



NOTES ON THE NATURAL HISTORY OF THE MONTH.

His spangling shower now Frost the wizard flings,
Or borne on ether blast, on viewless wings,
O'er the white pane his silvery foliage weaves,
And gems with icicles the sheltering eaves.

INACTIVITY is a thing unknown in the natural world. When the whole of the vegetable creation seems reduced to a state of torpidity, those secret processes are gradually at work, by which the face of nature is to be again renewed—to life, vigour, and beauty. The rain which, in summer, cools and revives the plants, in winter takes the form of a soft wool, to cover vegetable life, and to guard it from the inclemency of frosts and winds, forming a safe protection to the tender herb, till the winter cold yields to the influence of milder weather; while the frost which is permitted to decorate the outside of the leaf and stem with its brilliant spangles of crystal, retards vegetation, without congealing, except in rare instances, the living juices.

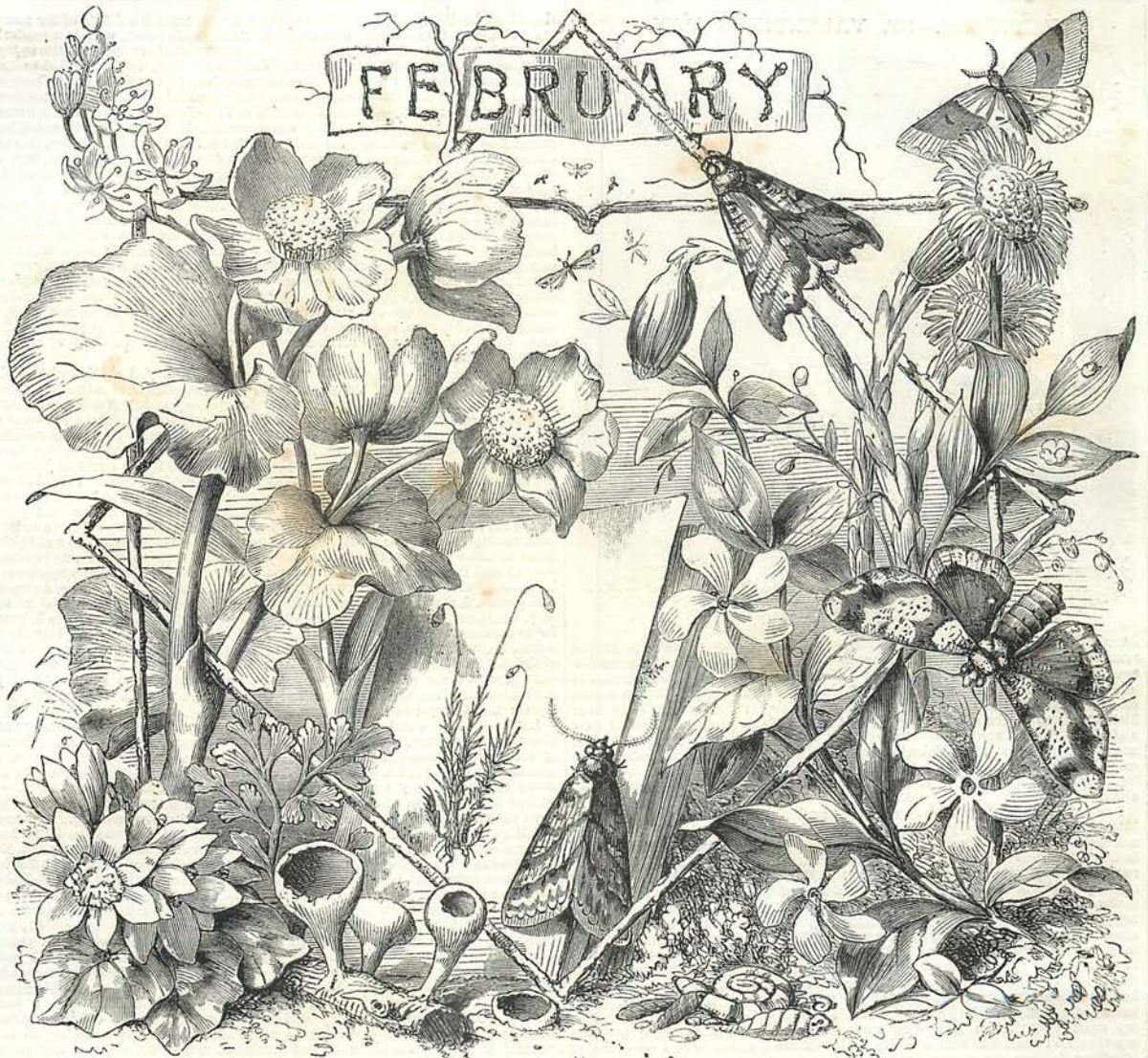
As objects of microscopic investigation, both frost and snow are peculiarly interesting; and those who, through the medium of the microscope, have discovered that a drop of impure water is peopled with the tenants of a world hitherto, to them, invisible, will also find in the purer forms of these wonderful agents of nature, an inconceivable variety of beauty. In the drop of water are thousands of living creatures, which, though invisible to the naked eye, yet bear the same proportion to others still more minute that the gigantic whale does to the tiny shrimp it swallows in shoals; and many of the flakes of snow are of forms equally numerous and varied; for the most part, stars of six points, and ice, as transparent and perfect as any we see on a pond or river. They present an endless source of wonder, and reflect with exceeding splendour the rays of the sun; differing from hail and frost in being crystallised, which the latter are not.

Other employment for the microscope may be found, at this season, in the lichens and mosses. Some of these will suffer themselves to be frozen throughout, and become, from a mass of watery sponge, a block of ice, so solid that a

slice may be cut off no thicker than a biscuit, consisting entirely of the extremities of shoots.

Where the ground is not entirely hid from view, the cup-moss (*Cenomyce pyxidata*) or chalice-moss, as Gerard prettily calls it; and some of the fungi tribe, as *Polyporus squamosus*, *Xylaria hypoxylon*, spring up among the decayed vegetation, and one of them (*Tremella mesenterica*), which fastens its orange greasy-looking substance to old wood, is called by the country people "witches' butter." Regardless of winter's cold, midges flit about, and the six-cleft moth (*Phetorophorus hexadactylus*) may often be seen resting on our garden walls. Where the pool has yielded its icy crust, the water-scorpion (*Nepa cinerea*) "walks the waters;" and the larva of the water-beetle (*Dytiscus*) is active as a formidable enemy to aquatic insects, and even to young fish; exhausting their living juices with its enormous, sickle-shaped jaws. On coming to the surface to breathe, at the least alarm, these creatures, in accordance with their Greek name, dive down and rapidly scuttle away in the mud.

Few are the flowers that yet adorn the garland of the opening year, but foremost in indication of returning life, is that "lone flower hemmed in with snows, as pure as they," the snow-drop (*Galanthus nivalis*); while in sheltered hollows under the "russet drops," which already fringe the hazel (*Corylus avellana*), blossoms the sturdy winter furze (*Ulex nanus*), a species lower in growth than the common gorse, and confining its "blaze of vegetable gold" to the autumnal and winter months. The flower of faithful love, with its "golden bosom fringed with snow—" that constellated flower that never sets," the day's-eye of the poets (*Bellis perennis*)—blooms beneath its prickly shelter; and, above them both, wave the scarlet hips of the wild rose, the stems sometimes adorned with scarlet mossy-like tufts, the work of the gall-fly (*Cynips*), and productions, deemed by the old naturalists, under the name of Bedeguar, as very valuable medical remedies. In gardens, the spurge laurel (*Daphne laureola*) expands its blossoms, adding its mite as "token to the wintry earth, that beauty liveth still," and that even at this inclement season, nature occasionally has her languid faculties revived by a burst of welcome sunshine!



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With anxious heart the farmer looks around,
And marks the first green blade that breaks the ground.
In fancy sees his trembling oats uproot,
His tufted barley, yellow with the sun.

The varying weather of February, destructive as it is to some of the firstlings of the year, as they venture forth prematurely from their winter sleep, is not sufficient to check the gradual tokens of returning animation throughout the hardy vegetable world. The last edging of snow on the skirts of Winter's cold mantle have now melted;

And the dark pine wood's boughs are seen
Fringed tenderly with living green.

A "tender green" also peeps forth from the straggling branches of the hedge-row elder;

And hazel catkins, and the bursting buds,
Of the fresh willow, whisper Spring is coming.

Under southern hedge-rows the small periwinkles (*Vinca minor*), with their starry blue flowers, and shining myrtle-like leaves, garrison the bushes; while by the cold river side—

Where the coarse rushes to the sweeping breeze
Sigh forth their ancient melodies—

flowers the bold marsh marigold (*Caltha palustris*), its sturdy stem, like theirs, unbroken by the rude winds.

Unguarded by leaves, the coltsfoot (*Tussilago*) sends forth its pale yellow blossoms, almost a solitary instance of a wild flower which appears long before its leaves are unfolded; and another of "Flora's vagaries," butcher's broom (*Ruscus aculeatus*); and an evergreen shrub, bears its flowers upon the leaves, eventually to become brilliant balls of coral. That "hedge-bank beauty," lesser celandine (*Ficaria ranunculoides*), looks out upon the sun, at nine o'clock, carefully folding up between two and three; and the two-leaved squill (*Scilla bifida*), of more cultivated ground, sometimes opens its pale blue blossoms.

Amongst the first indications of returning animation in the insect world, is one of the frailest, the moth, who now emerges from a chrysalis, which, without

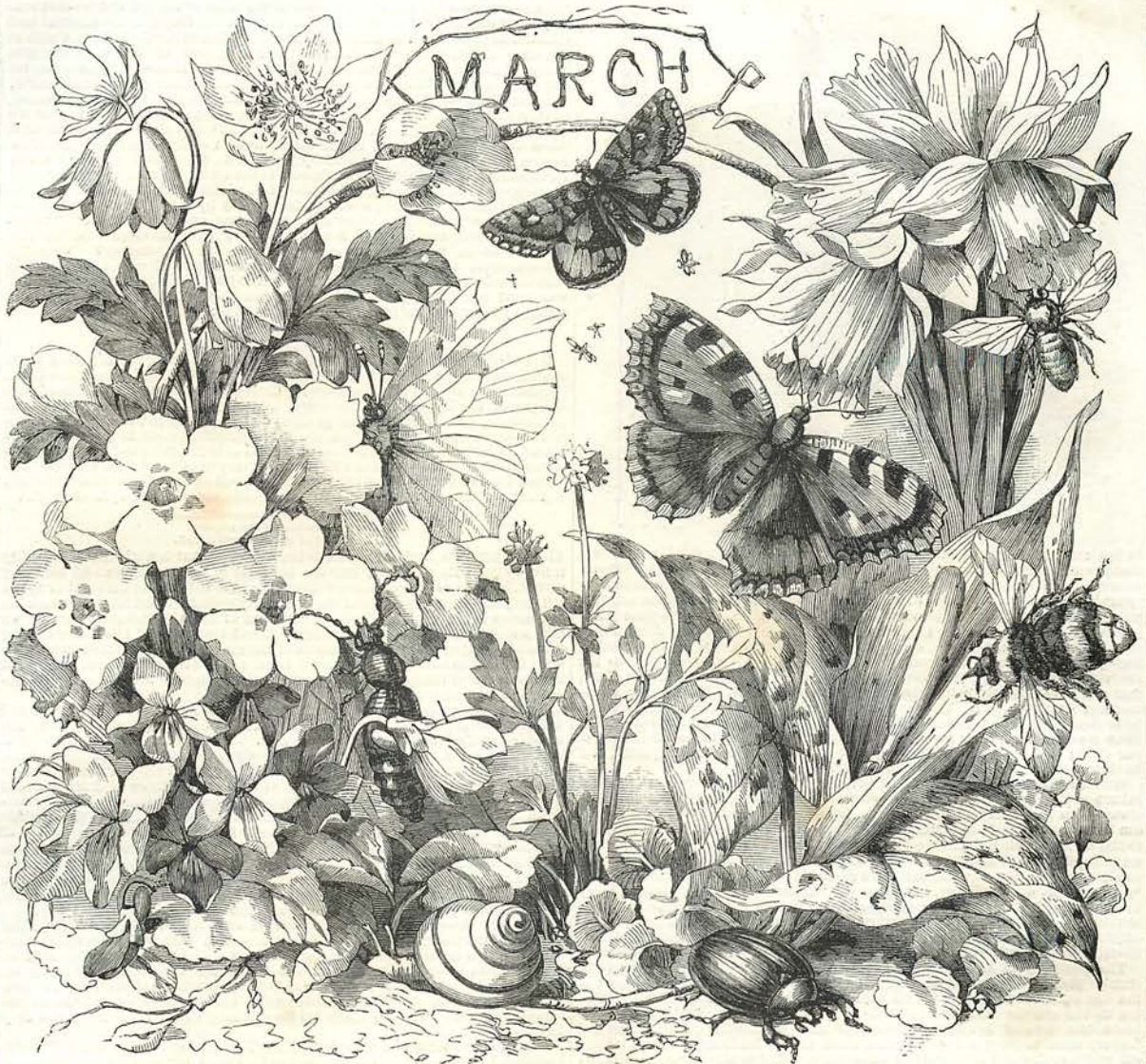
harm to the inmate, has perhaps been brittle as glass in the frost of winter. The early moth (*Cheimotabia brumata*); the herald moth (*Calyptra libatrix*); the oak beauty (*Biston prodromarius*); the pale brindled beauty (*Phigalia pilosaria*)—

As moved with one desire,
Put on, to welcome Spring, their best attire.

The tiny chrysalis-shaped snails (*Clausilia helix*), who chiefly find a home in mosses, at the foot of trees, feel, too, the wakening influence of the season; and in this, and the following month, both mosses and lichens are in their fullest verdure. Many of them are advanced even to fructification, being destined, as it would appear, to keep up the green tints of Nature, when most other vegetation is slumbering; and to protect the roots of larger plants from vicissitudes of cold, as well as of heat, and from too much moisture, as well as dryness. Like the air plants of India, they themselves seem to derive their chief nourishment from the moist air, a circumstance which may account for their growing upon trees, walls, and bare rocks, where there is little if any soil to support vegetation.

In this month may be found one of the prettiest of the fungi tribe, the Carmine Peziza (*Peziza coccinea*); in its early stage presenting but an unprepossessing appearance; but when the white club-shaped columns open, an intensely bright crimson cup appears, which finally expands into a spreading bowl as large over as a crown piece. "When in this state, if they are touched while the sun is shining warmly, they will sometimes send up a fine jet of smoke—at least so it is in appearance—but so rapid is this process, that before one has had time to discover from what part of the surface the puff proceeds, it has vanished, and not a pore as large even as the point of a needle can be detected. The particles of which this apparent smoke is composed are undoubtedly seeds; but how infinitely minute, and yet how incalculably numerous must they be, that they should vanish from the sight more rapidly than smoke, and yet exist in such numbers as to be visible."

Thus Nature works as if to mock at Art,
And in defiance of her rival powers,
By these fortuitous and random strokes,
Performing such inimitable feats
As she, with all her rules, can never reach.



NOTES ON THE NATURAL HISTORY OF THE MONTH.

March often will at first induce
The lion's untamed form, and pour
Abroad the blustering tempest's roar;
Which, joined with "April's genial showers,"
Will fill "May's lap" with blooming flowers.

The winds of March, which come careering over our fields, roads, and pathways, although cuttingly severe to the frail invalid, are highly beneficial to the soil, as they tend to dry up the damps which the previous frosts had prevented from soaking into the earth; and they "pipe to the spirit," too, ditties, the words of which tell tales of the forthcoming flowers. These now, with unerring order, advance in the fairy ranks of nature, and take their share in purifying and renovating the atmosphere.

Amongst the cool green raiment of Spring, and flourishing in damp woods and shady nooks, the moschatel (*Adoxa moschatellina*) unfolds those pale green flowers which, from their unassuming appearance, have given it the name of *adoxo*, or "without glory." The primrose (*Primula vulgaris*), so peculiar in colour as to have a name of its own; and the delicate anemone (*Anemone nemorosa*)—

Flower that seems not born to die,
With its radiant purity,
But to melt in air away.

Now also peeps the arum (*Arum maculatum*), "one of the prettiest fancies in Nature's wardrobe (remarks Harvey); and it is so much admired by country people, that they have dignified it with the name of 'Lords and Ladies,' because it looks, I suppose, somewhat like a person of quality sitting with an air of ease and dignity, in his open sedan."

Sweet violets, Love's paradise, that spread
The gracious odours which they couched bear,

now clothe the banks; and in woods where the soil is congenial, it is not at all uncommon to see a bed of sweet violets (*Viola odorata*) of a rich colour of their

own, then claret, dull red, pinkish white, and finally white. A striking contrast to these retired denizens of the shade, are the gay daffodil (*Narcissus pseudo-narcissus*), immortalised by Wordsworth in his pretty sonnet:—

I wandered lonely as a cloud,
That floats on high o'er vales and hills;
When all at once I saw a crowd,
A host of golden daffodils—
Beside the lake, among the trees,
Fluttering and dancing in the breeze!

Over, and about, and amongst all these treasures of the infant Spring, the delicate sulphur butterfly (*Gonepteryx rhamni*) and the small tortoiseshell butterfly (*Vanessa urtica*), the light orange underwing moth (*Brepha notha*), open and shut their painted wings to the transient sunbeam. The honey-bee (*Apis mellifera*) hums his lay of courtship; and his cousin, the humble-bee (*Bombus terrestris*), airs his handsome plush jerkin. The useful scavenger, the dor-beetle (*Geotrupes stercorarius*), wheels his drony flight; the oil-beetle (*Proscarabeus vulgaris*) displays his armour, offensive and defensive; while, to complete the picture, that at once glutton and epicure, the banded snail (*Helix fasciata*), having crept from his winter retreat, and been awakened into full vigour by a genial shower or two, speedily makes amends for his long abstinence by feasting, with great complacency, on any delicate vegetable substance that comes in his way. Everywhere, in the most cultivated as well as the most barren spots—in the forests of Guiana, or Brazil, or in the Great Desert of Sahara—the common garden snail may be found to be always at homo.

Where'er he dwells, he dwells alone,
Except himself, has chatties none;
Well satisfied to be his own
Whole treasure.
Give but his horns the slightest touch,
His self-collecting power is such,
He shrinks into his house, with much
Displeasure.



NOTES ON THE NATURAL HISTORY OF THE MONTH.

And the Spring arose on the garden fair,
Like the Spirit of Love felt everywhere;
And each flower and herb on earth's dark breast
Rose from its dream of wintry rest.

CAPRICIOUS as it may be, who does not love the month of April, "with its laughing and crying days, when sun and shade seem to chase each other over the landscape, when the bright sunbeam courses over the flying cloud, and turns its drops into many-coloured gems?"

Such alternations of sunshine and rain, and the increasing softness of the

Vernal gales that sweep the Spring's enamelled floor,

well entitle this month to its name of Flowery April.

For dazzling carpets have the meads prepared
As if the rainbows of the fresh mild Spring
Had blossomed where they fell.

Beautiful are now the white and blushing blossoms of the fruit-trees; and primroses, with their pretty relatives, the cowslip and oxlip, offer a pleasing contrast to the wild hyacinth (*Scilla non-scripta*).

That English sensitive plant, the wood-sorrel (*Oxalis acetosella*), with its pale purple-veined petals, now expands over the heart-shaped and triply-folded bright but delicate green leaves; its root, creeping, like beaded coral. The curious snake's-head (*Fritillaria meleagris*) hangs forth its solitary talip-shaped flower; and, opening to the changeful skies of April, sits the Pasque flower (*Anemone pulsatilla*) in her upland solitude on the heath.

The cowslip (*Primula veris*), the eye-bright speedwell (*Veronica chamaedrys*), the early purple orchis (*Orchis mascula*); in its " quaint shaping," its leaves marked with dark purple spots; the dainty little marsh violet (*Viola palustris*). In the garden, we may notice that fragrant native of Switzerland, now naturalised in our *parterres*, the cyclamen (*Cyclamen Europeanum*).

Butterflies—certainly the loveliest of all the insect world, if not of all animal creation—

Expanding oft the brodered wing,
Through fields of air prepared to sail,
Now on the venturesous journey spring,
And float along the rising gale!

Accompanying the sun in his course, and, before he sets, disappearing, the skies are the home of the butterfly; the air is its element, and the varied clothing of its powder wings may truly be said to rival the pageantry of princes. The orange-tip butterfly (*Euchloe cardamines*), though not one of the most splendid, is still a beautiful object, from the lovely contrast of its orange and green wings. Moths, too, are now pretty numerous, and some of them, as the Kentish Glory (*Endromis versicolor*), and the Marvel de Jour (*Mitika Aprilina*), are very richly tinted.

We admire butterflies, but have a lingering prejudice against their more soberly-clad brethren, because we associate them with corruption, with the destruction of books, and of goodly garments; but there is not one which is not more or less useful, in many ways, to birds and bats; and with regard to our own interests, we should recollect, that although a few may be notorious for their depredations, we are indebted to the silkworm moth for more of the richest of our garments, than their predatory kinsmen can possibly destroy. St. Pierre has prettily said, "that the weevil and the moth, obliged the wealthy monopoliser to bring his goods to market, and by destroying the wardrobes of the opulent, they give bread to the industrious."

Those favourites of young people, seven-spot ladybirds (*Coccinella septem punctata*), are decidedly useful in their generation, both in their larva and perfect state, by devouring the aphides which infest plants.

Whoever has looked attentively at a shallow pool for a few moments, must have noticed many moving objects, like bits of sticks, from about an inch in length, and from one end of which, protrude a head and six legs. These are the tubes of the caddis worms, the larva of the genus *Phryganea*, well known to anglers as the water-moth, and taking its name from the Greek, a "dry stick." For an equally expressive name, is the happy little humble-bee fly also indebted to the Greek; taking its name *Bombylius* from the bubbling or buzzing noise it makes, when disporting in the sultry weather in which it delights.



NOTES ON THE NATURAL HISTORY OF THE MONTH.

Now mighty Nature bounds as from her birth:
The Sun is in the heavens, and light upon the earth;
Flowers in the valley, splendour in the beam,
Health in the gale, and freshness in the stream.

MAY was the great festival of our forefathers—their hearts truly responded to the cheerfulness of nature at this season; for May-Day was a word which awakened all ideas of youth and verdure, and blossoming, and hilarity, and love—

And, in the balmy time of May-Day weather,
Both youth and maiden thought the dart
Of Love lay ranking in the heart,
If grazed but by its passing feather.

Homage was paid to Flora in wreaths of her own flowers; and, as Phillips prettily remarks, "her garland does not possess a more charming bloom than the British hedge beauty, the hawthorn (*Crataegus oxyacanthus*); nor do the most luxuriant spices of Arabia yield a more grateful perfume. It was appropriated to the chaplet of the Athenian maidens, and composed the *fascies nuptiarum* of the Romans." And, we may add, is still a constant appendage to the cottage porch, and the May-pole garland of the rural population; and, though mingled with richer blooms, still

Silver hawthorn sweetly shows
Her dewy blossoms, pure as mountain snows;

contrasting them with good effect by the side of the virgin gold globe-flower (*Trollius Europæus*) the dog-violet (*Viola canina*),

Whose looks are like the sky;

and the velvet-green leaves of May's own lilies (*Convallaria majalis*).
Beautiful both in flower and fruit, is the wild hautboy-strawberry (*Fragaria*

elator), one of the wholesome rosaceous family; and equally pretty are the pink flowers and red berries of the cowberry (*Vaccinium vitis idæa*); but perhaps one of our most exquisite wild flowers is the ivy-leaved campanula (*C. hederacea*), excelling in beauty of formation, and delicacy, many a more highly-prized exotic. In May, the sweet woodruff (*Asperula odorata*), with its clear white clusters of starry flowers, and its rings of green leaves, blooms in great profusion around the roots of trees in shady woods; and the fine maiden-hair-fern (*Adiantum capillus veneris*) the only species of the genus found in Britain, is to be met with, though in far more circumscribed localities.

Among the plants belonging to the genus *Ophrys*, is one which, when seen for the first time, can scarcely fail to be mistaken for the insect, from its resemblance to which, it takes the name of bee ophrys, or orchis (*Ophrys apifera*).

Admire, as close the insect lies,
Its thin wrought plume, and honied thighs;
Whilst on this flow'ret's velvet breast,
It seems as though 'twere lulled to rest.

Now might its fancied wings unfold,
Enchained in vegetable gold:
Think not to set the captive free—
'Tis but the picture of a bee?

An effigy that never deceives the insect itself; for, on a warm day, a number of these busy creatures settle upon it, and rifle its nectary of the sweet juice it so abundantly contains. Then leave it uninjured by the visit.

Cockchafer (*Melolontha vulgaris*) now come forth from the grub state, whence they have received the name of May-bugs. Their harmless vagaries, as if of attack, have also caused them to be called dars, or darers. The spotted burnet-moth (*Anthropera flitpendula*) also makes its appearance; while the economy of nature in distributing seeds—resembling these winged race of insects, in their mode of sailing—by means of their feathery down, in whatever current of air they may chance to catch, may be remarked in those of "the sunflower of spring," the dandelion, and in the thistle.



NOTES ON THE NATURAL HISTORY OF THE MONTH.

We tread on flowers, flowers meet our every glance:
It is the scene, the season of romance,
The bridal of the earth and sky—

WELCOME once more to "Jolly June, arrayed all in green leaves!" Welcome once more to the month which comes

Half pranked with Spring, with Summer half embrowned,

when all its vigour and activity in the vegetable kingdom, and the most believing worshipper of Nature is almost bewildered at the vast stores of countless treasures she displays.

Fresh and pure is the air, yet of luxurious warmth, and luscious scents from the newly-mown hay and fields of flowering beans, are borne on the "slow wings of the unfelt wind;" while

Wound in the hedge-rows oaken boughs,
The woodbine's tassels float in air,
And blushing, the uncultured rose,
Hangs high her graceful blossoms there!

Those pale blossoms, touched so tenderly with a faint red, melting away to pearliness like a pure ocean shell!

The sweet-scented bindweed twines its delicate pink bells around the green wheat stalk, and the great bindweed (*Calistegia sepium*), the flower of a day, unfolds her trumpet-shaped corolla to the rays of the sun; and, like a highly-polished mirror, it conveys as much heat as possible to the interior, while its green leaves and clustering tendrils garland the hedge bank—

Where cinquefoil studs the earth with stars of gold;
While, from its dwelling by the violet cold,
With laughing eyes, the coy forget-me-not
Bids me not heedless pass the hallowed spot.

The young shoots of the bladder campion (*Silene inflata*) spring up in April, and the flower in this month is in bloom. The pale green shoots have a powerful odour of green peas, and are, when blanched, a common dish in some of the Mediterranean islands. One of those "sweet remembrancers which tell how fast the moments fly," is the pimpernel (*Anagallis arvensis*)—

That vegetable gem, whose brilliant flower,
Closes against the approaching shower—

opens in fine weather at eight, and folds up its ruby petals at noon. That more hardy flower, the columbine (*Aquilegia vulgaris*), which, in our gardens, assumes a double form, grows in some of our woods in great profusion, wearing in its single state a garb of blue, pink, purple, or white. "Folly's flower" is so called from the shape of its nectary, which turns over like the caps of the old jesters—a form more observable when the flower is in a wild state. The bitter-sweet, or common nightshade (*Solanum dulcamara*), and the common red-rattle (*Pedicularis sylvatica*), have also curiously-shaped corollas. Amongst so much vegetation, as may be supposed, caterpillars are not idle. Some, as the caterpillar of the privet-hawk moth (*Sphinx ligustre*), confine themselves to a single article of diet; others are less delicate, and devour all sorts of organised matter, varying in size, colour, and appearance as much as in diet. Some are clothed with hair, either plain or arranged in tufts, as in the caterpillar of the vapourer moth (*Orgyia antiqua*); others being smooth, as in that of the privet-hawk moth. Their pupæ are equally varied; one, of the magpie moth (*Abraxa grosulariata*), for instance, resembling in appearance the body of a wasp; another, the fruit of the date palm. Among caterpillars, those of the sphinx moths are remarkable for delicacy and even beauty of colouring. That of the privet-hawk moth is pea-green, fading into the most delicate straw colour, and striped with shades of lilac, green, yellow, and white; the horn on the tail is black; but to the touch the creature has a most uncomfortable, cold, and clammy feel.



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All things rejoice beneath the Sun—the meads,
The cornfields, and the murmuring reeds;
From willow leaves, that glance in the light breeze;
To the firm foliage of the larger trees.

Now comes Summer, his face embrowned with labour and glowing with brightness; his head crowned with that diadem of majesty, a wreath of the fiercest sun-beams. Now, countless multitudes of insects try their thin wings, and dance in the sultry beam that waked them into life. "Now," as the Indicator remarks, "cattle stand in water, and ducks are envied; now, a walled lane, with dust, and broken bottles, and a brickfield, is a thing not to be thought of; now a green lane, on the contrary, thick set with hedge-row elms, and having the noise of a brook 'rumbling on the pebble stone,' is one of the pleasantest spots in the world."

Now, in the sunshine, dragon-flies,
Are wondrous to behold—
With rainbow wings of gauzy pearl,
And bodies blue and gold.

But the brilliant and lively dragon-fly (*Colepteryx virgo*) is as sanguinary as it is beautiful, and pursues with the velocity of a hawk, its prey, the gnats (*Culex*) and throngs of smaller insects; which, in their turn, feed upon victims less than themselves. Such constant destruction to which insects, from their small size, are so permanently liable, and against which their instincts, in all stages of their existence, is so remarkably brought into play, is nevertheless necessary, to preserve a just proportion between all the tribes of the creation.

Amongst the loveliest of July's flowers is the floating white water-lily (*Nymphaea alba*), in its green cradle, broad and bright:—

While a star from the depths of each nearly cup—
A golden star—unto heaven looks up.

And now, too, the heath lands are so beautiful, with their gorgeous array of flowers that we can hardly imagine that the purple bells indicate a poor and barren soil. Over them waves the blue harebell (*Campanula rotundifolia*); and spread

beneath, like a pink carpet, blossoms the bog pimpernel (*Anagallis tenella*) July's own flower, the sun-loving rock-rose (*Helianthemum vulgare*), and the queen of the meadows (*Spiraea ulmaria*), with its flowers of "lace-like" embroidery, and rich almond perfume, now open in the sultry noontide; while the grasshopper (*Gryllus*), subdued by the heat, ceases his somewhat monotonous chirp, to be again renewed at a cooler period of the day. Not so the harmless little lizard; in the full blaze of noon, when no cloud keeps off the fire of the bright burning sun, does he come out from his hiding-place in the copse. Strange is it that so graceful a little creature should belong to a class of animals, not only differing from every other, but also differing in its members so widely, as to include the bright-eyed lizard, and those Saurian reptiles whose fossil remains excite, on the whole, more wonder at their gigantic proportions, than regret at their extinction.

Other joyous lovers of sunshine are now in perfection. Butterflies "that in the colours of the rainbow live," the painted lady (*Cynthia cardui*), with its marbled under-wings; the chalk-hill blue (*Polyommatus carydon*), the silvery-blue Clifden beauty (*Polyommatus adonis*), the azure-blue (*P. argiolus*), the pearl-bordered fritillary (*Melitaea euphrosyne*), the wood-white (*Leucophasia sinapis*), and a host of others. What a stupendous wonder is the transformation they have undergone. The same animal crawls in its caterpillar state; rests, or sleeps, in its torpid chrysalis state; and afterwards springs forth into the air, on the feathered wings of the butterfly! May we not perceive with the Italian poet, that "we, too, are caterpillars, born to form the angelic butterfly!"

For some time past, the lady-bird (*Coccinea*) and its lizard-like caterpillar, have been busy in the hop-grounds, where they are much respected by the owners, in spite of the disagreeable odour they sometimes emit. The musk-beetle (*Corambyx moschata*), with its formidable jointed feelers, has a rather more agreeable perfume of musk—at least to those who admire such all-pervading scents. On twigs, or bits of decayed wood, the curious observer may now detect a fungus, called in Scotland siller-cups (*Nidularia campanulata*)—its leathery cup, and the contents, bearing a strong resemblance to a bird's nest.



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There, with its waving blade of green,
The sea-flag streams through the silent water,
And the crimson leaf of the dulse is seen,
To blush like a banner bathed in slaughter.
There with a light and easy motion,
The star fishes sweep through the clear green sea,
And the yellow and scarlet tufts of ocean,
Are bending like corn on the upland lea.

To those who delight to contemplate the varied forms of animal life, and who, "by enlarging their curiosity after the works of Nature, multiply their inlets to happiness," a more agreeable recreation can scarcely be enjoyed than a morning's ramble over the beautiful gardens of the Zoological Society in the Regent's-park.

Among its more recently added attractions, may now be numbered the Aquatic Vivarium, a building erected by the Society in 1852, for the novel and ingenious purpose of exhibiting, under natural conditions, a curious collection of marine animals; and amongst them those, which, as we draw near the confines of the animal world, we find so closely approaching to vegetables, not only in the simplicity of their structure, but even in their form, colour, and general appearance.

Their compound term, Zoophyte, indicates the union of the animal and vegetable nature, which characterises the whole of these interesting objects. Covering the bed of the ocean in all directions, they present the appearance of vegetation, thickly and elegantly ramified, and that in a manner as various as is exhibited among the plants of the earth.

The Vivarium consists of rows of ponds, enclosed in plate-glass, and occupying two sides of a building of glass and iron, about eighty feet in length. The water is enclosed by walls of plate-glass, each in a single piece. At the bottom of these transparent cells, are shingles, rocks in miniature, living tree-like sea-weed, and corallines; sparkling pebbles, groups of shell-fish, star-fish, sea-anemones, &c. Sea-water is contained in these ponds; but there are also ponds of fresh water,

in which the cray-fish and other river fish appear to live with equal facility. Perch have not only spawned, but swim about among the vegetable part of their habitation as if their glassy prison really was—

A place where joy was known—
Where golden fish and silver gleam
Had meaning of their own;
And here, in lasting durance pent,
Their silent lives employ
In something more than dull content,
Though haply less than joy!

One of the most well-known of those objects, once forming part of that world of mystery hidden beneath the waters of the ocean, is the *Echinus*, sea-urchin, or sea-egg. In its living state, a ball of spines, bearing a strong resemblance to a hedgehog: and when these are removed, by the death of the animal, a most wonderful piece of mechanism meets our view. In the heart-urchin (*Spatangus*), the shell is oval, instead of round. Among the interesting group of objects may be also seen a fine specimen of the zoophyte called Peacock's tail (*Padina pavonia*); and, attached to the stalk of a neighbouring sea-weed, a bunch of marine grapes, about the size of the fruit—black, oval, sharp at one end, and attached to each other by foot-stalks—these are the eggs of the cuttle fish, from which, in due season, the animal will come out, perfectly formed; the *Chiton marginatus*, with its boat-like shell, which it can roll up like the wood-louse it somewhat resembles; the sand-star (*Ophiura acicularis*), eggs of the whelk (*Buccinum*), formerly called *B. purpura*, from the rich purple liquor secreted by the animal.

Well deserving its name of Thrift, from thriving in all situations, the *Statice Armeria*, and sea-lavender (*S. limonium*), with perfoliate yellow wort (*Chlora perfoliata*), have taken congenially to their new habitats; and, indeed, with all their vegetable and animal companions, seem to prosper as much as the spirited projectors of so valuable and interesting an assemblage could possibly expect.



NOTES ON THE NATURAL HISTORY OF THE MONTH.

And living flowers are there,
Which like a bud compacted,
Their purple cups contracted,
And now in open blossoms spread.
Stretch like green anthers, many a seeking head.

HOWEVER beautiful to look at sea-anemones may be, they are extremely disagreeable to the touch, whether closed or open: in the former case, they have a cold slimy feel, which is far from pleasant; in the latter, the feelers appear to cause a slight irritation—arising, perhaps, from their roughness, as actual stinging is confined to another member of the family (*Actinia viridis*). They belong to the order Carnosi (*carnosus*, fleshy, from their substance), of the Polypi family, and the name *Actinia gemmacea*, was given from its resemblance to the anemone. When closed, the animal is in its quiescent state; when open, it is seeking its food, which is shrimps, small crabs, whelks, or probably with indifference any animal within reach of its numerous feelers. Whatever is seized is conveyed to the central mouth, the soft parts are devoured, and if it be a shell-fish, the empty shell is, after a while, ejected. The size of the prey is frequently most disproportioned to that of the feeder.

Small specimens of the tribe *Calepha*, familiarly known as sea-jelly (*Medusa*), sea-blubbers, or jelly-fishes, are seen floating by thousands near our coasts, during the summer and autumn; and it is to the microscopic members of this family we owe that phosphorescence which occasions the luminosity of the ocean—

Spangling the waves with lights as vain
As pleasures in this vale of pain,
That dazzle as they fade.

Cuvier tells us "that the sea-mouse (*Aphrodite*) has colours not inferior in beauty to the plumage of the humming-bird, or to the lustre of the richest gems.

The globular heroe (*Beroe pileus*) is called by boatmen the spawn of the sea-egg, which it somewhat resembles in its globular and ribbed form; but the rows of cilia, when seen through a microscope, are slightly curved backwards, so that the whole apparatus gives not a very bad representation of the paddle-wheel of a steam-boat. The star-like sea-urchin (*Holothuria*) is employed by the Chinese in the preparation of their soups, in common with an esculent seaweed, edible birds'-nests, shark's fins, and other condiments, by us considered more nourishing than palatable.

Space will not permit us to do more than allude to other objects of equal interest in the Marine Vivarium, as the sand-worms (*Serpule*), whose habitation is formed by the sand which adheres to the exudation from the animal's body; the nut-leaf (*Caryophyllia Smithii*)—one of the coral family, closely resembling the *actinia*; the lily-shaped animal (*Pentacrina Europea*); the curious sea-mat (*Plustra foliacea*)—spreading, like a fine net, over stones, rocks, shells, and marine plants; the delicate and fragile sea-pen (*Virgularia mirabilis*); the long-legged spider-crab (*Stenorhynchus phalangium*)—like all the species of the family, slow, sluggish, and timid; the velvet swimming-crab (*Portunus puber*), whose name is given from its rich velvety coat, and to which the French also do honour, under that of *Crabe à laine*; and the hermit-crab (*Pagurus*)—so called because the borrowed shell, which serves it for a dwelling, has been likened to the cell of the hermit: it differs from all other crabs, in having the tail destitute of a shell, and therefore requires some external covering to prevent it from meeting with the numberless injuries to which it would be otherwise exposed: guided by instinct, it seeks some empty spiral shell, capable of affording the protection it needs, and into this carefully backs itself; and, the end of the tail being furnished with something resembling hooks, it allies these to the top of the spire.

Within that house secure he hides,
When danger imminent besides
Of storms, and other harm besides.



NOTES ON THE NATURAL HISTORY OF THE MONTH.

And then, w'd bramble, back dost bring,
In all their witching power,
The fresh green days of life's fair spring,
And boyhood's happy hour.

The glowing hues of this month are not confined to the many-coloured woods; the hedges are decked with hip and haw, the rose-tinted fruit of the spindle-tree (*Euonymus Europæus*), the red and white berries of the cowberries (*Vitis idæa*), the gratefully acid ones of the barberry (*Berberis vulgaris*), and the brilliantly scarlet ones of the white bryony (*Bryonia dioica*); while the round-leaved winter green (*Pyrola rotundifolia*) adorns the background with its pear-shaped unfolding foliage. In the still green pastures we now find the meadow saffron (*Colchicum Autumnale*), which opens its lovely pale purple petals, unprotected by leaves, to greet the sun at his rising, folding them carefully up at four o'clock.

A second blow of many flowers appears, "faintly tinged, and breathing no perfume." The bramble (*Rubus fruticosus*) bends beneath its jettty load of fruit, its leaves brilliantly coloured with the smiles of the departing year, and occasionally bearing on their surface, light coloured marks, as if a wandering stream of milk had passed over them. These are the tracks of insects. A little fly deposits its egg between the upper and under surface, and when the young caterpillar is hatched, it moves along between the two skins, feeding upon the substance of the leaf, carefully turning back as it approaches the edge. As it eats, more and more in proportion to its growth, so does its track widen, until at last it comes to a stop, and the chrysalis of the future moth is formed. On the stem of the branches, the insect gall (*Cynips*) forms a fleshy sort of excrescence as its habitation.

In the hasty twilight, "the hawk-moths" may be seen flitting about, seldom making their appearance until that sober time of day. The larger species, belonging to the genus Sphinx, were so named from the habit of the caterpillar in raising the fore part of the body with the head bent down, and sitting for a long

time in a position resembling the Egyptian Sphinx. The caterpillar of the largest European species, the Death's-head moth (*Acherontia Atropos*), is of considerable size, of a delicate pea-green, striped with a darker tint of the same colour, fading into yellowish white. When disturbed, it draws back rapidly, making at the time a clicking noise, like the snap of an electric spark. It feeds on the plants of potato, and on the shoots of jessamine. This moth, one of our finest insects—for it measures more than five inches in extent—is marked with yellow, bordering on buff, and various shades of brownish red, and grey. On its thorax, is a spot, bearing a rude resemblance to a skull, from which it takes its name of "Death's-head," and from this ominous badge, and the faculty it possesses of emitting a very shrill creak like the cry of a mouse, it has been made the subject of an absurd superstitious dread. How this sound is caused, is still a matter of dispute, but the most probable conjecture is, that it is occasioned by the insect rubbing its mandibles, or the instrument it perforates with, against its horny chest. The grasshopper and cricket effect their well-known chirpings, by grating their spiny thighs against their rigid wings.

No insect has, in truth, the requisite organs to produce a genuine voice. Superstition has always been particularly alive in suggesting causes of alarm from the insect world; and where man should have seen only beauty and wisdom, he has too often found horror and dismay. The markings on the back of this "Death's-head phantom" represent to such fertile imaginations the head of a perfect human skeleton, with the limb-bones crossed beneath, its cry becomes the voice of anguish, the signal of grief, and flying into their apartments in the evening, it extinguishes the lights, not from the effect of natural attraction, but as the foreteller of war, pestilence, hunger, and death, to both man and beast. The same terror is inspired by its appearance on the Continent, where it is called the "Wandering Death-bird."

Let us hope such vain imaginations are fast flitting away, before the light of education and experience.



NOTES ON THE NATURAL HISTORY OF THE MONTH.

Look Nature through, 'tis revolution all;
All change—no death!

Truly may it be said, that the "Almighty works in a mysterious way. His wonders to perform," when among the many astonishing secrets brought to light by aid of scientific research we read the following extract, selected from an interesting addition to the "Illustrated London Library," called "The Microscopæ":—"Startling and almost incredible as the assertion may appear to some, it is none the less a fact, established beyond a question, by the aid of a microscope, that some of our most gigantic mountain ranges, such as the mighty Andes, towering into space 25,250 feet above the level of the sea, their base occupying so vast an area of land; as also our massive limestone rocks, the sand that covers our boundless deserts; and the soil that covers many of our wide-extended plains, are principally composed of portions of invisible animalcules. And, as Dr. Buckland truly observes, 'The remains of such minute animals have added much more to the mass of materials which compose the exterior crust of the globe, than the bones of elephants, hippopotami, and whales.' The stratum of slate, fourteen feet thick, found at Bilin, in Austria, was the first that was discovered to consist almost entirely of minute flinty shells. A cubic inch does not weigh quite half an ounce; and in this bulk it is estimated there are not less than forty thousand millions of individual organic remains! This slate, as well as the tripoli, found in Africa, is ground to a powder, and sold for polishing. The similarity of the formation of each is proved by the microscope; and their properties being the same, in commerce they both pass under the name of tripoli. One merchant alone in Berlin disposes annually of twenty tons weight. The thickness of a single shell is about the sixth of a human hair, and its weight the hundred and eighty-seven millionth part of a grain. The *Berg-mehl*, or mountain meal of Norway and Lapland, has been found thirty feet in thickness; in Saxony, twenty-eight feet thick; and it has also been discovered in Tuscany, Bohemia, Africa, Asia, the South Sea Islands, and South America—of this almost the entire mass is composed of flinty skeletons. That in Tuscany and Bohemia resembles pure magnesia, and

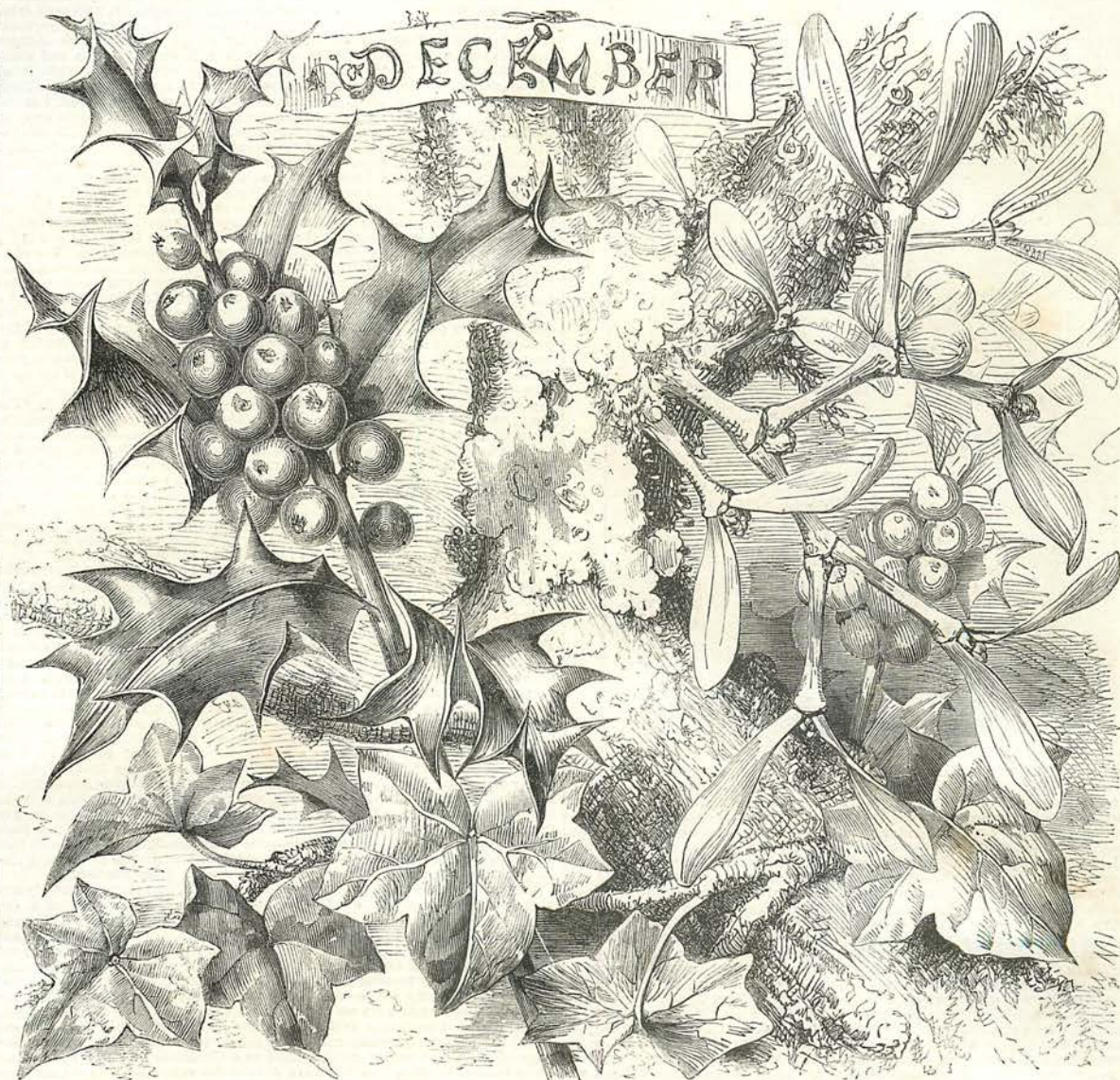
consists entirely of a shell, called *Campilodiscus*, about the two-hundredth of an inch in size."

As endless and varied as natural objects, are the sources of amusement afforded by the aid of the microscope. Through a powerful one, a fish's scale assumes the form of a scallop-shell; the pollen of a flower looks like small shot, a tripod, or a neat little box; the down of a butterfly's wing, a cluster of delicate campanula-shaped cups; its egg, an echinus; the tongue of a bee, a four-winged insect; the eye of an insect, a round piece of network; and the animalcule called cyclops, the form of some eccentric vegetable—as if an overgrown radish had taken unto itself a set of jointed legs, a pair of spotted wings, a forked tail, a cluster of feelers, and had suddenly become gifted with the power of locomotion.

Ferns, lichens, and mosses, are beautiful objects for investigation; and at this season many are in full fructification, and in none is it more abundant than in the common polypody (*Polypodium vulgare*) which grows very plentifully on old hedges, and about the decaying roots of trees. On this, the fructification takes the form of small orange-velvet buttons; on the hart's-tongue (*Scolopendrium vulgare*) the seeds have a longer form; on the hard fern (*Blechnum boreale*), with its tough wiry roots, they are more diffused; on the maiden-hair spleenwort (*Asplenium trichomanes*) they are minute black dots. The seeds of *Polytrichum undulatum*, one of the vast tribe of mosses, require the aid of a microscope to be seen at all. The little green balls attached to the *under side* of the oak-leaf are the habitation of the genus *Cynips* (gall-fly), whose residence varies with every plant on which it chooses to rest; and all of them may be numbered among objects for closer inspection.

At this season, pupæ of the hawk-moths may sometimes be found working their way up to the surface of their burial-ground. Smooth in appearance, and not, like those of the butterfly, angular in shape, they have the sucker—which in this family is very long—enclosed in a separate skin, or case, and projecting from the head:—

Contrivance intricate, expressed with ease,
Where unassisted sight no beauty sees.



NOTES ON THE NATURAL HISTORY OF THE MONTH.

Though boundless snows the withered heath deform,
And the dim sun scarce glances through the storm,
Yet shall the smile of social love repay,
With mental light, the melancholy day.

WELCOME then, old December! "wrapped well in weeds to keep the cold away!"
Welcome, frost and clear weather! and thrice welcome the bracing exercise in
the bright, cold sunshine by day, and the blazing hearth and well-stored library
at night!

While fancy, like the finger of a clock,
Runs the great circuit, and is still at home.

And welcome, too, the "Happy, happy Christmas, that can win us back to the
delusions of our childish days—that can recal to the old man the pleasures of
his youth, and transport the sailor and the traveller, thousands of miles away,
back to his own fireside and his quiet home!"

And numerous are the hearts to whom Christmas brings a brief season of
happiness and enjoyment. How many old recollections and dormant sympathies
does this season not awaken? How many then meet who have but scanty
intercourse at other periods of the year! And, though the Christmas pastimes
of our ancestors appear now to be neglected by society, in proportion to their
polish, still, in many parts of merry England, Father Christmas is invited to
reign with a little of his former spirit.

In a winter's night,
When the soundless earth is muffled,

the yule log still sends up its myriads of bright sparks on the hearth, and its
cheerful red tint on the surrounding happy faces. The holly, the once named
"scarlet oak," is still considered as an indispensable addition to the garniture of
home; and

Fluttering bosoms come and go,
Under the sacred mistletoe!

No! the genius of Hospitality has not yet deserted the English fireside, nor
has the joyous solemnity of Christmas ceased to warm the bosom of Charity—of
that Charity which truly feels that, next to enjoying happiness, is the con-
sciousness of having bestowed it on others.

There is that scattereth, and yet increaseth—
To him who giveth, a blessing never ceaseth!

The wandering waits still chant "that antique music linked with household
words," the true carol, instead of those tender airs from the last sentimental
opera, with which we are aroused from balmy slumber during Christmas week
by the less seriously-disposed minstrels of city streets. And yet, if our sleep
has been healthful and pure,

Some chord in unison with what we hear,
Is touched within us, and the heart replies.

So that, on the whole, we are rather pleased than otherwise, at being reminded
that even so slight a relic of home and youthful associations *is yet permitted*
to linger among us.

O the hearth of home has a constant flame,
And pure as a vestal fire;
It will burn, and burn, for ever the same,
For Nature feeds that pyre.

And there, like a star, through the midnight cloud,
Thou shalt see the beacon bright;
For never, till shining on thy sho' o'ud,
Can be quenched its holy light!