

JANUARY.

As the words Natural History are generally associated with ideas of flowers, birds, and insects, the subject appears particularly barren in January, when the ground is usually hard with frost, or covered with snow, and scarcely any birds or insects can be seen. Yet even at this dreary and desolate season there is much to interest the lover of nature.

Frost itself presents many curious phenomena. When the temperature of the atmosphere sinks below the freezing point, ponds, and other pieces of still water, have their surface gradually changed into a thin coating of ice, and the aqueous particles on the surface of the earth are congealed and hardened in the same manner. The surface of the water being frozen, imparts its cold to the layer of water beneath, which also freezes, and in its turn freezes a layer beneath it, till in time the ice becomes thick enough to bear enormous weights. A similar operation goes on in the ground; but as the layers freeze more slowly, the frost seldom penetrates more than six inches deep into the earth in any part of Great Britain; and even in the hardest frosts, the earth below the part which is frozen is as warm as in summer, or about 58°. When frost kills plants it is by freezing their sap, which, of course, expands when frozen, and thus requiring more space than it had before, tears asunder the veins which contained it.

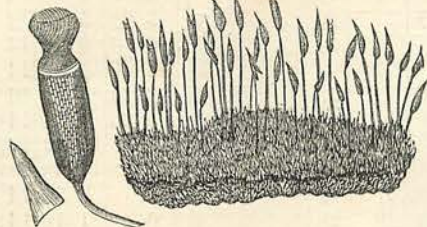
Hoar frost is merely frozen dew. On calm clear nights a great radiation of heat takes place from the surface of the earth, and the earth becoming suddenly chilled, communicates its coldness to those strata of the atmosphere which lie nearest to the ground, and these being laden with vapour, the moisture they contain is condensed by the sudden depression of the temperature, and falls in the shape of dew, covering the earth and trees with drops of moisture. In the summer these drops evaporate in the heat of the sun, but in frosty weather they become frozen into a covering of crystal.

It was formerly believed that the 14th of January was the coldest day in the year; that the sun always shone on the 22nd; and that if St. Paul's day (the 25th) should be fine, the year would be a productive one:—

If St. Paul's day be fair and clear,  
It doth betide a happy year;  
But if by chance it then should rain,  
It will make dear all kinds of grain;  
And if the clouds make dark the sky  
Then neat and fowls that year shall die;  
If blustering winds do blow aloft  
Then wars shall trouble the realm full oft.

Snow is produced when the atmospheric temperature falls suddenly below the freezing point, at a time when the clouds are loaded with moisture. This moisture is congealed as it falls, and if the atmospheric temperature continue below the freezing point till the frozen particles reach the earth, they take the form of snow; but should the atmosphere be warmer near the surface of the earth than it was in the region of the clouds, the frozen particles melt as they descend, and reach the ground in the shape of sleet. Hail, on the contrary, is formed by the atmosphere near the surface of the earth being colder than that of the clouds, so that the aqueous particles, which leave the clouds in the shape of rain, become frozen into hail before they reach the earth. In this way hail often happens after rain has fallen violently in very hot weather; for, as heat ascends, the atmosphere remains excessively hot after the surface of the ground has been cooled by the rapidly descending rain, and consequently the rain drops are chilled and frozen as they approach the earth. As a curious illustration of the theory explaining the formation of snow, Dr. Robertson mentions that one severe winter, a pane of glass having been accidentally broken in an assembly-room at St. Petersburg, the stream of cold air which was admitted instantly congealed the vapour in the room, which fell in a shower of snow.

There are very few plants in flower at this season. The holly, the mistletoe, and the ivy will probably have some berries left, and a few golden blossoms may yet be found on the dwarf furze (*Ulex minor*), but these are only lingering remnants of the former year. The common groundsel and purple dead nettle or red archangel, are, however, generally in flower; and several of the mosses and lichens are in their greatest beauty. One of the latter, which is generally found on old palings, the yellow tremella, is sometimes called St. Gudule's lamp, because it first appears about St. Gudule's day (January the 8th), and because its shining, yellow, jelly-like substance, glitters and quivers in the sun like the light of a feeble lamp. The common, or wall screw-moss (*Tortula muralis*) generally



SCREW MOSS.

ripens its seeds in this month. This moss, which grows almost everywhere, on old walls and other brickwork, and what at other seasons looks like patches of dark green velvet, if now examined closely, will be found to have springing from its base numerous very slender stems, each of which terminates in a dark brown case, which is, in fact, its fruit. As the fruit ripens, a little cap which covers it, like an extinguisher, rises gradually and is at last thrown off; and when the lid of the fruit, which is also conical, falls off, a curious tuft of twisted hairs appears, forming a kind of fringe, and it is from these twisted hairs that the plant takes its popular name of screw-moss. If a patch of the moss is gathered when in this state, and the green part at the base is put into water, the threads of the fringe will uncoil and disentangle themselves in a most curious and beautiful manner, and thus afford an opening to the seeds, which are exceedingly small, and are contained within a thin bag, attached to the central column of the case. It may here be mentioned that all mosses and lichens are more easily detached from the rocks and walls on which they grow in frosty weather than at any other season, and consequently they are best studied in winter. Many of them, also, are in fruit at this season.

About the 21st of January (St. Agnes's day), the Christmas rose, or black hellebore comes into flower, and hence the plant was formerly dedicated to St. Agnes, and numerous virtues were assigned to it, in addition to those which it really possesses. The flower of this plant is large and handsome, like a single tulip rose; and the root, which is thick and fleshy, looks quite black, when first taken out of the ground; but this dark colour is only in the outer skin, which readily peels off, and leaves a white and succulent substance, which is the part

used in medicine. The bear's foot, or stinking hellebore, also produces its curious purplish flowers about this season:

Its petals green, o'erlapped and closed,  
Present such arch'd converging lip,  
Embroidered with a purple tip,  
And green its floral leaves expand,  
With fingers like a mermaid's hand. MANT.

Towards the close of the month the Winter aconite frequently unfolds its bright yellow flowers, placed, as it were, in a salver of green; and about the 27th of January the first snow drop is frequently seen, attended by what is called the Scotch crocus, the flowers of which are white, regularly streaked with very dark blackish purple.

The robin redbreast and the common wren are among the few birds that sing in January; but they are said to suspend their music when the frost is very hard and has continued some time. It is at this season that the beautiful red breast of the robin has its most brilliant hue. In spring the red feathers lose their lustre, and the bird having a mottled breast all summer can scarcely be distinguished from the redstart, till its autumnal moult, when it recovers its characteristic feathers. Young redbreasts, hatched in the spring, do not display any scarlet feathers on the breast till after they have moulted in the following autumn.

High is his perch, but humble is his home,  
And well conceal'd, sometimes within the sound  
Of heartsome milk-lack, where the spacious door  
White-dusted, tells him plenty rises around;  
Close at the root of briar-bush, that o'erhangs  
The narrow stream, with healings bedded white,  
He fixes his abode and lives at will.  
O'er near some single cottage he prefers  
To rear his little home; there, pert and spruce,  
He shares the refuse of the goodwife's churn,  
Nor seldom does he neighbour the low roof  
Where tiny elves are taught. GRAHAM.

Starlings are seen in great numbers in the month of January. It is supposed by many naturalists that they stay in Great Britain all the year, and that they only migrate to the south in winter, returning northward in spring. Their food is chiefly insects, but when these cannot be obtained they will eat grain. The flight of the starling is not undulated, and it walks or runs on the ground like the wagtails and the larks, but never hops like the thrush. In severe winters starlings are sometimes found in pigeon-houses, where it is supposed they have ventured to protect themselves from the cold. The golden-crested wren is frequently seen in January. It is the smallest of the British birds. Its weight seldom exceeds eighty grains, and its length is rarely more than three inches. The male has a beautiful orange crest, but the crest of the female is much smaller and less conspicuous. This little bird remains uninjured during the severest weather, and it is said to sing even when the snow is falling. Its nest, which is very small, is composed of green moss, and it is said to have the opening on one side. The eggs are scarcely larger than peas, and they are white, with a tinge of pink. It is a singular fact in the history of this bird that eggs are frequently found that appear to have been laid the previous season, but never set upon. Sparrows are found abundantly at this season, as they are at every other; and fieldfares, larks, and redwings, are frequently seen on the banks of rivers searching for insects, which are sometimes found in such places, even upon the snow.

Insects are generally torpid in this month. Caterpillars, grubs, and maggots are sometimes found in the pupa state, but they are generally either buried in the ground or hidden in some secluded place, where it is only by chance they can be discovered. The eggs of insects may, however, be found in great abundance, though they are generally so carefully concealed as only to be recognised by a naturalist. The twigs of several kinds of trees will be found to have rings of what look like beads upon them, but which are, in fact, the eggs of the lackey moth glued so firmly together that they cannot be separated without the aid of a penknife. The eggs of the gipsy moth are covered with little tufts of down; and those of the va-pourer are found on the outside of the web-like bag which served the female for her cocoon. Snails shut themselves up for the winter by means of what is called an operculum, which is a shell-like substance just large enough to fill the opening of the shell, to which the snail glues it with a strong cement, having previously fixed herself to a wall or tree by a portion of the same glutinous substance, and in this state she remains without either air or food till recalled to life by the warmth and moisture of spring. In the countries where snails are eaten, they are only used while in this state of hibernation. They are fattened in what are called snail gardens, that is, in broad shallow pits sunk in the ground. In these the snails are kept and fed with fresh leaves, bran, and potatoes, during the summer, and in the winter, when they fix themselves against the walls of the pits, they are collected, packed in casks, and sent to market. It is said that four millions of snails are exported every year from the city of Ulm alone, and yet there are snail gardens in various other parts of Germany. The common garden snail (*Helix aspersa*) is never eaten, and it is only the large apple snail (*Helix Pomatia*) which is used as food. This large snail is not common in England, but it is found at Dorking and in some other places.



EGGS OF THE LACKEY MOTH.

There is a kind of small (*Helix virgata*), common in Devonshire, at this season, which is so small as to be generally found sticking to the blades of grass, together with a species of *Bulinus*; and these molluscous animals being eaten by the sheep with the grass, are said to afford a most fattening nourishment, and to make the mutton remarkably sweet. Many persons who are not observers of nature are not aware how many different kinds of snail are to be found, even in Great Britain. In different parts of the world there are two hundred and fifty living species known and described, and sixteen fossil kinds. Some of the foreign living kinds are very beautiful, their shells being spotted with various brilliant colours. Even among the common garden snails some are pink or yellowish, and others curiously banded. The banded snail (*Helix nemoralis*) differs from all the other kinds in living principally upon earth worms, or bits of meat. This was discovered accidentally by a little girl, the daughter of an eminent naturalist, who having picked up one of these pretty snails, and tried to feed it with various kinds of leaves without effect, at last gave it a piece of meat from her own dinner, which, to her delight, it ate greedily; by a series of further experiments it was found that this snail is really carnivorous.



MOOR SNAIL AND MOUNTAIN BULINUS.

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FEBRUARY.

FEBRUARY is generally considered the first month of the spring. As the snow melts gradually away, snowdrops appear abundantly, and hence this delicate little flower was formerly called the fair maid of February. It was also called our lady of February, as it was generally in flower on the 2nd of the month, the festival of the Purification of the Virgin, or Candlemas Day. This day, in many parts of Great Britain, particularly in Scotland, is supposed to have great effect upon the weather.

If Candlemas Day be fair and bright,  
Winter will have another flight;  
But if Candlemas Day be clouds and rain,  
Winter is gone, and won't come again.

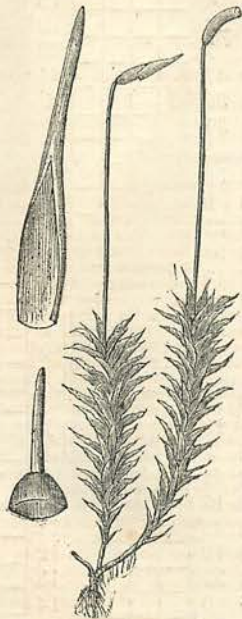
Towards the middle of February the cloth-of-gold crocus appears, with its petals of a deep golden yellow, which are striped with very dark reddish brown on the outside. The bulb, or rather corm, of this species is very large, and covered with strongly-marked network. The leaves of various bulbous plants now begin to appear above the ground, and the pink hepatica and the mezezon are generally in flower. Both flowers are worth remarking; the hepatica because its flowers are of as dark and rich a colour in the bud as they are when they are fully expanded; and the mezezon because the petals of its flowers are each furnished with a lining, which may be carefully peeled off, and which, when separated, looks as if two flowers had been glued together. The flowers of the latter plant appear clustered together on the naked part of the branches, while the leaves, when they unfold, are produced in tufts at their points. The bark of the mezezon is extremely tough, and the inner bark is capable of being distended, so as to form a kind of lace. The curious lace-bark tree of Jamaica is nearly allied to the mezezon, but its bark is still more beautiful, and is, indeed, so fine, that ruffles, a frill, and a cravat were cut from it and worn by Charles II. The catkins of the hazel generally appear in this month, though the female flowers, which are of a bright crimson, are seldom seen before March. The buds of the different kinds of trees begin to swell at this season, and it is curious to mark how diversified they are in appearance; some being short and thick, like those of the horse-chestnut and the lilac; and others long and tapering, like those of the *Eunonymus*, or spindle tree. On the 22nd of the month (St. Margaret's Day), the daisy is generally in flower, and hence the plant was formerly called Herb Margaret. It is still called *La Marguerite* in France, though it is also sometimes called *La Paquerette* in that country, from its being most abundant about Easter, the French word for which is *paques*. The name of daisy is said to have been, originally, day's eye. The green hellebore, which dies down to the ground in winter, springs up again in February, and flowers almost as soon as it appears above ground. The creeping crowfoot is often in flower at this season. In ancient times, the holly and mistletoe used to deck the houses at Christmas, were suffered to remain till the 1st of February, when they were removed, and their place supplied with box.

The curious cupped moss, called the Jew's-ear, is very abundant about this period. Though it is called a moss, it is, in fact, a kind of fungus which grows on old wood, generally the trunks of elder trees, which are partially decayed. There are two kinds, one of which is of a reddish brown, and the other a dingy black. The crab's-eye lichen (*Leccanora parvella*) is found at this season on exposed rocks and stones, and sometimes on walls and stones by the sea-side. The thallus, or leafy part, is of a dirty white, and forms conspicuous roundish patches, closely adhering to the stones on which they grow. It is used for dyeing crimson or purple in the south of France. Cudbear (*L. tartarea*), is another crustaceous lichen, very similar to the last in form, but differing both in size and colour, being larger, and of a brownish hue. In the Highlands of Scotland, many peasants earn fourteen shillings per week by scraping this lichen off the rocks with an iron hoop, and sending it to the Glasgow market, where it is used for dyeing wool purple. The scale mosses (*Jungermannia*), and the hair mosses (*Polytrichum*) are both in fructification about this period. One of the commonest kinds of scale moss (*Jungermannia bidentata*) is found in fructification at this season; it grows in patches, in moist shady situations,



SCALE MOSS.

near the roots of trees, and among moss upon commons, and on hedge banks. The seed vessels are little oval bodies, which, if gathered when unexpanded, and brought into a warm room, burst under the eye with violence the moment a drop of water is applied to them, the valves of the vessel taking the shape of a cross, and the seeds distending in a cloud of brown dust. If this dust be examined in a microscope, a number of curious little chains, looking something like the spring of a watch, will be found among it, their use being to scatter the seeds; and if the seed-vessel be examined in a microscope while in the act of bursting, these little springs will be found twisting and writhing about like a nest of serpents. The undulated hair moss (*Polytrichum undulatum*) is found on moist shady banks, and in woods and thickets. The seed-vessel has a curious shaggy cap, but in its construction it is very similar to that of the screw moss, except that the fringe round its opening is not twisted. There are also several kinds of tremella found on partially decayed wood at this season; and several curious fungi, which appear sometimes in patches of white or yellowish matter, and sometimes of a brilliant blue or purple. The curious plant called the ground *Sphaerocarpos* is only found at this season growing on the ground in clover and turnip fields, generally in Norfolk and Suffolk. It consists of a number of pear-

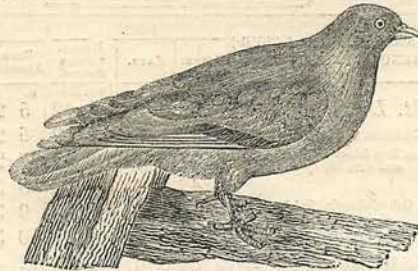


UNDULATED HAIR MOSS.

shaped substances, growing in clusters on a very thin membranous leaf. The whole plant is of a bright yellowish green; and, when the pear-like bodies are opened, a round ball is found at the base of each.

Many birds pair in February; but the earliest are generally the rooks, which sometimes begin to build on Candlemas Day (Feb. 2nd). The ravens are nearly as early; and White of Selborne relates an interesting anecdote of a female raven, which happened in this month. "In the centre of a grove near Selborne, there stood an oak, which, though shapely and tall on the whole, bulged out into a large excrescence about the middle of the stem. On this pair of ravens had fixed their residence for such a series of years, that the oak was distinguished by the title of the Raven Tree. Many were the attempts of the neighbouring youths to get at this eyrie: the difficulty whetted their inclinations, and each was ambitious of surmounting the arduous task. But when they arrived at the swelling, it juttred out so in their way, and was so far beyond their grasp, that the most daring lads were awed, and acknowledged the undertaking to be too hazardous. So the ravens built on, nest upon nest, in perfect security, till the fatal day arrived in which the wood was to be levelled. The saw was applied to the butt, the wedges were inserted into the opening, the woods echoed to the heavy blows of the beetle or mallet, the tree nodded to its fall; but still the dam sat on. At last, when it gave way, the bird was flung from her nest; and, though her parental affection deserved a better fate, was whipped down by the twigs, which brought her dead to the ground."

The blue titmouse, or tomtit, may be seen busily at work in the month of February pecking off the trees all those buds which are infested with insects, as the bird is one of those which require animal food; and, in severe frosts, it may often be seen near dwellings searching for bits of meat or bones which may have been thrown out by the cook. The nuthatch and the woodpecker are birds having similar habits, and they may often be seen in February pecking insects out of the lichens, with which the branches are covered. Blackbirds frequently begin to build in this month; and towards its close are heard the songs of thrushes, woodlarks, sparrows, wrens, and many other birds. In marshy places, the two harsh sharp notes of the marsh titmouse are heard about this season; and the stone curlews are heard to pipe. They are supposed to be the first migrating birds that return in spring. The bullfinch is frequently seen very busily employed in pecking at the swelling buds of the early trees and shrubs. "The bullfinch," says Mr. Knapp, "is gifted with no voice to charm us; it communicates no harmony to the grove: all we hear from it is a low and plaintive call to its fellows in the hedge. It has no familiarity or association with us, but lives in retirement in some lonely thicket ten months in the year. At length, as spring approaches, it will visit our gardens, an insidious plunderer. Its delight is in the embryo blossoms wrapped up at this season in the bud of a tree: and it is very dainty and curious in its choice of this food, seldom feeding upon two kinds at the same time. It generally commences with the germs of our larger and most early gooseberries; and the bright red breasts of four or five cock birds, quietly feeding on the leafless bush, are a very pretty sight, but the consequences are ruinous to the crop. When the cherry buds begin to come forward, the bullfinch quits the gooseberry bushes, and makes tremendous havoc with the cherry trees. The Orleans and green-gage plums form the next treat, and draw the bullfinch's attention from what remains of the cherry. Having banquetted here awhile, it leaves our gardens entirely, resorting to the fields and hedges, where the sloe bush in April furnishes it with food. May brings other dainties and other avocations."



THE WOOD PIGEON.

Wood pigeons are frequently seen towards the close of this month. The wood pigeon is indigenous to this country, and it is doubtful whether it migrates farther than from the northern to the southern parts. These birds assemble in large flocks in winter; and they resort to the woods, in order to roost in the highest trees, preferring those of the ash. They begin to pair generally in the month of February, "at which time the male birds are seen flying in a singular manner, alternately rising and falling in the air." The nest of the wood pigeon is formed of a few small sticks, so loosely put together, that the eggs may frequently be seen through them. The female lays only two, and they are white and oval; but larger than those of the common pigeon. Both the male and female birds assist in making the nest; and the male sometimes relieves the female in sitting. The nest is frequently built in pine or fir trees; but it is also found in hedges, or in large hawthorn bushes. The most common situation is, however, in ivy, or in the fork of a large tree.

Various kinds of caterpillars are found in the month of February; as, by a curious and beautiful provision of nature, insects come into existence just at the moment when the leaves of plants unfold so as to afford them food. Butterflies, that appear to have found some place of shelter all the winter, often appear on a warm day in February, fluttering about, and laying their eggs on the leaves of the plants destined to afford food to their caterpillars, before the leaves themselves are quite expanded; and in this way the eggs of the nettle, peacock, and painted lady butterflies, and sometimes even these of the tiger moth, are found on the young leaves of the nettle when the plants are only a few inches high. A few of the common flies sometimes appear at the end of this month; and the bat begins to fly. The woodlouse (*Oniscus asellus*) often makes its appearance towards the close of this month. This creature belongs to the Crustaceae, and it possesses the same power of curling up its body as the lobster does its tail. Woodlice always frequent dark and retired places; they are generally found under stones, or old logs of wood; and if a flower-pot chances to be turned down it is sure to be soon filled with woodlice. The food of these creatures consists of decayed vegetable and animal substances, and they are very fond of burying themselves in fruit somewhat over ripe. They generally crawl about at night, and are rarely seen in the day-time excepting in wet weather; and they coil themselves up when in danger. The young, when first hatched, are nearly white, and have only twelve feet; though, when the creature is full grown, it is brown, and has fourteen feet.



MARCH.

In the month of March the woods and banks by the roadside are full of wild flowers; amongst the most beautiful of which may be mentioned primroses, violets, several kinds of veronica or speedwell, the common coltsfoot, with its golden star-like flowers without a single green leaf; the rare whitew grass, both white and yellow; the golden saxifrage; the little white wood anemone; and the lesser celandine, or pilewort, the shining golden yellow flowers of which appear at first sight to resemble those of the buttercup, though upon examination it will be found that their petals are numerous and sharp-pointed, while those of the buttercup are rounded, and their number never exceeds five.

Pansies, lilies, king-cups, daisies,  
Let them live upon their praises;  
Long as there's a sun that sets  
Primroses will have their glory;  
Long as there are violets  
They will have a place in story:  
There's a flower that shall be mine,  
'Tis the little celandine.  
See its varnish'd golden flowers  
Peeping through the chilling showers,  
Ere a leaf is on the bush,  
In the time before the thrush  
Has a thought about its nest,

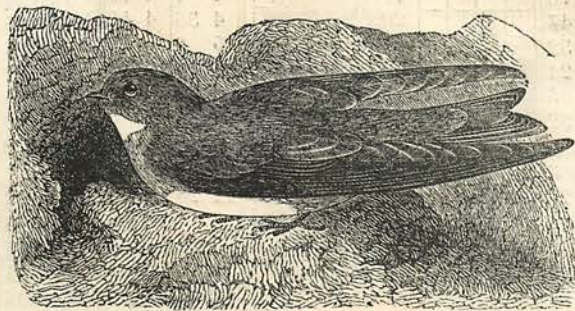
Thou wilt come, with half a call,  
Spreading out thy glossy breast,  
Like a careless prodigal;  
Telling tales about the sun  
When we've little warmth or none.  
Comfort have thou of thy merit,  
Kindly unassuming spirit;  
Careless of thy neighbourhood,  
Thou dost show thy pleasant face  
On the moor, and in the wood,  
In the lane—there's not a place,  
However mean it be,  
But 'tis good enough for thee.

WORDSWORTH.

Several of the forest trees are also now in flower; the willow, with its soft downy catkins; the acers, with their feathery blossoms; the elm, with tufts of purplish flowers, which, though too small to attract attention individually, yet give a kind of glow to the young shoots of the tree; and the lime, with its pale green flowers of delightful fragrance. The catkins of the hazel are now quite ripe, and the solitary crimson female flowers appear. The catkins of several kinds of poplars are also very conspicuous; and almost all the deciduous trees are partially in leaf. The black poplar, however, does not unfold its leaves till May, though it produces its large dark-red catkins in March, and towards the end of this month they fall, looking like great caterpillars on the ground. The capsules of the female catkins are enveloped in white cotton.

In this month the underwood of woods and forests is generally cut down; and the timber trees are felled, as, from the rising of the sap, the bark is more easily separated from them in this month than in any other. In the gardens, the almond, the apricot, and the peach, are now generally in flower; the *Pyrus*, or *Cydonia japonica*, opens its bright scarlet blossoms; and the *Corchorus japonicus* or *Kerria japonica*, its brilliant yellow flowers. All the crocuses are in full beauty, and nearly all the different kinds of narcissus and jonquils.

Many birds are in full song in this month. The garden thrush is one of the most interesting of the British songsters; and, like the nightingale, it sings nearly all night. Its nest is large, but not very compact, and its eggs are of a bluish tint, with irregular brown blotches. It lives principally upon snails, cracking their shells against a stone; and an amusing story is told of a tame thrush, which, being let out of its cage to fly about a room, took its mistress's pincushion, which was made in a whelk's shell, and hit it as hard as it possibly could against the table, in hopes of breaking it, thinking, no doubt, that some kind of snail was concealed within it. When the garden thrush is disturbed on her nest, she ruffles her feathers, spreads her tail, and snaps her bill with great force to drive away the intruder. As a great many nests may be found at this season, it may be useful to observe that the eggs of singing birds are almost always speckled, and generally on a dark ground. The greenfinch, the common wren, and the willow wren, have white eggs, spotted with red; the eggs of the house sparrow are of a dingy green, streaked with black; and those of the hedge sparrow, the magpie, and the crow, are of a greenish blue. The eggs of the raven are large, and of a dark green, blotched with brown; those of the fly-catcher are of a bright clear blue; and those of the kingfisher are white. The eggs of the nuthatch and of the greater titmouse are both white, with very small spots of red, and it is difficult to distinguish them from each other. The duck begins to lay in this month; the goose sits on her eggs; and the cock-pheasant begins to crow. At this season the curious nests of the sand-martins may be observed, and they consist simply of holes in the perpendicular front of a sand rock, being sometimes so deep as to take a man's arm up to his shoulder



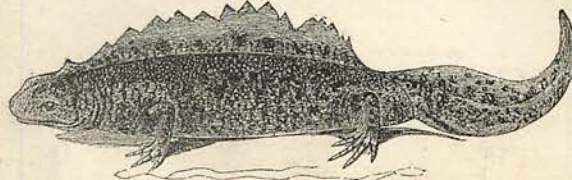
THE SAND MARTIN.

without reaching the bottom. Rennie gives the following description of the mode in which the sand martin builds its nest. He says he has seen "one of these swallows cling with its sharp claws to the face of a sand-bank, and peg in its bill as a miner would do his pickaxe, till it had loosened a considerable portion of the hard sand, and tumbled it down amongst the rubbish below. In these preliminary operations it never makes use of its claws for digging; indeed, it is impossible it could, for they are indispensable in maintaining its position, at least when it is beginning its hole." He also observes that the holes of some of these swallows are as nearly circular as if they had been drawn with a pair of compasses. The bird begins in the centre, and works outwards, changing its position continually, and it is as often hanging from the roof, with its back downwards, as standing on the floor. When the hole is of considerable depth, the bird "always scrapes out with its feet the sand detached by the hill; but, so carefully is this performed, that it never scratches up the unmined sand, or disturbs the plane of the floor, which rather slopes upwards, and, of course, the lodgment of rain is thereby prevented." There is a whole colony of these swallows in the sand-banks near Woking, in Surrey; and there are others in various parts of Great Britain, from Devonshire to the north of Scotland.

About this season frogs reappear. They pass the winter in a state of absolute torpidity, in the mud at the bottom of the water in which they generally live. "Here they congregate in multitudes, embracing each other so closely as to appear

almost as one continuous mass." (Bell.) On the return of spring, they separate from each other, and emerge gradually into active life. The eggs of frogs undergo eleven changes before the perfect animal is produced; and for at least a month they remain in what is called the tadpole state, in which the creature has a large head, and long body, but no legs.

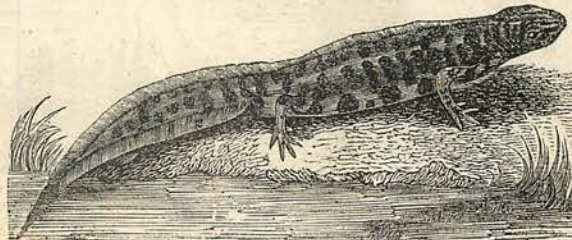
The toad is torpid, like the frog, during winter; but it generally chooses for the place of its retreat some sheltered hole, or hollow tree.



THE COMMON WARTY NEWT: MALE.

The warty newt is in a state of great activity early in spring. It is common in ponds and large ditches, where it feeds upon the tadpole of the common frog. The male and the female newt are nearly the same in appearance during winter; but, in spring, a beautifully-cut crest rises from the back of the male, which is highly ornamental.

The manner in which the eggs are deposited is very interesting. "The female, selecting the leaf of some aquatic plant, sits, as it were, upon its edge; and, folding it by means of her two hinder feet, deposits a single egg in the duplication of the folded part of the leaf, which is thereby glued most securely together, and the egg is thus effectually protected from injury." As soon as the female has, in this way, deposited an egg, she seeks another leaf, on which she deposits another egg, in the same manner; and in this way she proceeds till she has deposited as many eggs as she requires. The egg is very slightly tinged with buff, and it is surrounded by a substance resembling the white of a common egg, in which it keeps continually whirling round. It now goes through nine changes from the egg till it becomes a perfect insect, and for a considerable time it remains in a tadpole state, almost like the common frog.



THE COMMON SMOOTH NEWT: MALE.

The smooth newt is found in considerable numbers in almost every ditch and pond, especially where the water is tolerably clear; and it affords food not only to several kinds of fish, but to the warty newt, which is much larger than itself. Its own food consists of gnats, and other small insects, and also of the *Planorbis*, and other British molluscous animals, which it devours when they are quite young. In the month of June these animals quit the water, and remain for some time on land; the younger ones return to the water in autumn; but some of the older ones appear to become completely terrestrial, and may be found creeping about in damp places, near water, and sometimes venturing even into cellars. About the latter end of autumn, or the beginning of winter, the male newt acquires a crest, and his tail spreads out into a kind of web; both the tail and the crest being tipped with red. The body of the animal is also of a bright orange, passing into red; but, in June, when the newt quits the water, it loses its crest, its tail contracts, and its vivid colours change into a dull and uniform hue. The metamorphoses of this species differ very little from those of the larger kind, but the female is less careful in depositing her eggs, as she frequently lays three or four together upon an open leaf.

Bees generally become active in the month of March, as they are particularly fond of crocuses, which are generally in full flower in that month, and the bees partake so freely of their juices that it appears to intoxicate them. It is well known that the queen bee is longer and larger than the rest, and, as she is not intended for work, her movements are slow and apparently awkward. It is not, however, perhaps, so generally known that when bees swarm it is always the old queen that leaves the hive, while the young one remains behind. Bees are said to converse by crossing their antennæ; and it is certain that before swarming the queen may be seen going from one end of the hive to the other, and laying her antennæ across those of every working bee she meets with in the course of her progress; and also that each bee, as soon as touched, though quiet before, becomes instantly in a state of wonderful agitation, hurrying to and fro as though preparing for his journey, and at last joining the other bees that had been touched and all assembling together to be ready to attend their queen. The caddis worm, and other insects that live under water, sometimes begin to leave their cocoons in this month. The purple capricorn beetle, which is generally found feeding on the bark of trees that have been felled, goes into its chrysalis state in March, and reappears as a perfect insect in May or June. "When the insect is about to assume its chrysalis state, it bores down obliquely into the solid wood, to the depth sometimes of three inches, and seldom if ever less than two, forming holes nearly semi-cylindrical, and of exactly the form of the grub which inhabits them." This beetle is sometimes called the goat chaffer or musk beetle, on account of its smoky smell. The ground beetle is frequently found in the beginning of March, in paths near walls, where the sun has considerable power. It is one of the largest and most beautiful of the beetles which are natives of Great Britain. Its body is rather long and narrow; its head, breast, and wing cases are of a brilliant green, the latter being marked lengthwise with rows of oblong raised spots; and the under side of the insect is of a glossy black. The legs of this creature are remarkably long, and, when attacked, it runs away with amazing swiftness. It is generally found in gardens under heaps of decayed plants, or under stones. The larva of the beetle is a grub, and is very destructive, frequently continuing in its larva state three or four years, and eating voraciously during the whole of that time. Most insects eat only in the larva state, but the beetle continues to be destructive even when it is full grown.



APRIL.

In the month of April most of the trees are in leaf, and all nature looks so gay and beautiful, that we cannot refrain from quoting the exquisite lines of Mrs. Hemans, called "The Voice of Spring"—

I come, I come! ye have call'd me long,  
I come o'er the mountains with light and song!  
Ye may trace my step o'er the wakening earth,  
By the winds which tell of the violet's birth,  
By the primrose stars in the shadowy grass,  
By the green leaves opening as I pass.

I have breath'd on the South, and the chestnut flowers  
By thousands, have burst from the forest bowers,  
And the ancient graves, and the fallen fauces,  
Are veil'd with wreaths on Italian plains;  
But it is not for me, in my hour of bloom,  
To speak of the ruin or the tomb!

I have pass'd o'er the hills of the stormy North,  
And the Jacob has hung all its tassels forth,  
The fisher is out on the sunny sea,  
And the rein-deer bounds through the pasture free,  
And the pine has a fringe of softer green,  
And the moss looks bright, where no step has been.

At this season a great variety may be observed in the colours of the young leaves of the trees: the balsam poplar, which is one of the earliest, has its leaves of a beautiful yellowish green; the lilac, which is also early, is of a bluish green; some oaks are almost yellow, and others are of a bright reddish brown, with a tinge of yellow; the beech is of a purplish and rather dingy brown; the elm has large red bracts, which fall off as the leaves, which they enclose, unfold; and the lime has leaves of a peculiarly soft and tender green. The blossoms of the forest trees now also begin to show themselves; those of the lime are peculiarly fragrant, and they have attached to them a long, thin, membranous bract, which renders them easy to be recognised. The flowers of the acers have no petals, but the anthers of their stamens are deeply coloured—sometimes red and sometimes yellow, so that they are very ornamental; the flowers of the sycamore are drooping and very elegant. On the plane trees, the ball-like fruit of the previous year is probably still hanging, while the young leaves are opening; those of the American plane (*Platanus occidentalis*) are invested in a cottony down, which falls off when the buds burst, in such quantities as to make the Americans call the tree the cotton wood. Towards the end of this month, the large red caterkins of the black poplar begin to fall, and look on the ground like caterpillars of the goat moth (*Cossus ligniperda*). The catkins of the Italian poplar (*Populus monilifera*) also begin to fall towards the latter end of April, and scatter masses of cottony substance upon the ground, till it is quite white beneath the trees. The ash, in this month, produces its curious seed pods, which, in some parts of Great Britain, are called keys, and in others cocks and hens. The hop hornbeam and the common hornbeam are also in flower in this month, and are very ornamental. Among the herbaceous plants are cowslips, polyantheses, and the arum, so beautifully described by Clare:—

How sweet it used to be, when April first  
Unclos'd the arum leaves, and into view  
Its ear-like spindling flowers their cases burst,  
Being'd with yellowish white or luscious hue;  
Ah, how delighted, humming all the time  
Some nameless song or tale, I sought the flowers;  
Some rusby dyke to jump, or bank to climb  
Ere I obtained them; while from hasty showers  
Oft under trees we nestl'd in a ring,  
Calling our "lords and ladies"—O ye hours!

Dog violets, purple anemones, several kinds of orchis, the wood sorrel, ground ivy, the white meadow saxifrage, the forget-me-not and wood scorpion grass, with various kinds of ranunculus or crow-foot, and the globe flower, make the fields and banks a mass of beauty. The flowers of the marsh-marigold, and those of the water ranunculus, adorn the ponds and pieces of stagnant water; and, in short, the whole country is covered with flowers. One curious plant, which is found only at this season, is the toothwort (*Lathraea squamaria*). It grows on the roots of trees and has a yellow stalk, clothed with white tooth-like scales instead of leaves, and bearing very pale purple flowers. Another curious plant, which is in perfection at this season, is a kind of liverwort (*Marchantia hemisphaerica*), which, in fruit, looks like a number of little green



MARCHANTIA HEMISPHERICA.

toadstools growing out of flat leaves, and which is generally found with the common liverwort, on the earth in flower pots, on the banks of ditches, or in the moist crevices of rocks.

Among the birds of this month, the most interesting is, undoubtedly, the nightingale, which generally arrives in England about the middle of April, and commences singing about the 26th of that month. It is elegant in its shape, though its plumage is only of a dull, greenish brown. The song of the male bird, during the pairing and hatching seasons, is probably finer than that of any other bird. It "breathes," as Isaac Walton expresses it, "such sweet, loud music out of its little instrumental throat, that it might make mankind think that miracles had not ceased. He, that at midnight, when the very labourer sleeps securely, should hear, as I have very often, the clear airs, the sweet descant, the natural rising and falling, the doubling and re-doubling of that sweet voice, might well be lifted above the earth, and say, 'Lord, what music hast thou provided for the saints in Heaven, when thou affordest bad men such music on earth?'" It is a curious circumstance that, when the nightingale has once begun to sing, it is very difficult to make it stop. Even a stone thrown into the bush has no effect; and an attempt to seize the bird will only make the song cease for a few moments, as the bird, as soon as it has found a more secure posi-

tion, will recommence its song as loudly and as beautifully as before. An alarm before the bird had begun to sing would, however, probably prevent it from singing at all that night. The black-cap, or mock nightingale, is another singing bird which is generally heard in the month of April. It has a merry, cheerful song; and, though it sometimes imitates the nightingale so well as to be mistaken for that bird, yet it never can preserve its imitation long. It seems such a little madcap, that it can't bear control, and must burst forth again into its own wild, joyous notes of glee. The cuckoo begins to sing about the 14th of April, which is still called Cuckoo Day in some parts of England; and many old persons consider that they shall be unlucky all the year if they do not hear the cuckoo on that day. The wood wren, or petty-chaps, sings in April. It is a beautiful little bird, of so bright a green, that it is called, in Germany, the leaf-bird, or the green wren. The redstart, the titlark, the willow wren, the sedge warbler, and many other birds, begin to sing in this month.

In this month several luminous insects appear, the most remarkable of which are the glow-worm and the scolopendra. The scolopendra being seldom found, except in dry, gravelly soils, many people are comparatively little acquainted with it. It is a long, slender insect, white, or of a cream-colour, tinged with red, and having numerous feet. It lives on the ground; and, when it is seen crawling by night, it leaves a long, brilliant line of light behind it. A curious battle between one of these insects and a stag beetle is related in the *Magazine of Natural History* for 1832:—"A gentleman was walking in a flower garden, when he perceived that one of the beds was almost covered with a brilliant light. The light was brighter than that of the glow-worm, and six or seven inches square; and it appeared so extraordinary, that he was determined to examine it. When he approached the spot, he saw, to his great surprise, a large star-beetle, quite covered with the luminous matter, which seemed to confuse and bewilder it, for it staggered about in a most extraordinary manner. Observing the beetle closely, he found that it was running and stumbling to and fro, as if blinded by its own unnatural light; every now and then stopping and thrusting its head into the ground, and rolling itself over and over, as if to get rid of its fiery coating. In all its movements, however, it seemed quite unable to escape from the spot of illuminated ground; as, though it was incessantly running round and round, it never attempted to pass the boundary. The gentleman, as he watched the beetle, became more and more puzzled to discover the cause of this singular scene; till at last he discovered, beyond the boundary, a *Scolopendra electrica*, a perfect line of silvery light, slowly, but gracefully, winding itself away, without leaving the least mark by which its track could be discovered." Snails are now abundant and active, destroying almost every kind of vegetation they can find. The female earwig may sometimes be found under stones, or in some sheltered situation, placed over a heap of eggs, which she appears to brood over as carefully as a hen does over her chickens. The young are seldom hatched before the middle of May; and when they first leave the egg they are nearly white. The earwig is almost the only insect that takes care of her young; as generally, insects, after laying their eggs, leave them to be hatched by the sun. The supposition that earwigs gnaw the drum of the ear is a vulgar error, as the forceps of the earwig are not strong enough to divide the skin. The insect vulgarly called the death-watch, is usually heard at this season. It is a species of *Anobium*, a genus of small beetles. These insects



THE DEATH-WATCH.

live entirely upon wood: the eggs appear to have been deposited near some crack in a piece of furniture, or on the binding of an old book. As soon as the larvae are hatched, they begin to eat their way into the furniture on which they have been deposited, and when they have attained a sufficient depth, they undergo their transformations, and return, by another passage, as beetles. In furniture that has been attacked by them, little round holes, about the size of the head of a pin, may be seen, and these are the holes that have been made by the beetles. The noise which has given rise to the name of death-watch, is made by the insect striking its head against the wood. The larva is called a book-worm, when it attacks books; and old books that are seldom used are often found bored through by it; as, though it prefers the cover, when it has finished one side it searches for the other, and takes the nearest way to it by boring through the leaves of the book, however thick the volume may be. Kirby and Spence mention that in one case twenty-seven folio volumes were eaten through in a straight line by this insect. The beetle is very small, and almost black. The head is particularly small, and, from the prominence of the thorax, looks as if it were covered with a hood. Another insect of the same genus (*Anobium puniceum*) attacks dried objects of natural history, and all kinds of bread and biscuits, particularly sailors' biscuits, in which its maggots frequently abound. In collections of insects it first consumes the interior; and when the larva assails birds, it is generally the feet that it devours first; and in plants, the stem, or ligneous part. The larva is a small white maggot, usually curled; and the body, which is wrinkled, consists of several segments covered with fine hairs. The jaws are strong and horny, and of a dark brown. The pupa is white, but so transparent that all the parts of the perfect insect may be seen through it. The beetle is of a reddish brown, covered with fine hairs.

The saw-fly, which is so destructive to the gooseberry bushes, generally makes its appearance in the month of April, issuing from the ground in which it has lain from the preceding September. The fly has a flat yellow body, and four transparent wings, the outer two of which are marked with brown on the edge. The female lays her eggs on the underside of the leaf



THE SAW-FLY OF THE GOOSEBERRY.

on the projecting veins, and they are so firmly attached that they cannot be removed without crushing them. It is supposed that the female insect makes a number of very small cuts in the projecting veins of the leaf, and lays an egg in each; so that the edges of the wounded membrane grasp and hold firmly the part of the egg which is thrust into the gap by the insect. Similar insects attack the leaves of the osier and the alder.



ANOBIIUM PUNICEUM.



MAY.

MAY is proverbially the month of flowers. The hawthorn, the blackthorn or sloe, the horse chestnut, and many other ornamental trees and shrubs, are now in all their beauty; and almost innumerable herbaceous plants are in full flower. Among the most conspicuous of these is the lady-smock (*Cardamine pratensis*), which grows in such profusion in moist meadows, near water, that it looks, at a little distance, like linen laid out to bleach; and hence its common English name. The marsh marigold, with its golden yellow flowers, is very abundant in marshy places, in this month; and Jack-by-the-hedge—a plant which has a strong flavour of garlic, and clusters of cruciferous white flowers—is found abundantly in the hedge banks, and affords a useful vegetable to those who like its flavour. The cotton grass (*Eriophorum vaginatum*) produces its downy seed in this month, and the places where it abounds look, at a little distance, as if covered with snow. In the gardens, the lilac, the laburnum, and the wistaria are in flower among the trees; while tulips, anemones, various kinds of ranunculus, and many other beautiful flowers, decorate the beds. Towards the close of the month, several curious wild flowers may be found, one of the most remarkable of which is that called Herb Paris (*Paris quadrifolia*). This plant, in



HERB PARIS.

some parts of the country, is called one-berry, or true-love, from its fruit being a single purple berry, growing in the centre of a green-spreading calyx. The flowers are green, and of no beauty. The plant is only found in sheltered woody spots, and it is generally considered poisonous.

Beneath the shade,  
A beauteous herb, so rare, that all the woods  
For far and near around, cannot produce  
Its like, shoots upright; from the stalk  
Four pointed leaves, luxuriant, smooth, diverge,  
Crown'd with a berry of deep purple hue.

GRAHAME.

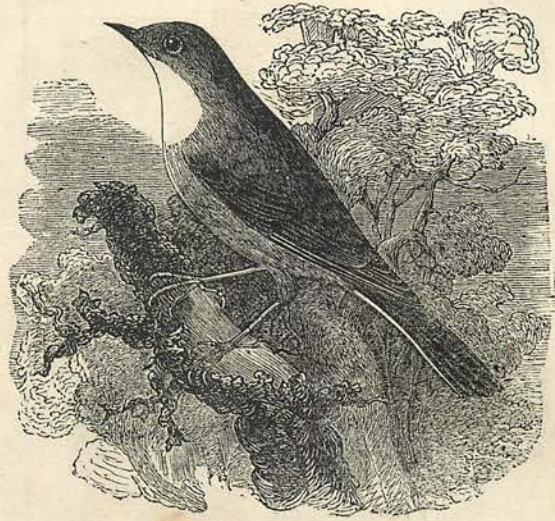
Another poisonous plant, which is found in great abundance at this season, is the wild chervil, also called the May-weed, or cow-parsley. It is an umbelliferous plant, with white flowers, which, Lees tells us, it produces in such abundance, as often to "completely cover and whiten over whole fields, especially in the vicinity of coppices." The white-rot, or marsh-penny wort (*Hydrocotyle vulgaris*), and the red rattle (*Pedicularis sylvatica*), are found in boggy places. The common wallflower, and the curious little plant called the wandering sailor, or ivy-leaved snapdragon, grow on walls; and the greater celandine (*Chelidonium majus*) is generally found in country churchyards. This latter plant has yellow flowers and bluish-green leaves, and, when broken, its juice is yellow and glutinous. It is said, when diluted with milk, to remove white specks from the eyes; and, formerly, it was supposed to be used by swallows to make their young see, as it was supposed that the young birds, when first hatched, were blind. The plant is still called swallow-wort in many parts of the country, in allusion to this superstition; though, in the north, another plant is known by that name. Among the water plants, the fringed buckbean (*Menyanthes trifoliata*) is conspicuous, from its beautiful yellow flowers; and the water crowfoot, from its star-like flowers of silvery white. Several kinds of orchis are in flower during this month.

Birds are particularly abundant in the month of May, and nearly every bush resounds with their notes. It is indeed, perhaps, in this month that the songs of wild birds are heard in their greatest perfection; and those who are interested in the subject will be amused to find what very different sounds the same birds can produce. The call note of each bird, for instance, is quite distinct from its sharp chattering note of fear; and both, again, are quite different from the full melodious song of the male while the female is sitting on her nest. The willow warbler, which is generally heard in this month is one of the few birds that sings as it flies. It builds its nest on the ground, and the nest itself is so oddly shaped that in some parts of the country it is called an oven.

The nightingale sings through the greater part of the month of May; but, towards the close of the month, the female makes her nest, generally of oak leaves lined with dry grass, and places it on the ground, among materials of the same nature as those of which it is composed, so that it can scarcely be seen. The female lays four or five eggs, which are of a dark brown or dusky green; and, as soon as these eggs are hatched, the male ceases to sing; and, instead of doing so, makes a fearful noise like the croaking of a frog. "The croaking of the nightingale, at the end of May, and in June," says Knapp, "is not occasioned by the loss of voice; but by a change of note—a change of object. His song ceases when his mate has hatched her brood; vigilance, anxiety, caution, now succeed to harmony, and his croak is the hush, the warning of danger or suspicion, to the infant charge and the mother-bird."

The sharp shrill call of the whitethroat is generally heard early in May, and soon after, its proper song. It is a lively and interesting little bird, with a

very sweet, clear, and loud song. It lives principally upon insects, though it is sometimes found to attack cherries, currants, strawberries, and other soft juicy fruits. It is said to be easily caught in a trap baited with a living caterpillar, a common house fly, or a butterfly. When kept in a cage, it should have some fine gravel in the bottom, and plenty of water inside, to allow it to wash, which it will do two or three times a day.



THE COMMON WHITETHROAT.

During the spring, the thrush is heard nearly all day, but towards the end of May it sings principally in the morning and evening; and sometimes, it continues its song all night. It has been observed, indeed, that the thrush dislikes hot, dry weather, as much as the blackbird; and it is well known that the blackbird always sings in wet weather, and particularly in a thunder-storm. The blackbird sings early in the morning, and late in the evening, but not so late as the thrush. The woodlark and the sedge-warbler also sing in the night, during the hot weather of summer, and the hedge-sparrow and the cuckoo have been heard to call as early as three o'clock in the morning. The turtle-dove is generally heard first in the woods, in May; and about the same time is first seen the curious bird called the sandpiper or marine snipe, and also, sometimes, the pigmy curlew, from its singular and somewhat monotonous cry. This bird is elegant in its form, with very long slender legs, and a long, slender, and slightly curved beak. These birds are remarkable for a change of colour in their feathers, which is produced by a partial moult in summer; but this elegant summer plumage falls off, and the bird resumes its ordinary feathers in autumn. The sandpiper is only found near the sea, as its food consists of the small crabs and molluscous animals it finds in the sand, just on the verge of the waves. The water-hen or moor-hen (*Gallinula chloropus*), builds her nest about this time. The following interesting account of a water-hen's attachment to her young is related in Mr. Waterton's delightful *Essays on Natural History*.—"In 1826, I was helping a man to stub some large willows near the water's edge. There was a water-hen's nest at the root of one of them. It had seven eggs in it. I broke two of them, and saw that they contained embryo chicks. The labourer took up part of the nest, with the remaining five eggs in it, and placed it on the ground about three yards from the spot where we had found it. We continued in the same place for some hours afterwards, working at the willows. In the evening, when we went away, the old water-hen came back to the nest. Having no more occasion for the labourer in that place, I took the boat myself the next morning, and saw the water-hen sitting on the nest. On approaching the place, I observed that she had collected a considerable quantity of grass and weeds, and that she had put them all around the nest. A week after this I went to watch her, and saw she had hatched; and, as I drew nearer to her, she went into the water with the five little ones along with her."

The wireworm is the larva of a beetle; and in general, when a whitish-looking grub is found buried in the ground, it may be presumed to be the larva of some destructive kind of beetle, and should be destroyed.

Glowworms are very abundant in this month, and the female may always be detected at night by her light, though by day she can hardly be distinguished from a woodlouse. The male insect has wings and no light. It is properly a kind of beetle, and it was supposed to live entirely upon vegetable matter till a few years ago, when a French naturalist who had taken the larvæ of some glow-worms to watch their habits, accidentally gave them a dead slug among the leaves with which he usually fed them. The next morning, when he went to look at his glow-worms, they were nowhere to be found. On turning over the leaves, however, he found, to his great surprise, that they had buried themselves in the body of the slug; and he afterwards found that his insects would eat a dead slug every day. A live snail was afterwards put to the same larvæ, and after a long battle they succeeded in killing it and finally devouring it.

The ephemera or Mayflies appear towards the latter end of this month. These little creatures, it is well-known, live as flies only one day; but they pass two or three years in their larvæ state. They undergo their transformations buried in the earth on the sides of ponds, the entrance to their habitation being below the surface of the water. On a warm evening towards the end of May, about sunset, these insects burst from the bank that has sheltered them, and rise in incredible numbers into the air, casting off the exuvie or skins which had enveloped them, which fall as a shower of snow as the insects rise. In less than two hours the female insects have laid their eggs, which are about eight hundred in number. These eggs are curiously glued together, so as to form two little packets, each about a quarter of an inch long, and as soon as they are laid they are deposited in the water by their parent, who dies as soon as she has performed her task.



JUNE.

JUNE is pre-eminently the month for flowers. The wild roses and honeysuckles are abundant in every hedge. In the woods, the butterfly orchis, and numerous other curious nearly allied plants, are to be found; while the beautiful bee orchis hangs from the limestone rocks its curiously shaped flowers, quivering in the air, as if they were really the insects they represent. In boggy places, the butterwort is found, with its oily leaves covered with the remains of very small flies; and the sun-dew, with its curious leaves looking as if fringed with gems. In wetter places will be found the water violet, with its pretty pink flowers and finely-cut leaves; the forget-me-not; and the brooklime (*Veronica Beccabunga*), which generally produces its clusters of bright blue flowers on the banks of a clear, shallow brook. Near the sea, the yellow horned-poppay has a peculiarly brilliant appearance, and its sea-green leaves looked as though they had actually taken their colour from the spray which washes over them. The sea milkwort, the sea spurge, and the eryngo or sea holly, are all beautiful plants which adorn the sea shore during the month of June.

In this month, a great number of the ferns unroll their fronds; for it must be observed that ferns do not form buds like other plants, but that their leaves, or fronds, as they are properly called, when they first appear, are rolled up in a circular form, and gradually unfold. It was formerly believed that fern seed, if gathered on the eve of the Festival of St. John the Baptist (the 23rd of June), would make the bearer invisible. Ferns have no visible flowers, and their seeds are produced in clusters, called sori, on the backs of the leaves. Each sorus contains numerous theca, and each theca encloses almost innumerable spores or seeds. The curious plant called the flowering fern (*Osmunda regalis*), has the sori, which are of a deep brown, growing on a branched spike which rises above the fronds like a spike of flowers. There are numerous other kinds of fern, all remarkable for some interesting peculiarity, but which it would take too much space to enumerate here. When ferns grow in great masses, as in Epping Forest, and Hagley Park, in Worcestershire, the effect is magnificent, particularly when the fronds are waved to and fro by the wind. The poppies are all in flower at this season, particularly the large white, or opium-bearing poppy. When the petals of the flowers of this species fall, the seed vessel will be found green and

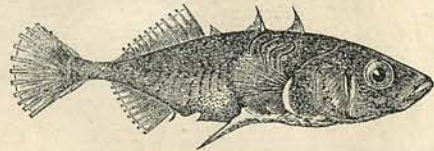


MALE FERN.

succulent; and, if it is slightly wounded, or rather scarred with a sharp knife, a milky juice will appear; and, if this is exposed to the sun till it hardens, it becomes opium. The white water lily, which has been called the queen of British flowers, is in perfection in this month. The leaves of this plant are large and handsome, and they float on the surface of the water. The flowers, if closely examined, will be found curious in a botanical point of view, from the manner in which the calyx, the corolla, and the petal-like stamens seem to change into each other. The common yellow flag (*Iris Pseud-acorus*) is a splendid marsh plant at this season, and it was formerly believed always to unfold its blossoms on the 1st of June. Various other kinds of iris ornament the gardens. The genus iris is also curious to a botanist, from the stigma of each flower spreading out into three fringed petals, under each of which a stamen lies hidden. The grasses are very interesting in June, and may be studied at this season to the best advantage. Those who have not studied the subject will be surprised to hear that there are nearly fifteen hundred different species of grasses, and that, of these, above three hundred kinds are common in pasture fields in Great Britain. Of course, the chief difference between these kinds consists in the seeds; but, when closely examined, even the leaves will be found decidedly distinct. The most beautiful of the British grasses are the feather grass (*Stipa pennata*), and the quaking grass (*Brisa media*). St. John's wort (*Hypericum calycinum*) was said always to be in flower on St. John's Day, the 24th of June. The scarlet pimpernel or shepherd's weather-glass is in flower at this season, and it takes its popular English name from the fact which has been often observed, that, if its flowers will not unfold in the morning, there is sure to be rain in the course of the day.

In this month, comparatively few birds are heard in song, for, as in most cases the young birds are hatched, the parents, both male and female, are too much occupied in attending to them to sing. In fact, the song of birds seems generally confined to the periods of pairing and hatching, as, during the latter time, the male sings as if to amuse the female while on the nest. Many birds may, however, be seen in this month; and the habits of the shrike, or butcher-bird, are so curious, as to make it well deserving attention. It is a migratory bird, seldom appearing in England till the latter end of May, and it departs early in September. It is a solitary bird, being generally found alone; and when it has killed its prey, which consists of small birds, insects, and sometimes field mice, it fixes the creature it has killed to a thorn, and then tears it in pieces with its bill. "When coming upon a bird or mouse which it has pursued for some distance, it settles its feet at the moment it strikes with its bill the cranium of the object pursued." "All small birds," says Mr. Knapp, "have an antipathy to the shrike, betray anger, and utter the moan of danger, when it approaches their nests. I have often heard this signal of distress, and, cautiously approaching to learn the cause, have frequently found that this butcher-bird occasioned it. They will mob, attack, and drive it away, as they do the owl, as if fully acquainted with its plundering propensities." White mentions that a friend of his, who shot a butcher-bird, told him "that it might easily have escaped his notice, had not the outcries and chattering of the whitethroats and other small birds drawn his

attention to the bush where it was." The redstart and the pied fly-catcher are sometimes heard singing in June; but the latter seldom longer than the first week of that month. Some birds build their nests in this month, and the commonest of these is the goldfinch. This bird makes a very elegant nest, composed of various kinds of grass, mosses, and lichens, all carefully woven together, so that not a single projecting particle is seen. The nest is then lined with wool, hair covered with thistle down, or with the cotton that falls from the catkins of the willow and the poplar. "The goldfinch," says Rennie, "is more neat in the execution of its felting than the chaffinch, though I have seen several of the nests not look so pretty; for the goldfinch's is rendered more formal, and less richly varied in colouring, by the anxiety which the bird displays not to have a single leaf of moss or lichen projecting, all being smoothly felted with wool, which, in some measure, conceals the moss; whereas, in the chaffinch's nest, the lichen usually conceals the wool. In other respects, the two nests are much the same, as well as the eggs; those of the goldfinch having their white ground more commonly tinged with blue, and having fewer and rather brighter spots, which are dark in the centre, and shade off into a thin spread purple colour."



THE STICKLEBACK.

The curious little fish called the sticklebacks (*Gasterosteus aculeatus*) are found in great abundance in June. They are small, and, if put in a glass, extremely beautiful, the back being red, and the sides of a brilliant green, shading into a silvery white. The fins on each side of the head are very large, and as fine as gossamer; they are in perpetual motion, and extremely beautiful. The male sticklebacks are very pugnacious; and, if several are put together in one glass, the strongest will kill the others. When kept singly, and supplied daily with fresh water, with duck weed or some kind of conferva, they will live a long time. A lady at Godalming kept one for several months, and she was very much amused to find that, whenever the sun was hot, he took the trouble to spread out the conferva with which he was furnished in the shape of an umbrella, near the surface of the water, so as to afford him shade, letting it sink to the bottom again when the sun went in. A battle was once observed between the pupa of a dragon fly and a stickleback. There was first an extraordinary motion in the water of the pond, as though a stone had been thrown into it; but on closer observation the pupa and the stickleback were observed struggling with each other, like two foes grappling in mortal combat. They alternately rose to the surface, and sank again, till at last the poor fish was overpowered, and the pupa of the dragon fly, having dragged it into the soft mud near the bank, was soon perceived sucking its blood. When sticklebacks fight with each other they use the sharp spines on their backs and the lower part of their bodies as weapons; and the bodies of those that are killed, if taken out and examined, will generally be found to be dreadfully lacerated. It is only the male sticklebacks that fight, and when one has gained the victory his body appears to swell out, the lower part becomes of a brilliant crimson, the upper part of as bright a green, and the two gossamer fins on the sides quiver as if the fish were in a transport of delight.

Vipers are frequently found in woods during this month; and though their bite is venomous, it is said to be cured by taking abundance of common salad oil, and rubbing the wounded part with it. There are several kinds; but, as they differ only in colour, they are supposed to be only varieties of one species. Vipers will bear a long fast, and one is said to have been kept in a box six months without food. It is asserted, indeed, that they will never eat while in confinement.

Among the insects of this month may be mentioned the green forester moth (*No stitices*). The wings are semi-transparent, and the larger pair are of a brilliant green. The body is of a bright copper-colour; and the hind wings are brown. The moth is a very pretty one, and has a metallic lustre in the sun. It is common in many parts of England, but has never been found in Scotland. Its caterpillar looks like a greenish brown maggot; and its chrysalis is enclosed in a close cocoon, which is generally found fastened by a number of loose silky threads to the leaves of the common thrift. The caterpillars of the vapourer and tussock moths are generally found at this season. That of the vapourer moth is very handsome; it is dark grey, spotted with red on the sides, with a black mark down the back, having three reddish spots on it towards the tail, and four tufts of yellowish hair towards the head, and long fine black hairs growing from the sides of the head, the sides of the body, and over the tail. The female vapourer has very slight wings, and is incapable of flight; but the male is a dark brown moth. The female lays her eggs on the outside of the cocoon in which she was inclosed in her pupa state. The caterpillar of the tussock moth is larger than the vapourer; the dorsal tufts are black, and the other hairs yellow. The male moth is of a bluish grey; and the female is furnished with wings. The gipsy moth, which has also a caterpillar furnished with tufts of hair, is often seen in this month. The male is brown, and the female whitish—both marked with dark brown wavy lines. The caterpillars of the tiger moth are hairy, but the hairs are not disposed in tufts. One of these, which is extremely common, is called, in Scotland, the hairy worm, and it is very abundant at this season. The large blue butterfly (*Polyonatus Arion*) is often seen in this month, and in the beginning of July, on the cliffs at Dover, and in various other places. The female has a broad blackish margin to her wings; and both species have the underside of their wings of a pale buff, so that when they sit with their wings closed, they look like another species. The Scotch argus (*P. Artaezyx*) is another species of the same genus, which has the underside of the wings buff, marked with white and yellow spots; the upper surface is brown.

The stag-beetle is one of the largest and strongest of the British insects: when put under a glass of moderate size, it will raise it with its horns. It is generally found in the daytime, concealed in the stump of an oak or an elm tree; but in the evening it begins to fly about with a peculiar humming noise. The larva is a large thick grub of a very pale yellow. It is generally found coiled up, but when stretched out to its full length, it measures nearly four inches. It is said to remain five or six years in a larva state, and when it has attained its full size, it forms a sort of cup or oval saucer in the earth, by moistening it with its glutinous saliva, and working it till the inside is quite smooth and hard. The grub then lays itself down in the cavity it has formed, and remains about a month in a torpid state, after which it changes its skin and becomes a pupa or chrysalis, rolling itself up in a ball of earth larger than a hen's egg, in which it lies about three months, becoming a perfect insect about the last week in June or the beginning of July. In its larva state it feeds upon decayed wood; but the perfect insect is said not only to feed on wood, but to attack the leaves of the oak.



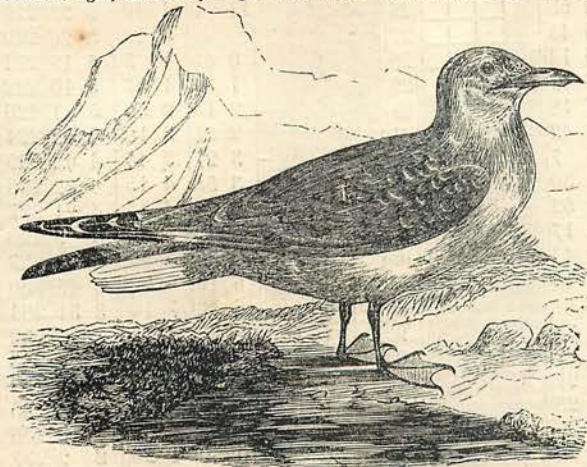
JULY.

In July, most of the succulent plants come into flower, such as the various kinds of Sedum, and house-leek; also, the snapdragon and various kinds of Labiatae, and nearly all the Compositae. It has been observed that the flowers in this month are generally yellow or red. In July is frequently found the curious parasite called broom-rape, growing from the roots of the beech and other trees. The stem of this plant is purple, and the flowers are lightish brown; it has also light brown scales, which serve instead of leaves. Another curious parasitical plant, which is found at this season, is the *Cuscuta* or dodder, which twines itself round the stems of clover, heath, and other low-growing plants, so as completely to hide them. Nettles are very abundant at this season; and, as some persons have been known to express a wonder of what use such ugly stinging plants can be, it may be interesting to mention, that upwards of fifty species of caterpillar are known to feed upon the nettle, and to prefer its leaves to those of any other plant.

Sea-weeds are, however, perhaps the most interesting plants at this season, for those who happen to be staying near the sea-coast, as most of them are now in fructification. Several kinds are only found in the south and south-west of England, and the south of Ireland; but others are common in every part of Great Britain. One of the most abundant of the latter kind is the bladder fucus, or sea-wrack. The frond, or leaf, of this plant is often three or four feet long; its colour is a dark olive-green, and it is furnished with a strong midrib, occasionally branched, and numerous air-vessels, about the size of a large pea, generally arranged in pairs, opposite each other, on each side of the midrib, which explode when the frond is clapped between the hands. The sporules, or seeds, are contained in pine-shaped receptacles, which are formed at the extremity of the fronds, and which, when ripe, are of an orange colour. Large masses of this weed are thrown on shore in stormy weather. It is used for manure, and its ashes form the alkaline substance called kelp, which was formerly so much used in the manufactures of soap and glass. Now, however, the duty having been removed from barilla and salt, kelp is but little used. In Sweden, this weed is boiled, and used for feeding pigs. There are many other kinds of fucus, particularly that called buck's horn, which is very common in Scotland and the north of England, but which is seldom seen in the south; and the cut-leaved fucus, which has notched leaves and tubercles instead of air vessels. Another very beautiful seaweed which is common in the south of England, and particularly in the Isle of Wight, is the feathered fucus (*Platola plumosa*). The fronds are tufted, and of a beautiful pale crimson when young, becoming of a dark brown when older. Another curious sea-weed, which has only been found in Great Britain in Freshwater Bay, in the Isle of Wight, is the cartilaginous *Gelidium*. The fronds are beautifully pinnated, and of a reddish hue. The plants when boiled form a stiff jelly, and it is said to be from a plant of this genus that the Indian swallow makes those nests which are used in China for making soup. The laver, which is so frequently eaten as a kind of vegetable, is a kind of sea-weed, growing in broad leaf-like fronds, on rocks or stones on the coast. It is pickled with salt, and preserved in jars; and, when brought to table, it is stewed, and eaten with oil and lemon-juice. There are two distinct kinds, the purple and the green, and several species of each. Numerous other sea-weeds are found upon the British coast, such as the chequered *Enteromorpha*, the fronds of which form dense tufts of a yellowish green; and, though each is not thicker than a bristle, yet, when examined under a microscope, it will be found so beautifully reticulated as to appear like lattice-work. The different kinds of *Elodeocarpus* are found on various parts of the coast, forming tufts of green filaments. Other tufted sea-weeds belong to the genus *Polysiphonia*, but they are generally dark red, or purple.

Very few birds sing in the month of July; and the cuckoos and many other migratory birds leave England in that month. Young broods of swallows, martins, and some other birds that breed in England, are generally seen at this season. On warm summer evenings, the goatsucker may be often seen darting about in search of insects, and hovering round goats while they are feeding.

The goatsucker (*Caprimulgus europæus*, Lin.) is a very curious bird. The month is remarkably large, and it is furnished with long hairs or bristles, which, it is supposed, are intended to prevent the small butterflies and other winged insects, on which it feeds, from escaping when once caught. On the middle claw of each foot, is a curious kind of comb, with which it is supposed the bird arranges or disentangles the fringe of its beak. This bird is known by a great many names; it is called the nightjar, from a peculiar jarring noise, not unlike the sound of a large spinning-wheel, which it makes when it flies, and which, of course, appears loudest at night, when everything around is still. It is also called the fern-owl,



THE GULL.

because it generally makes its nest among ferns; and, as it feeds on nocturnal insects, it flies at night, like the owl. Its popular name of goatsucker arises from an absurd supposition that it sucks goats, and that the animals which have been sucked by it are liable to a disease called puckeridge. The fact is, that this disease arises from a species of fly, which lays its eggs in the skin of goats, which produce the maggots that are found in the animals affected with the disease; and, as the bird hovers round the goats to catch the insects which are about to lay their eggs, it is more likely to prevent the disease than to occasion it.

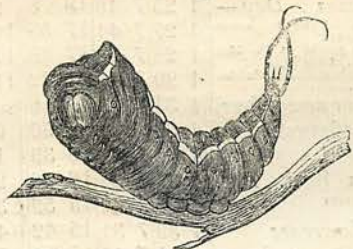
Young wild ducks and teals are often found in this month; and owls are seen flitting about towards the evening. In this month gulls are very abundant on the sea-coast, and they often build on the ledge of a rock so close to the water, that it seems wonderful they can keep their eggs from falling in. They are very abundant in the north of Great Britain, but they are also found on the southern coast during the summer months, particularly between the Needle Rocks and Freshwater Gate, in the Isle of Wight. There are several kinds of gull, which are distinguished by their feathers being marked in different places with black. There is a gull near Bonchurch, in the Isle of Wight, which was brought up there nearly thirty years ago, and which, for many years, used to leave its host's every season to pair with the wild birds which visited the coast every spring; but it always returned after the breeding season was over, and would suffer itself to be played with, and fondled by the children as before, though it would not suffer itself to be touched by strangers.

Insects are now particularly abundant, and an immense quantity of moths and butterflies are seen flying about. Amongst the moths may be mentioned the lappet moth, the caterpillar of which is very large, and is remarkable for having the sides of its body furnished with fleshy appendages, from whence it has received the name of lappit. It is dark grey, or brownish, and has numerous tufts of hairs. The perfect insect is of a reddish brown; and when it is at rest it folds its wings so curiously that it looks like a dead leaf. The chrysalis looks like the hairy seed vessel of a plant.



THE CATERPILLAR OF THE HAWK MOTH.

The moth of the lobster caterpillar appears in this month. It is of a pale brown, with a lozenge-shaped dark brown mark on the head. The caterpillar is red, with very long fore-legs, and the tail curved, so as to bear considerable resemblance to a lobster. The moth of the zig-zag caterpillar appears in this month; it is small, and brown, and not remarkable for its beauty. The caterpillar is very curious. The long straight caterpillars which resemble twigs in their appearance are often found in this month; and that of the swallow-tailed moth (*Ourapteryx Sambucaria*) is exactly like a brown twig. The moth is of a very pale yellow, and the chrysalis is enclosed in a cocoon of leaves hung from a branch by silken threads. The caterpillar of the brimstone moth (*Rumia Crataegata*) has another of these twig-like caterpillars, but it is generally of an iron-grey, sometimes varying to brown; and the moth is of a brimstone yellow.



THE CATERPILLAR OF THE PUSS MOTH.

Other caterpillars of less common insects have the same twig-like appearance. The sphinx caterpillars take their name from the curious attitude of the caterpillar, which resembles that of the Egyptian Sphinx. The perfect insect of these caterpillars is the hawk moth, of which there are many species, all of which are very handsome, both in the larva and the perfect state. In this month is often found the caterpillar of the puss moth, a very curious creature, with a forked tail, and a very curious face, which is of a reddish purple, with yellowish lips, and jet black eyes. The under part of the body is green, and the upper part of a very dark purple with a white margin; the tail is black. It is generally found feeding on the willow.

A very curious little beetle is often seen on the surface of ponds about this season. Hundreds of these little creatures appear together darting and whirling about on the surface of the water, their shining wing cases and rapid motions positively dazzling the eyes. These little creatures are the whirlwig beetles; but the country people call them water fleas. When they are frightened, they dart down into the water, carrying with them a small bubble of air, which looks like a drop of quicksilver attached to the body of the insect when it is seen clinging to an aquatic plant at the bottom of the water. When these beetles are seen in the water, they are always clinging to some aquatic plant, as their bodies are said to be so exceedingly light that they would rise to the surface if they did not take hold of something to keep them down. When caught, they emit a milky fluid, which has a very disagreeable smell, and which remains on the fingers a long time in spite of every effort to remove it. The eggs of these beetles are laid on the leaves of aquatic plants, and they look like small bugles. The grubs look almost like centipedes; they are of a greyish white with long slender bodies, and six legs. Towards the end of July or the beginning of August they climb up the leaves of reeds, or any robust growing plants which they find near the water, to undergo their transformations. Here each grub spins for itself a substance resembling grey paper, of which it forms its chrysalis. In this state it remains about a month, and the moment it is released, it springs into the water and darts about on its surface with the other insects.



AUGUST.

In this month several water-plants are in flower, particularly the beautiful water pepper (*Polygonum amphibium*). This plant grows in the water, though its terminal spikes of rosy flowers, and occasionally its long lanceolate leaves, rise above the surface, and at a little distance have the appearance of an island. The flowering rush (*Butomus umbellatus*) has also pink flowers, but it has decidedly the appearance of a water-plant; as have the bullrush and the reed-mace or cat's-tail. The dark brown club-like head of the latter plant is, in fact, a mass of female flowers, which, when ripe, become a mass of downy seeds. The yellow flowers which appear above this club are male flowers, and they wither before the seeds ripen. The white water-lily is also still found occasionally, and the yellow water-lily, or brandy bottle, as it is still found occasionally, and the arrow-head, with its light purple flowers; the dark purple flowers of the French willow herb, and those of the purple loose strife; and the frog-bit, with its white flowers, are all highly ornamental. In this month several of the tree lichens begin to make their appearance, particularly those growing upon the oak, some of the handsomest of which are those called Ramalina and Usnea. Some of the latter hang down from the trunks of old oaks like hair. Another very curious lichen is that called oak lungs or hazel rag (*Sticta pulmonaria*). The thallus, or leafy part of this plant, is deeply pitted, so as to afford some resemblance to the human lungs; and hence it was supposed to be highly efficacious in curing consumption. It is, in fact, useful in all diseases of the lungs, as its medicinal properties are like those of the Iceland moss. The cup-moss is another curious lichen frequently found at this season. It is common on heaths, moors, and in dry woods, in every part of the kingdom; and, when in fructification, the cups are tipped with brown in the common species, but, in some of the other kinds, the seed-vessels are of a brilliant scarlet, and the stalks are of a greyish green. Several of the sedges are in flower at this season; and, in the gardens, the white and yellow lilies are in all their beauty. On the commons, the heath is in full flower; and when rushes were used for covering the floors, it was in this month that they were cut.

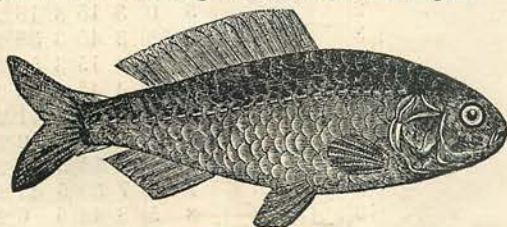
The birds in this month are more silent than in any other month in the year, but young broods of goldfinches, chaffinches and starlings, are seen crowding together. At this season, also, is occasionally seen the curious little bird called the fire-crested wren. It is very common in Belgium, but it is comparatively rare in



THE FIRE-CRESTED WREN.

Great Britain; though, no doubt, it is frequently mistaken for the golden-crested wren, to which it bears a considerable resemblance, though, when closely examined, it may be easily distinguished by the two white streaks near its eyes. It hangs its nest on the branch of a tree, and lays five eggs of a pale flesh-colour, marked with small red spots at the larger end.

The common grouse, or moor-fowl (*Tetrus scoticus*), are only found on uncultivated wastes covered with heath, on high ground. They never resort to woods, but, according to Rennie, "confine themselves wholly to the open moors—building their nests—if a few withered stems placed carelessly together, deserve that name—in a tuft of heath; they feed on mountain and bog berries, and, in defect of these, on the tops of the heath." The female lays from eight to fourteen eggs; and the young, which keep with the parent birds till towards winter, are called a pack, or brood. Grouse shooting commences on the 12th of August.



THE GOLD FISH.

Though gold fish are not natives of Great Britain, they are so frequently bred in this country as to render some notice of them interesting. The gold fish is a kind of carp, which was first brought from China to Europe in 1611, though it does not appear to have been introduced into England till nearly a hundred years afterwards. It is a curious fact in the history of the gold fish, that it will bear without injury extremes of heat and cold, as it will live equally well in a tank, in a pine-stove, and in a pond in the open air. Some years since, Professor Host, a well-known naturalist in Vienna, chanced to leave a glass globe containing a gold fish in the window of a room without a fire, during one of the coldest nights of a very severe winter. In the morning he recollected his poor fish, and, examining the glass, he found the water frozen apparently quite hard, and the fish fixed immovably in the centre. Supposing the fish to be dead, he left it in the ice; but, as it was extremely beautiful, he took a friend to look at it in the course of the day, when, to his great surprise, he found that the water had thawed naturally, from the room becoming warm by the sun, and that the fish was quite

lively, and swimming about as though nothing had happened. The friend of M. Host was so much struck with this remarkable occurrence, that he tried a similar experiment; but bringing his frozen fish to the stove to hasten its revival, the fish died. It is a well-known fact, that gold fish never breed in clear water; and it has been observed that when they do breed, the young conceal themselves among the roots of plants, in inequalities of banks, or among the faggots which may have been put in for them. A lady who happened to pull up an aquatic plant which had grown on the bank of a pond in which there were some gold fish, was quite astonished to find the roots appear alive; and on examining them, she discovered the movement to be occasioned by a great number of little dark-brown fishes which were sticking to the roots. These little fishes were the fry of the gold carp, which are taught by instinct to conceal themselves from the old fish till the golden hue begins to appear on their sides, which it does when they are about an inch long. It is said that the gold carp devour the fry of other fish, and also their own, if they see them before the golden blotches appear. When it is wished to breed gold fish in clear water in a tank or basin, a few faggots should be thrown into the water; or a sloping bank of gravel should be raised in the tank, the upper part of which is near the surface of the water. This will afford at once a situation for the old fish to deposit their spawn, and a shelter for the young fry. Some persons, when the spawn has been deposited on a faggot, remove the wood to another tank to rear the young; but they always do better, and grow faster, when bred in a pond with an earthy bottom, and in which plants grow naturally. All kinds of carp, in favourable situations, live to a great age; but gold fish can seldom be kept in glasses longer than four or five years, and they scarcely ever grow in such situations. When kept in ponds, on the contrary, they live to a great age, and attain an enormous size. Some that were kept at Seville, were known to be upwards of sixty years of age; and several in England have been known to weigh from three to five pounds. In the year 1846 a disease prevailed among the gold fish, which proved fatal to hundreds. A kind of canthara, nearly allied to the green scum found on stagnant water formed upon the fish, and occasioned their death. This plant, which is called *Achyta proliferata*, consists principally of threads so exceedingly fine as to be imperceptible to the naked eye, but which take root in the body of the fish, as the mistletoe grows on the apple tree, and in time produce a soft downy substance like mould, that first appears on the gills and tail, but gradually covers the whole body of the fish. When this extraordinary disease, if it may be so called, is discovered in its first stages, it is said that it may be stopped by sprinkling salt on the back and sides of the fish; but the application appears to cause intense pain, as the fish, as soon as it feels the salt, darts from one side to the other of the vessel that contains it, and appears to be writhing with agony.

Insects are very numerous in August, and caterpillars of several kinds that appear earlier in the season, are now seen again as if for a second brood. Among these may be mentioned the caterpillars of the cabbage butterfly, which are often found at this season, as if springing from a second brood. The caterpillars are green, with a yellow streak on each side. When young, the colours are pale and indistinct; but when the caterpillar has nearly attained its full growth, both the green and the yellow become dark and decidedly marked, and spotted with black. In August, this caterpillar forms its chrysalis, which is green, with a yellow stripe down the back. When the insect begins to form its chrysalis, it first spins a quantity of white silk, which it attaches to any object it may be near, and then fastens itself to this mass of silk by a strong girth round the centre of the body. As soon as the silk is completed, the insect reposes quietly at full length upon it, "or, rather, its body contracts in length, and becomes thicker, and at length the skin of the fore part of the back bursts, and the head of the chrysalis appears; by continual writhing of the body the slit is enlarged, and the skin pushed backwards beneath the skin of silk, and thrown off at the tail."—(*Humphreys's British Butterflies*.) A beautiful green caterpillar with bands of a darker colour, is also often found at this season. It is the caterpillar of the dot moth (*Mamestra Persicaria*). The moth flies at night, generally concealing itself during the day, and it is of a dark brown, with a very conspicuous white crescent-like dot on each of the fore wings. A hairy caterpillar is also found belonging to the spotted buff ermine moth. The caterpillar is brown, and thickly covered with hair, through which may be seen a narrow red line down the back, and some white marks on each side. The moth has a yellow body, and pale buff wings slightly spotted with black. The swallow-tail butterfly is frequently found in this month. The caterpillar is of a fine green, with velvet-black wings, spotted with red. It feeds on umbelliferous plants, particularly on the fennel and the carrot. It has a bright red forked-like projection on the neck near the head, which, when touched, emits a strong-smelling liquid. When this caterpillar has attained its full growth, it makes itself a chrysalis, in the same manner as the caterpillar of the cabbage butterfly does.

AUGUST ANNIVERSARY.

(See preceding page.)

On Thursday, the 31st of August, five days after the great and ever memorable battle of Crecy, Edward drew up his army before Calais, and began his famous siege of that place, which lasted nearly a year.

As it was a place of incredible strength, he resolved not to throw away the lives of his soldiers in assaults, but to reduce it by famine. He girded it by entrenchments, and built so many wooden houses for the accommodation of his troops, that his encampment looked like a second town growing round the first. At the same time his fleet blockaded the harbour and cut off all communication by sea; the Governor obstinately refusing to capitulate, until reduced to the necessity of eating all their horses, dogs, and other animals, and nothing was left for them but to eat one another. Edward, enraged at their obstinate resistance, refused them any terms, saying that he would have an unconditional surrender. Sir Walter Manny and many barons pleaded for the men of Calais. "I will not be alone against you all," said the King. "Sir Walter, you will tell the captain that six of the notable burghesses must come forth naked in their shirts, with halters round their necks, and the keys of the town and castle in their hands: on these I will do my will, and the rest I will take to my mercy."

Six of the richest and most notable voluntarily offered themselves to save their fellow-citizens. The English barriers were opened, and the six were admitted to the presence of Edward, before whom they prostrated themselves, and presenting the keys, begged for mercy, but the King rejected their prayers, and ordered their heads to be struck off. The barons and knights entreated the King to be merciful, but he would not hear them, and ordered the headsman to be summoned. But the Queen of England, who was far advanced in her pregnancy, fell on her knees, and, with tears, said, "Ah! gentle Sire, since I have crossed the sea with great danger, I have never asked anything of you; now I humbly pray for the sake of the son of the Holy Mary, and your love of me, that you will have mercy on these six men." The King looked at her, and was silent awhile; he then said, "Dame, I wish you had been somewhere else; but I cannot refuse you—I put them at your disposal." Philippa caused the halters to be taken off their necks—gave them proper clothes and a good dinner, and then dismissed them with a present of six nobles each. In a few days after this good Queen was delivered of a daughter, whom she called Margaret of Calais.

This occurred on the 3rd of August, 1347, nearly twelve months after the commencement of the siege; and exactly five hundred years have now passed away since this memorable event, so well and beautifully depicted by our Artist in the accompanying Engraving.



SEPTEMBER.

In this month the autumnal flowers begin to come into blossom. The different kinds of small-flowered asters, called Michaelmas daisies, are now in flower; and the pale purple flowers, on long naked tubes, of the colchicum, or autumnal crocus, now begin to appear. In the gardens, the dahlias are in all their splendour, the *Althæa frutescens*, and the hollyhocks. It is at this season that the saffron is gathered. It is the stigma of a kind of crocus (*Crocus autumnalis*), which is taken out and dried. This crocus, though it flowers in autumn, is quite a different plant from the colchicum; and it may be known by the stigma projecting, through an opening in the flower, on one side. It is cultivated in fields, on a large scale, near Saffron Walden, in Essex, and in several other parts of Great Britain.

Mushrooms, and various kinds of fungi, are in season in this month. Every fungus consists of a stem, which is called *stipes*, surmounted by a cap, or *pileus*, under which are a number of thin plates, arranged around the centre, like the radii of a star, and are called the *lamellæ*, or gills, and among which are placed the *sporules*, or seeds. The botanical name of the common eatable mushroom is *Agaricus campestris*; but there are several other species of *Agaricus*, which are poisonous, when eaten in a fresh state. In Russia and Poland, however, nearly all the kinds of *Agaricus* are eaten; as they are first dried, and then reduced to powder, and it is principally their acrid juice that renders them unwholesome. The true mushroom appears, when young, in the shape of a button, with a white skin coming down from the cap to the root, so as to hide both the stem and gills. As the stem grows, the white skin, which is called the veil or curtain, bursts, and the gills appear of a beautiful pink, which contrasts strongly with the whiteness of the cap. As the mushroom becomes older, the gills become of a dark liver colour, and the skin of the cap loses its whiteness and smoothness, and turns brown and rough; while, when it is still older, the rim of the cap curls up on the outside, the gills turn black, and the whole mushroom becomes perforated with insects. When the mushroom is in this state, it is called a flap, and it is unfit for any use but making into catsup. It is reckoned most wholesome just after the veil has burst, and the gills appear. Truffles are found in this month, in some parts of England, generally in beech woods. They are tubers which grow underground, like potatoes; only, as they send up no stalk, they are very difficult to find. In Germany, they train dogs and pigs to hunt for truffles; and, when these animals discover them by their smell, they begin to scratch the ground, and the truffle-hunters, digging in that place, are sure to find the tubers.

Many of the wild birds that visit England in the autumn appear in this month; and, among others, various kinds of wild ducks and geese. They come in flocks, and are very noisy in the air; their perpetual clamour being supposed to be designed to prevent them from dispersing and losing their companions. As in this month partridge-shooting begins, it may be interesting to say a few words on these well-known birds. Young partridges may frequently be seen running as soon as they are hatched, and sometimes even with the remains of the shells upon their heads. The hen partridge is very fond of her young, and "it is not uncommon to see an old partridge feign itself wounded, and run along the ground, fluttering and crying, before either dog or man, to draw them away from its helpless, unfledged young ones." Partridges are found in all parts of Great Britain, where corn is cultivated, but never at any great distance from corn-fields. The hen partridge makes no proper nest, but only scrapes a little hollow in the ground, in which she lays from twelve to twenty eggs. The young partridges in one brood generally fly together, and are called a covey. In Scotland partridges are only found in glens and valleys, while the grouse and ptarmigan are on the hills. Another species of this genus, generally called the red-legged or Guernsey partridge, is found in Suffolk, and in some other parts of England. These birds are larger than the common species; the bill, the legs, and the feet, are of a bright red, and there is a good deal of red in the plumage. They are reckoned very fine in France, but are not much admired in this country. Their habits are very different from those of the common partridge, as they frequently roost on trees, and will breed in confinement. Most of the migratory birds that leave England for the winter depart in this month; and some of those birds which remain in England during the winter, and which become silent about Midsummer—such as the thrush, the blackbird, the woodlark, and the willow-wren—resume their song in September. The male redbreasts that were hatched in spring, also begin to sing in this month, after they have moulted and acquired the red feathers on the breast. Before that period, the young are scarcely to be distinguished from those of the redstart, particularly the blue-throated kind; though after they have moulted, and the one has acquired its blue feathers, and the other its red ones, scarcely any two birds can be more distinct.



THE BLUE-THROATED REDSTART.

In this month all kinds of shell fish are in high season. Oysters, it is true, are allowed to be sold in August; but they are not considered to have attained their full flavour before September. Oysters are so common that few people think of the peculiarities of their construction, which is, in fact, very curious. The oyster

is a molluscous or soft-bodied animal, of the kind called *Acephalus*, or non-headed, as it has no distinct head. The gills, or breathing apparatus, form what is commonly called the beard of the oyster. The creature is attached by strong muscles to its shell, which, as it consists of two parts, or valves, is called a bivalve, to distinguish it from those which are in one part, like that of the snail, and which are called univalves. The mouth of the oyster is a mere opening in the body, without jaws or teeth, and its food consists of nourishing substances which may be in the water, and which are washed into the shell when it is open. Oysters attach one of their valves to rocky ground, or some fixed substance, by means of a mucilaginous liquid which soon becomes as hard as the shell. Oysters generally spawn in May, and their growth is so rapid, that in three days after the deposition of the spawn the shell of the young oyster is nearly a quarter of an inch broad, and in three months it is larger than a shilling. The animal of the oyster appears to be extremely inanimate: it fixes itself to any object that may be near, being sometimes found attached to the back of a living lobster or crab, and frequently to the roots of trees. Craw-fish, lobsters, crabs, shrimps, and prawns, though generally called shell fish, do not belong to the same class of animals as the oyster, but to the Crustaceæ, because they are covered with crust-like shells. They also belong to the class of animals called Articulata, and have their bodies articulated, that is, jointed, so that they can stretch them out or curl them up at pleasure. A crustaceous animal consists of three parts—the head, the carapace, which is covered with one entire shell, and what is popularly called the tail, which consists of seven rings, or joints. There are fourteen rings in that part of the body which is called the carapace, but they are only used when the animal changes its shell. The joints in the tail are to enable the animal to spring forward, which it does frequently when it wishes to change its position. It can also crawl, but it moves in this manner awkwardly, and in an oblique direction. The river craw-fish belongs to the same genus (*Astacus*) as the lobster, and both have long tails, which are spread out when they crawl, and numerous legs and claws, with which they can pinch severely when they wish to defend themselves. The crab has a short tail, and belongs to the genus *Cancer*. The shrimp, though it has no claws, properly so called, has two feet larger than the others, each of which has a hooked jointed nail. The prawn, which is quite different from the shrimp, is nearly allied to the crayfish, or thorny lobster. All the Crustaceæ have the power of renewing their claws if they are torn off at a joint, and they change their shells every year. The new shell is at first quite soft, and at that period the fish are unwholesome to eat. The females spawn in July and August, and soon after great numbers of the little Crustaceæ may be found swimming about in their proper forms, sometimes not more than half an inch in length.

Abundance of spiders are found at this season. Spiders are articulated animals, and possess the same power of renewing a lost limb as the crustaceæ. The diadem spider (*Epeira diadema*) is one of the largest of the British kinds. It is a garden spider, and is easily recognised by the beautiful little gem-like marks on its body and legs. The web of this spider is found in great abundance during the months of August, September, and October. "The top line of this web," Mr. Westwood observes, "appears to be first spun, either by attaching a thread to a neighbouring tree, and then carrying it along until it is of sufficient length, when it is attached to some adjacent object to which the spider has crawled, or by throwing out a floating line, whilst the spider remains stationary, the action of the air carrying this line on until it becomes attached to some object, when, in either case, it is doubled and redoubled until it is of sufficient strength to bear the weight of the intended fabric, together with the spider itself. The other outer threads of the frame work are then added, and then cross lines carried from one point of the web to another exactly opposite, forming a complete series of spokes or radii, which she then attaches together by a spiral series of transverse bars of a more glutinous thread." The rapidity with which these webs are constructed is astonishing, as is also the accuracy with which the webs are formed. There are many different kinds of spiders, but nearly all of them envelope their eggs in a covering of silk, forming a round ball, which the spider takes care to hang up in some sheltered place till the spring. The mode in which the ball is formed is very curious: the mother spider "uses her own body as a gauge to measure her work, in the same way as a bird uses its body to gauge the size and form of its nest. The spider first spreads a thin coating of silk as a foundation, taking care to have this circular by turning round its body during the process. It then, in the same manner, spins a raised border round this till it takes the form of a cup, and, at this stage of the work, it begins to lay its eggs in the cup, not only filling it with these up to the brim, but piling them up above it into a rounded heap, as high as the cup is deep. Here, then, is a cup full of eggs, the under half covered and protected by the silken sides of the cup, but the upper still bare and exposed to the air and the cold. It is now the spider's task to cover these, and the process is similar to the preceding, that is, she weaves a thick web of silk all round them, and, instead of a cup-shaped nest like some birds, the whole eggs are enclosed in a ball much larger than the body of the spider that constructed it."—(*Penny Cyclopaedia*.) In fine weather, the female dragon-flies may sometimes be seen in this month depositing their eggs, which they lay in water, making a strange noise, as though they were beating the water while they are depositing their eggs; and the eggs themselves look like a floating bunch of small grapes. The larvæ, when hatched, live in the water, and it is scarcely possible to fancy more disgusting-looking creatures. They are short, and comparatively thick, and their motions are heavy and clumsy. They soon shed their skins, and become pupæ, still continuing to live in the water. The pupa of the dragon-fly differs from the larva, principally in having four small scales on its sides, by which the future wings are concealed. While the dragon-fly continues in its aquatic state, both as larva and pupa, it devours all the insects it can catch; but as it can only move slowly, it is furnished with a very curious apparatus to its head, which it can project at pleasure, and which it uses as a trap. This apparatus consists of a pair of very large, jointed, moveable jaws, which the insect keeps closely folded over its head, like a kind of mask, till it sees its prey; when it does, it creeps softly along till it is sufficiently near, and then it darts out those long, arm-like jaws, and seizing the insects it had marked, it conveys them to its mouth. When the dragon-fly emerges from its pupa case, it places itself on the brink of the pond, in which it has existed in its previous state, or on the leaf of some water-plant which is sufficiently strong to bear its weight, and there it divests itself of its pupa case, which, as it afterwards lies on the bank, looks exactly as though the insect were still contained in it. The insect, when it first appears, has two very small wings, but they gradually swell out, the veins in them appearing to fill with some coloured liquid, and two other wings gradually appear. As soon as the wings are fully expanded, and have attained their beautiful gauze-like texture, the dragon-fly begins to dart about, and to catch any poor unfortunate insect that may fall in its way. A dragon-fly may sometimes be seen flying about with an insect in its mouth so much larger than its own head, that it is difficult to imagine how it will contrive to swallow it. The mouths and stomachs of dragon-flies are, however, gifted with an extraordinary power of distension; and thus, however large the captured fly, moth, or butterfly, may be, it disappears, as though by magic.



OCTOBER.

There are few plants in flower in the month of October, but many are very ornamental in their fruit or seeds. Almost all the American *Cratægi* are more ornamental in their fruit than in their flowers, the flowers in many cases differing very little from those of the common hawthorn; while the fruit is as large as a small apple, and is either of a bright yellow or dark scarlet, being in either case very ornamental. The mountain ash is now, as Wordsworth expresses it,

Deck'd with autumnal berries that outshine  
Spring's richest blossoms.

The white beam tree, and other plants of the same genus, are also covered with their scarlet berries. In the mountain districts, different kinds of juniper, bilberries, whortleberries, crowberries, and other dwarf moor plants, are in fruit. In the forests, the trees have now taken their autumnal tints: the lime is a pale orange; the maple, poplar, and birch, light yellow or straw colour; the wild cherry, the crab, the dogwood, the spindle tree, the guelder rose, and the five-leaved ivy, different shades of red; the elm, a dull brown; the horse chestnut and beech, a reddish brown; and the oak, yellow and brown. Some trees change very little, particularly those which grow near water, such as the willow and the alder; and others change very much, such as the sycamore, which Cowper well describes as—

"Capricious in attire;  
Now green, now tawny, and ere autumn yet  
Has changed the woods, in scarlet honours bright."

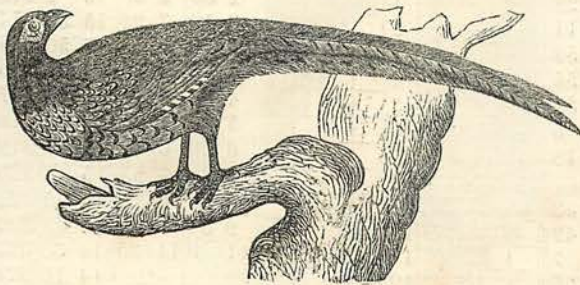
The ash seldom becomes beautiful in autumn, the leaves generally falling with the first frost, or becoming shrivelled up as if scorched. The beech, on the contrary, is perhaps one of the most beautiful of all trees in its autumnal tints, which display various shades of the richest yellows and browns, and which frequently retains its withered leaves till the following spring.

The leaves of the hornbeam take almost the same colour as those of the beech, and they remain on nearly as long. In pleasure-grounds the leaves of the liquidambar turn of a rich crimson; those of the *Diospyros Lotus* become pink beneath in autumn, and fall off altogether with the first frost. Thus, the tree may be clothed with leaves at sunset, and, after a frosty night, it may be found the next morning at sunrise entirely bare, the leaves lying in heaps upon the ground. The American oaks take beautiful colours in autumn; the leaves of the scarlet oak become scarlet; those of the red oak and some other kinds crimson; and those of the white oak violet. Some of the other kinds become almost black, and some yellow. A very good effect may be produced in plantations by attending to the autumnal colours of the leaves of trees. Most of the ferns are very beautiful at this season, from the rich brown of the sori, or clusters of seed cases at the back of the leaves.

In this month, numerous kinds of fungi appear. One of the most conspicuous of these is the fly-agaric, which, though it belongs to the same genus as the mushroom, is one of the most poisonous of all the kinds of fungus. This plant is large, and very handsome, having a bright scarlet cap, studded with pearl-like projections of a brilliant white. The botanists who have named the plant have, however, fancied that the white projections look like the maggots of flies, and hence the name of fly-agaric, though others derive the name from a decoction of the plant being sometimes used to poison flies. The Russians are said to make an intoxicating liquor with it, called Moncho More, and which brings on convulsions and raving madness, if drunk to excess. The Hydnum, or tree fungus, is found in woods, generally growing on the roots of trees. There are several kinds of this fungus, some of which are dried and powdered, and then eaten, in Sweden, and some of the other northern countries.

Various kinds of lichens are also extremely beautiful at this season, and some of the most curious of the mosses. Among these may be mentioned the dark green Hookeria, which is found in the south of Ireland, and near the waterfalls of Killarney. The leaves of this moss are broad, ending in a sharp point, and when they are examined in a microscope, they will be found to have two distinct mid-ribs, and the surface curiously reticulated. Another very beautiful moss which is found in the north of England and Scotland, and which is in fruit at this season, is the ostrich-plume moss (*Hypnum crispa castrensis*). This is sometimes confounded with the crested feather-moss, which is common in rocky places in the chalky and limestone districts of Great Britain.

In this month pheasant-shooting begins. Pheasants are found in most parts of England, but they are less plentiful in the north than in the south; and in Scotland they are scarcely ever met with. Woods and corn-fields seem to be essential to the existence of this bird. It is very fond of acorns and beech-mast, and it also eats abundance of corn, sometimes even scratching up growing wheat, to bite off the grain still remaining at the root. Pheasants are very fond of the tubers of



THE COMMON PHEASANT.

one of the kinds of creeping crowfoot (*Ranunculus bulbosus*), a plant which is poisonous to human beings, from its extreme acidity. Pheasants will live in captivity, but when they are domesticated, the male bird must be kept apart from the young ones, or he will destroy them. In a wild state, the female carefully hides her nest from the male. The pheasant is a dull bird, and, when roused, it will frequently perch upon the first tree near, which it will suffer the sportsman to approach closely before it flies away. In October, also, most of the migratory birds who pass the winter in this country make their appearance, and, among others, the fieldfare and the redwing. These birds appear in large flocks in October, and generally remain in England till April. "The extensive lowlands," says Mr. Knapp, "of the river Severn, in open weather, are visited by prodigious flocks of these birds; but, as soon as snow falls, or hard

weather comes on, they leave these marshy lands, because their insect food is covered, or become scarce, visit the uplands, to feed on the produce of the hedges, and we see them all day long passing over our heads in large flights, on some distant progress, in the same manner as our larks, at the commencement of a snowy season, repair to the turnip fields of Somerset and Wiltshire. They remain absent during the continuance of those causes which incited their migration; but, as frost breaks up, and even before the thaw has actually commenced, we see a large portion of these passengers returning to their worm and insect food in the meadows, attended, probably, by many that did not take flight with them; though a great number remain in the upland pastures, feeding promiscuously as they can." The fieldfare is a kind of thrush; but, instead of singing melodiously, like the common thrush, it only utters a loud chattering noise. It has never been known to breed in this country, notwithstanding the immense quantities that are seen here. It is a very shy bird, and will not live in a cage. Fieldfares, when fat, are reckoned delicacies for the table. The redwing is also a kind of thrush, of very similar habits to the fieldfare, coming over to England in great flocks. It feeds upon the berries of the hawthorn, and also upon various kinds of insects; and it is particularly fond of the banded snail (*Helix nemoralis*), the shell of which it breaks against a stone or wall, in the same way as the garden thrush does. Like the fieldfare, it never builds in this country. It perches on trees, and may occasionally be heard to sing, but its note is generally only a loud chattering. The ring ouzel generally leaves England in this month. It is singular enough that these birds generally assemble in great numbers on the southern and eastern coasts of England for a week or two before they finally depart, as if they were half unwilling to go. The wheat-ear generally leaves England in this month, and shortly before their departure, great quantities of them are caught in Sussex and Dorsetshire, and sent to the London market. They "are caught in a singular manner, by placing two turves on edge; at each end of which, a small horse-hair noose is fixed to a stick, which the bird, either in search of food, or to evade a storm of rain, attempts to get under, and is caught. Upon inquiry of the shepherds, whose trade this is, we have been informed that fifty or sixty of these traps have had a bird in them of a morning; sometimes several mornings together; and then for a day or two scarcely one is to be seen; and yet they are never observed to come in flocks: it is the general opinion that they come in the night." — (*Ornithological Dictionary*.) They are esteemed very delicate eating, and little inferior to the ortolan.

At this season of the year several kinds of molluscous animals are to be found in shallow water, in brooks and ditches. One of the most common of these is what is called the horny coil shell, or *Planorbis cornuus*. The shell of this creature at first sight looks like that of one of those little flat snails which are sometimes found in cellars; but, on examination, it will be found to differ from these creatures in being exactly the same on both sides, or, in the language of a naturalist, having neither spire nor column. The animal belonging to this shell is extremely like a snail when it is crawling with its tentacula extended, but it is much smaller in all its parts. It is found in ditches and ponds. The amber snail (*Succinea amphibola*), has a beautiful transparent shell of a light amber colour, and it is from this that it derives its scientific name, as *succinum* signifies amber.



THE AMBER SNAIL.

The puddle-mud shell (*Lymnaea peregra*) is also very frequently found in this country. Its shell bears considerable resemblance to that of *Succinea*, but it is less transparent, and has a more horny look. The shells of all the species of *Lymnaea* have the aperture on the right hand, and the plait on the left hand; which distinguishes them from *Succinea*. Another kind of pond snail, called the stream bubble shell (*Physa fontinalis*), is distinguished from *Lymnaea* by its opening being on the left hand instead of the right. All the pond snails have a singular manner of appearing to crawl under the surface of the water with their shells downwards. They also let themselves down in the water with a thread, in the same way as some kinds of caterpillars let themselves down in the air. The common circle shell (*Cyclostoma elegans*) is found abundantly in various parts of England and Wales, near hedges, and in other sheltered situations. The shell is of a greyish, and sometimes purplish brown, occasionally marked with two rows of purplish brown spots. The operculum is hard and horny externally, and marked with a slight spiral line. The animal is of a greyish brown, with tentacula, having black tips like those of the snail. The cry stalline marsh snail (*Paludina vivipara*), is often found in marshy places or ditches, at this season. The shell is of an olive green, with five whorls, the lower ones of which are very distinctly marked, and very much inflated; and it bears considerable resemblance to the apple shells often found in collections which are brought from Egypt. The animals resemble a snail, and they are viviparous. The shells of the marsh snails are found abundantly in the river Colne, at Uxbridge; in the Thames; and in the rivers of Cambridgeshire, Oxfordshire, Essex, and Suffolk; but they are never found in the north of England, or near the sea. The river limpet (*Ancylus fluviatilis*), is a very small shell, found in streams and rivulets attached to stones. The animal is greyish, and very lively. The shell is almost transparent, with a blue tinge inside, and a pointed top, which is on one side, and slightly curved downwards. These animals are sometimes seen swimming in the water, just below the surface, with the shell downwards, like the pond snail.



LYMNAEA PEREGRINA.



PHYSA FONTINALIS.

The insects which are most abundant this month, are the different kinds of flies, particularly the common blue-bottle, or blow-fly, and the crane-fly, or daddy long-legs. The latter belongs to the genus *Tipula*, and is remarkable for the extraordinary length of its legs. The blow-fly produces its young alive, and they begin to eat as soon as they are born. A single blow-fly has been known to produce twenty thousand living maggots; and each of these continues eating so voraciously, that in twenty-four hours it has increased its own weight above two hundred times; and in five days it has attained its full size. When the maggots have attained their full size, they go into the pupa state, and remain in that only about five days, when they become flies ready to produce thousands of more maggots, and afterwards flies, till the whole brood is destroyed by cold. The blue-bottle fly lays eggs, as does the common house fly. These eggs are generally deposited either in dunghills or other heaps of rubbish, from whence they issue in great quantities on a warm day. One kind of small two-winged fly lays its eggs on the leaf of the sow thistle, and the maggots live entirely upon the cellular tissue of the leaf, without touching the outer skin, either on the upper or under side. These maggots generally commit their ravages in the maggot state, early in the month of October, and appear in their fly state towards the close of that month; but Professor Rennie found one of these mining maggots at work in December, on the leaf of a purple cineraria, grown in a pot, and kept in the house.



NOVEMBER.

In this month there are scarcely any flowers left, but many trees are still beautiful, from the varying colours of their leaves and their ornamental fruit. Among the latter may be mentioned the spindle tree, the fruit of which is particularly beautiful, from its pink capsules opening so as to show the bright orange aril of the seed, which looks just dropping from it. The clusters of the bryony also exhibit beautiful shades of orange and scarlet, which are finely contrasted with the few remaining leaves. The arbutus at this season is also covered with its rich crimson strawberry-like fruit, hanging amidst its elegant evergreen leaves, and intermingled with a few remaining flowers, which look like pale waxen bells, or as Mrs. Meredith elegantly calls them, fairy lamps. The berries are still hanging on their bushes; and the purple berries of the ivy, together with the scarlet ones of the pyracantha, still remain to afford food for the birds. Amongst the plants that are ornamental at this season, few are more conspicuously so than the traveller's joy (*Clematis vitalba*), whose light feathery seed vessels hang over the hedges like plumes of feathers waving to and fro with the wind. The cones of the pine and fir tribe are now very ornamental, and vary considerably both in the form and colour. Those of the spruce fir are of a deep purple, small and erect, and those of the cedar of Lebanon are yellowish. Some look reddish, and some green, and some are short and pointed, while others are long and drooping. The plane trees look remarkably well at this season, their bald-like seed vessels hanging on long foot stalks—

The flush of the landscape is o'er,  
The brown leaves are shed on the way  
The dye of the lone mountain flower  
Grows wan and betokens decay.  
All silent the song of the thrush,  
Bewild'rd she covers in the dale;  
The blackbird sits lone on the bush—  
The fall of the leaf they bewail.

Hogg.

Several very curious kinds of fungi are to be found at this season. One very peculiar kind grows out of the ground with a single stem, scarcely thicker in the cap part than at the base. It only springs up where there is decaying vegetable matter, and it is of a brilliant crimson. That very curious fungus called in Scotland siller cups (*Nidularia campanulata*) is found at this season. It consist



SILLER CUPS: NIDULARIA CAMPANULATA.

of a curious leathery cup, in which are a number of small ones, which contain the sporules, and each plant looks like a bird's nest with several eggs in it. It generally grows on a twig, or a bit of rotten wood, and one has been found in a pot, growing on a wooden tally, fixed in a pot containing a greenhouse plant. The curious plant called witches' butter (*Tremella arborea*), is found upon fallen trees, or any kind of dead wood in moist places. It forms roundish, somewhat truncated, irregular masses, of a firm, gelatinous substance, lobed and wrinkled above, slightly plicate below, of a pale, whitish hue at first, but soon changing to brown, and eventually becoming black. It was called witches' butter, partly because it is of a soft, buttery substance, and partly because it was formerly supposed that throwing it into the fire of a dwelling house, would protect the inhabitants from witches. Several kinds of *Agaricus* may also be seen, some of which have blue stems, others orange, yellow, and green, with caps of various colours, some of which are scarlet or crimson, and others have beautiful shades of purple or violet. In short, nothing can exceed the variety of these curious plants—

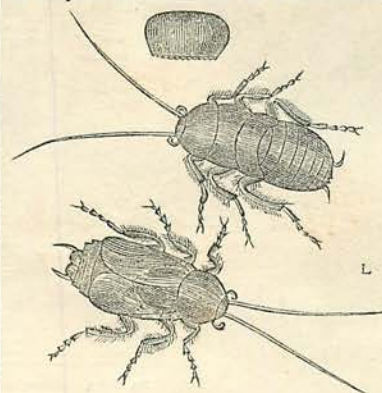
Whose tapering stems, robust or light,  
Like columns catch the searching light;  
Like fair umbrellas, fur'd or spread,  
Display their many-coloured head—  
Grey, purple, yellow, white, or brown,  
A Grecian shield, or prelate's crown,  
Like freedom's cap or friar's cowl,  
Or China's bright inverted bowl.

LEES.

The principal bird seen at this season is the snipe, though it generally leaves England about the latter end of this month. The snipe, from the nature of its food, requires a somewhat moist and cold climate. It lives principally upon earth-worms, which it finds by boring in the soft moist ground with its long beak. This beak is covered with nerves, so that it is as sensitive as the human hand. The bird also appears gifted with an extraordinary power of scent, as it scarcely ever bores in any place where it does not find a worm. Snipes are too shy to permit any one to approach near enough to observe their habits with the naked eye; but through a telescope they may be watched feeding in marshy ground near rivers, when it will be found that they strike their long bills almost up to the head into the soft mud, and almost always bring up a worm. The snipe generally draws its beak back with a jerk, and runs a few paces, holding the worm in its beak, before it swallows it; but as soon as the worm has disappeared, the snipe makes another plunge, and brings up another, and in this manner it eats an amazing quantity of worms, and sometimes slugs. The head of the snipe is admirably fitted for the manner in which the bird obtains its food. The head is heavy, and somewhat square in front, and the eyes, which are very large, are placed so far back in the head as to enable

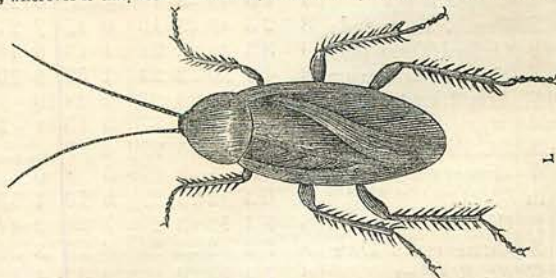
the bird to keep watch when its beak is plunged into the ground in search of food. The tip of the beak is soft and flexible, and the snipe can move it so as to take hold of any object in the ground, without unclosing the horny part of the bill. When hungry, the snipe is very active and so shy that it will not suffer any one to approach it, but after feeding it becomes more torpid, so that sportsmen when they go out to shoot these birds generally look for the marks left by the bird in boring, as they know that the snipe is not far off, and that it is probably sufficiently quiet to afford the chance of a good shot. The common wild pigeon or stock dove is a bird of passage in the south of England, seldom appearing before the end of November. They are very fond of the mast, or seed, of the beech tree. They generally appear in prodigious flights, and occasionally, in severe weather, they will join the domestic pigeons in a farm yard, though they may be easily distinguished by their smaller size and darker colour. It is said that this wild bird is the origin of all our tame pigeons. Some other kinds of birds migrate from the north to the south of Great Britain in this month. The water-wagtail is one of these birds, which generally visits marshy places on the southern coast in this month, returning back to the north about the beginning of March. Some of these birds, however, remain all the year in the northern and western parts of England. It has been often observed that when cows are feeding in low moist pastures, broods of wagtails are seen fluttering about them, in quest, no doubt, of the flies which are apt to annoy animals in such situations. They are also found, in country places, on the sills of windows, to catch the flies that are generally found in such places. The grosbeak, or hawfinch, usually visits England in this month. It feeds principally upon the fruit of the common hawthorn, breaking the hard seeds with the greatest facility. It feeds also upon other seeds, and the stones of various kinds of fruit.

There are scarcely any insects to be found in the open air in this month; but the dampness and chilliness of the weather inducing larger fires to be kept up,



BLATTA ORIENTALIS.

kitchens and the lower parts of houses are frequently infested by what are commonly called black beetles, but which are not properly beetles, but a kind of cockroach (*Blatta orientalis*), and it is, therefore, nearly allied to the cricket and grasshopper. All the insects belonging to this class are very destructive, as they continue eating through all their transformations. The female black beetle does not lay her eggs singly, but always sixteen at a time, and these eggs are enclosed in a capsule which resembles an oblong snuff-box or small box. The mother carries this capsule about with her for a long time, the half of it protruding from her body, until by degrees the sides of it have attained a proper firmness. The outer part of this capsule is at first white, but by degrees becomes brown. If this receptacle for the eggs is more closely examined, it will be seen that one of the two longer margins is very finely toothed, and is composed of two layers, and so constructed that the teeth of one of the layers easily go into the spaces between the teeth of the other layer. This margin is also so firmly united by means of a gummy substance, that it might be easier opened at any other part than at the toothed edge. As soon as the young are hatched and have quitted the egg, they emit a fluid from their mouths, by which they soften the cement that united the two layers of the capsule together, and thus they contrive to open the door of their prison-house. The anxious mother lays the capsule containing her eggs on clothes, leather, and even on walls, taking abundant care to cover it with a portion of the same kind of material as that on which she has laid it. She even carries this feeling so far as to scrape the lime from the wall, and to spread it over the capsule. Black beetles are fond of warm places, and they are found in the greatest abundance in kitchens and bake-houses. Their favourite food is bread and flour; but they will eat almost anything. They avoid the light and hide themselves in dark places during the day, but they come out of their hiding-places in the evening to feed. The wings and wing-cases of the male are one-third shorter than the body. The female is without wings, and has only very short rounded wing-cases, which are separated from each other. The Germans have a cockroach, which is still more troublesome than ours. It is smaller than the common black beetle, and of a dirty yellow colour. These creatures are excessively troublesome, and will even eat the blacking off boots. The American cockroach (*Blatta americana*), is red, and it is nearly twice as large as the black beetle. It has large wings, and very long antennae. It has been brought to England by the American ships, and as, wherever it has been introduced, it has destroyed the oriental cockroach, it



BLATTA AMERICANA.

will probably, in the course of a few years, as completely extirpate the ordinary kind as the Hanoverian rats have extirpated those of Norway. The American cockroach is a most voracious feeder, and as it is particularly fond of sugar, it is frequently found in the shops of grocers and other persons who deal in that commodity. The female of the American cockroach is much larger than the male; and she has very large wings, and tremendously long horny antennae.



DECEMBER.

Among the few plants that are ornamental at this season, one of the most conspicuous is the holly, the beautiful red berries of which look particularly brilliant from the want of ornament in most of the other trees and shrubs.

O reader, hast thou ever stood to see  
The holly tree?  
The eye that contemplates it well, perceives  
Its glossy leaves  
Order'd by an intelligence, so wise  
As might confound the Atheist's sophistries.

Below a circling fence its leaves are seen,  
Wrinkled and keen;  
No grazing cattle through their prickly round  
Can reach to wound;  
But as they grow where nothing is to fear,  
Smooth and unarm'd the pointless leaves appear.

Thus, though abroad perchance I might appear  
Harsh and austere,  
To those who on my leisure would intrude  
Reserv'd and rude;  
Gentle at home amid my friends I'd be,  
Like the high leaves upon the holly tree!

The holly and the mistletoe, it is well known, are used to decorate houses at Christmas; but very few people are aware of the origin of the custom. The holly was dedicated to Saturn; and, as the *fétes* of that deity were celebrated in December, and the Romans were accustomed to decorate their houses with holly, the early Christians decorated their houses in the same manner, while they were celebrating their festival at Christmas, in order that they might escape observation. The mistletoe was dedicated to Friga, the Venus of the Scandinavians, and, as she was the goddess of love, it was formerly a custom to kiss under the mistletoe.

As at this season, the leaves have generally fallen, the peculiarities in the growth of trees are more perceptible. Amongst others, may be observed occasionally that curious mode of growth called inosculation, where two trees unite together, or where a branch crossing a trunk, becomes united to it. There are

And should my youth, as youth is apt, I know,  
Some harshness show,  
All vain asperities I day by day  
Would wear away,  
Till the smooth temper of my age should be  
Like the high leaves upon the holly-tree.

And as, when all the summer trees are seen  
So bright and green,  
The holly-leaves their fadeless hues display  
Less bright than they;  
But, when the bare and wintry woods we see,  
What then so cheerful as the holly-tree?

So serious should my youth appear among  
The thoughtless throng;  
So would I seem amid the young and gay,  
More grave than they;  
That in my age as cheerful I might be  
As the green winter of the holly-tree.

SOUTHEY.



AN INOSCULATED BEECH.

several examples of trees of this kind in Epping Forest; and it is said that it was observing this curious manner of growth that gave the first idea of grafting. In the gardens, the laurustinus is generally in flower; as also the newly-introduced *Garrya elliptica*, with its long, drooping spikes of flowers, which bear some resemblance to those of *Love-lies-bleeding*, but are of a lighter texture, and of a pale green colour. *Chimonanthus fragrans* now opens its pale-yellowish, buff-coloured flowers, which have a delightful fragrance. In the green-houses the camellias are in all their beauty; as are the chrysanthemums, both in the open air and under glass.

The principal bird deserving notice is the woodcock, which generally appears in this country about the latter end of November, or the beginning of December. As woodcocks live in the same manner as snipes, sportsmen guess where they are to be found by the perforations or borings made by their bills in the ground. Woodcocks are naturally very shy birds, rarely taking wing by day, unless disturbed; but in the evening, all, as if by common consent, quit the woods nearly at the same instant, and wander over the snow-covered meadows in search of moist places, for food, retiring to their hiding places just at the dawn of day. The bill of the woodcock, like that of the snipe, is furnished with nerves that render it exceedingly sensitive; and the tip is also so flexible, that it can easily pick up a worm, or even a small insect, without opening the bill. "The enormous quantity of worms that these birds eat," Ronnie observes, "is scarcely credible; indeed, it would be the constant labour of one person to procure such food for two or three woodcocks." The woodcock is so much like the snipe when seen at a little distance, that it would be difficult to distinguish between them, were it not for the habit which the woodcock has, in rising from the ground, of throwing up its tail feathers in the same way as the peacock does its tail, when the white tips of the woodcock's tail feathers distinguish it from the snipe, the tail of which is dark brown. The redbreast, the wren, the hedge-sparrow, and the tomtit are almost the only small birds seen in the open air at

this season, and they are generally found in the neighbourhood of dwelling-houses, picking up any particles of food they can find. If the weather should be mild, the hedge-sparrow may sometimes be heard singing, even in the middle of December.

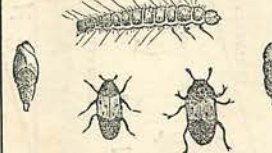


AN INOSCULATED OAK.

Very few living insects are to be met with in the open air in this month, though those which infest dwellings houses are often in a state of great activity. One whose ravages are very extensive, is the bacon beetle, or weevil as it is generally

termed (*Dermestes lardarius*). The larva of this insect is particularly partial to the skin of any animal that falls in its way; and consequently it destroys stuffed animals and birds in collections of natural history, whenever it can gain access to them. It attacks hams and bacon for their skin, but as it is very gluttonous it extends its ravages to the flesh. The larva is long and slender, its body being nearly round, and consisting of thirteen segments, which are blackish brown in the middle and white at the edge. The whole body is furnished with bristle-shaped reddish brown hairs. The beetle is black at the head and tail, with an ash-grey band across the back, having three black spots on each wing case. Sometimes this band takes a yellowish tinge, and the whole beetle is furnished here and there with tufts of ash-grey or yellowish-grey hairs. The beetle is frequently seen in December and January, but the weevils are most destructive in spring. The larvæ are very seldom seen, as they conceal themselves in the bodies they attack, and their presence can only be guessed by finding occasionally their cast-off skins, as they change their skins several times while in their larvæ state. Whenever, therefore, little rolls of black skin are found near the places where ham and bacon are kept, or in cases containing objects of natural history, it is probable the bacon beetle has attacked them, and a careful examination should be made to endeavour to discover and destroy the larvæ. Search may also be made for the clothes moth during this month, as, though it generally passes the winter in a torpid state, if its eggs are found and destroyed, it will prevent the mischief the caterpillar would otherwise do in spring. The common clothes moth generally lays its eggs on the woollen or fur articles it intends to destroy; and when its larva appears, it begins to eat immediately, and, with the hairs or wool it has gnawed off, it forms a silken case or tube, under the protection of which it devours the substance of the article on which it has fixed its abode. This tube is of parchment-like consistence, and quite white. It is cylindrical in its shape, and furnished at both ends with a kind of flap, which the insect can raise at pleasure, and crawl out; or it can project the front part of its body with its fore feet through the opening, so as to crawl about without removing the rest of its body from the tube, which it drags about with it. There are several kinds of clothes moths, and the caterpillars of some of them bury themselves in the article on which they feed, instead of making themselves a silken tube. The moths also differ very much in appearance: the commonest kind is of a light buff; but one species (*Tinea tapetella*) is nearly black, with the tips of its larger wings white, or pale grey.

The eggs of insects should be sought for in this month as well as in January; and rose trees should be examined to see if their bark has been penetrated by the saw-fly, which wounds the bark with her saw, and then deposits in it her eggs, the caterpillars from which are extremely destructive to the young leaves of the rose. The eggs of a kind of leaf-roller, which is also very destructive to the rose, are sometimes found in little yellow patches on the glass of green-houses, and other places where they are not likely to be disturbed. The hearth cricket (*Acheta domestica*) is particularly lively at this season. It passes the summer concealed in the crevices of walls, or among heaps of rubbish; but, towards winter, it takes refuge in the house, where it generally breeds about Christmas. The noise of the cricket is made by its wings.



DERMESTES LARDARIUS.



THE BLACK CLOTHES-MOTH