goodness of the fruit. Several species have been introduced into this kingdom, and our woodland fruit affords, under culture, several varieties of white and red strawberries. Mr. T. Hudson Turner, in a paper on the state of Horticulture in England some centuries since, says, "Strawberries and raspberries rarely occur in early accounts, owing probably to the fact that they were not cultivated in gardens, and known only as wild fruits. Strawberries are named once in the Household Roll of the Countess

of Leicester for the year 1265. The plant does not seem to have been much grown even at the end of the sixteenth century. Lawson speaks of the roots of trees being 'powdred' with strawberries, red, white, and green. Raspberries, barberries, and currants, he describes as grown in borders. Both fruits, being indigenous, were probably to be found plentifully in the woods of ancient times, and thence brought to market, as they are in the present day in Italy and the other parts of Europe."

We find one of Ben Jonson's personages saying—

"My son hath sent you
A pot of strawberries gather'd in the wood
To mingle with your cream."

And we know that in the time of Henry VIII. strawberries were sold at fourpence a bushel. Tusser, who wrote in the latter part of this reign, says, in his *Advice to the Farmer*—

"Wife, into the garden and set me a plot
With strawberry roots of the best to be got;
Such growing abroad among thorns in the wood,
Well chosen and pricked, prove excellent good."

In earlier times than these, however, they were occasionally cultivated in gardens. Hollinshed, who furnished Shakspeare with many materials for his poems, describes a scene which the great bard afterwards dramatised. Ely-place, Holborn, was the ancient site of the stately palace, then the London residence of the Bishops of Ely, and there the grass waved green over meadows, and the vine trailed over walls, and strawberries grew in garden borders. The old historian,

referring to the conduct of Richard III. when Duke of Gloucester, on the morning of the execution of Lord Hastings, in 1483, has this graphic passage:—"On the Fridaie (being the 13th of June) manie lords assembled in the Tower, and there sate in councell, devising the honourable solemnitie of the King's coronation, of which the time appointed then so neere approached, that the pageants and subtilties were in making day and night at Westminster, and much vittels killed that afterwards was cast awaie. These lords sitting together, communing of this matter, the Protector came in among them, first about nine of the clocke, saluting them courteously, and excusing himselfe that he had beene from them so long, saieing merrilie that he had beene a sleepe; that daie, after a little talking with them, he said unto the Bishop of Ely, 'My lord, you have verie good strawberries in your garden in Holborne, I require you let us have a messe of them.' 'Gladly, my lord,' quoth he; 'would God I had some better thing as ready to your pleasure as that!' And therewithall in all hast he sent his servant for a mess of strawberries." Notwithstanding this, however, Morton, the then bishop, was, with others, taken prisoner, as suspected of being opposed to the plans then forming.

The strawberry, frequent as it is now, is still prized both in its wild and cultivated state; many could say with Hurdis—

"We often wander at the close of day
Along the shady lane or through the woods,
To pluck the ruddy strawberry, or smell
The perfumed breeze that all the fragrance steals
Of honeysuckle, blossom'd beans, or clover;

Or haply rifles from the new-made rick
The hay's sweet odour, or the sweeter breath
Of farmer's yard, where the still patient cow
Stands o'er the plenteous milk-pail, ruminant."

In the coffee-houses at Paris a very pleasant beverage, called *bavaraise à la Grecque*, is made of the strawberry.

2. *F. elatior* (Hautboy Strawberry).—*Calyx* of the fruit spreading, or turned backwards; hairs of the general and partial *flower-stalks* spreading. Plant perennial. This species is usually admitted into the list of British plants, but it is not indigenous. It is, however, found, though rarely, in copses and hedges of the south of England, having more hairy foliage than the wood strawberry, and being a larger plant. The white flowers expand from June to August, and it is remarkable for bearing in some cases blossoms which, having stamens only, produce no fruit. This is the case with the plant also in the garden; and strawberry cultivators are therefore careful to exclude the plants with barren flowers. This species grows on the high woods of Bohemia; hence its name of Hautboy, which is a corruption of Hautbois.

Some of the Alpine fruits have, like the Pine Strawberry (*F. collina*), a sweeter flavour than any others except the different hautboys. Numerous varieties of the garden strawberries are also obtained from the American species (*F. Virginica*), and from the *F. grandiflora* of Surinam; and the Bishop's strawberry, the American scarlet strawberry, the Garnstone's scarlet, the Hudson's Bay, Melon, and Roseberry strawberries, are

all well-known varieties of the American species; while the Black Prince, Bullock's Blood, and others, are varieties of *F. grandiflora*. The black and blush Chili strawberries are derived from *F. Chiloensis*, a South American species, which produces some of our largest and richest fruits. Many writers believe that all the species from which they are said to be derived are one and the same in reality, assuming different forms and qualities under different circumstances of soil and situation.

The chief supply of strawberries for the London markets is derived from Twickenham and Isleworth; and, as a writer on this fruit has observed, "one of the most remarkable instances of the power of the human body to endure great and continued fatigue, is shown by the strawberry women, who, during the season, carry a heavy basket twice daily from Twickenham to Covent-garden, walking upwards of forty miles. Fatigue like this would soon destroy a horse, but these Cambro-Britons, who come purposely from the Welsh collieries, endure the labour for weeks without injury or complaint."

St. Pierre's observations on the number of insects which are nourished by a strawberry plant are very interesting. He had placed one of these plants near his window, and was amused by observing that in the course of three weeks no less than thirty-seven species visited the strawberry, and at length they came in such numbers and variety that he desisted from attempting to count or describe them. They were, he says, distinguished from each other by their forms, colours, and manners. "Some," says St. Pierre, "were of the colour of gold, others of silver, and others of bronze; these

were spotted, those were striped ; some were blue, some green, and others shining. In some the head was rounded like a turban, in others lengthened into a point like a nail ; in some it appeared dark, like a spot of black velvet, in others it sparkled like a ruby." Besides all these less known insects, butterflies, wasps, and bees hovered about the plant ; caterpillars and snails feasted on the leaves, and spiders wove their airy nets to betray some of the brilliant lesser creatures. That little plant, which is so pleasant and so refreshing to man, was not framed for him alone.

This naturalist then, by means of a lens, examined the leaves of the plants, which, he says, he found divided into compartments, covered with hair, separated by canals, and interspersed with glands. These compartments appeared like large verdant carpets, and their hairs seemed to resemble vegetation of a particular order, some of them were straight, others inclined, others forked, and hollow like tubes, from the extremities of which issued drops of liquid, and their canals as well as their glands seemed to be full of a sparkling fluid.

It were well if those who have much leisure would, like this naturalist, use a microscope, and examine the different minute natural objects which are near them. The structure of various plants, or parts of a plant, would offer to one little conversant with the subject a most interesting source of recreation and improvement, and surely might tend to lead the thoughts to the Creator, whose hand had wrought these hitherto unseen wonders. The hairs on plants afford great variety. They exist occasionally on almost every part.

of a plant, and, as in the Water-lily and some other aquatic plants, are even found, though rarely, in the cavities of the stem. They are composed of a transparent tissue, consisting wholly of cells, and they vary in length, rigidity, and density, sometimes being so soft and close as to render the plant downy, sometimes being stiff and rigid, and making it hairy and rough. Now they form a fringe or margin like an eyelash, or are so silky as to silver over the surface of a leaf with grey glossiness. Sometimes they curve backwards, forming hooks; sometimes they become barbs by having forked hooks. In some cases, as in the nettle, they give out an acrid juice when touched; sometimes they are tipped with an exudation, as in the Chinese Primrose. Occasionally they send forth little branches throughout their whole length, and sometimes they are interwoven into a mass which can be easily separated from the surface, or they are long and loosely entangled, and look like cobweb. Hairs compose the substance which, in the Cotton Plant, envelopes the seeds, and furnishes the manufacturer with his material: it is the minute hairs on the leaf of the Cowhage which, entering the skin, produce in him who touches it an intolerable irritation; and the lovely snowy plumage of the cotton grass which waves over the moorland, as well as the feather grass of the garden, owes its beauty to these minute and delicate organs. Hairs are useful in protecting plants from the extremes of heat and cold; of the beauty which they bestow we need say nothing, for the shining foliage of the Silver weed grows by every highway, and our gardens are full of leaves made more or less beautiful by them.

9. RÚBUS (Bramble Raspberry).

* *Leaves pinnate or ternate. Stem nearly erect, biennial, woody.*

1. *R. idæus* (Common Raspberry).—*Stems* round; *prickles* straight; *leaves* pinnate, with 5 or 3 serrated leaflets, white with down on their under surface; *foot-stalks* channelled; *flowers* axillary and terminal, corymbose and drooping; *petals* as short as the calyx; *fruit* downy. Plant perennial. The raspberry-bush, though a familiar object in the garden, is not a frequent plant in the woods and hedges of England, though in the north of this kingdom it is not of very rare occurrence in rocky woods, and it grows also in several southern counties among trees and bushes. A writer, describing the plants about Lexden, in the neighbourhood of Colchester, says, “The boggy ground in which the springs have their rise is covered with low alders, and produces much that is interesting to the botanist. *Rubus idæus* abounds in it, and when the fruit is ripe presents a temptation to venture on the soft and treacherous soil.” The greenish white flowers of the plant appear in May and June; its fruits are smaller than those of the cultivated raspberry, of which it is the origin, and are either red or yellow. They are very wholesome, and not likely by becoming acid to disagree with delicate persons, while they are considered very salutary in some complaints. The uses of the raspberry, however, in desserts, in confectionary, in making a pleasant summer beverage when mingled

with vinegar, in giving their peculiar flavour to brandy and other liquors, are too well known to require much comment. The raspberry is a native of most of the countries of Europe, and has its name from Mount Ida, in Crete. It is the *Framboisier* of the French, the *Himbeerstrauch* of the Germans, the *Braamboos* of the Dutch, the *Rovo ideo* of the Italians, the *Zarza idea* of the Spaniard, and the *Malinik* of the Russians. Our forefathers called the fruit *Raspis*, or hindberry. Doctor E. D. Clarke says that the manner in which the raspberry is found in Sweden might afford useful hints as to the mode which should be adopted in its cultivation. Of all places it seems to thrive best among wood-ashes and cinders, as among the ruins of houses which have been destroyed by fire. 'This traveller always also found it most luxuriant in those forests where the Swedes had kindled fires in the wood, and left the land strewn with the ashes of the trees. "In the north of Sweden," this writer says, "neither apples, pears, nor plums can be produced by cultivation, but Nature has been bountiful in a profusion of wild and delicious dainties. No less than six species of raspberry, besides white, red, and black currants, grow wild in all the forests." He found our common raspberry abundant in a wild state, and producing highly-flavoured fruit. Wild gooseberry-trees were less common, and four species of whortleberry were decked with plenty of red or black berries, while the soil was covered with this low shrub to a great extent, and the mouths of the children were constantly blackened by eating the fruits. "All round the Gulf of Bothnia," says this writer, "the traveller at this season



of the year will see old women and children waiting near the public roads in hopes of meeting passengers to whom they may offer their large baskets filled with raspberries, or whortleberries ; the baskets are made of birch-tree bark." The children followed the carriage continually, and when they received a few pence as payment for their fruits, would endeavour to induce the travellers to accept more, and expressed their gratitude by bowing to the ground. Dr. Clarke had tarts made of the berries thus purchased ; but he adds, that the Swedes, at that time, never made this use of them, probably owing to the scarcity of sugar.

In Canada the people commonly take their baskets and go out " herrying " in the woods during the raspberry season. Mrs. Moodie describes some of the shores of Stony Lake as abounding in these fruits, the banks being formed of large masses of limestone, on which the rich Cardinal flower and brilliant Tiger lily displayed their magnificence, while beautiful Water lilies abounded in the clear waters. This lake, which the Indians call by a name which seems to signify the Indian's grave, lies in the heart of the wilderness. " The only clearing upon its shores," says Mrs. Moodie, " had been made some years before, so that a second growth of young branches of the Red Cedar had sprung up, and the spot was covered with raspberry bushes, several hundred acres being entirely overgrown with this delicious berry. It was here that we used to come annually in large *picnic* parties to collect this valuable fruit for our winter preserves, in defiance of black flies,

mosquitoes, snakes, and even bears, all which have been encountered by berry-pickers upon this spot, as busy and as active as themselves, gathering an ample repast from Nature's bounteous lap. And oh, what beautiful wild flowers and shrubs grew in that neglected spot !”

* * *Leaflets 5 ; digitate, or cut into lobes, or ternate, rarely pinnate ; stem mostly biennial, woody.*

2. (1.) *R. suberectus* (Upright Bramble.) — *Stem* roundish, nearly erect, not rooting, nearly smooth ; *prickles* few, small, chiefly confined to the angles, and not intermixed with bristles ; *leaflets* quinate, or sometimes pinnate without close white down underneath. This plant, which is common in boggy woods and hedges, bears its white rose-like flowers from June to August, and produces its red fruits in autumn till the frosts destroy them. Few families of plants have been more variously arranged than the brambles, most botanists recording a large number of species, while others consider that these so-called species are but different forms of the same plants, varying only according to circumstances. Mr. Babington, in his “Manual of Botany,” describes forty-three species of *Rubus*. Dr. Bell Salter considers that there are twenty-three species, and many botanists divide them into a larger number than either of these writers. In that valuable work, “The British Flora,” by Sir William Jackson Hooker and Dr. Arnott, the following remark occurs on this

subject, "We are almost quite convinced, *practically*, not only because the characters taken from the young shoots, and disappearing when they are older and begin to blossom, are not permanent, but because none of the reputed species of the shrubby Brambles are either anatomically or physiologically distinct, all passing into each other without any fixed assignable limit; and, *theoretically*, from a consideration of what is requisite to constitute a difference between the other European species of *Rubus*, that all of the present section are mere varieties, approaching on the one side to *R. idæus*, on the other to *R. saxatilis*, with both of which many fertile and permanent hybrids may have been formed and are still forming." These authors have, therefore, given what they consider the more prominent forms or races, numbering them as if only constituting a single species, and have indicated how these ought probably to be reduced to four types, an arrangement which is followed in this work.

In examining the descriptions it will be necessary to remember that by stem is meant the barren root-shoot, and the prickles and leaves, when not otherwise described, must be understood as those upon that shoot.

2. (2.) *R. fruticosus* (Common Bramble).—*Stem* arched, rooting, angular, furrowed, and nearly smooth; *prickles* slender, uniform, confined to the angles of the stem, and not intermingled with bristles; *leaflets* quinate, with close white down underneath. The beautiful snowy or delicate pink flowers of this bramble are to be found on most hedges from June till the end of summer, often

contrasting with the dark crimson or black berry clustering on the same bough. When winter comes the long trailing shoots are yet clad with leaves, exhibiting the tinge of purple and deep brown, or of that red colour, which combined with the fruit to give the name of *Rubus* to the genus, with here and there a leaf green as the spring foliage, and whitened beneath with down. We have all in childhood eaten the ripened fruits, for what so "plentiful as blackberries." They are very wholesome, and often so juicy as to deserve the French provincial name applied to one of the species, *Pinte de vin*. The ancients considered both fruit and flowers efficacious against the bite of the serpent, but blackberries are now little valued save by country children, though they are occasionally made into puddings and tarts, or boiled with sugar, when they form a wholesome and pleasant preserve. Blackberries were also formerly considered as of valuable medicinal uses, especially in complaints of the throat and mouth, and bramble-roots boiled in wine were prescribed by the Roman physicians as one of the best astringents. The old English herbalists, who received many of their notions of the uses of plants from the old Roman writers, considered every part of the bramble as affording medicines, which, variously prepared, relieved various forms of human suffering. Turner, one of our oldest writers on plants, says, "The bramble bindeth, drieth, and dieth heyre," and a general belief prevailed that the bramble was so astringent, that even eating its young shoots as a salad would fasten teeth which were loose. Many a poet, like Cowper and Robert Nicholls, has referred to the pleasure of gather-

ing the blackberries in early days, and Elliot has a beautiful little poem addressed to the plant :—

“ Thy fruit full well the school-boy knows,
 Wild bramble of the brake,
 So put thou forth thy small white rose,
 I love it for his sake :
 Though woodbines flaunt, and roses blow
 O'er all the fragrant bowers,
 Thou need'st not be ashamed to show
 Thy satin-threaded flowers ;
 For dull the eye—the heart is dull,
 That cannot feel how fair,
 Amid all beauty beautiful,
 Thy tender blossoms are.

“ How delicate thy gauzy frill,
 How rich thy branching stem,
 How soft thy voice when winds are still,
 And thou singest hymns to them ;
 While silver showers are falling slow,
 And, 'mid the general hush,
 A sweet air lifts the little bough,
 Lone whispering to the bush.”

Brambles in some cases prove injurious to hedges by climbing about more valuable plants, and hindering their growth ; but, on the other hand, they protect more delicate shrubs and herbs, and shield them from rough winds. The shoots are very tough, and are used for binding down the cottage roof, and the sods of the lowly graves. Sometimes they are wound among straw fences in the farm-yard, or serve to bind the hayrick and bee-hives ; and straw-mats, and various other articles of domestic use, are held together by their flexible twigs. Badgers are said to be very fond of blackberries, and to thrive well upon them, though the acorns which

may be strewn near them may prove as great a benefit to these animals as the smaller fruits. The green boughs are of great use in dyeing wool, silk, and mohair, black; and silk-worms seem to like the leaves of this plant as well as those of the mulberry, and to thrive as well upon them. A small fungus, the Bramble Puccinia (*Puccinia Rubi*) often forms sooty patches in autumn on their under surfaces. A double flowering variety of the Bramble is very ornamental to the garden and shrubbery.

2. (3.) *R. rhamnifolius* (Buckthorn-leaved Bramble).—
 “*Stem* arched, rooting, nearly glabrous; *prickles* confined to the angles of the stem, uniform, without glandular bristles; *leaflets* quinate, paler underneath, but not with close white down.” This plant, which is in flower at the same season as the bramble last described, differs very little from it. It is found in thickets, woods, and hedges, and gives its glossy black fruits in autumn to child and bird:—

“It springs without our bidding
 With its flowers of faintish blush,
 And hangs its glossy berries
 To meet the infant’s touch;
 And as the daisies in the Spring
 Are little children’s flowers,
 So blackberries are all their own
 In the Autumn’s breezy hours.

“I have seen the village children,
 From their infant labours freed,
 In their young gladness wandering on
 Through many a pleasant mead;
 And at each loaded bush they set
 The infant on the ground,
 And soothed it with the tones of love
 Till the ripe fruit they found.”

2. (4.) *R. carpinifolius* (Hornbeam-leaved Bramble).—“*Stem* arched or prostrate, rooting, hairy; *prickles* confined to the angles of the stem, uniform, without glandular bristles; *leaflets* quinate or ternate, without close white down underneath.” This plant grows in woods and thickets, flowering in July and August. The authors of the “British Flora” remark, “This and the last appear to be merely the two extremes of the same form, between which there are, it is to be feared, many intermediate states.”

2. (5.) *R. corylifolius* (Hard-leaved Bramble).—“*Stem* arched, rooting, nearly smooth; *prickles* scattered, nearly equal, without glandular hairs or bristles; *leaves* quinate or ternate, without close down underneath.” This plant, which grows in hedges and thickets, flowering in July and August, is scarcely distinct from the two preceding.

2. (6.) *R. glandulosus* (Glandular Bramble).—“*Stem* arched, or decumbent, rooting, hairy, not glaucous; *prickles* scattered, unequal, with numerous glandular hairs and slender prickles; *leaflets* quinate or ternate, without close white down underneath; *calyx* erect, spreading, or turned backwards in fruit.” This species, which is found in woods, thickets, and hedges, is in flower during July and August.

2. (7.) *R. coësius* (Dewberry).—“*Stem* prostrate or arched, rooting, more or less glaucous; *prickles* scattered, unequal, with (sometimes very few) glandular hairs; *leaflets* ternate or quinate, without close white down underneath; *calyx* closely clasping the fruit.” This low-growing bramble is not uncommon, trailing

over our field borders or heaths, in thickets, or on hedge-banks. The fruits are few and large, less compact but more juicy than the blackberry, and half enclosed in the calyx. When quite ripe they are black, but are often so thickly covered with a pale blue powdery bloom as to have a greyish tint. They grow either singly or two or three together, and not in dense clusters like the blackberry. Clare, a poet, whose descriptions of nature are unsurpassed in truthfulness, describes the "sun-burnt cow-boys" as searching for them where they are often to be found—beside the brook :—

“ The pithy bunch of unripe nuts to seek,
And crabs sun-redden'd with a tempting cheek,
From pasture hedges, daily puts to rack
His tatter'd clothes, that scarcely screen the back,—
Daub'd all about as if besmear'd with blood,
Stain'd with the berries of the brambly wood,
That stud the straggling briars as black as jet,
Which when his cattle lair he runs to get ;
Or smaller kinds, as if begloss'd with dew,
Shining, dim powder'd, with a downy blue,
That on weak tendrils lowly creeping grow,
Where, choked in flags and sedges, wandering slow
The brook purls simmering its declining tide,
Down the crook'd boundings of the pasture side ;
There they to hunt the luscious fruits delight,
And dabbling keep within their charge's sight,
Oft catching prickly struttles on their rout,
And miller-thumbs, and gudgeons, driving out,
Hid near the arched brig, under many a stone
That from its wall rude passing clowns have thrown.”

Even in Australia, where fruits are so few and so tasteless, the bramble fruit has a somewhat pleasant flavour, though rather acid, and more resembling that of the cranberry. It is prized by the colonists, and used for

tarts. The Tasmanian Bramble is the *Rubus Gunianus* of the botanist. It is a small species, having yellow flowers, and is found commonly at the summits of all the mountains as well as in many level parts of that country. "Its mode of growth," says Backhouse, "is something like that of our dewberry, and it is a creeping plant, seldom exceeding a few inches in height, but covering patches of ground several feet in extent, and flourishing on a soil chiefly composed of decayed wood. The fruit is of a fine colour, and formed like that of the Arctic bramble. It is concealed by the leaves, which densely cover the ground, and is also partially hid under the light soil."

* * * *Leaflets ternate, stem herbaceous, or nearly so.*

3. *R. saxatilis* (Stone Bramble).—*Stems* slender, rooting, nearly without prickles or bristles; *flower-shoots* erect, with a panicle of few flowers; *leaflets* ternate, slightly downy. This bramble is found chiefly in the north of this kingdom, where it grows on stony mountainous places. Its leaflets are egg-shaped, and are sometimes only two in number. The flowers are minute, appearing from June to August, and are of a greenish yellow colour. The fruits are large, bright red, and few in number.

4. *R. árticus* (Arctic Bramble, or Strawberry-leaved Bramble).—*Stems* erect, not rooting, without prickles or bristles; *petals* roundish, notched; *flower* terminal and mostly solitary; *leaflets* ternate; slightly downy, and bluntly serrated. This bramble is well known in the north of Europe, and its fruit is highly prized. It is

recorded as growing in the Isle of Mull, and on Ben Ghlo, in Athole. Sir William Hooker and Dr. Arnott remark of this species:—"The only place in Scotland which agrees with the foreign localities of this plant, is in the low moors near the station of *Menziesia cærulea*, where stood the old Caledonian forest; there only need it be looked for, the two spots above given we have searched in vain for it."

The Arctic Bramble is found on mountainous turfy bogs; its stems are from four to six inches in height, and its flowers large and rose-coloured, expanding in June. The flavour of the fruit is delicious, partaking both of that of the raspberry and strawberry. In Sweden a very rich wine is made of these berries. "The nobility in Norlandia," says Linnæus, "cause to be made of the berries syrup, jelly, and bramble wine, which are partly consumed by themselves, and partly sent to their friends at Stockholm, as the most choice and delicious dainties;" and, indeed, among all the wild berries of Sweden, these seem to hold the first place. Linnæus, in his "Flora Lapponica," records his obligations to this fruit. "I should be ungrateful," he says, "to this excellent plant, which has so often refreshed me with the nectareous juice of its berries when almost overcome with hunger and fatigue, were I not to give a full description of it." All travellers in the north of Europe speak highly of the worth of this fruit, and of the somewhat less delicious Cloudberry. The berries of the Arctic Bramble are not only highly flavoured, but so fragrant, that if only a few be gathered and placed in a saucer and brought into the house, they perfume the

whole room. They are of a dark red colour, and about the size of the common raspberry, but the plant itself is so diminutive that an entire shrub, with all its branches, leaves, and fruit, was placed by Dr. E. D. Clarke within a phial, holding about six ounces of alcohol, in which state it was preserved with even its colours unaltered, and might be so, this traveller remarks, for any length of time, provided it be kept from the access of external air. This author adds, that it is found only in the southern provinces of Sweden. A few plants occur in Dalecarlia, and it grows occasionally in Finland.

* * * * *Leaves simple.*

5. *R. Chamæmorus* (Mountain Raspberry, or Cloudberry).—*Stem* herbaceous, without prickles, 1-flowered; *leaves* lobed and plaited. This is a very distinctly marked species of Bramble, growing in the mountainous parts of England, Wales, Scotland, and Ireland. It has in June beautiful large white flowers, often delicately tinted with rose colour, having their stamens and pistils on separate plants. The stems are about half-a-foot high, creeping like the stems of the raspberry and Arctic species.

The delicious fruits of this bramble are prized in all countries in which they grow, and, though rare in this kingdom, are plentiful in the north of Europe. The bogs near the water in some parts of Lapland are covered with Cloudbberries, and Dr. Clarke relates that from a spot thus situated, he and his Swedish interpreter gathered, in little more than an hour and a-half,

a large basketful of the fruit. "In its natural state," says this writer, "no fruit looks more beautiful. We endeavoured to procure a small cask of it to send to England, but wanting a sufficient quantity of sugar, the acetous fermentation took place, and the whole mass was spoiled. Wherever we walked near the river we found whole acres covered with its blushing fruits, hanging so thick that we could not help treading on them. As they ripen they lose their crimson hue, and turn yellow, when the flavour of the fruit is not so refreshing to the palate. They are always most delicious when they have been cooked. In their unripe state they resemble in taste those diminutive stunted apples gathered from Codlin-trees, which are called 'crumplings.' The larger berries are as big as the top of a man's thumb." Our traveller, who, while staying at the house of a Lapland minister, was seized with a fever, remarks, that in the evening two of the children came into the room, bringing with them two or three gallons of Cloudberries, which grew so abundantly near the house that it would have been easy to gather bushels of the fruit. "Little," says this traveller, "did the author dream of the blessed effects which he was to experience by tasting of the offering brought by these little children, who, proud of having their gifts accepted, would gladly run and gather daily a fresh supply, which was as often blended with cream and sugar by the hands of their mother, until at last he perceived that his fever rapidly abated, and his spirits and appetite were restored; and when sinking under a disorder so obstinate that it seemed to be incurable, the blessings of health were restored to him when



he had reason to believe he should have found his grave. The symptoms of amendment were almost instantaneous after eating these berries." The Laps make a jelly of Cloudberry by boiling them with fish, and the Swedes preserve them with sugar in various ways. In the northern parts of the Gulf of Bothnia, especially about Tornea, the fruits are commonly collected and sent in the form of a conserve to Stockholm, where they are used as a sauce for meat, and mingled with soup. Casks are also sent to that city filled with the roots of this bramble, from which vinegar is made.

10. AGRIMÓNIA (Agrimony).

1. *A. Eupatória* (Common Agrimony).—*Leaves* pinnate; smaller *leaflets* alternating with the larger ones, strongly serrated, downy underneath, and the terminal one stalked; *spikes* long, with distant flowers. Plant perennial. During the months of June and July this pretty wayside flower can hardly fail to arrest our attention by its tapering spikes of yellow blossoms, which have a faint odour of lemon, or as some say of apricots, an odour becoming more powerful if they are bruised. Gerarde, and the herbalists of his day, praise the great virtues of the Agrimony. Michael Drayton mentions it in his "Muse's Elysium" among several other supposed herbs of virtue:—

"Next these here Egremony is,
That helps the serpent's biting;
The blessed Betony by this,
Whose cures deserving writing

This All-heal, and so named of right,
New wounds so quickly healing;
A thousand more I could recite
Most worthy of revealing."

Few plants are, in our own days, in more repute as a tonic than the Agrimony. The village doctors and doctresses yet prescribe it, and the author has known it to be taken in cases of debility with apparent benefit, for the herb is doubtless somewhat tonic in its properties, though less so than that common medicinal plant, the red centaury. The Agrimony is an ingredient in most of the herb teas which have from time to time been recommended to public notice. A decoction of the plant is also commonly used as a gargle for diseased throat, and the notion that it was good for a disordered liver once gave it the familiar name of Liverwort. Coughs, agues, gout, and a variety of ills, were thought by the old herbalists to be ameliorated by syrups and salves made of the Agrimony; and the native of any other country, who should read their pages, while he wondered at the prevalence of serpents in the land, might at least congratulate the physicians of the age that herbs to cure their "biting" were to be found in every wood. Doubtless, in times when forests were more frequent than now, the rambler or the woodman might be more often bitten by the viper or adder, the only native reptile whose bite is poisonous; but in those days of more imperfect knowledge, the innocent snakes and slow-worms were probably believed also to have the power of inflicting deadly wounds, so that the apparent cures wrought by these herbs would be numerous.

The Agrimony contains tannin, and has been used in dressing leather; it also dyes wool of a yellow colour. It is *L' Aigremoine* of the French, and *Der Odermennig* of the Germans, while the Dutch call it *Agrimonie*. The root in spring is sweet-scented.

11. ALCHEMÍLLA (Lady's Mantle).

1. *A. vulgáris* (Common Lady's Mantle).—*Leaves* kidney-shaped, plaited, with from 7 to 9 lobes, blunt, serrated; *flowers* in loose divided clusters. Plant perennial. This herb is more attractive by the beauty of its foliage than by the small but pretty flowers, which from June to August deck it with yellowish green petals. Purton, in his "Midland Flora," remarks, "I agree with Dr. Abbot, the author of the 'Bedford Flora,' that this is one of the most elegant of the native plants," and though more showy and brilliant flowers are to be seen, yet most people would agree with this opinion. The stem is about a foot high, and the foliage, which is very large for the size of the blossom, is rendered of a grey green by the quantity of soft silky hair upon it. The plant is not uncommon on hilly pastures in the north of this kingdom, growing in similar places throughout nearly the whole of Europe. It bears in Sweden, as in our country, a name which refers to the Virgin Mary, for it is there called *Maria Kapa*. The French term the plant *L' Alche Mille*, the Germans *Der Sinau*, the Dutch *Leuwenvoet*. In the upland pastures, where it abounds, it is eaten readily by sheep as well as by some other animals. Some writers say that the plant is not relished by cows, but Haller, in his "Iter Helveticum," remarks, that the

extraordinary richness of the milk in the dairies of the Alps is attributed altogether to these animals having fed upon this plant and the Ribwort Plantain. In Gothland a tincture is made of its leaves for spasmodic or convulsive diseases. In an epidemic complaint of this kind in 1754, a medicine made from this Lady's Mantle was considered very efficacious, and it had long been in repute as a remedy in milder forms of disease, and was also, though with little reason, praised as an outward application to wounds. Several species of the *Alchemilla* are esteemed as tonics, but, as Professor Burnett observes, they have been prized above their deserts. The Arabian physicians have a very high opinion of the remedial virtues of this common species, and Hoffman and others have affirmed that it has the power of restoring beauty and freshness to the faded complexion. It is called *Alkemelyeh* by the Arabs, and was formerly prized by the alchemists as an ingredient in their preparations.

2. *A. alpina* (Alpine Lady's Mantle).—*Root-leaves* digitate, with from 5 to 7 divisions, which are blunt and closely serrated at the ends, and white and satiny beneath. Plant perennial. Two varieties occur of this pretty plant, which are by some writers described as species. In the first the leaflets are quite distinct to the base, and in the second the leaflets are joined together to nearly a third of their length. The former is sometimes called *A. argentea*, the latter *A. conjuncta*. The name of *argentea* would not be inapplicable to any form of the species, for never was leaf more silvery than this, nor have we any native plant the foliage of which is more beautiful. Like many other leaves rendered

white by silky down, they long preserve their beauty even in the herbarium. So glossy is the foliage, that the under surface is like satin, and is so lustrous as to have quite a metallic appearance. This Alpine species grows high up on the mountains at the north of England and Scotland, and is very frequent in the Highlands, as well as on the heights of Switzerland, and other European countries. It is supposed by Lightfoot to aid considerably in giving the peculiarly excellent flavour to the Highland mutton.

3. *A. arvensis* (Field Lady's Mantle, or Parsley Piert).—*Leaves* palmate, 3-cleft; *lobes* wedge-shaped, deeply toothed at the end; *stem* prostrate or ascending; *flowers* sessile, axillary. Plant annual. This is a common little plant everywhere in fields and waste places, often growing on the wall beside Whitlow-grass, but not flowering until May, when that blossom has withered. It continues in bloom till August. The branches and leafy stems often spread over the soil, and are five or six inches long. The small tufts of greenish flowers are almost hidden among the leaves and their large stipules.

12. SANGUISÓRBA (Burnet).

1. *S. officinális* (Great Burnet).—*Leaves* pinnate, with about 13 leaflets, which are oblong and heart-shaped, stalked, blunt, and coarsely serrated; *spikes* egg-shaped, or in one variety of the plant long and cylindrical. Plant perennial. This Burnet has from June to September large oblong heads of flowers, of a dull purple colour, standing on a much-branched stem, from one to three feet high. Cattle are very fond of this plant, which is

not uncommon in moist pastures. It had the old name of Bloodwort, not so much from its colour probably as from its supposed virtues as a styptic. The people of Siberia are said to eat the roots.

13. POTÉRIUM (Salad Burnet).

1. *P. Sanguisorba* (Salad Burnet, or Burnet Bloodwort).—*Stem* slightly angular, lower part often downy; *leaves* pinnate, with numerous small serrated leaflets, which are smooth or slightly hairy beneath; *calyx* of the fruit smooth, and marked with a net-work; *flowers* in roundish heads, the upper ones in each head bearing crimson tufted pistils; the lower ones from 30 to 40 stamens. Plant perennial. This plant as early as June has its pistil bearing blossoms open, the purplish crimson styles with their stigmas looking like little richly tinted brushes long before the flowers bearing stamens expand. These latter are fully blown a week or two later, and the plant is then in flower till the end of July. The lower flowers, which contain the stamens, present a very elegant appearance, as their long filaments hang all around the oval head. The stem is about a foot and a half in height, often much tinged with red, while the leaf-sprays which crowd around its base are bright green and of an elegant form. To these leaves the plant owes its name of Salad Burnet, for their flavour, so like that of the cucumber, induced our forefathers to eat them in their salad, and they are still gathered for this purpose on the Continent. In France the plant is called *La Pimprenelle*, and the Germans call it *Der Pimpernelle*. Both this and the Great Burnet were formerly planted

as pasturage for cattle, and the "Sweet Burnet" is praised by the poets of Queen Elizabeth's time. It has of late years been again cultivated to some extent by farmers as food for cattle, as its very luxuriant growth in the early spring affords a good quantity of herbage, and it may be mowed thrice during the summer, but it was not found to succeed, and it was then said that cattle were not fond of it. Mr. Purton, in his "Flora of the Midland Counties," remarks on this subject, that on Salisbury Plain, between that place and Everley, this plant forms almost the whole staple of herbage over a great extent of that most excellent sheep-walk; and the failure in other places may, he thinks, be owing to the cultivators having selected a wrong soil for its growth, as the plant never grows naturally on any other than chalky ground. Valuable as it is for sheep, it is probable, however, that horned cattle do not like it.

This species of Burnet seems to be that which has acquired so much celebrity as the toper's plant, for it was customary to infuse it in various liquors, and with the Borage and some other flowers it helped to compose that celebrated beverage, called a cool tankard. The old herbalists, who called it *Pimpinella* and *Bipula solbergrella*, prized it very highly. "It is," says Culpepper, "an herb the sun challengeth dominion over, and is a most precious herb, little inferior to betony; the continual use of it preserves the body in health, and the spirits in vigour, for if the sun be the preserver of life, under God, then his herbs are the best in the world to do it." He adds, "It is a friend to the heart and liver. Two or three of the stalks put into a cask of wine,

especially claret, are known to quicken the spirits, refresh and clear the heart, and drive away melancholy. It is a special help to defend the head from noisome vapours, and from infection of the pestilence."

The author of the "Journal of a Naturalist" remarks, "The common Burnet of our pastures in a remarkable degree possesses the faculty of preserving its verdure, and flourishing amid surrounding aridity and exhaustion. It is probable that these plants and some others have the power of imbibing that insensible moisture which arises from the earth even in the driest weather, or from the air which passes over them. The immense evaporation proceeding from the earth even in the hottest season supplies the air constantly with moisture, and as every square foot of this element can sustain eleven grains of water, an abundant provision is made for every demand." The same writer remarks, that he has seen the Snapdragon in a hot dry summer, when vegetation in general was burnt up and withered away, long retain its verdure on the parched walls.

14. RÓSA (Rose, Dog-rose, Sweet Briar).

* *Prickles slightly curved, and intermixed with bristles.*
Bracts large.

1. *R. Dicksóni* (Dickson's Rose).—*Shoots* bristly; *prickles* scattered, slender, awl-shaped; *leaflets* oval, twice serrated, hoary; *sepals* long, simple, equal; *fruit* egg-shaped, somewhat up-shaped. Plant perennial. This Rose was discovered in Ireland by Mr. J. Drummond, but though usually enumerated among our British species, is not thought to be a native.

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Rosa chinensis (L.) DC. *Rosa chinensis* (L.) DC. *Rosa chinensis* (L.) DC. *Rosa chinensis* (L.) DC. *Rosa chinensis* (L.) DC.

2. *R. cinnamómea*.—*Shoots* bristly; *prickles* few, slender, and awl-shaped; *leaflets* lanceolate, somewhat oblong, serrated, downy, and glandular beneath. Plant perennial. This Rose has been found in a wood in Yorkshire, but is a very doubtful native.

* * *Prickles slightly curved; bracts small, or none.*

3. *R. spinosíssima*.—*Prickles* very numerous and crowded, mostly straight, of various sizes, and intermixed with bristles; *leaflets* serrated, their disk without glands; *calyx* simple; *fruit* nearly globular, erect. This, though not one of the prettiest, ranks certainly among the most fragrant of our wild Roses, but it is by no means generally diffused. It is a thick bush, from two to four feet in height; its dark purplish brown stems and branches being so prickly, that it is a difficult matter to gather a bough of its delicate white roses. These are small and numerous, often cream coloured, rarely snowy white, and no less rarely having a blush of faint red on their petals. The small roundish buds, tinged with a streak or two of deep red, are exceedingly pretty. The plant often grows on open sandy heaths, lending its roses to grace the nosegay of wild thyme and other heath flowers; and on the chalky banks of Kent it thrives so well as to form a good thick hedge-row, while it is almost the only British rose which may be found on the sandy sea-shore, where it often flourishes, though it becomes more dwarfed and spreading in its mode of growth. Gerarde calls it Pimpernel rose, not because it in any way resembles the flower which we now call Pimpernel, but because its leaves are much like those of

the Burnet, which, as has been mentioned, was called Pimpernel by the older writers. The black fruit, the Cat-hip of country people, when fully ripe, is very juicy, and the expressed juice, diluted with water, dyes silk of a peach colour, or, with the addition of alum, renders it of a rich violet hue, but it has little effect on muslin or linen. The leaves have often spots of a bright yellow hue upon them, which are caused by the fungus, called Golden Uredo (*Uredo aurea*). Scarcely any species of Rose affords a greater number of varieties than this to the cultivator of flowers. More than two hundred kinds are trained by our gardeners under the name of Scotch Roses.

4. *R. rubella* (Red-fruited dwarf Rose).—*Stem* and *branches* thickly crowded with bristles; *prickles* few, straight, and slender; *leaflets* simply serrated, naked, their disk without glands; *fruit* oblong, or cup-shaped, and pendulous. Plant perennial. This is a rare species, and a doubtful native. It is found in a few places on the sandy shores of Northumberland, and on the borders of the Dee at Abergeldy. It flowers in June, and its fruit is of a brilliant red colour.

5. *R. Hibernica* (Irish Rose).—*Shoots* and *branches* bearing scattered prickles, intermixed with a few bristles; *leaves* simply serrated, hairy beneath, their disk without glands; *calyx* leaf-like and pinnate; *flowers* mostly solitary, or two or three together. Plant perennial. The localities of this rare rose are various places in the counties of Derry and Down in Ireland. Its fruit is crimson. It flowers in May, and continues for some months in blossom.

6. *R. Wilsoni* (Wilson's Rose).—*Prickles* crowded

and straight, intermixed with glandular hairs; *leaflets* serrate, and hairy on both surfaces, their disk without glands; *fruit* egg-shaped, somewhat cup-shaped. This scarlet-fruited species is found on the banks of the Menai, near Bangor, and its small white flowers expand in June and July.

7. *R. involúta* (Prickly unexpanded Rose).—*Prickles* crowded, straight, and intermixed with glandular bristles; *leaflets* doubly serrated, hairy, glandular beneath. Plant perennial. This dwarf rose is found in the Hebrides and Western Highlands, flowering in June.

8. *R. Sabíni* (Sabine's Rose).—*Shoots* and *branches* bristly; *prickles* scattered, straight, or nearly so; *leaflets* twice serrated and hairy, glandular beneath; *sepals* somewhat pinnate; *fruit* globose, dark red, and bristly. Plant perennial. Two varieties of this rose occur, which have been by earlier writers described as distinct species. In one, the prickles are more numerous, the leaves very hairy, and the sepals almost simple; in the other, the larger prickles are hooked, and the sepals simple. This rose is found in woods, and is almost entirely confined to the north of this kingdom. It is very similar to the last species.

* * * *Leaves glandulose. Prickles nearly uniform; bristles few or none.*

9. *R. villósa*.—*Prickles* nearly straight; *leaflets* doubly serrated, downy, glandular; *calyx segments* slightly pinnate. Plant perennial. This rose, which is found in the northern counties of England, has its sepals remaining after the fruit is ripened, and closing down upon it. It flowers during June and July, and has reddish

blossoms. The plant is remarkable for its downy nature, and is sometimes called the Apple-bearing Rose, from its nearly globose fruit.

10. *R. tomentosa* (Downy-leaved Rose).—*Prickles* mostly uniform, straight, or curved; *leaflets* twice serrated, downy, glandular; *calyx segments* pinnate. Plant perennial. This species, which is not uncommon in hedges and thickets, has its large red roses in June and July. It is remarkable for its stout and long shoots and the downiness of its leaves, which are almost hoary. It is by many botanists considered to be a variety of the foregoing.

11. *R. inodora* (Slightly-scented Briar).—*Prickles* uniform and curved; *leaflets* doubly serrated, hairy, glandular beneath; *sepals* pinnate, rarely remaining attached to the *fruit*, which is oval, or nearly globular. The odour of the shrub is much like that of the Sweet Briar, but fainter. A variety occurs in which the calyx is much larger, and remains on the ripened hip; and in another form of the plant, the leaves are hairy on both sides. The flowers of this Briar are pink, expanding during June and July in woods and hedges, chiefly in the southern counties of England.

12. *R. micrantha* (Small-flowered Sweet-Briar).—*Prickles* uniform, curved; *leaflets* twice serrated, hairy, glandular beneath; *calyx segments* long and pinnated, not remaining on the small egg-shaped *fruit*. Plant perennial. This plant is found on open bushy heaths, and in hedges and copses chiefly at the south of England, as well as in the south of Ireland. Though a local plant, it is abundant in some parts of Sussex and Surrey, bearing its small pink flowers in June and July.

* * * * *Prickles, some hooked, some straight, intermixed with bristles ; leaves with glands.*

13. *R. rubiginósa* (True Sweet-Briar). — *Prickles* numerous ; *leaflets* twice serrated, hairy, glandular beneath, mostly rounded at the base ; *calyx* pinnate, remaining attached to the ripe fruit ; *fruit*, when young, pear-shaped. Plant perennial. Every one who has breathed the air perfumed by the odour of the Sweet-Briar, must regret that the shrub, with its pretty pink roses, is not more common on our way-sides. It grows chiefly in the south of England, on open bushy places, especially on chalky soils, but it is far from being a frequent plant, except in gardens, where it is commonly and deservedly cultivated both for beauty and fragrance. It has been planted there for many centuries ; for, in days when many of our modern roses were unknown, this could be found in the garden of the monastery, or the “pleasure garden of the gentlewoman.” Parkinson who wrote his “Garden of Flowers” in 1629, enumerates it among those which he prized. “The great varietie of Roses,” he says, “is much to be admired, being more than is to be seene in any other shrubby plant that I knowe, both for colour, forme, and smell. I have, to furnish this garden, thirty sorts at the least, euey one notably different from the other, and all fit to be here entertained, for there are some others, that being wilde and of no beautie or smell, we forbear, and leave to their wild habitations.” Not only in our own country, but almost throughout Europe, this fragrant shrub is trained for garden hedge-rows, and it is thus used

extensively in Australia. "One of the most charming peculiarities of the cultivated scenery of Tasmania," says Colonel Mundy, "is the Sweet-Briar-hedges. To-day we were driving nearly the whole distance between them. In a great many places they were ten or twelve feet high, and the same in width, spangled all over, and scenting the air with fifty thousand delicate little roses. I noticed one or two thickets of this plant, which must have been forty or fifty feet in diameter, and twelve in height." This writer remarks, that about Hobart Town, both in the town-gardens and country enclosures, the delicate scent of these roses absolutely monopolises the air as a vehicle for its peculiar perfume; the closely-clipped Mint borders, which in these gardens sometimes supply the place of Box, however, overpower even the Sweet-Briar, as well as every other scent of the garden.

This rose was introduced by the colonists, for although roses are to be found in almost every country of the Northern Hemisphere, both in the Old and New World, from Sweden to the north of Africa; from Kamschatka to Bengal, and from Hudson's Bay to the mountains of Mexico, yet neither in Australia nor in South America is there any native rose. There is a plant, called the Rose, in Australia, a description of which we may quote from the interesting work before referred to, "Our Antipodes." "This native flower," Colonel Mundy tells us, "has the colour, but no other resemblance to the European Queen of Flowers. It is one of the few bush-flowers possessing any odour. Wafted on the passing gale, it commends itself pleasantly to the senses, but, strange

enough, on close acquaintance, there mingles with the rich perfume a most powerful and nauseous odour, which renders the flower little adapted for the boudoir." "The native Rose is," says the writer, "I believe, nearly allied to the *Diosma* of the European greenhouse, to the scent of which some noses have a strong objection. A bouquet of bush-flowers is highly ornamental to the *épergne* of the dinner-table, for they do not soon fade, and keep better out of water than it; but he who would implant them on the bosom of beauty, will never desire to see them worn in the ball-room, for, with scarcely an exception, they are hard and thorny as the Holly itself." The native Australian rose is a *Boronea*, and it shoots up its slender stems amongst the roughest rocks, its wax-like petals exhibiting every shade between deep pink and snowy white.

Our Sweet-Briar has bright green foliage, and its flowers are of deeper pink than most of our wild roses. They expand in June and July. It is the Eglantine of the old poets. Chaucer calls it Eglantere:—

"Where she sate in a fresh greene laurey-tree,
On that further side even right by me,
That gave so passing a delicious smell,
According to the Eglantere full well."

Milton, who speaks of the "Twisted Eglantine," evidently refers to the Woodbine or Honeysuckle, but this was probably a mistake of the poet, as that flower does not seem ever to have been so called. Shakspeare alludes to the sweetness of the leaf of the Eglantine; and Spenser, referring to the Sweet-Briar, says:—

"Sweet is the Rose, but grows upon a breere,
Sweet is the Eglantine that pricketh neere."

It seems always to have been a favourite flower, and is often alluded to in old works. In the "Queen-like Closet," or "Rich Cabinet," by Hannah Woolley, published in 1681, we find various directions for adorning houses with this and other flowers, and are told how to "dress up a chimney very fine for the summer," when a packthread dipped in bees'-wax and rosin, and fastened to the inner part of the chimney, was to be stuck all over with green moss and orpin flowers, and Sweet Bryer flowers, and sprigs were to be stuck on as if they grew. The orpine sprigs, this lady tells her readers, will grow for two months, and the Briar was to be renewed once a-week, but the moss will last all the summer.

14. *R. sépium* (Small-leaved Sweet Briar).—*Prickles* numerous; *leaflets* small, doubly serrated, hairy, acute at each end, glandulose beneath; *calyx* pinnate. Plant perennial. This is a rare species, flowering in June and July. Its recorded habitats are near Bridport, in Warwickshire, and Heyford, Oxfordshire.

* * * * * *Shoots mostly without bristles; leaves
without glands.*

15. *R. canína* (Common Dog-rose).—*Prickles* uniform, hooked; *leaves* smooth, or slightly hairy; *calyx-segments* pinnate, and not remaining attached to the fruit; *styles* distinct. A number of varieties of this shrub are found; in one, the leaflets are keeled, and the serratures compound; in others, they are flat, and are more or less hairy. These have by various writers been described as distinct species. This is, above all others, the wilding



rose of England, for it is common almost everywhere, its deep pink or delicate blush coloured young roses and buds gleaming among the bright sprays of leaflets, and shedding on green lane and sunny bank, or shady wood, their sweet and rose-like odour. As the flowers expand fully, they become whiter. Few who have passed their early days in the country but can remember spots and occupations such as Clare describes, when alluding to a country maiden :—

“ She eager scrambled the dog-rose to get,
And woodbine flowers at every bush she met;
The cowslip blossom, with its ruddy streak,
Would tempt her furlongs from the path to seek;
And gay long-purple, with its tufty spike,
She’d wade o’er shoes to reach it in the dyke;
And oft was scratching through the briary woods
For tempting cuckoo-flowers and violet-buds.”

Some writers think that the reason why this pretty wilding rose was called by our fathers Dog-rose, is that all the wild roses or briars were termed by the Greeks *Cynorhodon*, because the root was supposed to cure the bite of a mad dog. The Latins, who had the same notion respecting this root, called the wild rose *Canina*, and hence our commonest rose received this name. Another of its names, the Canker Rose, was, however, doubtless expressive of contempt, and was most likely given to this flower because of its inferiority in size and odour to the garden rose. In this contempt the poets of those days fully shared. Shakspeare in more than one place designates it thus :—

“ The rose looks fair, but fairer we it deem
For that sweet odour which doth in it live ;

The canker blooms have full as deep a dye
As the perfumed tincture of the roses,
Hang on such thorns, and play as wantonly,
When summer's breath their masked buds discloses;
But (for their virtue only is their show)
They live unwoo'd and unrespected fade,
Die to themselves. Sweet roses do not so,
Of their sweet deaths are sweetest odours made."

Notwithstanding this opinion, however, this rose is not only beautiful, but even slightly fragrant. It is still called Canker Rose in Devonshire, and probably its old name lingers in the villages of some other counties. The blossom is generally over by July, but occasionally a few stray roses may appear on the bush in autumn, a circumstance which, in former times, was deemed a certain "signe of an insuing plague."

The Dog-rose affords several varieties of garden roses, and some rose-trees of this species attain a great age, the stems acquiring considerable thickness. Many of our hardy rose plants are long-lived, though we have none which is like that wild rose-tree which Humboldt mentions as growing in the crypt of the Cathedral at Hildersheim, said to be a thousand years old; though this writer adds, that it is the root only, and not the stem, which is proved by accurate and trustworthy original documents to be eight centuries old. "A legend," he says, "connects this rose-tree with a vow made by the first founder of the Cathedral, Ludwig the Pious; and an original document of the eleventh century says, that when the Bishop Hezilio rebuilt the Cathedral, which had been burnt down, he enclosed the roots of a rose-tree within a vault which still exists, raised upon

this vault the crypt, which was consecrated in 1061, and spread out the branches of the rose-tree on the walls. The stem, now living, is about twenty-six feet and a half high, and about two inches thick, and the outspread branches cover about thirty-two feet of the external wall of the eastern crypt; it is doubtless of considerable antiquity, and well deserving of the celebrity which it has gained throughout Germany."

When the artist represents the floral badge of our country, he does not often depict our native hedge-rose, for time and custom have sanctioned the practice of choosing one of those full roses, whose petals have been increased in number by culture, or which are the product of other lands. But the rose is always beautiful everywhere, although the blossoms of Eastern countries and of Southern Europe far exceed ours in hue and fragrance. In Greece the lovely and fragrant rose, known in England as the Cabbage-rose, is abundant, and it won for the Isle of Rhodes its name, while in some countries larger, though not sweeter, roses are to be found than these. Meyen tells of some thorny rose-bushes growing in the forests of Missouri, above St. Louis, which ascend to the tops of the highest trees, and adorn them with countless red blossoms.

The Holy Land has beautiful wild roses still growing there; and though doubtless our translators of Scripture have sometimes rendered an original word by rose, which refers to some other flower, and though the rose of Sharon is probably a species of *Cistus*, yet there is no doubt that the Rose itself is occasionally referred to by the prophetic writers, and that when the writer of the

“ Wisdom of Solomon ” said, “ Let us crown ourselves with rose-buds before they be withered,” he referred to the Queen of Flowers. Old Jewish authors tell us that Jerusalem was distinguished from all the other towns of Judæa, as by several other particulars, in having no gardens nor any planted trees, excepting some rose-bushes, which had existed there since the days of the ancient prophets. Beautiful wild roses have been seen at some parts of Palestine expanding as early as the close of March ; and Doubdan relates, that at the end of April roses were so plentiful in that land, that in some religious processions sacks full of rose-leaves were brought, from which handfuls were thrown on the people.

The rose seems to have been cultivated from the most remote time in our own country ; and records tell that early in the thirteenth century King John sent a wreath of roses to his lady, “ *par amour*,” at Ditton. “ Roses and lilies,” says Mr. T. Hudson Turner, “ were among the plants bought for the Royal garden at Westminster in 1276. The annual rendering of a rose is one of the commonest species of quit-rent named in ancient conveyances. The extent to which the cultivation of this flower had been carried between the fourteenth and sixteenth century may be estimated by the varieties enumerated by Lawson—they are red damask, velvet, double Provence rose ; the sweet musk rose, double and single ; and the double and single white rose. The Provence rose was probably first imported in the fifteenth century, when the occupation of France by the English may be conjectured to have caused the introduction of

many fruits and flowers: the marriage of Henry VI. with Margaret of Anjou may be regarded as likely to have brought the Provence rose to our climate."

It would be a vain attempt were we to seek to enumerate all the species and varieties of rose which in our own days render the garden so fragrant and beautiful, growing within the cottage palings, or decking the parterre of the palace, thriving best in the country, far away from smoke, of which they are very intolerant, some of them, as most of the yellow roses, refusing altogether to grow in town gardens. Every lover of flowers knows and prizes the old-fashioned Provence, Cabbage, or hundred-leaved rose (*Rosa centifolia*), with its mossy varieties, and flowers of every hue, from white to a rich dark crimson; and Damask roses, and Cinnamon roses, Bourbon, Musk and French roses, of which the well-known York and Lancaster rose is a variety, all these and many more are familiar plants in gardens. Several of these, like the white varieties of the Provence rose, are best when grown on a stock of the common dog-rose; and the numerous China roses, blooming almost all the year round, and peeping into the cottage window, or climbing up to the eaves, often tower above some of the roses which are but varieties of our common hedge species. Elizabeth Barrett Browning, in her beautiful little poem, "The Deserted Garden," alludes to the flower:—

“ Old garden rose-trees hedged it in,
Bedropt with roses waxen white,
Well satisfied with dew and light,
And careless to be seen.

“Long years ago it might befall,
When all the garden flowers were trim,
The grave old gardener prided him
On these the most of all.

“And lady stately over much,
That moved with a silken noise,
Blush'd near them, thinking of the voice
That liken'd her to such.

“Ah, little thought that lady proud
A child should watch her fair white rose;
When buried lay her whiter brows,
And silk was changed to shroud.

“Nor thought that gardener, full of scorns
For men unlearn'd and simple phrase,
A child would bring it all its praise
By creeping through the thorns.”

All nations have prized the rose. In ancient days even warriors wore wreaths of its flowers, and the Greeks and Romans strewed its petals over their dishes on festive occasions. When Cleopatra invited Anthony to an entertainment, the royal apartments were covered with roses to a considerable depth. The Greeks and Romans planted the shrub on their tombs, or laid upon them its gathered flowers. Aubrey mentions the old custom existing at Oakley, in Surrey, of planting roses in churchyards over the remains of those who were betrothed, which was probably the relic of a Roman custom. But all old poets, and historians of all places, extol the flower, from the “Romaunt of the Rose,” by our own Chaucer, or the “Ghulistan, the Region of Roses” of the East, or that Persian metaphysical poem mentioned by D’Herbelot, “The Rose-bush,” down to the writers of to-day. In Italy, one of the names of

the Virgin Mary is *Santa Maria della Rosa*, for when she came to be worshipped, and to take that place in the human heart which the Saviour alone should occupy, men believed her to be typified both by the Rose of Sharon and the Lily of the Valley. In the "Paradise" of Dante, the Virgin is called the "Mystic Rose," and in ancient times the flower was especially dedicated to her. In pictures of the Madonna, as in the Madonna of the Rose-bush, by Martin Schoen, the back-ground is often formed of a garden of roses. Shepherd, in his work on the Book of Common Prayer, remarks, that Mid-Lent Sunday was anciently called Rose Sunday, and that on that day the Pope carried a golden rose in his hand on the way to and from Mass. In Eastern lands the rose is prized above all flowers, and forms a continual source of allusion in Oriental writings. Various traditions of Scriptural personages, as well as of those of their mythology, are connected with uses of the rose; and many a poet of those sunny climes expresses the fancy which Jami records:—"You may place a hundred handfuls of fragrant herbs and flowers before the nightingale, yet he wishes not in his constant heart for more than the sweet breath of his beloved rose." But we have wandered long from the wilding rose of our woods and hedges, which is sometimes planted for its succulent hips. These are bright red, and have a pleasant acid flavour, which the pulp preserves when dried; and children eat them notwithstanding the silky bristly covering of the seeds, which has been known in some cases to cause painful irritation in the throat. Their profusion on the trees was believed, as Lord Bacon tells us,

to predict a severe winter, and modern rustics yet think so :—

“ The thorns and briars, vermillion-hue,
Now full of hips and haws are seen,
If village-prophecies be true
They prove that winter will be keen.”

The pulp of these fruits, beaten up with sugar, makes the conserve of hips sold by druggists, and a good pectoral medicine is derived from them. In former times, preparations made both from the fruits and petals were supposed to strengthen the heart and memory. An old herbalist says of the Dog-rose, “ It were of small purpose to use many words in the description thereof, for even children with great delight eat the berries thereof when they be ripe, and make chaines and other pretty gcwgaws of the fruit ; cookes and gentlewomen make tarts and such like dishes for pleasure thereof, and therefore this shall suffice for the description.” Parkinson mentions among “ the Physicale vertues ” of this and other roses, that the conserve is useful in “ cooling heate of the eyes,” and we have seen it most effectual for this purpose : this old writer also adds, “ Divers doc make an excellent yellowe colour of the juyce of white roses, wherein some allome is dissolved, to paint or colour flowers, or pictures, or any such things.” Gerarde tells of “ the pleasant meates and banketting dishes ” made of these fruits beaten up with sugar. Rose-water also was apparently used by our ancestors on some occasions ; for in the charges in the account of a dinner of Lord Leiyster, Chancellor of the University of Oxford, in 1570, we have the following

item :—" for iij oz. of rose watere, for boylde meats and leaches and gelleys and drie leches, and march payne, and to wash afore dinnere and afterdinnere, iijss. ix $\mathcal{d}$."

Every one accustomed to gather our wild rose has seen those green mossy tufts on its branches, which in autumn are tinged with crimson, and which on being opened are found to contain small worms. Country people call them Robin's cushions, though the Robin has no more to do with them than the toad with the toadstool. These excrescences are produced by the puncture of an insect, the *Cynips Rosæ*, and the tufts themselves are known as *Bedeguars*. They are very astringent, and have been much used as a styptic, having been employed both externally and internally to check hæmorrhage.

Caroline White, whose thoughts on Flowers, whether expressed in prose or verse, are always true to Nature, has written for our volume this little Poem on the Rose :—

“ Oh bright imperial flower,
Whether by palace bower,
Or graceful wreathing round the poor man's cot ;
Crowning young beauty's head,
Or clasp'd by fingers dead,
Or marking out for Love one heap'd up spot ;

“ Thou hast a brighter store
Of rich and varied lore,
Than unto earthly poet's page belongs ;
Garner'd in each sweet leaf,
Are tales of joy and grief,
Mocking the melody of written songs.

“ Love, to which words are weak,
hy blushing depths can speak,
And in the fond one's absence breathe his sighs ;

Yet as a trumpet's tone,
 In days for ever gone,
 Thou didst awake grim faction's battle cries:

“ Now wreathing hall and bower,
 Now twined for minstrel's dower,
 Or happier still, the chaplet of a bride;
 Now scenting rites divine,
 On some cathedral shrine,
 Or floating votive upon Gunja's tide;

“ Thine was the glowing wreath,
 The pure and perfumed breath,
 That at the banquet of Imperial Rome,
 Temper'd the festive hour
 With a refining power,
 And twined the wine-cup with a thought of home.

“ They cull'd thee for the breast
 Of beauty in her rest:—
 The pulseless rest—that coucheth in the tomb:
 And deck'd her in its trance,
 As for some festive dance,
 With gem-like tears and thy pale marble bloom.

“ Feast, triumph, bridal, bier,
 Joy's smiles, or Sorrow's tear,
 Took radiance from thee, or a deeper woe:
 Emblem of glowing Hope,
 Of life's fair promise broke,
 Of Mirth, of Love, of shatter'd sweets laid low.'

A plant, called the bracteated Dog-rose (*Rosa bracteescens*), found at Ulverston in Lancashire, and at Ambleside in Westmoreland, is remarkable for hairy bracts, which overtop its globose fruit. It is by most writers considered to be a variety of *Rosa canina*; its leaflets are serrated, and downy beneath, and its pink flowers expand in June and July.



16. *R. cæsia* (Glaucous Dog-rose).—*Prickles* hooked ; *leaflets* doubly serrated, and downy, without glands ; *sepals* slightly pinnate. Plant perennial. This is very nearly allied to the common Dog-rose, and is perhaps but a variety of it, though its general appearance more resembles that of *Rosa tomentosa*. It is found in the north of this kingdom, and is in flower in June and July.

17. *R. sýstyla* (Close-styled Dog-rose).—*Prickles* hooked ; *leaves* serrated, and pale green beneath, their disk without glands ; *sepals* sparingly pinnate, not remaining on the fruit ; *styles* united in a column ; *stigmas* forming a round head. Plant perennial. The shoots of this rose are nearly erect, and sometimes attain the height of ten or twelve feet. It is found in hedges and thickets in various counties of England, and more rarely in Scotland and Ireland. Its white flowers expand in June and July.

18. *R. arvënsis* (Trailing Dog-rose).—*Prickles* on the young shoots feeble ; *leaves* smooth, their disk without glands ; *calyx* slightly pinnate, not remaining on the fruit ; *styles* united ; *stigmas* forming a round knob. Plant perennial. This rose may be known from all our other native species by its slender trailing stems. The flowers, which are expanded from June to August, are white, growing mostly solitary, but sometimes two or three together. Though pretty, they have no odour. The shrub has fewer prickles than most of our wild roses ; it is common in woods and hedges at the south of England, but is rare at the north. It is sometimes called White Dog-rose, and is often, when in the garden, termed the Ayrshire rose.

It is generally fancied to be the rebel rose, worn during the contests of the Houses of York and Lancaster. Gerarde speaks of a double white rose which formerly grew wild in the hedges of Lancashire, but this was probably a garden variety, which was common then, but which never became naturalized.

15. PÝRUS (Pear, Apple, Service, and Mountain Ash).

1. *P. commúinis* (Wild Pear).—*Leaves* egg-shaped, serrated ; *flowers* in corymbs ; *fruit* tapering at the base. Plant perennial. The large clusters of snowy white flowers of the Pear-tree are very ornamental to woods during April and May, and although this tree can hardly be said to be common there, yet it is found more or less in the wooded districts throughout the kingdom. The fruits are so hard and harsh that even the school-boy leaves them for the birds, and few would suspect them to be the origin of the juicy and delicious pears which we welcome to our table in autumn and winter. The tree is tall and erect, and though when cultivated the branches are thornless, yet they are not so in the wild state. The wood is sometimes dyed black to resemble ebony, and is cut into bracelets. Wood engravers formerly made their blocks of it, but it is far inferior to the box for this purpose. Gerarde says, that the plates of his book were cut out of this wood, as were, he adds, breast-plates for English gentlewomen. The Persians are said to make their most beautiful spoons of the wood of the pear-tree. When burnt to ashes it was also esteemed medicinal, and

both this substance and the fruit were considered to counteract the poison of mushrooms.

The wild pear is of little use, but as, in making perry, harsh, rather than sweet pears are chosen, it sometimes mingles with the cultivated fruit in the preparation of this beverage. In this country the manufacture of perry is chiefly confined to Worcestershire, and three pears form the armorial bearing of the provincial city. Nor is this the only instance in which the pear is used as an armorial escutcheon. Mr. T. Hudson Turner remarks : “The Horticultural skill of the Cistercian monks of Wardon in Bedfordshire, a foundation dating from the twelfth century, produced, at some early but uncertain time, a baking variety of the pear. It bore and still bears the name of their abbey figured on their armorial escutcheon, and supplied the contents of those Wardon pies so often named in old descriptions of feasts, and which so many of our historical novelists have represented as huge pasties of venison, or other meat suited to the digestive capacities of gigantic wardens of feudal days. It is time, in justice to these venerable gardeners, that this error should be exploded. Their application to horticultural pursuits, even up to the Dissolution, is honourably attested by a survey of their monastery made after that event: it mentions the ‘great vineyard,’ the ‘little vineyard,’ two orchards, doubtless that in which the Wardon was first reared, and a hop-yard. The Wardon pear is still known in the west and other parts of England. Lawson, whose ‘New Orchard and Garden’ was published in 1597, remarks that hard winter fruits and Wardons are not fit to gather until

some time after Michaelmas : another author, of about the same date, says, Wardons are to be gathered, carried, packt, and laid as winter peares are." Mr. Turner adds in a note, "The late editors of 'Dugdale's Monasticon' remark that Wardon pears were sometimes called Abbot's pears, but no authority is given for the assertion.

Pears having been known in this country at a very early period, it is likely that the Romans introduced some of the cultivated sorts. Pliny mentions pears of various kinds which were grown in Italy, and says that a fermented liquor was made from their juice. It is amusing to read the names by which some of the Italian pears were distinguished, though we can now no longer trace their identities with our own pears. He tells of the Syrian, the Alexandrine, the Numidian, the Grecian, the Picentine, the Numantine, the Crustumine, and the Falernian pears, of all of which the two last named were most valued. There were Tiberian pears, named after the Emperor ; and barley pears, and aromatic pears, and laurel pears, so called from their pleasant scents ; some which ripened the earliest and decayed the soonest were reproachfully called Proud pears. He remarked, that all pears have the property of wine, and were therefore cautiously prescribed by physicians. Chaucer often speaks of the "pere," and a tradition tells that King John was poisoned by something mingled in a dish of pears by the monks of Swinstead, a tradition which at least would lead us to believe that pears were then highly esteemed. The monks paid much attention to the culture of this fruit, and in accounts of the fourth and twentieth years of Edward I., among purchases

made for the royal garden at Westminster pears were enumerated; and there is extant a writ of Henry III., directing his gardener to plant the Caillou pear both at Westminster and in his garden at the Tower. The pears mentioned in the bills delivered into the Treasury by the fruiterer of Edward I., in the year 1292, are the St. Régle, Caillou, Pesse-pucelle, Martins, Dreyes, Sorells, Gold-Knobs, and Cheysills, and the very high prices paid for them prove the great esteem in which they were held. Mr. Turner says, "There is still a common Scotch pear, called the Golden Knapp, which is possibly the very sort supplied to Edward I., more than five centuries and a half gone by." When we come to the period of Henry VIII., we find various mention of the pear by the herbalists and gardeners of his day. An old account of that monarch's household expenses has an item of twopence "to a woman who gaff the King peres." Gerarde, who, in Queen Elizabeth's time, had the superintendence of Lord Burleigh's fine garden, and who had himself in Holborn a large physic-garden, probably the best in this country at that time, says, that to write of the sorts of apples and pears, and "these exceeding good," would require a "particular volume." He tells of an "excellent grafter and painful planter, Master Henry Bunbury, who had them in his grounds," as had also "a most diligent and affectionate lover of plants, Master Warner, neere Horsly Down," and says they were "grown in divers places about London." Many of our common pears originated on the Continent, hence some of those names which seem absurd now, but which are corruptions of old French or other

languages. Such is the Bury pear, which should be the *Beurré*, probably because its juicy substance would melt in the mouth like butter. The *Boncrutching* of modern days is well known to be corrupted from the *Bon-Chrétien*, which is in itself an absurd name enough when applied to a pear. One of its best varieties has a still more ridiculous appellation, being called the *Bon-Chrétien Turc*.

Every one who has lived in the country can recollect seeing some ancient pear-tree, still in spring showing its snowy clusters, and rich in autumn with its brown fruits, for the cultivated pear-tree attains a great age, though it does not seem to be very long-lived in its wild condition. In the neighbourhood of Jedburgh Abbey, and in lands lying about various religious houses in Scotland, there are pear-trees which, there is every reason to believe, were planted by the monks, and are between five and six hundred years old. The most remarkable English pear-tree is mentioned by Dr. Neile, as standing in the glebe of the parish of Holme Lacy, in Herefordshire. The branches formerly hung down, and gradually reached the ground, where they took root. Each branch became a new tree, again producing others, till it extended itself so as to cover an acre of ground, and had it been allowed to remain unmolested would probably have extended further. In the year 1776, this tree produced enough pears for fourteen hogsheads of perry, each hogshead containing one hundred gallons. Though in these days, reduced in size, it is said by this writer to be still healthy and vigorous, and to produce from two to five hogsheads. The Rev. C. A. Johns, remarking on this

trec, says, "An idea of its superior size may be formed from the fact, that in the same county an acre of ground is usually planted with thirty-two trees, which in a good soil produce annually, when full grown, twenty gallons of perry each. So large a quantity as a hogshead from one tree is very unusual."

Though perry is less prized now than in former days, yet the pear retains its eminence as a valued fruit. The varieties which culture has produced from our harsh wild pear are almost innumerable, and above six hundred were enumerated some years since. One of them, the Choke or Iron-pear, well deserves to be so called when growing wild, or almost so, but when carefully treated it loses all its hardness. In few plants can we trace the value of horticultural skill more than in this, for all the numerous baking and dessert pears have come from a fruit which would not even tempt one who was hungry enough to feed on blackberries and hips. The Continental pears are generally superior to those grown in Britain; but, according to Marco Polo, the pears of China far exceed any known in this land, for they are said to weigh ten pounds each, and their white pulpy interior to be both fragrant and delicious.

We sometimes hear of the Australian pear-tree, but Colonel Mundy's description of its produce is not very inviting. The various common trees, he says, having been named by savages, have not always very suitable appellations. Thus, he remarks, that the Swamp-oak has the aspect of a laurel, and Pomona herself would indignantly disown the apple-tree, for there is not a resemblance of a pippin in its tufted branches, though a shingle

of the beef-wood looks precisely like a beef-steak. The Cherry-tree resembles a Cypress, but is of a tenderer green, bearing a worthless little berry, having its stone or seed outside, hence its name of *Exocarpus*. The pear-tree seems to be an *Eucalyptus*, and bears a pear of solid wood, hard as heart of oak. Nothing short of a mallet will break it, yet in the procreation of its kind its inedible body spontaneously and gently opens to drop out the seed.

2. *P. Malus* (Crab Apple).—*Leaves* simple, egg-shaped, serrated; *flowers* in a sessile umbel; *styles* combined below; *fruit* with a hollow beneath. Plant perennial. The wild apple is a small spreading tree, bearing in May its rich rosy tinted clusters of flowers. In later months the small sour “blushing crab” ornaments the bough. The sourness of the crab is well known enough to have originated a popular proverb. The fruit both of the wild and cultivated apple-trees abounds with malic acid, which is in the sour or sweet sorts more or less predominant, and which mingles with larger or smaller proportions of sugar, gum, essential oil, and bland pulpy material. The expressed juice of the unripe Crab apple is exceedingly sour, and in times when vinegar was commonly employed in making whey, syllabub, or other confectionary, the fruit was often gathered to be used instead. Vinegar made from this crab is still prized in villages as an application to cure sprains and scalds, and to curdle the whey used as medicine for colds. The juice, too, is imagined to be a good cosmetic.

Our wild fruit tree, though offering little worth in its produce, is very serviceable both in this country and on

the Continent, for on this stock have been grafted the apples of which horticulturists have obtained so many varieties. The *Pyrus Malus* of our woods comprehends two varieties of the tree, which Decandolle considers as two distinct species—one, which has a smooth calyx tube, and the other having that portion downy. The first, which is termed *Acerba*, is the *Pommier à cidre* of the French, and is by this botanist considered to be the origin of our cider apples; while the latter, *mitis*, the *Pommier à couteau*, he regards as that from which are derived the apples used at our tables, but botanists generally consider them merely different forms of the same tree.

Our cider is the old Anglo-Saxon word *Sieder*, and our apple is from their *Aeppel*, and these people most probably cultivated the plant at an early period in this country. It is not unlikely that the fruit was one with which the Romans enriched this soil, and which, after their departure, the Saxons found already growing here. The apple was afterwards cultivated in the gardens of the monasteries, and the Oslin, or Arbroath pippin, was either introduced or extensively cultivated by the monks of the Abbey of Aberbrothwick; while old herbalists relate that the Nonpareil was brought from France by a Jesuit in the time of Queen Mary. Many of the best apples appear from their names to have been brought from France. “One sort only is named,” says Mr. Turner, “in any account of the thirteenth century that has fallen under my observation, the Costard; it occurs in the fruiterers’ bills of the year 1292, but as this fruit was very generally culti-

vated from an early period, there must have been many varieties known." A reference to this fruit yet exists in the name of Costard-monger, which is an old English term for a seller of vegetables, and was given because these Costard apples would be one of his chief commodities, the large round bulky Costard being in more general use than the more delicate apples, most of which, indeed, were not cultivated in this kingdom till the reign of Henry VIII. The writer before referred to, Mr. Turner, says, "The pearmain was certainly known by that name soon after the year 1200, as Blomefield instances a tenure in Norfolk by petty serjeanty, and the payment of two hundred pearmaines, and four hogsheads of cider, or wine made of pearmain, into the Exchequer at the feast of St. Michael yearly. Cider was largely manufactured during the thirteenth century, even as far north as Yorkshire. Thus, in 1283, the bailiff of Cowick, near Richmond, in that county, stated in his account, that he had made sixty gallons of cider from three-quarters and a half of apples. Our forefathers considered the apple to be a 'soft fruit,' and more wholesome than the pear. Nccham records that an apple swims when thrown into the water, while a pear will sink."

Chaucer refers to the apple most common in early times—

"Your chekes embolmed like a mellow costard ;"

and as we advance in the history of the apple, we find numerous sorts in the lists of old writers. Michael Drayton, whose "Poly-olbion" was published in 1613, speaking of the orchards of Kent, says :—



“ The pippin, which we hold of kernel fruits the king ;
The apple orange ; then the savoury russetan ;
The pearmain, which to France long ere to us 'twas known,
Which careful fruiterers now have denizen'd our own ;
The renat, which though first it from the pippin came,
Grown through his pureness nice, assumes that curious name ;
The sweeting, for whose sake the school-boys oft make war,
The wilding, costard, then the well-known pomewater,
And sundry other fruits of good yet several taste,
They have their sundry names in sundry counties placed.”

The pippins, which were so called because the trees were raised from pips or seeds, and would produce fruit without being grafted, were brought from France, according to Fuller, in the sixteenth year of Henry VIII., and half a century after we find them well known, as Justice Shallow says, “ You shall see mine orchard, where, in an arbour, we will eat a last year's pippin of my own grafting ;” but the golden pippin, the renat of Michael Drayton, was called the *Reinette d'Angleterre*, and is by the Dutch now called *Engelsche goud Pepping*. It was apparently an apple of English and not of foreign origin, having, it is said, been first raised at Parham Park in Sussex. Catherine of Russia, who was fond of this apple, had it brought every year from England for her use. The cider orchards of Herefordshire, so beautiful in May with their masses of rosy flowers, were first planted in the time of Charles I.; and before the time of Charles II., cider, which had been in some measure in use for nearly a century before, had become a chief beverage of the nation. Gerarde says, in 1597, “ I have seen about the pastures and hedgerows of a worshipful gentleman's dwelling, two miles from Hereford, called Mr. Roger Badnome, so many trees of all sortes, that the

servants drink for the most part no other drink but such as is made of apples. The qualitie is such, that, by the report of the gentleman himselfe, the parson hath for tythe many hogsheads of cider." This old herbalist was a great advocate for planting this tree, for he says, "Gentlemen, that have land and living, put forward, in the name of God ; graffe, set, plant, and nourish up trees in every corner of your grounds ; the labour is small, the cost is nothing, the commoditie is great, yourselves shall have plentie, the poor shall have somewhat in time of want to relieve their necessitie, and God shall rewarde your good mindes and diligence." The value of the apple as an edible fruit is enhanced by the length of time which it may be kept, thus affording a store of fresh fruit throughout the winter and spring. Cornwall and Devonshire have always produced good apples, and the Cornish gillyflower apple has a well-deserved renown. The beautiful Ribston pippin, with the streaks of red tinging its russet surface, was raised at Ribston Park in Yorkshire, and good apples are grown extensively in Kent and other counties. The chief apple or cider counties lie in the form of a horse-shoe around the Bristol Channel, and many acres of orchard land in Devon, Somerset, Worcestershire, and Hereford are full of apple-trees, affording employment in the fruit season to large numbers of poor people. Cider is still in use in farm-houses as a common beverage in many parts of the kingdom, but it is not easy to compute the quantity which is produced, as there is now no duty on that liquor.

Many persons have so long accustomed themselves to

speaking of the fruit which Eve plucked in Eden as an apple, that careless readers of Holy Writ almost regard it as a fact recorded there; and some, who forget that in the eyes of God the motive of an action constitutes either its worth or its guilt, treat lightly the sin of our first parents, and speak of eating the apple as a small matter. But the apple has no more claim to be considered the forbidden fruit than has the Shaddock, which has long been sold under that name, or than that fruit which the sages of Ceylon pronounce to be forbidden to human taste. These priests having proved to their own satisfaction that Ceylon was the site of Paradise, assert that the fruit was borne on a tree which they call *Divi Ladner*. This they infer not alone from the extreme beauty of the fruit and the sweetness of the flower, but from the conclusive fact that the former still bears the marks of the teeth of Eve. The fruit is now poisonous, but they add that previously to Eve's transgression it was delicious.

The apple is often mentioned by the Scripture writers, and the tree grows in Palestine, but produces good fruit only in one or two places of that land, as at Lebanon. The citron is probably the tree intended, as it is among the most valuable of the fruits of Palestine, and would be fitted to occupy the place which the prophet Joel gives it among the Vine, the Fig, the Pomegranate, and the Palm.

The apple-tree is not remarkable either for size or longevity, and in an old orchard the pear-trees far outlive those of the apple, though occasionally we find one of the latter attaining considerable age.

The fruits boiled, baked, dried, roasted, or made into tarts and jellies, need no praises, and besides these purposes to which apples are commonly applied, it has been ascertained by M. Duduit de Maizières, that one-third of boiled apple-pulp baked with two-thirds of flour, having been previously fermented with yeast for twelve hours, will make a very palatable, light, and nutritious bread. A summer beverage, called Apple-wine, is also very good, though not equal to cider. An elegant chalybeate has been obtained from a solution of iron, which exists in the juice of the golden renet. The famous winter beverage of our forefathers, termed Lambs-wool, was the grand ingredient of the Wassel-bowl. Archdeacon Nares has preserved the following receipt for its composition : " The pulpe of the roested apple, in number four or five, according to the greatness of the apples, (espeecially the pomewater,) mixed in a wine quart of faire water, laboured together untill it comes to be as apples and ale, which we call Lambswool." In Herriek's " Hesperides " we find an allusion to this frequent beverage :—

" Next crown the bowl full
With gentle Lambs-wooll,
Add sugar, nutmeg, and ginger,
With store of ale too."

Gerarde, referring to the uses of the apple, says, " There is an ointment made with the pulp of apples and swine's grease, and rose-water, which is used to beautify the face, and take away the roughness of the skin ; it is called in shops pomatum, of the apple whereof it is made." Our modern pomades and pomatums, the off-

springs of this, cannot however boast the apple as an ingredient.

The use of apples was commended in “splenaticke” and melancholy disorders, and the Court physician to the Queens Mary and Elizabeth, John Key, better known by his Latinised name of John Caius, seems to have had a high opinion of its fragrance, sickly as we now deem it in a closed room. This physician wrote in 1552 his work, entitled, “A boke or Counseill against the disease commonly called the Sweate, or Sweatyunge Sicknesse. Made by John Caius, doctour in physicke. Very necessarie for everie personne, and much requisite to be had in the handes of al sortes, for their better instruction, preparacion, and defense against the souddein comynge and fearfull assaulting of the same disease.” The chief remedies consisted in keeping the patient very warm, and posset-ale, with parsley and sage put in it, was one of the medicines. If the patient recovered, and found his strength wasted, he was to “smell to an old swete apple,” for, adds Dr. Caius, “there is nothing more comfortable to the spirits than good and swete odours.”

Some of the exotic crab apple-trees are among the most beautiful plants of the shrubbery. The Chinese Crabs, with their rich pink blossoms mingling with the buds of deeper red, and the Siberian Crabs, with their red apples, are common and attractive plants, and furnish fruits well fitted for preserving with sugar. In Siberia these crab apples are used in making punch.

3. *P. torminális* (Wild Service-tree).—*Leaves* egg-shaped, with several deep and sharp serrated lobes;

Flowers in corymbs. Plant perennial. This tree is much like the Hawthorn, and its glossy green leaves have a similar form to those of that shrub. It is a small tree, its white flowers appearing in May, and the leaves being larger than those of the May-bush. The small fruits are of a greenish brown colour, dotted all over. It is found here and there in the woods and hedges of the south of England, and is in some places called Maple Service. The author of this volume has seen it occasionally in the Kentish woods, and has eaten of its berries, which resemble the Medlar in flavour, and, like that fruit, are not good till they are beginning to decay, or, as the country people say, till they are "wilted." The fruits are very plentiful on the Service, and boys gather the clusters, and, tying them upon stieks, carry them into towns for sale, when they are hung out of doors for a night, in order that a process of fermentation may soften and fit them for eating on the morrow. These berries have a pleasant flavour, and are nearly as large as the hips of the Sweet-briar. In Kent they are called Chequers. Gerarde says of this tree, "In Kent it groweth in great abundanee, especially about Southfleet and Gravesend;" but the woods there in which our herbalist saw it are now probably all cleared, for buildings have eneroached on the ancient woodlands. The plant grows wild in Russia.

The Service-tree is said to attain sometimes the height of fifty feet. Its wood is hard and close-grained, so that it is useful to turners and earvers; and for gun-stocks, and some part of carriage-wheels, the wood is preferred to any other. It is very durable, and is there-

fore sometimes selected for the timbers of houses built in exposed situations.

4. *P. doméstica* (True Service-tree).—*Leaves* pinnated, downy beneath; *leaflets* serrated upwards; *flowers* in panicles; *fruits* large, and egg-shaped. Plant perennial. This species, which is often called *Pyrus Sorbus*, is probably not a true native, only one instance being recorded in which it seems to grow quite away from cultivated spots; this is a solitary tree in Wyre Forest, near Bewdly, in Worcestershire. The tree has much the aspect of the Mountain Ash, but the fruits are considerably larger than the Rowan berries. Its showy white flowers appear in May. It is not very often cultivated in England, but in some parts of France and near Genoa it is reared for its fruits, two varieties being grown, one termed the apple-fruited, the other the pear-fruited Servicee. These fruits are not eaten until in a state of incipient decay. The trees so common in our shrubberies, called the Pinnatifid and the Hybrid Service-trees, bear similar fruits in abundance. They are both varieties of the Beam-tree (*Pyrus Ária*). The True Service-tree is a native of the south of Europe, where it attains a much larger size than with us. It also grows in many northern countries, as in Kamtschatka, where the natives use the berries as food. In some parts of the North an ardent spirit is produced from them by distillation.

5. *P. aucupária* (Mountain Ash).—*Leaves* pinnate, serrated; *flowers* in corymbs; *fruit* nearly round. Plant perennial. This tree, with its graceful feathery leaves, is familiar to us from being so frequent in gardens,

shrubberies, in squares, and walks of cities, where may be seen—

“The mountain ash, whose crimson berries shine;
The flaxen birch, that yields the fragrant wine!”

It is sometimes twenty feet high, and the bright green leaves, which when young are downy on the under surfaces, are formed of from seven to nine pairs of leaflets, terminated by an odd one. The flowers, which grow in dense clusters, and are greenish white, appear in May; they are neither so large nor so handsome as those of the Hawthorn, but have somewhat of their sweet fragrance. In autumn, however, the tree is more beautiful than in summer, for at that season the rich cluster of red fruits gleams among the foliage, each berry having the form of a tiny apple, and containing a little core and seeds within. The child strings the berries for necklaces, and the cook gathers them to garnish the dishes. To most people their flavour is rather agreeable, and a few may be safely eaten, but children should not be allowed to eat these astringent fruits in large numbers. In Wales ale and beer are made of these berries, and the poor people prepare from them an excellent fermented liquor, very similar in flavour to perry. In the Highlands a spirit is distilled from them. To the thrush and blackbird they are invaluable; and when we mark the havoc made by these birds on the berries, we must recall the songs of last spring, or look forward to that which is coming, as payment for the mischief. The old use of these berries by bird-catchers is recorded in one of the familiar names of the tree, the “Fowler’s Service,” and they are still employed to allure birds into the net. A good colour for

dyeing is also obtained from them. In some of the German burial-grounds the surface of the tomb is raked smooth, and crosses, initials, and various devices are made by laying the Mountain Ash berries in the soil ; while on other graves the mourners form these crosses of the white waxen fruits of the Snowberry, or plant cress in various patterns, sometimes either in letters or words, often variegating the device with stripes of blue, red, and white sand.

The Rowan-tree is frequent in woods and hedges in mountainous districts, often hanging out its branches from rocky crevices of the Highlands and Western Islands of Scotland. On the hills of Cheshire it is a dwarf shrub rather than a tree, and may sometimes be seen there with its branches full of leaves, and its stems not more than nine inches high. Its astringent bark is used by tanners.

The old notion that the Mountain Ash, or Rowan-tree, as it is called in the North, was efficacious against witchcraft and the evil eye, still prevails in the north of England and the Scottish Highlands. Pennant remarks, in his "Tour of Scotland," that the farmers carefully preserve their cattle against witchcraft, by placing branches of Honeysuckle and Mountain Ash in their cowhouses on the 2nd of May. The milkmaid of Westmoreland may often be seen, even now, with a branch of this tree either in her hand, or tied to her milking-pail, from a similar superstition ; and in earlier days crosses cut out of its wood were worn about the person. In an old song, called "Laidley Wood," in the "Northumberland Garland," we find a reference to this :—

“The spells were vain, the hag return'd
To the Queen in sorrowful mood,
Crying, that witches have no power
Where there is Rown-tree wood.”

The words in Macbeth, “Aroint thee, witch,” are thought by some commentators on Shakspeare to have become gradually corrupted, and to have stood originally thus:—

“A Roan-tree witch!”

This tree has also the old names of Quicken-tree, Rod-don, and Witcher-tree, and is, with good reason, supposed to have been one of the Druidical sacred trees. The superstitious ideas connected with it are certainly of very ancient origin, and it is very remarkable that Bishop Heber, when in Upper India, saw a tree very similar to this, which was an object of reverence. When this writer was at Boitpoor, he says, “I passed a fine tree with leaves, at a little distance, so much resembling those of the Mountain Ash, that I was for a moment deceived, and asked if it did not bring fruit. They said no; but that it was a very noble tree, being called the Imperial tree, for its excellent properties: that it slept all night, and wakened and was alive all day, withdrawing its leaves if any one attempted to touch them. Above all, however, it was useful as a preservative against magic; a sprig worn in the turban, or suspended over the bed, was a perfect security against all spells or the evil eye, insomuch that the most formidable wizard would not, if he could help it, approach its shade. ‘One, indeed,’ they said, ‘who was very renowned for his power (like Loorinita in the Kehama) of killing plants and drying up their sap with a look, had come to

this very tree, and gazed on it intently, but,' said the old man, who told me this with an air of triumph, 'look as he might, he could do the tree no harm.'” The Bishop adds, that it is very remarkable to find the superstition which in England and Scotland attaches to the Rowan-tree, here applied to a tree so similar. “Which nation,” he asks, “is in this case the imitator? or from what common centre are all these common notions derived?”

The wood of the Mountain Ash is finely grained and hard. It is used by turners, and in the old days of archery it was considered as inferior only to that of the yew for bows. The bark and roots are said by Professor Lindley to contain so large a quantity of essential oil of almonds, as to yield as large an amount of hydrocyanic acid as an equal quantity of the leaves of the Cherry laurel.

6. *P. Ária* (White Beam-tree).—*Leaves* egg-shaped, serrated, cut, or pinnatifid, or partly pinnate, white and downy beneath; *flowers* in corymbs; *fruit* globular. Plant perennial. This is a small tree, easily distinguished by the beautiful white hue of the under surface of its leaves. This whiteness is very ornamental, for when the wind turns up the foliage it contrasts with the rich green upper surface, and is conspicuous even at a great distance, while the young shoots look white as snow in their dense covering of down. The tree is not very large, nor is it very frequent. It grows chiefly in mountainous woods, especially where the soil is of chalk or limestone. The Rev. C. A. Johns remarks in the “Flowers of the Field,” that it is nowhere more

ornamental than on the ruinous walls of the ancient Roman town of Silchester, where it abounds. The fruit is red, rather larger than that of the Mountain Ash, and the flowers, too, are large and white, appearing in May and June. The berries are much eaten by birds, and if kept till decay commences, are palatable to man. The wood is used for various purposes, and has from earliest ages been valued for axles and shafts ; hence its name of Beam-tree. There are several varieties of this plant.

16. MÉSPILUS (Medlar).

1. *M. Germánica* (Common Medlar).—*Leaves* lanceolate, undivided, downy beneath ; *flowers* solitary. Plant perennial. A variety of the Medlar is sometimes found in which the leaves are doubly serrated. The tree occurs rarely in hedges in various parts of this kingdom, and though doubtless sometimes an outcast from a neighbouring garden, yet it appears to be truly wild, or rather to have been long naturalized, in many places, as in a hedge between Reigate and Nutfield. The tree is not largely cultivated in this country. One or two varieties, chiefly that called the Dutch Medlar, are to be found in gardens and orchards, where the crooked branches may be seen in May, bearing their large white flowers. The fruit, austere and hard as it is while on the tree, has a very pleasant acid flavour when gathered and ripened almost to decay. Its hardness suggested the name from the Greek, signifying half bullet. The tree is called in Germany *Der Mispelbaum*, and it is the *Mispelboom* of the Dutch. The Italians term it *Nespolo* ; and the French name *Néflier* is from the Celtic *naff*, which



signifies truncate, and alludes to the form of the fruit. The tree called Savoy medlar belongs to another genus of plants. Some Canadian medlar-trees produce excellent fruits. One of these, the *Amelanchier ovalis*, is said by Dr. Richardson to abound on the sandy plains of the Saskatchewan. Its wood is prized by the Crees for making arrows and pipe-stems, and hence termed by the Canadian travellers *bois de flèche*. The berries, which are not larger than a pea, are, however, the finest fruit in the country, and whether in a fresh or dried state, are highly prized by the Crees. They are said to make excellent puddings, little inferior to plums, and are a very pleasant addition to the *pemmican* of the Canadians.

The Medlar was a fruit much prized by our forefathers, and supposed by them to have various medicinal virtues, among others that of strengthening the memory. The dried leaves were also powdered and laid on wounds, and various salves and plaisters were made of the dried fruits. Chaucer says :—

“ And as I stood and cast aside mine eie,
I was ware of the fairest medle tree,
That ever yet in al my life I sie.”

17. CRATÆGUS (Hawthorn, Whitethorn, or May).

1. *C. Oxyacantha*.—*Leaves* smooth, cut into from 3 to 5 deeply serrated segments, wedge-shaped at the base ; *flowers* corymbose. Plant perennial. A welcome sight in early spring are the green knots of the Hawthorn-tree. In March they are just breaking forth into leaves, and daily expanding further, till in May every bough is feathered with delicate green spray, and the small ivory

balls are opening into cups studded with pink stamens. The Hawthorn is seldom in flower on the 1st of May, though before the alteration of the style, when May-day was twelve days later than it now is, it was rarely behind hand. Doubtless those days were very mirthful ones, and linked with many pleasing associations, when, as Chaucer describes:—

“Fourth goeth al the Court both most and lest,
To fetch the flouris fresh, and branche and blome.”

And when not the courtiers only, but lowliest of men and maidens sallied forth—

“To do observaunce to a morn of May.”

Bourne tells us, in his “Antiquities,” that all ranks of people went out “a maying,” and that the juvenile part of both sexes were wont to rise a little after midnight on the morning of the day, and walk to some neighbouring wood, accompanied with the blowing of horns and other music, when they broke down branches of the trees, and adorned them with nosegays and crowns of flowers. This done, they returned home at sunrise, and decked the doors and windows with the tokens of the flowering spring. Chaucer, Herrick, Shakspeare, Milton, and many another poet might be cited as adding their testimony to these usages: and Henry VI. desired Lydgate, then a monk at Bury, to write a joyful poem for May-day. This poem contained sixteen stanzas, setting forth the various processes of Nature in sap and leaf, and ending with a commendation of May-day games. Spenser, in his “Shepherd’s Calendar,” says:—

“Youth’s folke now flocken in every-where
To gather May buskets and smelling breere,

And home they hasten the postes to dight,
 And all the kirk pillars ere daylight,
 With hawthorn buds and sweet eglantine,
 And girlonds of roses and sops in wine.

* * * * *

To see these folkes make such jovisaunce,
 Made my heart after the pipe to daunce;
 Tho' to the greene woodes they speeden them all,
 To fetchen home May with their musicall;

Oh that I were there,
 To helpen the ladies their May-bush to beare!"

Innocent as these customs were in their design, and often doubtless in their enjoyment, yet, in the neighbourhoods of large towns especially, they became somewhat like the ancient Floralia, from whence they were derived, and the virtuous gradually withdrew from the scenes of riot and dissipation, so that the Maying, and the setting up of Maypoles, and the going out to gather the Maydew for the beautifying of the complexions, have all passed away, leaving us no trace of these doings save in the little garland yet borne by country children on May-day from house to house. The Reformers strove to abolish the May-games, and gradually succeeded in so doing. Bourne, who was an implacable enemy to festivities of this kind, describes them in such terms as leaves us nothing to regret that in our days they have ceased, for he says the people "daunced about the Maypoles, as the Heathen people did at the dedication of their idolles, whereof it was a perfect pattern, or rather the thing itselfe."

But as the poets of former days praised the usages connected with the Hawthorn, so they have not been slow to praise the beauties of the tree itself. It is, when

fully grown, a picturesque tree, with its gnarled trunk and wide extent of green boughs covered with the fragrant flowers of May, and casting a broad and deep shadow. From Chaucer downwards we find continual allusions to it :—

“ Amongst the many buds proclaiming May,
Decking the fields in holiday array,
Striving who shall surpass in braverie,
Marke the faire flowering of the Hawthorne-tree,
Who finely cloth'd in a robe of white
Fills full the wanton eye with May's delight.”

Burns speaks of—

“ The Hawthorn budding in the glen.”

Clare has a beautiful little poem, “ The Wild-wood Bower,” on this tree, which was treasured in “ Memory's Calendar ;” and Robert Nicholls says :—

“ The Hawthorn hangs its clusters round me now,
Through which the sky peeps sweetly sweetly in,
Through the green glades doth come the cattle's low,
From the rich pastures of the meadow green ;
Look up ! aloft the twittering birds are seen,
Upon the branches their wild matins singing,
Look down ! the grass is soft, and thick, I ween,
And flowers around each old tree root are springing,
Wood fancies wild and sweet to the lone wanderer bringing.”

The Hawthorn when young grows rapidly, but as it becomes older increases but slowly. Its name of quick-set it derives from its being the tree usually selected for making quick, that is, living hedges. These hedges seem to have come into use in the time of Charles II. ; and Evelyn says that he has raised hedges four feet high in four years from seedlings taken from the woods.

After a time the growth of the plant is slow, and those old trees which we find scattered about in woodland, field, or hedge, were many of them planted centuries ago. Thorny as the young boughs are, some of these old trees are almost without spines. Sometimes a tree separates into a number of distinct stems, looking like a clump of distinct trees, but on examining them we find them connected at the base into one. The wood of this species, as well as that of the Scarlet thorn, the Cockspur thorn, Fire thorn, and indeed of all kinds of Thorn, is remarkably tough, so much so that the genus *Crataegus* seems to have been so called from the strength of the wood. The hard, firm timber of large trees is very valuable, but the slow growth of the Hawthorne into any great size renders the tree little available for any purpose save for walking-sticks, or such small articles as its boughs may furnish: it is of a yellowish white colour, and is ornamental when polished. The branches are sometimes used in the country for lighting ovens, as they burn well even while green; but the chief use of the Hawthorn is for those green impenetrable hedges which bound our meadows and lanes, which are so hardy that they are not even killed by the sea breeze, and which when whitened by their flowers are one of the greatest beauties of the rural landscape. By frequently pruning the upper parts of these hedges the side branches increase in size and thickness, and these, with their tough wood beset with sharp thorns, present a firm barrier against the intrusion of man or beast. In early spring, when wet with the rains, some of these branches look like shining copper.

But the Hawthorn has not lost all its beauty when old and almost destitute of its own green leaves, the ivy winds about its stem and boughs, and the grey lichens crowd on its rugged trunk, as Wordsworth says:—

“ Like rock or stone it is o’ergrown
 With lichens to the very top,
 And hung with heavy tufts of moss,
 A melancholy crop:
 Up from the Earth these mosses creep,
 And then, poor Thorn, they clasp it round,
 So close, you’d say that they were bent
 With plain and manifest intent
 To drag it to the ground;
 And all seem join’d in one endeavour
 To bury this poor Thorn for ever.”

The chief lichens which thus hang on the old tree, are the Hairy Old Man’s beard (*Úsnea hírta*), the Stag’s horn (*Evérnia prunástri*), and the Mealy Ramalina (*Ramalína farinósa*). The bright yellow crusts of the Orange Parmelia (*Parmélia parietína*), sometimes also cover both trunk and boughs, not only of these old trees, but of others which form hedges.

Many an old Hawthorn-tree is the subject of old legend, or has long served as a landmark, or been recorded by the mariner in his book as a mark by which to guide his vessel. On many a village green, too, the old tree is prized, as was that of “Sweet Auburn:”—

“ The Hawthorn-tree, with seats beneath the shade,
 For talking age or whispering lovers made.”

The very tree, respecting which Goldsmith wrote these lines, was living within existing memories in the village of Lissoy, the Auburn of the poet. It was strengthened

and supported by a heap of stones cemented together and placed around it; but unfortunately, about fifty years since, it was knocked down by a cart laden with apple-trees, which the carter was driving into Ballymahon, and which struck against the aged and picturesque Thorn, and laid it low. It remained in this condition till it was removed, bit by bit, by persons who prized it as a relic, but the root is still preserved by a gentleman of Athlone. Mr. and Mrs. Hall, who, in their work on Ireland, record these facts, add in a footnote an anecdote quoted by Mr. Prior, from an American traveller, Davis:—"Some years ago, in the United States, Mr. Best, an Irish clergyman, informed this traveller that he was riding with Brady, titular Bishop of Ardagh, when he observed, '*Ma foy*, Best, this huge bush is mightily in the way: I will order it to be cut down.' 'What, Sir,' says Best, 'cut down Goldsmith's Hawthorn bush, that supplied so beautiful an image in the "*Deserted Village*!'" '*Ma foy*,' exclaimed the Bishop, 'is that the Hawthorn bush? then ever let it be saved from the edge of the axe; and evil be to him that would cut from it a branch.'"

A Hawthorn-tree, which stands connected with older associations than this, is still living; this is the Hawthorn of Cawdor Castle, near Inverness. It is a tree of great antiquity, and very remarkably preserved. This Castle has stood from time immemorial, and tradition relates that the original proprietor of the edifice was directed by a dream to build a castle exactly upon the spot, and this was done in such a manner as to leave no doubt that the tree existed long before the structure was

reared. The trunk of the tree with its knotty protuberances is in a vaulted apartment at the base of the principal tower, its root branching out beneath the floor, and its top penetrating the vaulted arch of the stone above in such a manner, that any person seeing it would feel assured that the masonry was adjusted to the size and form of the tree, a space being left at the top of the vaults through which its boughs might be reared. From the most remote times it had been customary for guests to assemble themselves around this tree, and drink success to the House of Cawdor.

But of all the Hawthorns connected with other days, none is more remarkable than the Glastonbury Thorn. The high ground on which the Abbey of Glastonbury stands was, in early days, called the Isle of Avalon. Tradition tells that Joseph of Arimathea with twelve companions came hither to preach the Gospel. This missionary is said to have borne with him a trusty staff, which, placed in the ground during sleep, was when he awoke grown into a tree bearing snowy flowers on its boughs. This miracle of course implied that something important was to be done on the spot. Joseph, concluding that his staff being thus, as it were, taken from him, was to be used no more, made this his resting-place, and built here a chapel, which after many additions and improvements became the magnificent abbey of later years.

But if we believe the legend, the Thorn had not wholly fulfilled its work when it had indicated the site of the monastic institution—it was destined to remain a wonder to succeeding generations. Not content with

believing the actual fact, that this singular tree produced its flowers about Christmas time, the men of other days believed that it invariably budded on the 24th of December, was fully blown next day, and that the bloom withered on the following night. In those times, when neither newspapers, nor books, nor familiar letters were common things, superstitions, told from place to place by travelling monks, were readily accredited, and the Thorn connected with such marvels was so prized, that the blossoms were sought for by people of all nations, and pieces of the Thorn were exported into distant lands by Bristol merchants. Even in later days, when superstition was somewhat on the wane, King James, Queen Anne, and many of the English nobility, gave large sums of money for cuttings from the original Thorn. Until the time of Queen Elizabeth the Hawthorn had two trunks, one of which was cut down by a zealous puritan. According to a writer of those times, James Howell, this desecration was not unpunished; "He was," says this writer, "well served for his blind zeale, who going to cut downe an ancient white Hawthorne-tree, which because it budded before others might be an occasion of superstition, had some of the prickles flew into his eye, and made him monocular." In the time of Charles I. the remaining trunk of the tree was cut down, but a vintner of the place, "out of pure devotion," as the narrator tells, secured a slip, which being set in a garden, flowered on the 25th of December. There are still two old trees in the precincts of the abbey, which doubtless sprung from the venerable tree, and which even yet blossom in winter, though

sometimes not until the latter end of January or February.

It is impossible to account for the winter flowering of the Hawthorn, though it was undoubtedly owing to a natural cause. Ashmole, in 1672, mentions having seen the branch of a Hawthorn, "having greene leaves, faire buds, and full flowers, all thick and very beautiful, and (which is more notable) many of the hawes and berries upon it red and plump; some of which," he says, "is yet preserved in the plante booke of my collection." This branch he had from Edgeworth, near Middlesex. Culpepper also mentions a Hawthorn which grew at Romney Marsh, and another near Nantwich, in Cheshire, where it flowered both at May and Christmas; though he says that if the weather was frosty it did not flower for the second time until January, or till the hard weather was over.

In 1752, when our fathers introduced what is commonly called the "New Style," our Glastonbury Thorn figured as a very important tree. This change, which has made many of the old proverbs respecting the seasons seem less wise than they really are, gave great offence to the uneducated class of the community. It not only seemed to them an attempt to alter the course of nature, but it caused even the very Psalms in the Prayer-books to occur on what they deemed the wrong days; and all public evils, as unfruitful seasons, wars, and epidemics, were attributed to the fancied impiety of the rulers of the land. The Rev. W. T. Bree relates the complaints of an old labourer in an obscure village in Yorkshire, who assured him that the inhabitants of that parish

were so disgusted with the change, that they were at the pains of procuring a minister at their own private expense to perform Divine service upon Old Christmas-day, making it also a point to work as usual on that newly appointed. Moreover, these simple villagers actually sent a deputation down to Glastonbury for the purpose of consulting the holy thorn on the occasion, a sprig of which, gathered on Old Christmas-day in leaf, or in flower, the narrator forgets which, was brought back in triumph to the village.

Many other persons at the same time consulted the old thorn, which would not swerve from its integrity to the old anniversary, but was covered on Christmas-day with its blooms. A large concourse of people assembled at Glastonbury to see if it would flower on the day appointed by Parliament, but not a blossom appeared, and the general dissatisfaction was greatly increased by the circumstance.

The well-known haws which redden on the Hawthorn boughs in autumn and winter among the falling leaves, are a useful store to the birds till the frost deprives them of their flavour. Dr. Withering mentions that a variety of the tree with white leaves was found near Brampton, in Oxfordshire. It is generally supposed that our name of Hawthorn was derived from that of the fruit; but many etymologists think that the haw took its name from the tree, and that the English word is a corruption of the German or Dutch name of Hedgethorn; the Germans terming our plant *Hagedorn*, and the Dutch *Haagdorn*. Our name of Whitethorn has its synonym in several countries: thus the Italians term it

Bianco spino, and the Spaniards *Espino blanco*. And the name by which it is called in France has a very elegant allusion. The French term it *Aubépine*, signifying the morning of the year, the word *aube* expressing the white or grey twilight before sunrise. Though our haws are of little worth to any but the school-boy, the fruits of some species are good, and the *Azarole* of South Europe is the very pleasant and juicy fruit of a Hawthorn. The old herbalists recommended that the common haws should be bruised and boiled in wine, and taken as a remedy for "tormenting pains;" while they held also that sponges dipped in the distilled water of the haws, and applied to "any place where thorns or splinters do abide in the flesh, it will notably draw them out." The application probably would be useful, as it would have the effect of a poultice. The bark of the Hawthorn affords a good yellow dye, and when mixed with copperas gives a black colour.

The following verses were written for this volume by H. G. Adams :—

TO THE HAWTHORN-TREE.

" Oh fair and fragrant Hawthorn-tree!
Thou hast thy nectar for the bee;
For every insect roving free,
Thou hast thy dewy wine!
Thou hast thy perfume for the breeze,
And, human hearts to cheer and please,
What pleasant reminiscences
And memories are thine!
How many tones of childish mirth,
How many hearts that knew no dearth,
Have hail'd thy blossoms' annual birth
A wonder, ever new!

How many tiny feet have trode
With eager haste the daisied sod
To pluck thy gem-environ'd rod,
Or but thy bloom to view !

“ Oh fair and fragrant Hawthorn-tree !
That deck'st the landscape gloriously,
It is a joy to gaze on thee,
And thy perfume inhale ;
It is a pure delight to hear
The throstle greet thee, year by year,
And mark thy snowy wreaths appear,
Pride of the English vale !

“ How many wanderers far away
From old familiar paths that stray,
Long once again to gather ' May '
From off thy laden bough ;
Long for the meadows fresh and green,
And the clear streams, meandering seen
Beyond the hedgerow's leafy screen—
Seen but in visions now !

“ Oh fair and fragrant Hawthorn-tree !
A gracious boon vouchsafed to be
To pilgrims treading wearily
The rugged ways of life ;
We bless thy Maker—thine and ours !
Who covers all thy thorns with flowers,
To mind us of the heavenly bowers
Where cometh care nor strife.

“ How many sinking hearts that fain
Aside the burden would have lain
Have ceased to murmur and complain
When gazing on thy bloom !
Which spake to them of sunny days,
Of God's benign though hidden ways,
And of the glorious light that plays
Above the riven tomb.”

18. COTONEÁSTER.

1. *C. vulgáris* (Common Cotoneaster).—*Leaves* oval, rounded at the base; *flower-stalks* and margins of the *calyx* downy. Plant perennial. This plant is not known to occur in a truly wild state in more than one place in this kingdom. This is at Ormeshead, in Caernarvonshire, where it grows on limestone cliffs. In May and June the small solitary rose-coloured drooping flowers peep from among the dark green leaves, and are succeeded in autumn by red, coral-like berries. Mr. Christy, in his notice of the plants observed during a tour in North Wales, thus remarks on this plant. Referring to heavy and continued rain which just then prevailed at the village of Llandudno, he says, "I was, however, too anxious to gather *Cotoneáster vulgáris* to be detained by the weather; and accordingly set off, accompanied by a guide who could speak no English, but who, the landlady assured me, knew both the plant and its places of growth. Following a steep narrow road up the hill, above the village, we reached some copper mines, overhung by a range of limestone precipices. On these rocks the Cotoneaster grows abundantly, but owing to being continually browsed on by the sheep it is very dwarfish, and probably from the same cause appears seldom to flower. Sir J. E. Smith mentions July for the Cotoneaster; whereas the few fertile specimens I found at that season bore fruit considerably advanced. Mr. Wilson mentions May, which certainly agrees better with the state in which I found the plant." This writer remarks that the rocks were everywhere covered

with the Common Roek rose (*Helianthemum vulgäre*) intermixed with a profusion of the rarer Hoary dwarf Rock rose (*Helianthemum canum*).

ORDER XXVII. ONAGRARIÆ.—THE WILLOW-HERB TRIBE.

Calyx of 4, sometimes 2 lobes, which in the bud are attached to each other by their edges; *calyx-tube* more or less united to the ovary; *petals* as many as the lobes of the calyx, twisted while in bud; *stamens* 4 or 8. rarely 2, springing from the mouth of the calyx; *ovary* of 2 or 4 cells, often crowned by a disk; *stigma* knobbed, or 4-lobed; *fruit* a berry, or 4-celled capsule. This Order consists of herbaceous plants or shrubs, found chiefly in the temperate parts of the world, especially in America and Europe. None of the plants contain unwholesome properties, but they contribute little either to medicinal or domestic purposes, though some of the species add largely to the beauty of our gardens. Several of our most common and ornamental flowers are included in it, as the Fuchsias, Clarkias, and Evening Primroses, of which we have so many cultivated kinds.

1. EPILÓBIUM (Willow-Herb).—*Calyx* 4-parted, the lobes not combined after expansion; *petals* 4; *stamens* 8; *capsule* long, 4-sided, 4-celled, 4-valved; *seeds* numerous, tufted with down. Name from the Greek *epi*, upon, and *lobos*, a pod; the flowers being placed at the top of a seed vessel, shaped somewhat like a pod.

2. *ŒNOTHÉRA* (Evening Primrose).—*Calyx* 4-parted, the lobes more or less combined after expansion, and bent back; *stamens* 8; *capsule* 4-celled, 4-valved; *seeds* numerous, not bearded. Name in Greek signifying “catching the flavour of wine.”

3. *ISNÁRDIA*.—*Calyx* 4-parted; *petals* 4, or none; *stamens* 4; *capsule* inversely egg-shaped, 4-angled, 4-celled, 4-valved, crowned with the calyx. Named after Antoine d’Isnard, a French botanist.

4. *CIRCÉA* (Enchanter’s Nightshade).—*Calyx* 2-parted; *petals* 2; *stamens* 2; *capsule* 2-celled, each cell containing a seed. Name from Circe, the enchantress.

1. *EPILÓBIUM* (Willow-Herb).

* *Petals unequal in size; stamens bent down.*

1. *E. angustifólium* (Rose Bay, or Flowering Willow).—*Leaves* scattered, lanceolate, veined, smooth; *flowers* somewhat spiked. Plant perennial. A variety of this plant occurs very commonly in gardens, having larger flowers and shorter capsules, which is sometimes called *E. brachycarpum*; and another, with smaller flowers and longer capsules, is sometimes termed *E. macrocarpum*. This Willow-herb is a rare plant in moist woods in England, though less so in Scotland. Some botanists have thought it to be not truly wild, but it has long established itself, and, in some woods, as in those about Wrington, in Somersetshire, whole acres of ground are covered with it. It does not seem to have been common in Gerard’s time, for he mentions one place only where it might be found. “It groweth,” he says,



“in Yorkshire, in a place called the Hooke, neere unto a close, called the Cow-pasture, from whence I had these plants, which doe grow in my garden, very goodly to behold, for the decking up of houses and gardens.” The old herbalist describes it as a “goodly and stately plant, having leaves like the greatest willow, or ozier. The branches,” he says, “come out of the ground in great number, growing to the height of sixe foote, garnished with brave flowers of great beautie, consisting of fower leaves apicce, of an orient purple colour.” The variety so common in gardens, often, by its profusion there, occasions much trouble to the gardener, not so much by the seed which it produces, as the roots which creep to a great distance, and take a very firm hold of the soil; and if by chance the common form of the plant is introduced, as it often is, instead of the variety, it is far worse, as this bears seeds in abundance, and as each seed has a little silky feather attached to it, it wafts itself away over garden and shrubbery during August and September, and comes up in profusion in the following April. This plant is from four to six feet in height, bearing showy pinkish lilac flowers in August; its stem and flower-stalk are much tinged with lilac. It is called by gardeners French Willow, and in France one of its common names is *Laurier de St. Antoine*, after St. Anthony, the first founder of monastic institutions.

Rare as this plant is on the English landscape, yet in some countries towards the north of Europe, it, by its profusion and bright colour, gives during its season a characteristic feature to the landscape. The border of the lake near Tornea is described as beautified during

summer with large masses of this plant, which towers over the brink of the water, displaying everywhere the most gaudy garlands, even on spots where vegetation in general seems dwarfed and barren. In Kamtschatka, this and other *Epilobiums* are exceedingly abundant, and mingle with most showy and brilliant species of Groundsel (*Senecio*), to beautify large tracts of land. Both plants contribute greatly to the physiognomy of the landscape, for the groundsel plants, as tall as a man, and laden with flowers, frequently cover the meadows with a fine yellow colour; while a splendid red tint is given to wood-sides and rivers by the Willow-herb.

Both the English and scientific names of this genus are very appropriate. Several of the larger species, before coming into flower, closely resemble the rods of a willow in the first year of their growth, only that they are herbaceous instead of woody. The name *Epilobium* describes with much accuracy the position of the petals: *epi*, on, *lobos*, the long pod-like seed-vessel, which, at first sight, might be taken for a flower-stalk. It is quadrangular in form, opening by four valves, and if when ripe it be carefully opened on one side, the seeds with their silky appendages burst forth from their prison.

This and some other of the species are well fitted for planting in shrubberies, as they are uninjured by the shade and frequent dripping of trees, and they thrive well in city gardens, unhurt by smoke. The leaves and stems of the Bay Willow afford a decoction, which is said to cause intoxication, and it is added to the fermented drink which the Kamtschatdales procure from the Cow-parsnip. The pith has, when dried, a sweet

flavour, and both ale and vinegar are commonly made from it in the north of Europe ; while the young shoots both of this and some other species are, when dressed, a good and wholesome substitute for asparagus. Goats are said to be very fond of the plant, and both cows and sheep will eat it. The wool of the seeds, mixed with fur or down, has been manufactured into stockings, and into some kind of fabric intended for dresses, but this was too fragile to be of much use. The French call the Willow-herb, *L' Epilobe à épi* and *Osier Fleuri*, and the Germans *Der Weiderich*. Its name among the Tartars is *Karamuk*, and the Russians term it *Xipree*.

* * *Flowers regular ; stamens and styles erect ; stigmas 4-cleft.*

2. *E. hirsútum* (Great hairy Willow-herb).—*Leaves* partly clasping the stem, narrow, oblong, serrated, downy ; *stem* downy, much branched ; *root* creeping. Plant perennial. Our stream-sides, beautiful as they ever are with their rich verdure and many flowers, receive an additional ornament when, during July and August this Willow-herb grows there in profusion. Most of the rills which trickle among our green meadows, and the streams and rivers which wind their silvery way, as well as the stagnant ditches, can then boast this ornament in more or less abundance. Often the purple blossom waving at a distance, on a hot summer's day, invites the wanderer to some cool sequestered spot, where he may feel as Chaucer did in such a scene :—

“ And the river which that I sate upon,
 It maden sicke a noise as it ron,
 Accordant with the birdis armony,
 Methought it was the best melody
 That mighten bin y’ hearde of any man.”

The stems of this Willow-herb are much branched, so that the plant has somewhat the appearance of a shrub. The foliage, like most downy foliage, is of a greyish green tint, and the large blossoms are reddish purple. They have a very pleasant odour, like that of cooked fruit, hence a common country name for the flower is “codlins and cream.” It never grows on a dry soil, but on river-brinks, and at no great distance from it may often be found such flowers as Calder Campbell describes:—

“ Sweet
 The Bugle-blossoms are! and just below
 The downy Coltsfoot gave its broad soft leaves
 As pillow for the Harebell’s sleepy head!
 The Cranesbill too supplied its scarlet bloom,
 Flaring above the burnish’d Buttercup,
 And Foxgloves with their fairy cups brimful
 Of matin dew, in which the drowning gnat
 Struggled in vain! and gaudy Golden Flag,
 Gleaning above like a magician’s wand:—
 And purple Willow-herb, and Violet,
 The poet’s pet, grew down beside the rill
 Where last we pluck’d those hazel-nuts.”

3. *E. parviflorum* (Small-flowered hairy Willow-herb).
 —*Leaves* sessile, lanceolate, downy, and toothed; *stem* nearly unbranched, generally downy, but sometimes smooth. Plant perennial. This species has flowers of less size than the last, and is altogether a smaller plant,

and is easily distinguished from it by its unbranched stem; its roots, too, afford a marked character, as they are fibrous. It grows usually to the height of a foot, or a foot and a-half, and has, in June and July, flowers of a purplish red colour. It is very common on moist lands.

4. *E. lanceolátum* (Spear-leaved Willow-herb).—*Leaves* stalked, lanceolate, irregularly toothed; *stem* obtusely angled; *stigma* slightly lobed; *root* fibrous and perennial. This rare species has been found near Tintern, Monmouthshire, and also in the neighbourhood of Bristol. Sir W. Hooker and Dr. Arnott remark of it: "With this we are scarcely acquainted, and we have seen no British specimen: it seems to be the *E. rosea* of some Swiss collectors, comprehended by Seringe in De Candolle's *Prod*, along with *E. roseum* of Smith, under his character of *E. montánium*."

5. *E. montánium* (Broad smooth-leaved Willow-herb).—*Leaves* egg-shaped, acute, smooth, toothed, rounded at the base, the lower ones shortly stalked; *stem* rounded, and slightly downy; *root* fibrous, and perennial. This species grows commonly on dry places, as on shady hills and banks, and is often to be seen on the cottage-roof. It is a small and unattractive plant, its flowers being rarely fully expanded. They are of a purplish rose-colour, and of small size, though larger than those of the next species. They are produced in June and July.

* * * *Flowers regular; stamens erect; stigma knobbed, not 4-cleft.*

6. *E. róseum* (Pale smooth-leaved Willow-herb).—*Leaves* on stalks, lanceolate, smooth, egg-shaped, finely toothed: *stem* erect, imperfectly 4-angled; *stigma* undivided, or slightly lobed; *root* fibrous and perennial. This Willow-herb is common in the neighbourhood of London, near water, or in hedges. It also occurs in similar places in various counties both of England and Scotland. It has very small rose-coloured flowers in July and August.

7. *E. tetragónum* (Square-stalked Willow-herb).—*Leaves* lanceolate, sessile and slightly toothed; *stem* with two, three, or four angles; *stigma* undivided. The small rose-coloured flowers of this species appear in July and August, and are not conspicuous, though the plant would, after flowering, attract attention by its long pod-like seed-vessels. Its stems are nearly smooth, and it is distinguished from the last species both by the more distinct angles of the stem, and by its narrower leaves without stalks. It is a very common plant in wet places; its stem is about one or two feet high, and it is in flower during June and July.

8. *E. palústre* (Narrow-leaved Marsh Willow-herb).—*Leaves* narrowly lanceolate, entire, or toothed; *stem* rounded, erect, and nearly smooth; *flower-buds* nodding; *root* with thread-like scions. Perennial. This species has small rose-coloured flowers in July and August. Its stem is from sixteen to eighteen inches high, and has



often two downy lines on opposite sides. It grows on wet soils, near ditches and pools.

9. *E. alsinifolium* (Chickweed-leaved Willow-herb).—*Leaves* egg-shaped and pointed, very thin, smooth, and nearly sessile, the upper ones toothed, the lower entire; *stem* round. Plant perennial. This is a mountainous plant; frequent on moist places of Highland or other Scottish mountains, having a few rather large purplish-red flowers in July. Its stem throws out suckers, with here and there a leaf upon them. It may be known at a glance from the other species, by its thin, flagging foliage.

10. *E. alpinum* (Alpine Willow-herb).—*Leaves* oval and blunt, on short footstalks, nearly entire; *stems* somewhat smooth. Plant perennial. This too is a plant of mountainous regions, where it grows by rills. It is common on all the Highland mountains, having in July one or two flowers which droop while in bud, and are of bright purplish-red. It is a plant of much lower growth than any other species, the stem being not more than three or four inches high.

2. CENOThÉRA (Evening Primrose).

1. *C. biennis* (Common Evening Primrose).—*Leaves* lanceolate, somewhat egg-shaped, toothed; *stem* slightly hairy; *flowers* sessile; *stamens* about the length of the corolla; *capsules* nearly cylindrical. Plant biennial. This pretty flower must be considered rather as naturalized than truly wild in this kingdom, neither is it at all a frequent ornament of our country scenery. On a few spots of sandy soil near Liverpool, on some of Sussex, and in

many parts of Warwickshire, it grows and thrives far from the care of man. It is not mentioned by our earliest writers on plants; but Parkinson, who calls it the 'Tree Primrose of Virginia, names it in his *Garden of Pleasant Flowers*, which was published in 1629. It is known to have been first sent from Virginia to Padua in 1619, and probably found its way into England at about the same period. It is a frequent garden flower, opening its large primrose-coloured and somewhat fragrant blossoms about seven in the evening, just when the summer twilight is on its way. Its mode of expanding is very curious. The petals are held together at the summit by the hooked ends of the calyx. The segments of this flower-cup at first separate at the base, and the yellow petals may be seen peeping through these openings, a long time before the flower is fully blown. The expansion is very gradual till the blossom is freed from the confinement of the hooks at the top, but when this is effected, it unfolds very quickly for a minute or two, and then stops, after which it opens very gradually, spreading itself out quite flat. The whole of this process sometimes occupies half-an-hour, and in some instances a little sudden noise is made as it jerks the topmost hooks asunder. The flowers hang next day in discoloured and flaccid condition on the stem, and this circumstance renders the plant less attractive, as usually it has little beauty till evening. It sometimes, however, varies from its ordinary habits, and a blossom or two may occasionally be seen fully open even at noon-day. The French call the Evening Primrose *L. Onagre*; and it is the *Nachtkerze* of the Germans, and the *Tweejaarige*

of the Dutch. The Hungarians call it *Viola*. It was formerly termed *Onagra*, the “ass food,” by botanists, and its name was changed to a word signifying wine-trap, because the roots have been used as incentives to wine drinking, and were formerly eaten after dinner as olives are in later days. The roots, as well as those of several species of *Ænothéra*, contain much nutriment, and the tubers are almost as good as the potato. Perhaps we owe some of the wild plants which occur on our landscape to the former cultivation of the flower for the sake of these tubers, which were once much valued, and which would probably have retained their place at the modern table, had not the potato become so general and accessible. They still in some countries form a common article of food.

The Evening Primrose grows to the height of two or three feet, beginning to flower about June. The uppermost blossoms expand first, and there is a constant succession of pale yellow flowers, till the end of autumn. Many of the garden species are much larger and handsomer than this. The *Ænothéra* is quite an American genus, all the large yellow, pale purple, lilac, and white flowers of this family having been brought from the New World.

3. ISNÁRDIA.

1. *I. palústris* (Marsh Isnardia).—*Leaves* opposite, egg-shaped, acute, and stalked; *stem* procumbent, rooting, and smooth; *flowers* solitary and axillary; *capsule* 4-angled. Plant annual. This little herb has stems about six or eight inches long, and flowers which have

pistils and stamens, but which are destitute of petals. It is very rare, having been found in a pool at Buxstead, in Sussex, and on Petersfield Heath, in Surrey, where it occurred in abundance. It also grows near Brockenhurst, in Hampshire. It was formerly recorded as a British plant, but was again lost in this kingdom, though known as a plant of various parts of Europe and America, as far south as Mexico. Mr. Borrer, in 1827, rediscovered it in Sussex.

4. *CIRCÆA* (Enchanter's Nightshade).

1. *C. Lutetiána* (Common Enchanter's Nightshade).—*Leaves* egg-shaped, tapering to a point, toothed; *bracts* none; *stem* erect, downy; *calyx* hairy; *root* perennial. This is a very common plant in lanes where the thick bushes or high trees cast a deep shadow, as in shrubberies, woods, and gardens. The stem is about a foot or a foot and a half high, and the dark green leaves, somewhat heart-shaped at the base, are very large in proportion to the blossoms. It is very troublesome in damp gardens, on account of its strong creeping roots, and the flowers are too small to render the plant ornamental in any situation. They appear in June and July, are white or pale rose-colour, with pink stamens, and are destitute of odour.

The genus *Circæa*, though named after the enchantress Circe, does not appear ever to have been used in enchantments, and it has no active properties either of a useful or deleterious kind. Some writers think that the name was given because many of the dark shady nooks in which it grows are such places as would be chosen

for incantations by the pretender to magic, in order that their gloom might affect the imagination of his victims. Boerhaave ingeniously suggested that the fruit, which is clothed with hooked bristles, laying hold of unwary passengers, and clinging to them, might, to him who named the plant, have been suggestive of the practices of the fabled Circe, who drew the unguarded into her toils ; but neither notion seems probable, and the origin of the name is involved in mystery. The French call the plant *La Circée*, the Germans *Das Hexenkraut*, the Dutch term it *Stevenskruid*. The ancient Greeks had a plant which they called *Circæa*. Our common plant is one much used by the leaf-cutter bees in the construction of their cells. Every one observant of garden flowers, must have seen how often little semicircular pieces are neatly cut out of the leaves of the garden roses, and the leaves of several wild flowers are subject to the same depredations. The perennial Mercury, three species of Willow, the Sweet Brair, and Dog Rose, the Barren Strawberry, and our Enchanter's Nightshade, are among the wild plants chiefly selected ; while, in the garden, the Provence, Bishop, Frankfort, and Monthly Roses, are sought by these insects, that they may hang their cells with the green tapestry taken from the foliage. Baxter tells us also that the caterpillar of the Elephant Hawk-moth (*Sphinx Elpenor*), which feeds chiefly on the Water Bedstraw (*Galium palustre*), sometimes regales itself also on the Enchanter's Nightshade.

2. *C. alpina* (Alpine Enchanter's Nightshade).—*Leaves* heart-shaped, toothed, nearly smooth ; *stem* ascending, nearly smooth. Root perennial. This species

much resembles the last, but is smaller, and less branched. It is found in woods, thickets, and stony places, especially near the lakes in the north of England and Scotland. Its flowers occur in July and August. Its leaves are remarkable for their thin and delicate texture. Some botanists describe a third species as *C. intermedia*, which in some specimens appears to be a variety of the first of the species, and in others of the last.

ORDER XXVIII. HALORÁGEÆ.—THE MARE'S
TAIL TRIBE.

Calyx tube adhering to the ovary, and either expanding into three or four minute lobes, or forming simply a rim; *petals* either minute, and placed at the mouth of the calyx, or wanting; *stamens* either equalling the petals in number, or twice as many, or, when petals are wanting, one or two in number; *ovary* with one or more cells; *stigmas* equal in number to the cells of the ovary; *capsule* not opening; *seeds* solitary, pendulous. The order consists of herbaceous plants of little beauty, and possessing no important properties. In several species the stamens and pistils are in separate flowers.

1. HIPPIÚRIS (Mare's-tail).—*Calyx* forming a minute, indistinctly 2-lobed rim to the ovary; *petals* 0; *stamen* 1; *style* 1; *seed* 1, nut-like; name in Greek signifying a mare's tail.

2. MYRIOPHÝLLUM (Water Milfoil).—*Stamens* and *pistils* in separate flowers, but on the same plant; *calyx*



4-parted; *petals* 4; *stamens* 8; *styles* 4; *fruit* of 4 nut-like seeds. Name from the Greek *myrioi*, ten thousand, and *phyllon*, a leaf, from its numerous leaves.

3. CALLÍTRICHE (Water Starwort).—*Flowers* without calyx or petals, often with 2 bracts at their base; *stamen* 1; *anther* 1-celled; *styles* 2; *ovaries* 2, each 2-lobed; *fruit* of 4 1-seeded carpels. Name in Greek signifying beautiful hair, from the hair-like roots.

1. HIPPIRIS VULGARIS (Mare's Tail).

1. *H. vulgaris* (Common Mare's-tail).—*Leaves* linear and whorled; *stem* erect, jointed, without branches. Plant perennial. This singular plant would not fail to attract notice when abundant, as it often is in ponds and ditches. It grows frequently also on the borders of slow streams, especially such as have a gravelly base. It is tall and slender, rising ten or twelve inches above the water, and very well deserving its common French name of *Pin d'eau*, or the no less expressive German one of *Schaftholm*. The flowers are inconspicuous, small and green, appearing in May and June close to the stem, in the angles which it forms with the short whorled leaves. This is remarkable as being one of the simplest of herbaceous plants, sometimes having a mere rim for its calyx, having no petals, and but one stamen, one pistil, and one seed. When the plant has flowered it sinks down and dies, and its stems and leaves form a mass at the bottom of the water.

Like many another aquatic plant, the Mare's-tail has its uses, not alone to water animals, as the freshwater snails and insects, not only to the wild ducks and water-fowls

which hail it as a welcome repast, but also to man. It renders the neighbourhood of stagnant water less prejudicial to human health, by absorbing a great quantity of inflammable air, thus serving to purify an atmosphere rendered putrid by the exhalations of the pool. In deep water it attains considerable luxuriance, and is sometimes three feet in height.

There is no other plant with which the Mare's-tail could possibly be confounded, save some of the Horse-tails, those allies of the Ferns, and many of which abound in moist places. It is, however, essentially distinct, for the Horse-tails have no flowers, and bear their fructification in cones or catkins at the tops of their stems or branches. Their leaves too are longer and more rigid, those of this herb being short and clear, with a thick strong vein running up the centre. The Dutch call this plant *Kattetail*, and the Italians term it *Ippuride*.

2. MYRIOPHYLLUM (Water Milfoil).

1. *M. verticillatum* (Whorled Water Milfoil).—*Flowers* all whorled, having bracts at their base, cut into slender segments, and longer than the flowers. Plant perennial. This aquatic can boast no brightness of corolla, its greenish petals being too small to attract observation. It is, however, very pretty in its greenness, and in the graceful form and movement of its feathery leaf-like bracts, which lie like green threads in the water, and are swept downwards if perchance a wind stirs up a current in the still pool. The plant well merits its name of Myriad-leaf, as well as its

German name of *Federball*. The French call it *Volant d'eau*, and the Dutch *Vederkruid*. The Milfoil is common in many of the pools and ditches of Europe; and this species is frequent in such places throughout England and Wales. Mr. Backhouse found a Milfoil growing with some of the pond-weeds (*Potamogeton*) in the waters of New South Wales, and believed it to be identical with the English species.

2. *M. spicatum* (Spiked Water Milfoil).—*Flowers* whorled, longer than the bracts at their base, which form an interrupted leafless spike; *stem* slender and branched. Plant perennial. This is a common plant in standing pools, where it forms entangling masses by its slender stem and branches, which when we take them from the water and shake them, drop numerous little living creatures, that have evidently found a home amid the leaves and bracts. The whole plant looks very green and pretty, as it lies in the water, where it floats below the surface, save when in July and August its spikes of minute greenish flowers rise just above the pool. These spikes are from three to five inches long, and the leaves, which are four in a whorl, are cut into slender segments.

3. *M. alterniflorum* (Alternate-flowered Milfoil).—*Barren flowers* arranged alternately on a short leafless spike; *fertile flowers* about three together, in the axils of the leaves at its base; spikes drooping when in bud. Plant perennial. This rare species appears in a few places in England and Scotland in ponds and ditches, its small green flowers occurring from May to August. It is very similar to the last species.

3. CALLÍTRICHÉ (Water Starwort).

1. *C. vérna* (Vernal Water Starwort).—*Leaves* in pairs, united at the base; *flowers* in the axils of the leaves; *carpels* bluntly keeled at the back. Plant annual. This little Starwort is abundant in ditches, pools, and slow streams, everywhere, and is often probably mistaken by those little familiar with plants, for some species of the Bedstraw (*Gálium*). Its leaves are most truly starry, being crowded on the top of the slender stem, and often the plant when in masses forms thick tufts like green cushions in the pools lying among the grass of marshy lands. Their verdure is of emerald hue, and numerous little white hair-like shining roots proceed from the joints of the stem, forming a characteristic feature of the Starwort. The foliage is submersed, the stamens of the little green flowers in June and July rising just above the surface of the water. The Starwort is called by the French *La Callitric*, and by the Germans *Wassersten*. It is the *Callitrica* of the Italians, and the *Sterrekruid* of the Dutch. Two varieties of this species are described, the one having the lobes of the fruit slightly keeled, the other with the lobes slightly winged at the back.

2. *C. pedunculáta* (Pedunculated Water Starwort).—*Fruit-stalks* without bracts at the base; *fruit* 4-sided, each lobe bluntly keeled at the back. Plant annual. This rare species is very nearly allied to the last. It is found in ditches in Sussex, and some other English counties, as well as in Wales, producing its inconspicuous flowers from June to September.

3. *C. autumnális* (Autumnal Water Starwort).—*Fruit-stalks* very short, without bracts; *fruit* somewhat 4-sided, each lobe winged at the back. Plant annual. This species occurs about London, and in various Scottish lakes. It flowers from June to July.

ORDER XXIX. CERATOPHYLLÆ.—THE HORN-WORT TRIBE.

Stamens and *pistils* in separate flowers, but on the same plant; *calyx* many parted; *corolla* none; *stamens* 12-20, without filaments; *anthers* 2-pointed; *ovary* 1-celled; *style* curved; *seed-vessel* nut-like, 1-seeded, not opening. This is an aquatic order, containing only the genus Hornwort, which is very distinct from any other known plant. The affinities of this order have been much disputed by botanists.

1. CERATOPHYLLUM (Hornwort).—Character that of the order. Name in Greek signifying Horn-leaved.

1. CERATOPHYLLUM (Hornwort).

1. *C. demersum* (Common Hornwort).—*Fruit* armed with two thorns near the base, and terminated by the curved style. Plant perennial. Our illustration will remind all accustomed to roam in the country of a plant which they often see lying in slow streams and ditches. This Hornwort grows quite under the water, and being unlike most other plants in the cone-like form which its mass of crowded leaves often assume,

it will hardly fail to be noticed, though no bright corolla adds grace to its verdure. The whorled leaves, rigid as bristles, are two or three times forked, and somewhat serrated; they are often also inflated and jointed. The green flowers grow in whorls in the axils of the leaves. The plant has no known uses, except that it aids with other aquatic vegetation in purifying the water, and elaborating air fitted for respiration. Some varieties of this plant have, by various botanists, been described as species, in one, the spines of the fruit are long, rigid, and rounded; in a second, they are also long but flattened, and winged at the base; a third variety has no spines on its fruit, but two tubercles at its base. The first of these is most common in this country.

2. *C. submersum* (Unarmed Hornwort).—*Fruit* without either spines or tubercles, and ending with the very short styles. Plant perennial. This species much resembles the last, and can be known from it only by the characteristics of its fruit. It is rare, being found only in the pools and ditches of the south of England, its flowers occurring in June and July.

ORDER XXX. LYTHRÁRIÆ.—LOOSESTRIFE TRIBE.

Calyx of one piece, often tubular, many parted, sometimes with intermediate teeth; *petals* inserted between the outer divisions of the calyx, soon falling off; *stamens* springing from the tube of the calyx, within the petals, and either equalling them in number, or twice, thrice, or

four times as many; *ovary* 2, 4-celled; *style* single; *capsule* many-seeded, covered by the calyx, but not united to it. This order consists chiefly of herbaceous plants, having mostly four-sided stems, and opposite leaves. Many of the species are astringent, and several are used by dyers. The celebrated *Henna* or *Al hanneh* of the Arabs is furnished by a plant of this order, the *Lawsonia alba*. The paste made of its pounded leaves is used by the Egyptians, Arabs, and Turks to impart a yellowish red hue to their nails. It seems to be considered by Eastern ladies not so much as an embellishment to their beauty, as a mark of dignity, slaves being forbidden to use it. The practice is of high antiquity, for the nails of the mummies have evidently received this tinge. The *Henna* forms an important article of commerce, and is cultivated in Egypt for the purpose of export to Constantinople, being used also to dye the manes of horses, and to impart its colour to wool and leather. The strong odour of the flowers of this plant is unpleasant to Europeans, but the Oriental lady adorns her apartment with the fresh flowers, and uses at her toilette a cosmetic prepared from them.

1. LÝTHRUM (Purple Loosestrife).—*Calyx* cylindrical, with 12 divisions, alternately smaller; *petals* 6; *stamens* 6 or 12; *style* thread-like. Named from the Greek *lythron*, blood, from the hue of the flowers.

2. PÉPLIS (Water Purslane). — *Calyx* bell-shaped, with 12 divisions, alternately smaller; *petals* 6, minute, soon falling off; *stamens* 6; *style* very short. Name of Greek origin, and anciently given to another plant.

1. LÝTHRUM (Purple Loosestrife).

1. *L. Salicária* (Purple Loosestrife).—*Leaves* opposite, or about three in a whorl, long and narrow, heart-shaped at the base; *flowers* whorled, and forming a leafy spike. Plant perennial. This Loosestrife is among the handsomest of our native flowers, rivalling the Foxglove and Viper's Bugloss in beauty. Its blossoms appear in June and July, forming tall tapering spikes, sometimes a foot long, on a stem which is from two to four feet in height. The colour is of rich purplish red, and when these gay pyramids rise up, as they often do above the sedges, and rushes, and willow boughs which fringe the water, they render the margin most beautiful, and may be seen far away over the landscape. The plant is called by several country names, as Grass-poly, Purple Willow-strife, Purple grass, and Willow Lythrum. The botanic specific name, as well as several of its familiar names, may have been given from the long narrow leaf, somewhat like a willow, but more probably was derived from the circumstance of its growing so frequently among willows and osiers. It is in many counties called Long Purples; and Clare in many of his poems alludes to it under that name:—

“As shadowy April's suns and showers would pass,
 And summer's wild profusion plenteous grew,
 Hiding the spring-flowers in long weeds and grass,
 What meads and copses would I wander through,
 When on the water oped the lily buds,
 And fine long purples shadow'd in the lake,
 When purple bugles peeped in the woods
 'Neath darkest shades that boughs and leaves could make.

" The ragged robins by the spinney lake,
 And flag-flower bunches deeper down the flood,
 And snugly hiding 'neath the feather'd brake,
 Full many a blue-bell flower and cuckoo-bud ;
 And old man's beard, that wreath'd along the hedge
 Its oddly rude misshapen tawny flowers,
 And prickly burs that crowd the leaves of sedge,
 Have claim'd my pleasing search for hours and hours.'

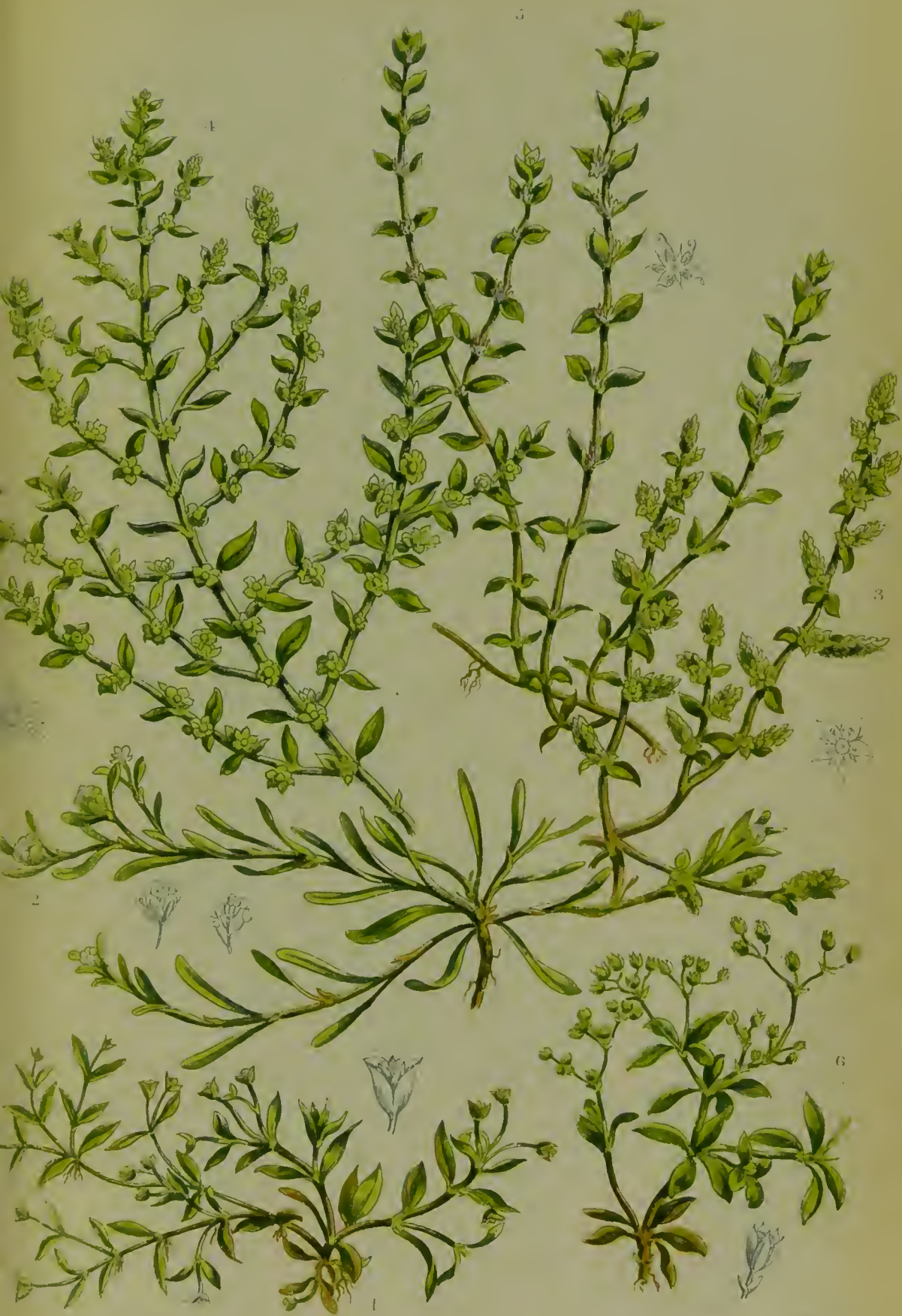
This Loosestrife grows in all parts of this kingdom, and is very general on the continent. It occurs in great profusion in the streams and ditches about Brussels, especially near Laerken, the king's country palace. The French, Italians, and Spaniards call it *Salicaire* ; the Germans term it *Braune weiderich* ; the Dutch, *Partyke* ; and the Russians, *Plakun*. The streams about Australia are as gay in summer with its crimson blooms as are our own watersides ; and the same, or a very similar species, blooms on the borders of lakes in Mexico. In the latter country several species of *Lythrum* are found, and they are very generally used as applications to wounds. Our own Grass-poly is very astringent and tonic, and has been recommended by De Haen and other continental physicians for intermittent fevers. Though it has long been celebrated in Ireland for its remedial uses, it is rarely prescribed in England by regular practitioners. Its leaves contain tannin, and have been used with success in the preparation of leather. In India the flowers of the *Lythrum Hunterii* are mixed with the blossoms of the *Morinda*, and are then called *Dhawry*, and commonly used as a dye.

2. *L. hyssopifolium* (Hyssop-leaved Purple Loosestrife).—*Leaves* mostly alternate, linear-lanceolate, blunt ;

flowers axillary, solitary; *bracts* 2, very small, and awl-shaped; *stamens* about 6. Plant annual. This species is so unlike the last in its general appearance, that only the botanist would perceive the affinity of the two. It is a lowly plant, about four or five inches high, having a few little blossoms growing singly between the leaves and stem. They are of a dull purplish lilac colour, expanding in July. This may occasionally be seen growing with the taller Loosestrife at the edge of the water, but is more likely to be found in bogs or among the grass of woods which have standing pools among their trees. It is not anywhere a common flower, but the author found it some years since in some profusion in Eridge woods, near Tunbridge Wells.

2. PÉPLIS (Water-Purslane).

1. *P. Pórtula* (Common Water-Purslane).—*Leaves* inversely egg-shaped; *flowers* solitary. Plant annual. Those who were intent on gathering a wild nosegay would leave this little aquatic untouched, or probably pass it by unnoticed. It grows either on moist lands, or on places sometimes overflowed with water, having often a reddish tinge on its stems and leaves. It is a lowly creeping plant, and not unfrequent; its stems being from four to six inches long, with few branches. Its small green flowers, often without petals, appear in July and August.



ORDER XXXI. TAMARISCINÆ—THE TAMARISK TRIBE.

Calyx 4—5, parted, overlapping when in bud, remaining after the corolla is withered; *petals* 4-5 from the base of the calyx; *stamens* either equal to the petals in number, or twice as many, distinct or united by their filaments; *ovary* not combined with the calyx; *styles* 3; *capsule* 3-valved, 1-celled, containing many seeds, which have downy tufts at the extremity. The plants of this order are mostly shrubs, with long slender branches and small scale-like leaves. They are very numerous on the shores of the Mediterranean, thriving well by the sea or on the saline soils of deserts. The bark is astringent, and many species are remarkable for the large quantity of sulphate of soda afforded by their ashes.

1. TÁMARIX (Tamarisk). *Calyx* 5-parted; *petals* 5; *stamens* 5 or 10; *stigmas* feathery. Named from the Tamarisci, the people who inhabited the banks of the Tamaris, now the Tambrá, in Spain, where this plant is in great abundance.

1. TÁMARIX (Tamarisk).

1. *T. Ánglica* (Common Tamarisk).—*Leaves* quite smooth, somewhat narrowed at the base; *flower-buds* egg-shaped; *capsule* rounded at the base and narrowed upwards. Plant perennial. This pretty shrub is very ornamental to several parts of our coast, with its rich deep verdure, and its delicate red branches clothed, in

July, with elegant spikes of pale rose-coloured flowers. It is very common in sea-side gardens, and in many places by the sea grows in profusion, without culture, on rocks, cliffs, and sandy soils. Truly wild, however, the plant is not, in any part of the kingdom; for although it is abundant in some places, as at Hastings and Sandgate, it was doubtless originally planted there. It is often said to be wild in Cornwall, as Tamarisk shrubs abound about the Lizard and St. Michael's Mount, having probably been brought thither from the opposite coast of France. The plant is said to have been introduced into the Lizard district by a carter, who, having lost his whip, gathered one of the long flexible branches of the Tamarisk at the Mount, which at the conclusion of his journey he stuck into the ground, where it grew and flourished. Nor is this an unlikely mode of its propagation, for it grows from cuttings as freely as the willow.

This is the same species which the earlier botanists called *Tamarix Gallica*, but, having become naturalised, it is called now the English Tamarisk. Fuller, in his "Worthies of England," remarks—"The Tamarisk was first brought over by Bishop Grindal out of Switzerland, where he was an exile under Queen Mary, and planted in his garden at Fulham, where the soil being moist and fenny, well complied with the nature of this plant; yet it groweth not up to be timber, as in Arabia, though often to that substance that cups of great size are made thereof." Richard Hakluyt also says that in his time the plant had so increased that there were thousands of the trees in this country, and adds, "Many

people have received great health by this plant.” This writer published his work in 1582. In those days the cup made of Tamarisk was thought to improve the flavour of ale; the spit made of its wood imparted an excellence to the meat roasted upon it; and its use was considered so beneficial to persons afflicted with diseases of the spleen, that physicians ordered patients to eat from dishes made of tamarisk wood. It had also other domestic uses, as Browne in his “Pastorals” refers to it,—

“ Amongst the rest, the Tamarisk there stood,
For housewives’ besoms onely knowne most good.”

And Pliny mentions its use for brooms by the Romans. Dioscorides praised it as a cure for every disease. It is the *Myrica* of the Greeks and Romans; and to the reader of the Classics is connected with many poetic associations. “It is so referred to,” says Mr. Baxter, “in the Pastorals of Theocritus and Virgil, and many times in the Eclogues of the latter poet; Ovid also names it in several poems.” Homer mentions it as the tree against which Achilles laid his spear before he rushed into the Xanthus to pursue the fleeing Trojans :

“ So plunged in Xanthus, by Achilles’ force,
Roars the resounding surge with men and horse;
His bloody lance the hero cast aside,
Which spreading Tamarisks on the margin hide.”

Evelyn says that it was considered one of the unfortunate trees, and gives that as the reason why its branches were in ancient times bound around the head of the criminal. It is in England commonly called Sea Cypress; but though its foliage somewhat resembles that

of the Cypress, its mode of growth, pale hue, and deciduous habit, make it quite distinct even to the unscientific eye.

The Tamarisk has associations with scenes and times even earlier than those of the Roman or Greek writers, for there is little doubt that it is the *Eschel* or *Ashel* of the Scripture. The passage rendered in our authorized version, "Now Saul abode in Gibeah, under a tree in Ramah," is translated by Boothroyd, "Saul was sitting on a hill in Gibeah, under a Tamarisk-tree,"—a rendering thought by Dr. Kitto to be the correct one. This author remarks that Saul preferred holding his court under the shadow of a tree, as many an Oriental prince of modern days would do. This, too, is thought to be the tree under which Saul and his sons were buried. Almost all travellers in Eastern countries speak of the Tamarisk-tree as the *Athel* or *Atlé* of the Orientals. It is one of the very few trees which will flourish and attain any good size in the soil of the desert. Large Tamarisks, called *Asul*, are found all about Palestine, not graceful and slender as are those of our country, but tall and sturdy as oaks. The exact species of Eastern Tamarisks are not ascertained; but if not mere varieties of our English species, they are very nearly allied to it and all have many points of similarity. The tree has long been highly prized by the Arabs for the medicinal uses of the galls which grow on its branches. The Tamarisk was called *Zoorfa* by Avicenna, and its astringent galls are praised in his works; they are also used in dyeing. In Egypt these trees are as large as oaks. Sonnini tells us that not a village of Lower Egypt is

without its Atlés. "There is," says this writer, "no other tree in the land which can in any degree be termed common. It furnishes the timber for mechanical purposes, and wood for fuel. Hence the Egyptians say 'the world would go badly with them if Atlés were to fail.'" They also make their bowls and drinking-cups of its wood.

Another interesting association connected with the Tamarisk is, that it is the only tree now found growing amid the ruins of Babylon. Ker Porter thought that he discovered some traces of the celebrated hanging-gardens, and on an artificial mound there stood a tree which the Arabs called *Athela*. It was hollow with age, and its branches bending downwards gave to it the aspect of a weeping willow. The boughs were graceful and richly verdant, though its large trunk was old and rugged. Some travellers have described this lonely relic of the ancient grandeur—this solitary tree—as a Cedar, others as a willow; but Aucher, in 1835, gathered some specimens which he preserved, and which were considered by botanists to be the *Tamarix pycnocarpus*. The Arabs regard this tree as sacred, because, after the battle of Hillah, the Calif Ali reposed under its shade. It is thought to be as old as the time of Herodotus, B.C. 440.

Our *Tamarix Anglica* is a native of most of the countries of southern Europe, of Asia Minor, Tartary, Japan, Barbary, and Arabia, as well as of many parts of Africa; and some other species, as the Eastern Tamarisk (*T. Orientalis*), are also common in these lands. A variety of our Sea-side Tamarisk affords, according to Ehren-

berg, the manna of Mount Sinai. This manna, as it is called, because it is supposed to resemble the manna of the Scriptures, drops during the month of June from the branches and twigs beneath the tree, where it coagulates. If left till after sunrise it dissolves, and is lost. The Arabs, therefore, collect it before dawn. It is a sweet and pleasant substance, which the Arabs prize greatly, and pour over their bread as if it were honey. Falling in small quantities, it is a very costly luxury. This manna probably no more resembles the "Bread of Heaven," given in the wilderness, than does the substance called manna in this country, and sold by the druggists for medicinal purposes. This is the product of an Ash-tree, *Ornus Europæa*.

ORDER XXXII. CUCURBITACEÆ.—THE GOURD TRIBE.

Stamens and *pistils* often in separate flowers, either on the same plant or on different plants; *calyx* 5-toothed, connected with a corolla; *corolla* often scarcely to be distinguished from the calyx; *stamens* 5, more or less united; *anthers* twisted; *ovary* imperfectly 3-celled; *style* short; *stigmas* lobed; *fruit* more or less succulent; *seeds* flat, in a juicy arillus, or skin.

The Gourd Tribe consists of a large number of important climbing herbaceous plants, having succulent stems and tendrils. In many cases their properties are very violent, but some plants of the tribe produce valu-

able fruits. To this Order belong the gourds, the fruits of which are, in Arabia, Egypt, and other countries, converted into bowls and other articles of domestic use ; the bottle-gourds, (*Lagenaria*), seeming exactly formed for this purpose, being shaped like flasks, and sometimes six feet long ; when young they are used as spoons. The plants are of rapid growth, and the Common Garden Pumpkin increases so rapidly in size, that with its long shoots it will, in a good soil, in one season cover the eighth part of an acre. This is extensively cultivated in some parts of France to use in soups and fricassees. The Vegetable Marrow is often seen on our tables ; the cool and refreshing Melons and Cucumbers in all their varieties afford us valuable edible fruits ; while in hot countries Water Melons are among the most refreshing articles of diet. The Germans eat the fruit of the Squash gourd, which, from its shape, they term the Elector's Hat ; and Cucumbers in Russia are deemed a most necessary vegetable diet. The Colocynth and Squirting Cucumber furnish powerful drugs ; and the plant mentioned in Scripture as the wild vine, from which the sons of the prophets gathered gourds for Elisha at Gilgal, is believed to be the Ass, or Wild, Cucumber, a plant of this Order, which is very bitter. As it resembles the cultivated cucumber it was apparently gathered by mistake, and its bitterness induced the men who procured it to consider it deleterious, bitterness in a vegetable indicating, in the ideas of the Hebrews, the presence of poison. Our Red-berried Bryony is the only British genus contained in this Order.

1. BRYÓNIA (Bryony).—*Stamens* 5 in 3 sets ; *style* 3-cleft ; *fruit*, a globose berry. Name from the Greek *bryo*, to bud, from its rapid growth.

1. BRYÓNIA (Bryony).

1. *B. dióica* (Red-berried Bryony).—*Leaves* palmate, rough on both sides ; *pistils* and *stamens* on different plants. Plant perennial. A very pretty climber is this Wild Bryony in early spring, when its half-developed leaves are of a delicate green hue, and its unfolding shoots grey with long silvery hairs. But as the months advance these leaves grow out into large vine-like foliage, and become of a deep rich green hue, covered with thick prickly hairs, and the long shoots armed with branching tendrils wind their way along the bushes, occupying no small space in the green hedgerow :—

“The scallop’d Bryony mingling round the bowers,
Whose fine bright leaves make up the want of flowers.”

The blossoms, which may be seen from May to September, add little to the beauty of the plant, for though they are large, yet their greenish white petals, marked with darker veins, have nothing very attractive in appearance, and are also destitute of perfume, save such faint and sickly odour as might suggest the idea that they belonged to a poisonous plant : nor would the inference be altogether wrong. The root partakes of that powerful drug yielded by the Colocynth, and the round red berries, which are in autumn amongst our most beautiful wild fruits, are poisonous, while the whole plant abounds with a fetid and acrid juice. The root is very large and

succulent, and to this accumulation of nutriment Linnaeus attributed the quick growth of the Bryony. Gerarde mentions having seen one as large as a child six months old, weighing half a hundred weight, but this was unusually large. These roots were formerly much prized as a remedy for dropsy, but are not now administered by medical men internally, though Professor Burnett records that they were a few years since still sold at Covent Garden market, and used by the pugnacious to remove the blackness “which follows blows too vigorously applied in the neighbourhood of the eyes.” The root, however, should not be used even externally when in a fresh state, or it would blister the skin. The acrimony is partly removed by drying. The writer just alluded to says, “Bryony root has also been often used, when cut in slices, to mix with Columbo-root, a vile adulteration, as the properties of the drugs are most dissimilar.” He adds, that the most serious consequences might ensue from its use in cases in which a tonic like the Columbo is required. The fraud is considered by medical practitioners to have originated in the belief which once prevailed, that Columbo was the root of *Bryonia epigæa*, which it is said to resemble, and which in India is used instead of it. Our old herbalists praise the Bryony root as an invaluable external and internal remedy, though, according to their own admission, it was “a furious martial plant.” Among other ways of using it, it was commonly made into an electuary for coughs, but it must have been a most dangerous medicine, unless used, as it is by modern homœopathists, in tiny globules. Culpepper—

“As one that on his worth and knowledge doth rely
In learned physic’s use, and skilful surgery,”—

after recommending it for various maladies, cautiously adds, “When it must be taken inwardly it needs an abler hand to correct it than most country people have, therefore it is a better way for them to leave the simple alone, and take the compound water of it mentioned in my ‘Dispensatory,’ and that is far more safe, being wisely corrected.” Those, however, are most safe who leave the plant altogether out of their list of remedies; but country people still have a strange belief that vegetable medicines are never dangerous, forgetting that Hemlock, Aconite, and other plants, contain most deadly poison. Villagers are often so ignorant of the nature of the plants which they use as remedies, that the author has more than once had much difficulty in dissuading persons from taking most powerful and most unsafe decoctions of wild plants.

This Bryony is commonly called also Wild Vine, or Wood-vine, and in some counties, where hops are not cultivated, it is called Wild Hop. One of its old names was Tetterwort. Though so common in England, it is rare in Scotland. It grows wild in many European countries, and is called by the French *Bryone*, or *Couleavrée*; it is the *Zaurübe* of the Germans; the *Bryone* of the Dutch; and *Brionia* of the Italians; the Portuguese term it *Norca branca*. The goat is the only animal which feeds on its foliage; but Dr. Withering says, that a decoction of the fresh root is an excellent medicine for horned cattle, and that it is a common practice in Norfolk to mingle small pieces of this root





with corn in order to render their coats glossy and fine. Other physieians consider that it might be used medi-
cinally with great advantage, as several foreign species
are valuable medicines of other countries. The seeds of
Bryonia callosa, a common plant in India, afford an ex-
cellent oil, much used for burning in lamps.

ORDER XXXIII. PORTULÁCEÆ.—THE PURS- LANE TRIBE.

Calyx of 2 sepals, united at the base; *petals* usually
5 from the base of the calyx; *stamens* 3 or more in-
serted with the petals; *ovary* 1-celled; *style* 1 or 0;
stigmas several; *capsule* 1-celled, opening transversely,
or by 3 valves; *seeds* usually more than 1. This Order
consists of herbs or shrubs with very succulent leaves
and stems. The species are all innocuous, and in many
cases edible. *Portulacca sativa* is the Common Purs-
lane, and is cultivated and much liked as a vegetable in
several continental countries. The *Da-t-kai* of Caffraria,
celebrated among the Hottentots for its edible roots, is
a Purslane; and Mr. Burehell remarks that an abun-
dance of the Common Purslane is to be found everywhere
on the Asbestos mountains, and that he ordered a quan-
tity to be boiled for his dinner, as it rarely happened
that he could convert the wild vegetation of that country
to culinary uses, the heat rendering plants so tough and
juiceless, that they were unfit for eating. He remarks
that this Purslane is one of the few plants whose seeds
have been scattered in various and very different parts

of the earth. The rocky hills of St. Helena are in the rainy season rendered verdant by this plant alone. Several species of the family have large and handsome flowers; but its only representative in Britain is an inconspicuous plant.

1. MÓNTIA (Blinks).—*Calyx* of 2 sepals; *corolla* of 5 petals, 3 smaller than the others, and all united at the base; *tube* of the corolla split to the base; *capsule* containing 3-dotted seeds. Name from Joseph De Monti, a botanist of Bologna.

1. MÓNTIA (Blinks).

1. *M. fontána* (Water Blinks).—*Leaves* opposite, tapering at the base. Plant annual. This lowly little chickweed varies much in size, but is always remarkable for its succulence. It flowers from June to August; its small white blossoms, drooping at first, and scarcely ever expanding, acquired for it the name of Blinks. It is abundant in wet places, and is very frequent on the Cheviot Hills, not far from the summit. Linnæus, who found it in Lapland, remarks that it was a plant which never came in his way before. “In Kalhëden,” he says, “I found it particularly abundant, and I afterwards found it in West Bothnia.” The French call this plant *La Montie*, the Germans *Die Quellen-monti*. It is the *Bronminnende montia* of the Dutch.

ORDER XXXIV. PARONYCHIEÆ.—THE KNOT-GRASS TRIBE.

Sepals usually 5 ; *petals* 5, minute, inserted between the lobes of the calyx, sometimes wanting ; *stamens* varying in number, opposite the petals, if equalling them in number ; *ovary* not combined with the calyx ; *pistils* 2—5 ; *fruit* 1-celled ; opening with 3 valves, or not opening. The Knot-grass tribe is composed of small shrubby or herbaceous plants, with minute flowers and undivided leaves. The few British genera are mostly found in the southern counties of the kingdom, and the plants of this order occur chiefly in Southern Europe or Northern Africa.

1. CORRIGÍOLA (Strapwort).—*Sepals* 5 ; *petals* 5, as long as the calyx ; *stamens* 5 ; *stigmas* 3 sessile ; *fruit* 1-seeded, enclosed in the calyx. Name from *Corrigia*, a strap, from the form of the leaves.

2. HERNIÁRIA (Rupture-wort).—*Sepals* 5 ; *petals* 5, resembling barren filaments ; *stamens* 5, inserted on a fleshy ring ; *stigmas* 2, nearly sessile ; *fruit* 1-seeded, enclosed in the calyx. Name from the disease which it was supposed to cure.

3. ILLÉCEBRUM (Knot-grass). — *Sepals* 5, coloured, thickened, and terminating in an awl-shaped point ; *petals* 0, or 5 ; *stigmas* 2 ; *fruit* 1-seeded, enclosed in the calyx. Name from the Latin *illécebra*, an attraction.

4. POLYCÁRPON (All-seed).—*Sepals* 5 ; *petals* 5, notched ; *stamens* 3—5 ; *stigmas* 3, nearly sessile ; *fruit* 1-celled,

3-valved, many-seeded. Name from the words *polys*, many, and *carpos*, fruit.

1. CORRIGÍOLA (Strapwort).

1. *C. littoralis* (Sand Strapwort).—*Stem* spreading, leafy; *flowers* stalked in small clusters; *stem-leaves* oblong, narrow below. Plant annual. This rare and pretty little Strapwort spreads itself over the ground, bearing, from August to December, tufts of little white flowers. It grows on Slapham Sands, and near the Starpoint, in Devonshire, and is found in great abundance on the banks of the Loe Pool, near Helston, in Cornwall. It is the *Corrigiole* of the French, the *Lingenkraut* of the Germans, the *Riempjis* of the Dutch, and the *Corrigiola* of the Italians.

2. HERNIÁRIA (Rupture-wort).

1. *H. glábra* (Smooth Rupture-wort).—*Stem* prostrate, clothed with minute curved hairs; *leaves* oval, narrowing towards the base, more or less hairy, in some cases fringed with delicate hairs; *flowers* sessile, axillary. Plant perennial. This varies very much in some of its characters. In one variety the leaves are quite smooth, and in the other the leaves have sometimes hairs on the surface, with a delicate fringe around the edges, like an eyelash. Some botanists think the latter a permanent distinction, and describe the plant in this condition as a different species, under the name of *H. ciliáta*. The plant is sometimes said to resemble Wild Thyme in its habit, but the flowers are green. They grow from

July to September, either in tufts from the axils of the leaves, or form a crowded spike interspersed with leaves. The plant is not common, occurring in some of the southern counties of England, and in the western parts of Kerry, in Ireland, though nowhere in any abundance save at the Lizard Point, Cornwall. A variety of a more hairy nature is by some botanists termed *H. hirsúta*. Its hairs are spreading, but in other respects it resembles the ordinary form.

3. ILLÉCEBRUM (Knot-grass).

1. *I. verticillátum* (Whorled Knot-grass).—*Leaves* broadly egg-shaped, smooth; *stipules* white, chaffy and jagged at the margin; *stems* slender. Plant perennial. This little Knot-grass doubtless received its English name from its entangling stems. These have a reddish hue, and the small white flowers which grow around them in axillary whorls, are remarkable for their thick calyxes. The plant is found on boggy lands and in standing pools in Cornwall and Devonshire. In the former county it is not uncommon. It flowers from July to September. One of its old names was Whitlow-grass, from a fancied efficacy in its cure of whitlows. The Germans call it *Nagelkraut*, and the Spaniards *Nevadilla*. It is the *Paronique* of the French.

4. POLYCÁRPON (All-seed).

1. *P. tetraphýllum* (Four-leaved All-seed).—*Stems* prostrate and branched; *leaves* oval, tapering at the base, upper leaves in pairs, lower in fours; *flowers* with 3 stamens. Plant annual. This plant is neither con-

spicuous nor frequent in this kingdom, occurring chiefly on the southern coast of England. It has also been found in Glamorganshire, and is a common weed in the Isle of Jersey, growing all about St. Aubyns on sunny banks, on hedges, and in gardens. It produces from May to August numerous little greenish white flowers. It has plenty of tiny seeds in its small two-valved capsules, but the name which it now bears was originally applied to the common Knot-grass (*Polygonum aviculare*), which it somewhat resembles. One of its old English names was *Linum*.

ORDER XXXV. CRASSULACEÆ.—THE STONE-CROP TRIBE.

Sepals 3—20, more or less united at the base; *petals* equal to the sepals in number, inserted in the bottom of the calyx; *stamens* as many, or twice as many; in the latter case the stamens opposite the petals are shorter than the others; *ovaries* as many as the petals, 1-celled, tapering into stigmas, often with a gland at the base of each; *fruit* consisting of several erect seed-vessels, which open lengthwise; *seeds* in a double row. This Order is composed of herbs and shrubs, which have thick succulent leaves and stems, and star-shaped blossoms. They are remarkable for growing on the most arid soils, ornamenting the sandy deserts of Southern Africa with beautiful blossoms, and inhabiting in greater or lesser number all parts of the world. Many grow on rocks;



1. COMMON SALVIA

2. SALVIA OFFICINALIS

3. SALVIA LEUCOLIA

4. SALVIA NIGRA

some on walls or roofs of houses, or dry hot sunny slopes; living on the nutriment derived from the atmosphere, rather than on that absorbed through the roots. Many of the plants are used medicinally, being often pungent or acrid, in several cases refrigerant; and in some astringent, or containing malic acid.

1. *TILLÆA*.—*Sepals, petals, stamens, and carpels* 3 or 4, the latter two-seeded. Name from an Italian botanist, Michael Angelo Tilli.

2. *COTYLÉDON* (Penny-wort).—*Sepals* 5; *corolla* tubular, 5-cleft; *carpels* 5, with a scale at the base of each. Name from the Greek *cótylé*, a cup, from the form of the leaves.

3. *SEMPERVIVUM* (House-leek).—*Sepals, petals, and carpels* 6—10; *stamens*, twice as many. Name from the Latin *semper*, always, and *vivo*, to live.

4. *SÉDUM* (Stonecrop).—*Sepals and petals* 5; *stamens* 10, spreading; *carpels* 5. Name from the Latin *sedeo*, to sit, from the lowly growth of the plants.

1. *TILLÆA*.

1. *T. muscosa* (Mossy Tillæa).—*Stems* branched, and bending down at the base; *leaves* opposite, oblong, blunt; *flowers* generally 3-cleft. Plant annual. This little Tillæa, though quite distinct from the Pearlworts, is much like them. The small greenish white flowers expand in May and June, and have a reddish tinge at the tips of the petals; the calyx leaves are sharply pointed. It is more frequent on gravel garden-walks than elsewhere.

2. COTYLÉDON (Pennywort).

1. *C. Umbilicus* (Wall Pennywort).—*Leaves* eireular, on stalks, and with rounded notches on their margins, generally inore or less sunk above; upper *bracts* very small and entire. Plant perennial. This singular-looking plant has spikes of long drooping bell-shaped flowers, with the corolla eleft nearly to the middle. They are of greenish yellow colour, appearing from June to August. The plant owes its name of Pennywort to the round leaves, and is also in some eountry plaees called Penny-pies, or Kidney-wort. It is *Le Cotylei*, or *Cotylhier*, of the French. The leaves are somewhat sunk in the centre, and in some of the species eultivated in our gardens they are much more so, forming little cups or vases. The plant is very sueulent, from half a foot to a foot and a half high.

This Pennywort is very eommon in some parts of the kingdom, especially in the western counties, but there are many distriets where it is seareely ever seen. The Rev. W. T. Bree remarks, that he seareely remembers ever finding it in Warwickshire, execept on the ruins of Maxstoke Priory, and there but sparingly; while in some parts of Somersetshire, and in the eounty of Wiek-low, as well as in many other places, it is abundant on walls and banks. It is rare in Kent, but the author oncee reeeived a specimen of the plant from the wall of Maidstone Church. Its ordinary plaee of growth is the old wall or roof, and it is very luxuriant on moist drip-ping roeks in mountainous eountries. In the neighbourhood of Wimborne, in Dorsetshire, it is very

frequent on hedge-banks. A botanist of that place remarks, that he has seen most luxuriant specimens growing in profusion on a hedge-bank with a southern aspect, the plants being from a foot and a half to two feet high. A species called *Cotylédon lutea*, is sometimes enumerated among our native flowers, but it is not a British plant.

3. SEMPERVIVUM (House-leek).

1. *S. tectorum* (Common House-leek).—*Leaves* fringed with delicate hairs; *flowers* containing 12 perfect, and 12 imperfect stamens. Plant perennial. Tufts of juicy leaves of the House-leek, forming large verdant patches on the cottage-roof or wall-top, though not so frequent as they once were, are yet common. In many a spot such scenes may be seen as one which Leyden so long remembered, and yearned for so deeply:—

“—The cottage roof fern-thatch'd, and grey,
Invites the weary traveller from the way,
To rest and taste the peasant's simple cheer,
Repaid by news and tales he loves to hear;
The clay-built wall with woodbine twisted o'er,
The House-leek clustering green above the door;
While through the sheltering elms that round them grew,
The winding smoke arose in columns blue.”

The old Dutch names of this flower, *Donderbaard*, and *Donderbloem*, remind us of the notions which in former days induced the planting of the House-leek on the roof of the dwelling. It was in our own, as in other lands, deemed a preservative against thunder. This superstition seems banished from our country; but a friend of the writer's, when residing in Holland, seeing

a roof almost covered with the plant, inquired of the owner of the house why it was cultivated there, and was told that it was a certain protection from the danger of the storm. One of our old herbalists says, "It is reported by Mizaldus to preserve what it grows upon from fire and lightning." Another old writer, speaking of the Bay-leaf as "privileged from the prejudice of thunder," adds:—"An ancient author recited among divers experiments of Nature which he had found out, that if the herb House-leek, or Sengreen, do grow on the house-top, the same house is never stricken with thunder and lightning. Even the philosophical Sir Thomas Browne, whose work on *Vulgar Errors* must have done some service in the cause of truth, yet never doubted that the House-leek was, as he expresses himself, 'a defensative, from lightning.'

The House-leek may easily be made to cover the whole roof of a building, whether of tiles or thatch, by setting the offsets with a little earth. It will also grow freely on the tops of walls. Linnæus remarked that House-leek was a preservative to the coverings of houses in Smoland; and it seems a frequent custom in the North of Europe to give to the houses a plot of some verdant plant, many roofs in Sweden being covered with green turf, which in summer is fit for mowing' presenting the singular appearance in the streets of numerous little sloping meadows. Nowhere does the House-leek, however, grow to such luxuriance as at Teneriffe, where plants of this genus are often shrubs, and flourish on the steep cliffs and rocks in the neighbourhood of the sea so as almost to cover them. Some

of the old gothic mansions in the interior of the island have their walls and roofs quite overspread with ferns and House-leek. In the flowering season they have a most brilliant effect, for their flowers are large, and instead of the purple blossoms which deck the European species, those of Teneriffe are of a light golden yellow.

The House-leek is often boiled with milk, and given to quench thirst in fevers. Mixed with honey it is a good application for inflammation of the throat. Old writers describe its uses, when bound about the forehead, "to ease the headache, and distempered heat of the brain in frenzies, or through want of sleep." The juice mixed with cream is still a popular village remedy for Erysipelas; and we can ourselves testify to its uses in allaying the irritation caused by the sting either of the bee or nettle. A slightly acid flavour is perceptible in the leaves, which is caused by the presence of malic acid; and Professor Burnett says, that the Dispensatory describes a beautiful white coagulum, of a highly volatile nature, formed of the filtrated juice of the leaves with an equal quantity of rectified spirits of wine. One of the species common in Madeira, the *Sempervivum glutinosum*, is of much service to fishermen. They rub their nets with the fresh leaves of this plant, and if they are subsequently dipped in any alkaline liquor they are rendered as durable as if they were tanned. Several species cultivated in our gardens and greenhouses are very pretty. The Cobweb House-leek has white fine lines traced over its foliage, and presents the appearance of a plant over which the spider has trailed his net.

Our common House-leek has, in July, handsome succulent flowers of a reddish purple colour. The plant had in earlier times the names of Scungreene, Jupiter's beard, Jupiter's eye, and Bullock's eye. It is called in France, *Joubarbe*, and in Germany, *Hauswurz*; the Italians term it *Sempervivo*.

The House-leek must be regarded rather as a naturalized than a native plant. It is rarely, if ever, found in our country even apparently wild, being usually on walls and house-tops. Schouw, in considering plants in their relation to soils, enumerates some which grow on living or dead animals or plants, and those which grow on artificial substances. These last he divides into wall, ruin, plank, and rubbish plants. Meyen, referring to this, says: "Wall plants are those which appear on the walls of buildings, and certainly are very seldom wanting on them when old; but as they appear chiefly on very old decayed buildings, ruin plants are not properly distinct from them. As belonging to this class, I may name the lichen called Wall Lecanora (*Lecanóra murális*), the Wall-moss (*Dicránium murále*), the fern called Wall-rue (*Asplénium Rúta-murária*), the Biting Stonecrop, the Livelong, and many others. But it is right to remark, that all these plants which we have considered as wall and ruin plants can grow quite as well in other situations, on the ground, or on the bark of trees, and on rocks; and a particular inclination to the artificial situation can only have been ascribed to them because in certain countries they are almost always to be found upon them. This is also the case with roof plants. Thus, the common or roof House-leek, which has a

preference for such a habitat, occurs likewise in natural stations ; and the numerous mosses, which in the North grow on roofs of houses, are found on the ground, on rocks, and on the bark of trees.”

This German writer, following Schouw's division, enumerates as board or plank plants those which grow on wooden palings and similar places. Such are the lichens, the Wall *Parmelia* and Wall *Lecanora*; and these grow equally well on wood, or on stone walls, or rocks. On the garden-palings of other countries other plants prevail ; and Meyen says that in East Prussia there is seldom wanting on barn-doors a great quantity of the lichen *Ramilina fraxinea*, often six inches in length. The rubbish plants are such as grow in the vicinity of dwellings, as the Good King Henry, the Borage, and the Henbane, which are often found on heaps about houses.

4. SÉDUM (Orpine and Stonecrop).

* *Leaves flat.*

1. *S. Téléphium* (Orpine, or Livelong).—*Leaves* oval, often wedge-shaped at the base, serrated ; *flowers* in crowded corymbs, interspersed with leaves ; *stamens* 10. Plant perennial. This is the largest of our British species of this genus, and has a very succulent stem, terminating, in July and August, with clusters of handsome purple flowers. The stem is often two feet high, and spotted ; and the thick leaves at the upper part are in one variety rounded at the base, but in another all the leaves become narrow towards the stem. The

Orpine is a generally dispersed plant, but not very abundant, occurring in field-borders, hedges, and bushy places. Its properties are slightly astringent, and the plant is boiled with milk and used medicinally. It is also sometimes pickled like Samphire, but is very inferior to that vegetable.

The name of Livelong well denotes a peculiarity of this plant, which Spenser describes as—

“Cool Orpine growing still,”

for it not only continues fresh long after it is gathered, but if hung up in a room will continue to grow for some weeks as well as when in the earth. It seems to have been a very favourite flower of our ancestors, and we find it in the list of almost all accounts of such processions and floral ceremonies as occurred when it was in season. It was one which was named in all the accounts given of the practices of Midsummer-eve, and it has the old name of Midsummer-men. Lyte, in his translation of “Dodoen’s Herbal,” says of the “Orpyne:” “The people of the countrey delight much to set it in pots and shelles on Midsummer even, or upon timber, slattes, or trenchers, daubed with clay, and so to set or hang it up in their houses, where as it remaineth greene a long season, and groweth if it be sometimes oversprinkled with water. It floureth most times in August.” Many foolish and superstitious practices were connected with it, for it was a kind of love charm; and they appear to have been sometimes used even in later days, for Hannah More alludes to one, in one of her traets, relating of a young country girl, that she would never go to bed on

Midsummer-eve without putting up in her room a piece of the plant called Midsummer-men, as the bending the leaves to the right or to the left would indicate the constancy or faithlessness of the object of her thoughts.

Sir Henry Ellis mentions that "A small gold ring was some years since found by the Rev. Dr. Bacon, of Wakefield, in a ploughed field near Cawood, in Yorkshire, which had for its device two Orpine plants joined in a true love-knot, with this motto above, '*Ma fiance velt,*' that is, 'My betrothed wills, or is desirous.' The stalks of the plant inclined towards each other, intimating that those to whom it belonged expected to be united in marriage. The motto under the ring was '*Joye l'amour feu.*'" The Society of Antiquaries, to whom it was exhibited, judged from the form of the letters that it was a ring of the fifteenth century.

2. *S. Rhodiola* (Rose-root Stonecrop).—*Leaves* oblong, flat, smooth, and toothed; *flowers* having stamens and pistils on different plants. Plant perennial. This Rose-root Stonecrop, which much resembles the Orpine, formerly constituted the genus called *Rhodiola*. It is a succulent, broad-leaved plant, stouter than the Orpine, but with its stem shorter, and rarely more than a foot in height. Its flowers expand in June, and are of greenish yellow colour. The roots are thick and knotted, and have, when dried, a sweet odour, resembling that of the Rose. The plant is abundant on mountains and cliffs in Scotland and Ireland, and also at the North of England. The root is used by the Greenlanders as an esculent vegetable.

* * *Leaves scarcely if at all flattened. Flowers white or reddish.*

3. *S. Anglicum* (English Stonecrop).—*Leaves* egg-shaped, fleshy, spurred at the base beneath, sessile; *cymes* few-flowered; *petals* very sharply pointed. Plant annual. This species, though small, is one of the prettiest of the genus, when, in July, its white star-like flowers, with reddish purple anthers, are expanded on the rocky sandy soils. The leaves, which are chiefly placed alternately, are small and thick, of a sea-green hue, often tinged with red; and the stems, which are at first prostrate, afterwards become about three or four inches high. On the western shores of Scotland this Stonecrop often enlivens by its green masses and flowers the stony sea-beaches. It has much of the general appearance of the Common Biting Stonecrop, only that its flowers are not yellow, and it often grows with it, as Bishop Mant has said:—

“ See on the inland garden’s bound,
Or antique battlemented mound,
Which girds some castle’s steep aloof,
Or lowly peasant’s peaceful roof,
The Stonecrop spreads a mantle bright,
Like cloth of gold, or silver white,
Powder’d with spots of garnet red.”

4. *S. album* (White Stonecrop).—*Leaves* oblong, cylindrical, blunt, scattered; *cymes* much-branched, and drooping when in bud. Plant perennial. This species, which is not common, does not appear to be truly wild. It is a somewhat taller and less thick plant than the last,



and its white flowers, which are produced in July and August, are destitute of the bright purple colour which tinges the anthers of the English Stonecrop. The foliage has, however, the same glaucous hue, often stained with red. It grows on rocks and walls in various counties of England, and is more general on garden walls and on outhouses, where it was probably cultivated, than on any other spots.

5. *S. dasyphýllum* (Thick-leaved Stonecrop).—*Leaves* fleshy, almost globular, and opposite, except on the flowering stems; *flowers* in panicles; *petals* egg-shaped and blunt. Plant perennial. This is a doubtful native, found occasionally on walls and rocks in various parts of England, and in one or two places in Scotland and Ireland. It is a small plant, having leaves of pale green tinged with red, and its rose-coloured flowers blooming in June and July.

6. *S. villósum* (Hairy Stonecrop).—*Leaves* scattered, oblong, and flattened above, and, as well as the stems and flower-stalks, hairy. This, too, is a small species of Stonecrop, not common in all parts of the kingdom, though frequent in Scotland and the North of England. It would easily be distinguished, in a family of plants remarkable for their smooth foliage, by its hairy stems and leaves, which are also clammy to the touch. Its stems are about two or three inches high, and of purplish colour; and the flowers, which appear in June and July, are of a pale pink hue.

* * * *Leaves scarcely or not at all flattened ; flowers yellow.*

7. *S. ácre* (Biting Stonecrop).—*Leaves* egg-shaped, fleshy, spurred at the base, sessile ; *cymes* 3-elft, leafy ; *petals* pointed ; *sepals* blunt, swollen at the base. Plant perennial. This is a very common wild flower, growing on walls and tiles of houses, as well as on dry sandy slopes and heaths. From its frequency on the cottage-roof it sometimes shares with the *Sempervivum* the name of House-leek, and is apparently the plant alluded to in Clare's lines :—

“ O Home, however homely, thoughts of thee
Can never fail to cheer the absent breast :
How oft wild raptures have been felt by me
When back returning weary and distress ;
How oft I've stood to see the chimney pour
Thick clouds of smoke in columns lightly blue,
And close beneath the House-leek's yellow flower,
While fast approaching to a nearer view.”

The Dutch call this Stonecrop *Huislook*, and the Spaniards term it *Uvas de gato*. It well deserves, in common with most of the species, its name of Stonecrop, for it is often abundant on stony barren places, being well fitted for such soils by its succulent nature. Plants of this kind, like the Aloe and the Cactus, are designed to inhabit exposed and dry places, and sometimes to experience not only the heat of a scorching sun, but also a long season of drought. They are, therefore, provided by the Creator of the Universe not only with a large mass of juicy material, but the thin skin, or cuticle, which covers every part of them, is adapted to

admit of ready absorption and tardy perspiration. It is this which enables the Livelong and several others of the species to live and grow when separated from the root. One of these succulent leaves, as that of an Aloe, will, when partly dry, again become plump in a few hours if plunged into water.

The Biting Stonecrop is very similar to some others of the yellow flowering species, but even when not in bloom it may be known from all others by the mode in which its short thick leaves are arranged on its barren stems, where they crowd so closely as to overlap each other. Country people call it Small House-leek, Prick Madam, Gold Chain, and Wall Pepper, the last name being merited by its pungent flavour; indeed, it should be tasted with caution, as its juice is acrid enough to blister the tongue. It was a plant much in use among the old herbalists, both as an outward application, and also, when boiled in beer, as a remedy in pestilential fevers. They deemed it an "expeller of poisons," and it stood pre-eminent among simples as a cure for ague. This species is the *Trique Madame* of the French.

8. *S. sexanguläre* (Tasteless Yellow Stonecrop).—*Leaves* linear, blunt, rounded, and spurred at the base; *cymes* 3-cleft, and smooth; *sepals* acute, not swollen at the base. Plant perennial. This species is a very doubtful native, found rarely on old walls, as on those of Greenwich Park. The leaves are much longer than in the last species, and arranged in six rows on the barren shoots.

9. *S. reflexum* (Crooked Yellow Stonecrop).—*Leaves* awl-shaped, scattered, spurred at the base, convex on both sides; *flowers* in cymes; *sepals* egg-shaped, rather

acute. Plant perennial. A variety of this kind, which has more slender leaves and is of glaucous hue, is termed by some botanists *S. glaucum*. It is described as growing on some dry hills near Mildenhall, Suffolk, and on some other spots, but it is doubted if it is truly distinct from the ordinary form of the plant. Its leaves are described as not spreading, whereas in the general state of the Crooked Stonecrop they spread, and turn backwards. The flowering stems of this species are more slender and tough than those of any of the preceding kinds; they are from six to ten inches long. In July and August thick clusters of its bright yellow flowers are to be seen clothing many an old wall and sunny bank with golden beauty. Dr. George Johnston, remarking on its tenacity of life, says of this plant, "I pressed strongly, between dry papers, a specimen without radicles, and the flowers of which were not in the least expanded. The papers were changed every three or four days; but at the end of as many weeks so far was life from being extinct, that it had protruded many white root-fibres, from one to two inches long, and the flowers had fully expanded themselves."

10. *S. rupéstre* (St. Vincent's Rock Stonecrop).—*Leaves* slightly flattened, spurred at the base, and 5 in a whorl, those of the barren branches overlapping each other; *flowers* in corymbs. Plant perennial. This species opens its flowers during June and July, not only on the St. Vincent's and Cheddar rocks, but also on walls about Darlington, and in some places in Wales. It is very nearly allied to the last, differing chiefly in its more flattened leaves.

11. *S. Forsterianum* (Welsh Rock Stonecrop).—*Leaves* flattened, spurred at the base, those of the barren branches spreading in many rows. Plant perennial. This species flowers in June and July, on rocks near waterfalls in Wales. The short, erect, densely leafy, barren stems, forming little rose-like tufts, are its chief characteristics, but some botanists doubt if it is essentially distinct from the preceding.

ORDER XXXVI. GROSSULARIÆ.—THE GOOSE-BERRY AND CURRANT TRIBE.

Calyx growing from the summit of the ovary, 4 or 5 cleft; *petals* 4—5, small, inserted at the mouth of the calyx-tube, and alternating with the stamens; *ovary* 1-celled, with the young seeds arranged in two opposite rows; *style* 2—4-cleft; *berry* crowned with the withered calyx, pulpy, containing stalked seeds among the pulp. This Order consists of shrubs with or without thorns, and with simple lobed alternate leaves, plaited while in bud. The woody stems and branches are round, or irregularly angled. The species grow only in the temperate parts of the world.

1. RÍBES (Currant and Gooseberry).—*Calyx* 5-cleft; *petals* 5, inserted at the mouth of the calyx-tube; *stamens* 5; *berry* many-seeded, crowned by the withered calyx. Name given in ancient times by the Arabians to a species of Rhubarb.

1. RÍBES (Currant and Gooseberry).

* *Flowers 1—3 together ; branches thorny.*

1. *R. grossulária* (Gooseberry).—*Leaves* rounded and lobed ; *flower-stalks* short, hairy, 1—3-flowered, with a pair of small bracts ; *thorns* either single, or two or three together. Among the many kinds of Gooseberry which are cultivated in our gardens few are preferred for their fruits to the varieties of this common species. The plant grows in many woods and hedges, though it does not seem to be truly wild. Rough and smooth, green, red, and yellow gooseberries may, many of them, claim this common species as their parent. From very early times the gooseberry has been much cultivated in this country, and it was by our forefathers called Feaberry. Mr. T. Hudson Turner says, “The earliest notice of the gooseberry which I have found is in the fourth year of Edward I., 1276, when plants of this genus were purchased for the king’s garden at Westminster ; but as it is an indigenous fruit, we may infer that it was known at a remote time, though probably only in a wild state.” Tusser, who wrote his work on Husbandry in the time of Henry VIII., says :—

“The barbery, respis, and gooseberry too,
Look now to be planted as other things doe ;”

and Lord Bacon, writing about fifty years after Tusser, says, “The earliest fruits are strawberries, cherries, gooseberries, and corrans ; and after them, early apples, early pears, apricots, and rasps ; and after them, damsons, and most kind of plums, peaches, &c. ; and the latest are apples, wardens, grapes, nuts, quinces, sloes



brierberries, medlers, services, cornelians, &c.” The partiality of the English for gooseberries is commented on in the French “*Encyclopédie des Sciences*.” One of the writers of the work says, “A great number of gooseberries are consumed in Holland and in England, and one sees in London, during the season of these fruits, nothing but gooseberry pies. One must admit, however, that this fruit is well adapted to ameliorate the muriatic and alkaline acrimony of the English diet. In France it is only women and children, or country people, who eat gooseberries.” One reason, however, for their being less eaten may be found in the inferiority of the fruits when cultivated in France, or, indeed, in any warm climate. Even the English gooseberry is inferior to the fruit of Scotland, and, provided there is warmth enough for ripening, the flavour seems to increase with the coldness of the climate where it is grown. In the South of Europe the fruit is so small and tasteless that it is quite neglected.

In England every cottage-garden can boast its gooseberry-bush, and, as Bishop Mant has said,—

“ ’Tis pleasant on each hardy tree,
Currant or prickly gooseberry,
Along the hawthorn’s level line,
Or bush of fragrant eglantine,
Bramble or pithy elder pale,
Or larch or woodbine’s twisted trail,
Or willow lithe, a flush of green
To note, with light transparent screen
At intervals the branches hide,
Of vegetable gauze, till wide
It spreads, and thickens to the eye,
A close-wove veil of deeper dye.”

The gooseberry-leaf is, indeed, among the earliest of spring verdure. In France it is much more common in the hedges than with us; and from the beginning of March the plant may be seen winding its branches among the bushes and enlivening the dreary season. "In the month of April," says the French writer in *L'Encyclopédie des Sciences*, "it attracts by its flowers crowds of bees; its foliage is very thick then, though other shrubs are just putting forth their leaves, so that it is an excellent plant for decking spring arbours. I have a hedge which borders one of the paths of my April bower, in front of which I have planted primroses, violets, and auriculas, which contrast agreeably with the green background, and form a most graceful *coup d'œil*." The leaf-stalks of the gooseberry are said by Professor Lindley to be beautiful objects beneath the microscope, on account of the delicate border of half-transparent hair-like fringe, which, when magnified, looks like the most brilliant needle-shaped crystals.

The Lancashire gooseberries are the best which are grown in our country, and the names of several well-known varieties indicate that they were cultivated by working-men. All true lovers of their country must rejoice to see the hard-toiling weaver or collier resorting at the close of the day to his little garden, training his plants with care and skill, and striving to gain the prize to be given at the Gooseberry Show for the heaviest gooseberry. The Jolly Miner, Jolly Painter, Lancashire Lad, and many another good fruit has originated thus, and was the result of industry. These gooseberries were reared by men who loved their homes and families,

men of regular and orderly habits, mostly of lowly birth, but often of elevated feeling and Christian worth; for the lovers of plants and the skilful cultivators of cottage plots are not usually found among the idle and dissipated of mankind. Gooseberry-bushes often attain great age and considerable size. At Duffield, near Derby, there was, about twenty years since, a bush well known to be at least forty-six years old, the branches of which extended twelve yards in circumference; and in the garden of Sir Joseph Banks at Overton Hall, near Chesterfield, there were two very large bushes, which had been trained against a wall, and which measured each upwards of fifty feet across. A writer in the "Gardener's Chronicle" remarks of a gooseberry plant, "It is surprising what efforts some plants, or parts of plants, will make to save as it were their lives when diseases or serious accidents befall them. A branch of a gooseberry, trained against a wall, became diseased near the ground, and began to die upwards gradually; but the top of the branch made a struggle for life, and threw out roots into the wall between the joints of the bricks, and in that dry situation found means to support itself; the dead wood was cut out, and the living part left near the top of the wall, and there it remains a living plant."

Gooseberries are of various colours—white, yellow, green, and red. Some of our richest flavoured fruits are of the yellow kind; the red gooseberries are usually more acid than the others, but there are many varieties in all the colours. We need not comment on their uses for tarts, puddings, and preserves. The fresh fruits

are valuable additions to the dessert, and a sparkling wine of crystal clearness, known in country places as English champagne, is made of the gooseberry. The Pecten acid, the vegetable jelly of the older chemists, was also prepared from this fruit.

The *groseille* of the French as well as our own gooseberry have been variously accounted for by etymologists. Some think that the English name was derived from gorse and berry, because of the prickly shrub on which the fruit grows. Professor Burnett thinks that both the French and English words are corruptions of grois or gross berry; and Skinner considers that the plant was called gooseberry because the fruits were used as sauc for the goose. Gerarde calls them Feaberries, and in Norfolk the fruits were called feabes. This author remarks, "The fruit is used in divers sawces for meate; they are used in brothes instead of verjuyce, which maketh the broth not onely pleasant to the taste, but is greatly profitable to such as are troubled with a hot burning ague."

* * *Flowers in clusters: branches without thorns.*

2. *R. rábrum* (Red Currant).—*Clusters* drooping; *bracts* very small; *leaves* with five blunt lobes. Plant perennial. Several varieties of this plant are found apparently wild, in one of which the flowering clusters are erect, but the fruit is pendulous; and in another both flowers and fruit are upright; but in the ordinary form of the plant both flowers and fruit hang drooping from the bough. The shrub, though found growing

without culture in many parts of this kingdom, especially in hedges near houses, is hardly to be considered as truly wild, though some writers are of opinion that this is a native fruit. In Dodoen's "History of Plants," translated by Lyte in 1578, it is called the red beyond-sea gooseberry; and in France one of the modern names for the currant is *Groseille d'outre mer*. The French also call currants *Groseilles en grappes*, and the plant is termed in Germany *Gemeine Johannisbeere*. The old writers classed it with the gooseberry, for Gerarde says, "We have also in our London gardens another sort of gooseberry altogether without prickles, whose fruit is verie small, lesser by much than the common kinde, but of a perfect red colour, wherein it differeth from the rest of his kinde." Our English name doubtless owes its origin to the dried seedless grape of the Levant, which was called currant from Corinth, for our plant was formerly thought to be the Corinthian grape degenerated. The white and flesh-coloured fruits, so common in gardens, are but varieties of the red species. Their pleasant acid flavour is the consequence of the malic acid found in their juice, and mixed with sugar the fruit is of much value for domestic uses. The berries are refrigerant, and form a wholesome refreshment at that season of the year when juicy fruits are needed to counteract the effects produced on the system by the heat of the atmosphere. Being a hardy shrub, the currant is valuable to the cottager; and when trained against a wall, and bearing in profusion its ruby clusters, which sparkle among the green leaves, it is as ornamental as it is useful. The red currant, besides having many other

uses, is of great value for jellies, and the white and red currant were formerly used in wine, when home-made wines were more general than they now are. The wine is, however, too acid to be very wholesome. This plant was some years since grown to a great extent in Kent, Essex, and Worcestershire, the best-flavoured fruits being produced by plants which were reared in an open situation. It is wild, in more or less abundance, in all the colder countries of Europe, and is cultivated in gardens in the more southern countries.

3. *R. alpinum* (Tasteless Mountain Currant).—*Stamens* and *pistils* on separate plants, branches angled, leaves shining beneath; *clusters* of flowers and fruit erect; *bracts* longer than the flowers. Plant perennial. This currant grows in the woods and hedges at the north of England, but is scarcely wild in Scotland. Both leaves and flowers are very small. The currants are red. It is in flower in April and May.

4. *R. nigrum* (Black Currant).—*Clusters* loose, drooping, with a single-stalked flower at the base of each; *calyx* downy; *leaves* sharply 3—5-lobed, dotted with glands beneath. Plant perennial. This species is found in woods and by river-sides in various places, and though probably not a native of Britain, the time of its introduction is unknown. It is quite a distinct species, and has no tendency to produce varieties. In Kent its fruit is commonly called gazel, and we find it so termed by writers of the sixteenth century; but Coles, writing in 1657, says the white currant was in Kent called gozill. It is a very common plant in the woods of Russia and Siberia, where wine is made of the berries only, or is

fermented with honey, and sometimes with some spirituous liquor. In England the flavour of the black currant is not liked so well as that of the red, and it is not used for wine, and but little for tarts and confectionary, but the jelly and lozenges made of the fruit are valuable medicines in affections of the throat. The leaves have a strong odour, unpleasant to most persons, yet well liked by the natives of Siberia, who mingle them with a spirit, to which they are considered to impart a delicious flavour. They are often mixed with green tea in country places, and they are said to be one of the substances used by those who adulterate that article, and perhaps are among the most innocent ingredients employed for the purpose. The fruits are considered tonic and stimulating, and the wood and leaves partake of these properties. The berry is the largest of our currants, and is black and glossy. Some very pretty currant shrubs are cultivated in gardens. The common red-flowered currant (*R. sanguinea*), and the sweet-scented yellow currant (*R. aurea*), are among the gayest of our garden flowers in March and April.

ORDER XXXVII. SAXIFRAGÆÆ.—THE SAXIFRAGE TRIBE.

Calyx of 4—5 sepals united at the base ; *petals* equaling the sepals in number, inserted between the sepals, rarely wanting ; *stamens* 5—10 ; *ovary* of 2 united carpels ; *styles* 2, usually spreading in opposite directions ;

capsule 2-celled, opening in the inside ; *seeds* numerous. This Order consists chiefly of herbaceous plants, with alternate, rarely opposite leaves. The species contain no very important properties, though some British plants are slightly astringent, and some foreign species are more so. The *Heucheria Americana*, a plant of this Order, is commonly called Alum-root from its astringency ; and several species of *Weinmannia* are employed in the manufacture of leather, as well as in the adulteration of Peruvian bark. The genus *Saxifraga* is a very extensive one. It yields some mucilage, but its greatest worth is the beauty of its flowers, which often adorn lofty mountains, or in other cases deck the barren wall or rock. They are frequently the most lovely objects in Alpine wildernesses, flowering with the blue *Gentians* in spots almost inaccessible to the traveller, and giving by their leaves an almost perpetual verdure to barren soils. Some species grow on marshes or by river-sides.

1. SAXÍFRAGA (Saxifrage).—*Calyx* in 5 divisions ; *petals* 5 ; *stamens* 10 ; *styles* 2 ; *capsule* 2-celled, 2-beaked, opening between the beaks ; *seeds* numerous. Name from *saxum*, a stone, and *frango*, to break, probably from some species growing among the crevices of rocks.

2. CHRYSOSPLÉNÍUM (Golden Saxifrage).—*Calyx* in 4 divisions ; *petals* none ; *stamens* 8, rarely 10 ; *styles* 2 ; *capsules* 2, beaked. Name from the Greek, *chrysos*, gold, and *splen*, the spleen, from some imagined virtues of the plant.



1. SAXÍFRAGA (Saxifrage).

* *Calyx reflexed, inferior ; flowers whitish, panicked.*

1. *S. stelláris* (Starry Saxifrage).—*Leaves* oblong, wedge-shaped, toothed, scarcely stalked ; *panicles* of few flowers. Plant perennial. This plant grows on mountainous places by the sides of rivulets, or on wet rocks in Scotland, England, and the north of Ireland. It is from two to five inches high, its leaves having large roundish notches at their edges. The flowers expand in June and July. They are large and white, with two yellow spots at the base of each petal.

2. *S. Géum* (Kidney-shaped Saxifrage). — *Leaves* roundish and kidney-shaped, sharply toothed, or having rounded notches ; *foot-stalks* hairy, linear, and channelled above ; *leaves* in one form hairy on both sides, in a second variety smooth on both sides. Plant perennial. This species is very nearly allied to the next, but it may be distinguished by its kidney-shaped leaves. It flowers in June, and is common on mountains in the south of Ireland. Its ordinary form has the leaves sharply toothed, but there are several hybrids found in its neighbourhood, which have by botanists been described as distinct species. The chief of them is a plant formerly called Hairy Saxifrage (*S. hirsúta*), which has slightly hairy, oval, dark green leaves, scarcely cordate at the base, and which appears to be intermediate between this and the next species. It is common on the Gap of Dunloe, in Kerry. The Kidney-shaped Saxifrage varies not only in the amount of hairiness, but

also in respect of size, and in the degree in which the margin of the leaf is toothed.

3. *S. umbrósa* (London Pride). — *Leaves* roundish oval, with white cartilaginous notches, tapering at the base into a flat foot-stalk. Plant perennial. This beautiful little flower is well known as one of the few which will bear unhurt the smoke of large cities. It grows well in London, flourishing not only in the squares and open parts of the great city, where many hardy flowers may be found, but cheering also some of the gloomy little spots at the backs of houses in densely populated neighbourhoods. One sighs at the sight of these small plots, though glad that when even the “mournful mint” seemed injured by the sooty mist gathered about it, yet the London Pride survived all the ills of its condition, and perchance soothed some care-worn heart by its cheerful flower. Bishop Mant thus alludes to this and another plant :—

“ Its disk of white on upland wolds
The pretty Saxifrage unfolds,
With lucid spots of crimson pied,
Hence brought, and hail'd the City's Pride ;
And yellow rose-root yields its smell
From Cambrian crag or Cumbrian fell,
Or Rachlin's lone basaltic isle.”

This Saxifrage is said to be found wild on the mountains of Ireland, and has there the common name of St. Patriek's Cabbage. It is also called None so Pretty, and the old name of Queen Anne's Needlework was doubtless given from the delicate red spots traced on its white petals, and which to some of the embroiderers, who in those days practised the mysteries of “tent work, raised

work, laid work, frost work, Irish stitch, fern stitch, Spanish stitch, rosemary stitch," and many another stitell suggested the remembrance of some one of their manifold traees and deviees. Parkinson writing of it in 1629 terms it Sedum, and says, "Some of our English gentlewomen have called it Princee's Feather, whieh, although it be but a by-name, may well serve for this plant to distinguish it."

The London Pride is rare in England, though found in woods at Wetherby and at Craven, in Yorkshire. The Rev. W. T. Bree, commenting on this plant, says, "Mr. Lees informs us that *Saxifraga umbrósa* may now be found on some of the rocks at Malvern; but he very properly assigns to it a garden origin. Some years since, while touring in Yorkshire, I was at no small pains in endeavouring to meet with this plant in a truly wild state, and with this view visited the spot (Hestleton Gill) so minutely pointed out as its habitat in 'English Botany.' The result, however, of my examination was only an increased doubt as to the species being even in this sequestered spot really of spontaneous growth. It has been confidently asserted that the species oeeurs wild in Ireland; but erroneously, I believe, unless indeed the discovery has been made of late years. The London Prides whieh grow unquestionably wild, and so profusely adorn the rocks and mountains of Kerry, that is, the Gap of Dunloe, and the rocks near Killarney, are not *Saxifraga umbrosa*, but some allied species, be they two (*S. Geum* and *hirsuta*) or more, with their perplexing host of endless varieties; and I very much doubt whether any truly wild habitat for *Saxifraga umbrosa*

be yet known, either in Ireland, England, or even Scotland ; or, indeed, whether the plant be in fact originally indigenous. Ireland is the proper country of the *Robertsonia*, by which name the London Pride family of the Saxifrage genus is now often distinguished. In some parts of that country they grow in astonishing profusion ; but among all the countless varieties which are to be met with, I never could see in a wild state any one that could be mistaken by a botanist for the true *S. umbrosa*." Our best writers on British plants, as Professor Hooker, Dr. Arnott, and Mr. Babington, all agree with the opinion that the plant is not indigenous. Besides the places named, it grows about Edinburgh and Glasgow. Several varieties occur of this species, several of which are regarded by some botanists as distinct species. Such a one is the plant called *S. elegans*, which grows on the Turk mountain, and which has round, smooth, shining serrated leaves, with foot-stalks which are broad, flat, and serrated beneath. The type of the species has smooth leaves, longer than they are broad, with the teeth either blunt or short, and pointed, but the varieties differ much in the toothing, as well as in the form of the leaves.

* * *Calyx spreading ; leaves not divided.*

4. *S. nivális* (Clustered Alpine Saxifrage).—*Leaves* all from the root, inversely egg-shaped, sharply crenate ; *calyx* half-inferior ; *flowers* in a crowded head. Plant perennial. This Alpine species is from three to six inches high, and has large white flowers growing in a compact cluster. It is frequent among the clefts of

the high mountains of Wales and Scotland. Linnæus stated that this Alpine Saxifrage flowered in the regions of eternal snow ; and later botanists have occasionally detected a prolific vegetation existing even under the snow of Arctic regions. Dr. Hooker mentions that whilst at Terra del Fuego he had observed *Pernettya mucronata* in full bloom in a spot from which the snow had been accidentally removed. A plant, considered by Sir Wm. Hooker and Dr. Arnott as nearly allied to *S. nivâlis*, though by some botanists considered to be a monstrous form of *S. umbrosa*, has been called *S. Andrewsii*. It is described as having narrow leaves, with a membranaceous margin, tapering at the base into a slightly hairy foot-stalk ; sepals spreading, oblong, and blunt ; petals broad and dotted, thrice as long as the calyx. It was found by Mr. Andrews on the Head of Glen Caragh, Kerry, on some moist cliffs.

5. *S. aizoides* (Yellow Mountain Saxifrage).—*Leaves* very narrow, fleshy, fringed, the lower ones crowded on the stem, the upper scattered ; *stem* branched, prostrate below ; *capsule* half-superior. Plant perennial. This beautiful Saxifrage, though absent from our lowland meadows, is very abundant on mountains, especially near streams and rills. It is found in the North of England, Wales, and Scotland, having in June and July bright yellow flowers, spotted with reddish orange colour. The plant is sometimes called Aizoon-like Saxifrage, or Sengreen Saxifrage.

6. *S. Hirculus* (Yellow Marsh Saxifrage).—*Stem* erect ; *leaves* lanceolate, those from the root tapering into a leaf-stalk ; *calyx* inferior, fringed at the margin ; *petals*

obtuse, with two callous points near the base. Plant perennial. This species differs from the last, in having its flowers solitary, or nearly so. They are large and handsome, of bright yellow, spotted with scarlet, and are produced from August to September. The stem is from four to eight inches in height, the upper part is downy. The species, which is very rare, is found on wet moors, and is very plentiful on a moorland near Langton-Lees Farm, in Berwickshire.

7. *S. oppositifolia* (Purple Mountain Saxifrage).—*Leaves* egg-shaped, fringed, opposite, and closely crowded, so as to overlap each other; *flowers* solitary, terminal. Plant perennial. A lovely mountain-flower is this Saxifrage, occurring both in Alpine and Arctic situations, fearless of snow or frost, and opening its rich purple blossoms in May and June. Its habit is unlike that of our other Saxifrages, as it forms straggling tufts on the moist Alpine rocks in the North of England, and on Snowdon and other Welsh mountains, though its most frequent place of growth in this kingdom is the Highland mountains. The Scotsman, accustomed to see it on his native heights, has joyed to meet it on the Arctic shores, where there were few plants to remind him of home. Not but that Arctic plants are in some spots numerous and brilliant too in the hue of flower and foliage, though there is less variety than in other lands, because of the fewer families of plants which vegetate there. Accustomed, as most persons have long been, to consider the regions of the Polar Seas as drear and almost flowerless, one is surprised to see such a plate as that prefixed to Dr. Sutherland's work on these regions,

where large and gorgeous flowers are grouped together. True it is that there are vast dreary barren tracts, covered only with incredible quantities of lichens, making a walk over the dried and crusty surface during summer a weary labour, while the eye is rarely gladdened by seeing here and there some dark fir or dwarfed birch-tree. Yet there are seasons and spots where wild flowers vary the scene ; nor is the green turf altogether wanting, where, as Dr. Sutherland tells us, the chubby Esquimaux takes his childish pastime, rolling on the green spots which Nature has provided for him, watching with his bow and arrows, and the cunning eye of a sportsman, the ill-fated mouse or lemming that may have lost its hole in the grassy banks, or gathering the Chickweed (*Cerástium alpinum*) which grows among the foxtail grass. In such regions the flowers of the Purple Saxifrage must afford delight to the traveller. “The most beautiful plant that one could see in a whole day’s walking around Assistance Bay,” says Dr. Sutherland “was the Spider plant (*Saxifraga flagelláris*), so called from its striking resemblance to a large spider when it first appears above the surface, before the stem begins to rise from the spherical arrangement of the leaves, or the flagellæ begin to creep to any distance from among them to the soil around. This plant was rather late of coming into flower, but the Poppy was still later. The *Ranúnculus frígidas* had a very beautiful little flower, but it did not bear comparison with those of the other two which have been mentioned. The Purple Saxifrage (*S. oppositifolia*) vied with, and perhaps in the estimation of some exceeded the Spider plant in beauty ; its

chaste purple colour assisted this very much ; but I do not think that this, which is mere colour, admits of comparison with the charm which is imparted to the other by its likeness to a creature so famous for its diligence."

Lessing found in the Arctic zone, on the coast of Norway, in the meadows about Kunnea, a quantity of Purple Saxifrage, mingled with Moss Campion, Alpine Meadow Rue, Alpine Fleabane and Lady's Mantle, the Crowberry, the Small Alpine Gentian, and the Alpine Milk Vetch ; while the sandy shores were green, like some of ours, with the Sandwort (*Honckenya peploides*). The Pyramidal Saxifrage (*Saxifraga cotylédon*), which is the most beautiful of all the family, and which in spring adorns our garden with its white flowers, grows on the sides of some of the perpendicular precipices of Norway, and covers the borders of the ravines with multitudes of its starry blossoms. The peasant styles it *Berg Köngen*, or King of the Rock, which is a most appropriate name for this magnificent plant. Here, too, the Roseroot Saxifrage grows in great abundance. Another of our garden species, *Saxifraga crassifolia*, is very common in Siberia and Upper Asia. Its leaves are used as a substitute for tea, and, growing on elevated spots, the plant is called by the Russians Tea Mountain. The leathery spongy leaves of this plant fall off after a time, when those only are gathered which are quite black. They require no preparation, and the tea made from them is described as having an astringent flavour like that of the Chinese tea, but the aromatic property is said to be wanting.



* * * *Calyx spreading ; leaves divided.*

8. *S. granulata* (White Meadow Saxifrage).—*Root-leaves* kidney-shaped, with rounded lobes, stalked ; *stem leaves* nearly sessile, acutely lobed ; *flowers* paniced ; *capsule* partly inferior. Plant perennial. The large milk-white flowers of this species are by no means uncommon during May and June on hedge-banks, meadows, and pastures, especially where the soil is of gravel. The root gives its name to the species, being what botanists term granulated, and consisting of a number of small reddish, downy, round tubers. It is a pretty plant, with slender, leafy stems, ten or twelve inches in height. A double variety is a common garden flower.

9. *S. cernua* (Drooping Bulbous Saxifrage).—*Root-leaves* kidney-shaped on long stalks, palmate and lobed ; *flowers* solitary and terminal ; *capsule* superior. Plant perennial. This species is now almost extinct on the only recorded British habitat. Its place of growth is on rocks on the summit of Ben Lawers. It is remarkable for having small reddish bulbs in the axils of its upper leaves. The white flower appears on the slender drooping stem in July, but the plant rarely blossoms, being mostly propagated by its bulbs.

10. *S. tridactylites* (Rue-leaved Saxifrage).—*Leaves* wedge-shaped, 3—5 cleft ; stem much branched ; *flowers* terminal, each on a single stalk ; *capsule* inferior. Plant annual. This little Saxifrage has small snowy-white flowers from April to July, on a stem two or three inches in height. It is very common on old walls, dry

barren heaths, and the roofs of cottages in England, but it is rare in the west of Scotland and in the Highlands. The petals are so small as hardly to extend beyond the calyx. The foliage is of a rich green, turning red after flowering. It is thickly set with short hairs, terminated with red globules, which render it very clammy to the touch. It is a very elegant little plant.

11. *S. rivularis* (Alpine Brook Saxifrage).—*Leaves* 3—5 lobed, palmated, smooth, stalked; *stem* slender, branched, downy; *flowers* few; *bracts* oblong; *capsule* half inferior. This is a very scarce species, found in Scotland on moist rocks near the summit of Ben Lawers and Ben Nevis, but not in abundance. The only spot where it is known to occur plentifully is on Loeh-na-gar, Aberdeenshire. The flowers are white, and the root perennial.

12. *S. hypnoides* (Mossy Saxifrage).—*Barren shoots* long, and usually prostrate; *root-leaves* 3-cleft, those of the shoots either undivided or 3-cleft, bristle-pointed, and more or less fringed; *segments* of the calyx pointed. Plant perennial. This is an abundant and most variable species, its leaves assuming so many forms that the varieties have been described as species under several names. The flowers are white, expanding from May to July, on rocky mountainous situations in England, Scotland, and Ireland.

13. *S. caespitosa* (Tufted Alpine Saxifrage).—*Barren shoots* usually very short or wanting; *root-leaves* crowded, fringed, 3—5 cleft, with obtuse lobes; *calyx* segments blunt. In one variety the plant is larger, and in another smaller, but both without barren shoots. In this rare species the white flowers expand from May to

July. It grows on mountains, and is probably but another form of the variable Mossy Saxifrage, and, like that, it has a perennial root.

14. *S. muscoïdes* (Mossy Alpine Saxifrage).—*Barren shoots* very short, erect; *root-leaves* linear, blunt, and 3-cleft; *stem* few-flowered; *calyx* superior; *petals* short, scarcely longer than the sepals. Perennial. This plant, which is said to have been found in the Highlands of Scotland, is a doubtful native. It has buff-coloured petals, expanding in May.

15. *S. geranoïdes* (Geranium Saxifrage).—*Barren shoots* short; *leaves* downy and glandular, lower ones, and those of the shoots, on very long foot-stalks, deeply 3-cleft, the segments either cut or entire; *calyx* superior. Plant perennial. This Saxifrage is said to have been found on the Scottish mountains, but is a doubtful native.

2. CHRYSOSPLÉNium (Golden Saxifrage).

1. *C. oppositifólium* (Common Golden Saxifrage).—*Leaves* opposite, roundish, heart-shaped, with rounded notches; *flowers* in small umbels. Plant perennial. This, one of our earliest flowering plants, is common by the sides of rivulets, and in wet woods. It is also frequent on some of the highest parts of the Highland mountains, near rills. Though a small plant it often grows in large quantities, and we have seen masses of it on bogs at Tunbridge Wells, looking quite beautiful as the sun shone on its small clusters of yellow flowers and yellowish green leaves, so that the plant was like

a stream of gold among the greener mosses; while the water-wagtails were peeking at its young buds with great delight, and the willow wren singing a song of thankfulness for the loveliness of the heathy waste. This plant was renowned among the old herbalists for certain powers which they supposed it to possess, of removing melancholy and such maladies as were presumed to arise from a disordered spleen. It cannot, however, have any powerful medicinal properties, for it is in common use as a salad in the Vosges, where the peasant terms it *Cresson de roche*. Its golden hue is alluded to in several of its European names. The French call it *La Dorine*. It is the *Goldmiltz* of the German; the *Goudveil* of the Dutch; the *Gylden steenbrek* of the Danes; and the *Gul stenbräck* of the Swedes.

2. *C. alternifolium* (Alternate-leaved Golden Saxifrage).—*Leaves* alternate, lower ones somewhat kidney-shaped, upon very long foot-stalks; *flowers* generally with eight stamens. Plant perennial. This species, which is frequent in Scotland, is rather rare on the boggy lands of England. Its flat umbels of flowers are of a deep golden yellow. The stems are usually four or five inches in height, but in some places where the plant is luxuriant they are much higher, and it there overtops its frequent companion, the commoner Golden Saxifrage. The foot-stalks of the lower leaves of this species are very long, scarcely less than half the length of the stem. The stem, which is erect at the upper part, is often prostrate at the base. Sir Wm. Hooker and Dr. Arnott describe the common species as of a paler

colour than this in all its parts, and it is so usually; but in some places, as in an alder copse on Reigate Heath, mentioned by Mr. Luxford, it appears that this is of the paler tint, and that the bright yellow green of its upper leaves, and the pale yellow flowers, contrast there with the darker green of *C. oppositifolium*.

END OF VOL. II.



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