

JANUARY, 1845.

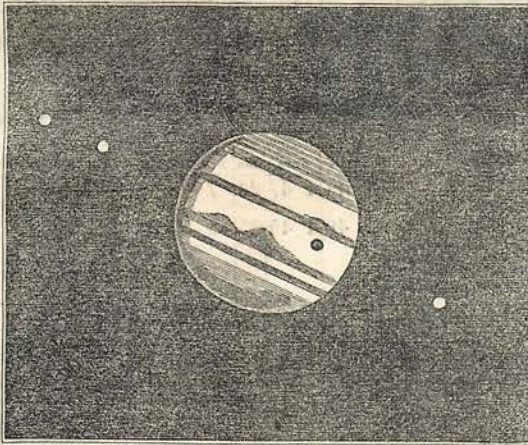
SONNET.

GATE of the year! where would'st thou lead us now?
On still through Winter's path?—or wilt, ere long,
Thaw the cold icicles that point thy brow,
And wend us to a way of woodland song
And Spring-time, flow r-embroider'd road of light?
Art thou like Susas's portals, which disclose
Unto the Alpine traveller, the sight,
All suddenly, of fair Italia's rose
And vine, and honeysuckle interlac'd?
Or has December left a will behind
That thou should'st on perpetuate his snows,
And make the year like that he left, a waste?
Is not young Spring a wooer warm and kind—
Wilt not for her thy rigid looks unbind?

W.

ASTRONOMICAL APPEARANCES.

THE frosty nights of January are usually favourable for astronomical observations. So "resplendent in brightness" are the hosts of heaven on such occasions, they should be embraced with more than ordinary zeal by every student of the works of God.

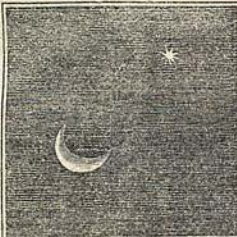


From careful calculations we find, at the commencement of this month, the planet Mercury will be visible near the western horizon about half-an-hour after the setting of the sun. Saturn may be seen (if the air should be very clear) a few degrees above him. But the most interesting planet at this time is Jupiter; for throughout this month, during the evenings, he will deck the southern and western heavens with his majestic rays, when his belts and satellites will interest and instruct the telescopic observer. The cut at the head of this column is a view of Jupiter, with his luminous attendants, as he will appear at 30 minutes past 6 o'clock in the evening of the 10th. But it also exhibits a phenomenon of frequent occurrence through the year, for a view of which, youthful and amateur observers should be on the alert. We allude to a transit of one of Jupiter's satellites across the face of the planet. These satellites or "moons" are four in number, and as they perform their several revolutions in different periods, their relative positions are of course infinitely varied; but they are generally arranged nearly in a straight line with an oblique direction. Sometimes two of them are seen on one side of the planet, and two on another; sometimes two only are visible, while the other two are eclipsed either by the body or the shadow of Jupiter; and sometimes all the four may be seen on one side, and in a straight line from the planet, in the order of their respective distances. In the cut two are shown on the left side; one like a black ball on the face of the planet; and one on the right side of the planet.



On the 2nd day of this month, the first satellite will be eclipsed.

- On the 12th, the second satellite.
- On the 18th, the first.
- On the 19th, the second.
- On the 10th day of the month, as shown in the cut, the first satellite will pass over the face of the planet.
- On the 20th, the second will make a similar transit.

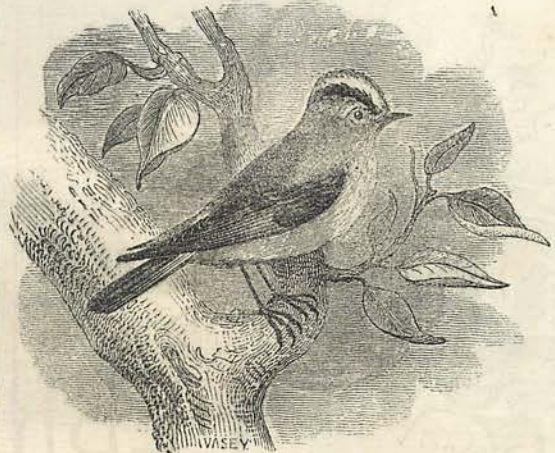


In addition to these phenomena, the progress of a shadow on the face of the planet, from one of the satellites, forms an interesting spectacle.

The eclipses of Jupiter's satellites furnish navigators with the most important signals for determining the longitude of places on the earth. Tables of them are accordingly inserted in the Royal Nautical Almanack. Mars is to be seen in the south-east before sunrise: on the morning of the 4th, he will appear in the neighbourhood of the crescent moon, according to the accompanying illustration, which is drawn to correspond with a view by the naked eye. Venus is a splendid object at day-break, and may be readily identified by her excessive brightness. On the 6th, she will appear as the comely harbinger of morn, in the neighbourhood of our satellite, as exhibited in the subjoined illustration.

NOTICES ON NATURAL HISTORY, &c.

JANUARY.



GOLDEN CRESTED REGULUS.

THIS curious little bird delights in the largest trees, such as oaks, elms, tall pines, and firs, particularly the first, in which it finds both food and shelter; in these it builds its nest, which is suspended from a branch by a kind of cordage made of the materials of which the nest is chiefly composed; it is of an oblong form, having an aperture on one side, and is made principally of moss, lined with the softest down, mixed with slender filaments; the female lays six or seven eggs, scarcely larger than peas, which are white, sprinkled with very small spots of a dull colour. These birds are very agile, and are almost continually in motion, fluttering from branch to branch, creeping on all sides of the trees, clinging to them in every situation, and often hanging like the titmouse. Their food consists chiefly of the smallest insects, which they find in the crevices of the bark of trees, or catch nimbly on the wing; they also eat the eggs of insects, small worms, and various sorts of seeds.

They remain in this country all the year through, and are even observed to be more numerous in the winter than in the summer. Colonel Montagu, who timed the visits of a female to her nest of eight young ones which he kept in his room, found that she came once in each minute and a half, or two minutes, or, upon an average, thirty-six times in an hour; and this continued full sixteen hours in a day. The male would not venture into the room; yet the female would feed her young while the nest was held in the hand.

The month of January, if not clad in snows and icicles, is generally borne on the wings of the tempest. Various tribes of birds flock round farm houses and out buildings in search of food. The thrush is seen under sunny hedges and southern walls in pursuit of snails, which he destroys in abundance, particularly in hard winters. The nuthatch is heard, and larks congregate and fly to the warm stubble for shelter. Field-fares and finches are seen in flocks.

When the temperature of the air becomes so low that vegetable life would be in danger of destruction, the moisture which was held suspended in the atmosphere is let fall in the shape of snow, and so deposited on the surface in a succession of strata or layers, which form the warmest mantle which could be thrown over the earth to guard and preserve her offspring. The air which is interposed or held captive between each layer is a very bad conductor of heat, and at once prevents the internal warmth of the earth from escaping, and the external cold from reaching the insects, animals, and, above all, the plants. In the colder regions the fur of hares and other animals undergoes a change which renders it a most perfect protection against the severity of the weather. For food, hares and birds are often reduced to great extremities; and at this season we see many animals, which at other times regard man as their natural enemy, betake themselves to him for succour and protection. The kindly habits of the robin-redbreast in this way are familiar to all; and it strives to reward man, for any little crumbs bestowed upon it, by a grateful song, which not even the storms and cold of this month can silence. Nor in the unceasing perseverance with which the robin endeavours to cheer us is it quite alone; for if we go out into the woods, we shall hear the wood-lark mingling its notes with the blast and with the creaking and murmuring of the branches.

When the weather is not very cold, this period of the year is favourable for some of the operations of agriculture, such as conveying manure to the fields, repairing hedges, putting trenches and ditches in a good condition, and examining and improving the state of the farming implements.

ST. PAUL'S DAY (Jan. 25) has been vulgarly esteemed ominous of the weather of the year; hence, an old proverb says—

If St. Paul's Day 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 skie,
Then neate and fowles this year shall die;
If blustering winds do blow aloft,
Then wars shall trouble the realm full oft.
All superstition from thy breast repel,
Let cred'lous boys and prattling nurses tell
How, if the Festival of Paul be clear,
Plenty from liberal horn shall strew the year,
When the dark skies dissolve in snow or rain,
The labouring hind shall yoke the steer in vain,
But if the threatening winds in tempests roar,
Then War shall bathe her wasteful sword in gore.
Let no such vulgar tales debate thy mind,
Nor Paul, nor Switwin, rule the clouds and wind.

FEBRUARY, 1845.

SONNET.

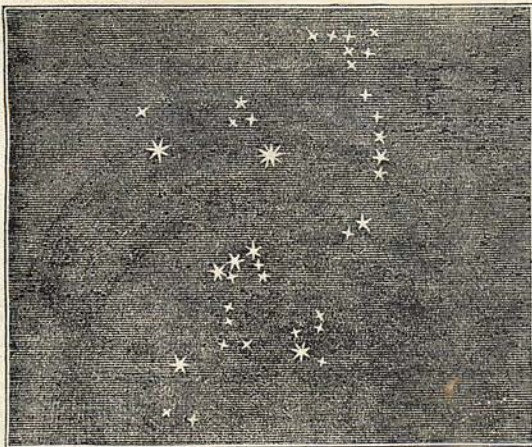
At length grim Auster with his snowy head
 And gloomy countenance, and sable wings,
 Forth from the cave of Æolus hath sped
 And o'er the land his varied winter flings.
 Along the pathway of the storm he wends,
 Sometimes enwrapt deep in his dusky clouds,
 Anon a treach'rous sun-beam forth he sends,
 And the next moment all again enshrouds—
 With scudding mists he hides the mournful moon
 That weeps behind them for a glimpse of earth,
 Then for awhile reveals her, and as soon
 Makes the Night dark as ere Creation's birth:
 Thus 'tis with Man—now bright—now dim appear
 The hopes and joys of each succeeding year.

W.

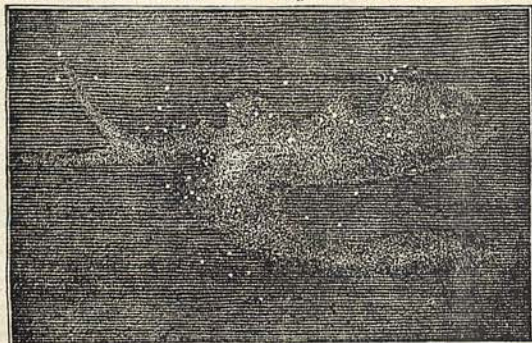
ASTRONOMICAL APPEARANCES.

“ Orion's beams! Orion's beams!
 His star, gemmed belt, and shining blade;
 His isles of light, his silvery streams,
 And gloomy gulfs of mystic shade.”

We have here given a representation of the glorious constellation Orion, which, throughout this month, shines with conspicuous and emphatic beauty in the southern heavens.

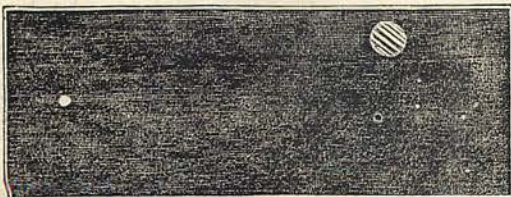


The most remarkable nebula in the heavens is that which appears in what is absurdly called the “sword handle” of Orion; and, as this month is a good one for its observation, we have subjoined an accurate drawing of its appearance. This wonderful group is without doubt a distant universe, spread in the illimitable depths of space, and but just revealed to human eyes to humble pride and elevate the immortal affections of observers. He who “tellecth the number of the stars” is the same merciful Creator who “healeth the broken in heart.” From long-continued surveys of this famous



nebula, there is reason to believe it has undergone great changes since it was first observed by Huggens in 1656; but whether the changes—like those in our own planet—have consisted in a progress towards more highly organised existence, is, of course, a matter of extreme speculation.

Venus will be visible during the first week, a little before sunrise, near the south-eastern horizon. Mars is to be seen at the break of day; and Jupiter amid the evening twilight. On the evening of the 7th, Jupiter will be so near Uranus, or the Georgium Sidus, that both planets may be seen at the same time, if the telescope has a tolerably large field of view. The cut in



the margin shows the appearance of Jupiter with his Satellites, and Uranus, through an inverting telescope. Those who never saw this distant planet should embrace this opportunity, as they will find Jupiter a good guide to him.

NOTICES ON NATURAL HISTORY, &c.

FEBRUARY.



THE THRUSH.

THE thrush is distinguished among our singing birds by the clearness and fulness of its note; it charms us not only with the sweetness, but the variety of its song, which it begins early in the Spring, and continues during part of the Summer. The female builds her nest generally in bushes; it is composed of dried grass, with a little earth or clay intermixed, and lined with rotten wood. She lays five or six eggs of a pale blue colour, marked with dusky spots. Although this species is not considered with us as migratory, it has nevertheless been observed in some places in great numbers during the Spring and Summer, where not one was to be seen in the winter, which has induced an opinion that they either shift their quarters entirely, or take shelter in the more retired parts of the woods. The thrush is migratory in France: M. de Buffon says that it appears in Burgundy about the end of September, before the redwing and fieldfare, and that it feeds upon the ripe grapes, and sometimes does much damage to the vineyard. The females of all the thrush kind are very similar to the males, and differ chiefly in a less degree of brilliancy in the colours.—Bevicck.

We observed this summer (1829) two common thrushes frequenting the shrubs on the green in our garden. From the slenderness of their forms, and the freshness of their plumage, we pronounced them to be birds of the preceding summer. There was an association and friendship between them, that called our attention to their actions; one of them seemed ailing, or feeble from some bodily accident; for though it hopped about, yet it appeared unable to obtain sufficiency of food. Its companion, an active sprightly bird, would frequently bring it worms or bruised snails, when they mutually partook of the banquet; and the ailing bird would wait patiently, understand the actions, expect the assistance of the other, and advance from his asylum upon its approach. This procedure was continued for some days; but after some time we missed the fostered bird, which probably died, or by reason of its weakness met with some fatal accident.—*Journal of a Naturalist.*

In February the woodlark commences his sweet lays; the blackbird, and song thrush are heard. Tomtits are seen hanging on the eaves of barns and thatched out-houses, particularly if the weather be snowy and severe. The yellow-hammer and chaffinch are heard towards the end of the month. Rooks revisit their breeding-trees, the stone-curlew clamour and frogs croak. The hedge-sparrow sings, and our old friend the robin cheers us with his song. The most conspicuous of early insects is the indefatigable bee.

THE brief visits of the sun are, now, generally sufficient to bring out a few flowers. In our walks in the garden, if the weather prove mild, we shall discover many pleasing objects; among these, the admirer of nature's beauties will not consider the snow-drop and the crocus beneath his passing notice. The bloom buds of fruit-trees may be seen to swell every day. The laurustinus is still in blossom, and so is the china-rose. The buds of the lilac-tree are very forward; and the green-house is an object of attraction. The young lambs also now call for the attention of the shepherds. The snows thaw; the icy pools break up. The snow holds mingled with it more of the principles or elements which are favourable to vegetation than common rain water, so that the melted snow, sinking into the earth, enriches it with many of the salts most useful to nourish the plants which are destined to spring up soon afterwards. A provision is thus prospectively made to ensure a proper supply of food to every seed

— which, in her warming lap,
 Our mother-earth doth covetously wrap.

These begin slowly to swell and germinate, so as about the beginning of the following month to appear with their young shoots a little above the surface, and faintly to renew the verdant covering of the soil. A few insects may also be discovered, and now and then, on a very sunny day, the brimstone-butterfly surprises us while flitting on the yet chilly breeze; the leaves of the elder also begin to expand: the mezezon puts forth its buds; the missel-thrush, the yellow-hammer, and the sky-lark resume their pleasing strains, uniting with the birds of the former month in celebrating the return of Spring, of which they furnish the earliest and most unequivocal proofs. Other proofs, however, are not wanting, such as the blossoming of the willows, which hang out their yellow catkins as signals to the bees that they may again begin their industrious career: while the hazel makes preparations, by its flowering, to secure to the squirrel a store for its winter food.

These various indications of returning warmth excite emotions of joy and gladness in every mind; and the first notes of that general concert begin to be sounded which is to receive its full strength and power in May and June. The lover of Nature enjoys this in its utmost degree; and those who fail to cultivate an acquaintance with Nature and her works lose more than can be compensated for by all the artificial usages of life.

MARCH, 1845.

SONNET.

THOU variable Tyrant of the Year!
 MARCH! in thy snow or frosty vestment clad,
 Or making Nature weep a general tear,
 Thou hast some attributes which make us glad—
 Thou bring'st the sunny April showers more near,
 And therefore do we take thy embassy,
 Rude as it is, to be precursor sent
 Saying: "At length the seasons do relent,
 And flowery May all joyous ye shall see!"
 Mild Zephyr soon will kiss the buds and flow'rs,
 And through the disentangled woods and bow'rs*
 Breathe his warm breath upon the waiting things
 That long to have their winter-closed springs
 Unlock'd as throat of tuneful bird that sings!

ASTRONOMICAL APPEARANCES

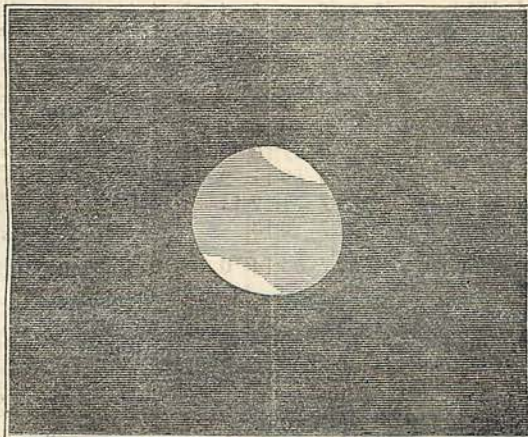
THE Zodiacal lights will appear during the first half of this month, about half-past seven o'clock in the evening, or as soon as the twilight is ended. The subjoined drawing exhibits a view of this phenomenon.



It will be observed to soar from the horizon in the form of a delicately luminous cone, pointing towards the Pleiades, or the star Aldebaran; its axis forming an angle of between 60 and 70 degrees with the horizon.

Various opinions have been entertained as to the cause of this sublime phenomenon; but as it uniformly accompanies the sun, it has been generally ascribed to an atmosphere of immense extent surrounding the luminary, and extending beyond the orbit of Mercury.

Mars is to be seen during twilight, not far from the south-eastern horizon; through a good telescope he will appear gibbous, like the Moon two or three days after the full. The accompanying engraving gives the telescopic aspect,



in a correct manner, but in an inverted position. The comparative whiteness of the poles is very remarkable, and should be closely examined. Mars will appear not far from the Moon on the 1st and 31st days. The rest of the planets are unfavourably situated for observation. Jupiter may be perceived near the western horizon after sunset during the first week, but not longer.

* "Consider the Zephyrus which dares hardly breathe in fears, how she plays and courts the corn. One would think the grass the hair of the earth, and this wind a comb to disentangle it."—Bergern's Satyrical Characters, 1658.

NOTICES ON NATURAL HISTORY, &c.

MARCH.



THE SKYLARK.

IN March the skylark sings delightfully; the blackbird gives out its mellow notes. Fieldfares and other birds take their departure to more northerly regions. The lesser pettychaps and the wheatear arrive. Some of the feathered tribes are now busy constructing their nests. In this month the redwing, fieldfare, woodcock, and other migratory birds take their departure on a summer excursion to the northern parts of Europe.

The lark produces two broods in the year; the first in May and the second in July or August. Mr. W. P. Foster, surgeon, of Church-street, Hackney, has for some years kept twelve or fifteen pairs of our smaller singing birds together in an aviary, where they appear in excellent health and plumage, repaying the care and attention bestowed on them by pursuing the round of their various interesting habits—the song, the courtship, the nest-building, and feeding their young within five or six feet of the window, outside which the aviary is constructed, and through which, when open, many of them come into the room to him. The degree of perfection which they are managed, and the total absence of any influence of fear or restraint on their habits may be learned by the fact that in the summer of 1836, a pair of skylarks produced four sets of eggs; in 1837, the same pair produced three sets of eggs, and reared some of their young; and 1838, three females had each of them a nest and eggs. During the period of producing the eggs the female has occasionally been heard to sing with a power and variety of tone equal to the voice of her mate. To supply the quantity of insect food necessary during summer, the maggots of the flesh-fly and the beetle, so common in most kitchens, are principally resorted to. —Yarrell.

The lark begins its song very early in the spring, and is heard chiefly in the morning; it rises in the air almost perpendicularly and by successive springs, and hovers at a vast height; its descent, on the contrary, is in an oblique direction, unless it is threatened by birds of prey, or attracted by its mate, and on these occasions it drops like a stone. It makes its nest on the ground, between two clods of earth, and lines it with dry grass and roots; the female lays four or five eggs, of a greyish brown colour, marked with darker spots; she generally has two broods in the year, and sits only about fifteen days. As soon as the young have escaped from the shell, the attachment of the parent bird seems to increase; she flutters over their heads, directs all their motions, and is ever ready to screen them from danger.

Trout begin to rise in the rivers, the smelt spawns, and blood worms appear in the water. Moles in quest of food, throw up hillocks. Bees, black-ants, and the meloe or oil-beetle, are seen in mild sunny days.

The vegetable world now puts forth fresh beauties every day; pile-wort, colts-foot, the daisy, and the primrose are some of the principal wild plants in bloom; while in the gardens are to be seen in flower the daffodil, the sweet violet, crown imperial, polyanthus, &c.

It is not, in general, till the commencement of this month, that, in such a latitude as that of Britain, the effects of the higher temperature are visible on vegetation. Then the perennial roots, the former stems of which have died away, begin to send up the shoots which are intended to bear the leaves and flowers for the present year. These, it is worthy of remark, are always arranged in a uniform and unvarying manner, which is peculiar to each species or genus of plant. In the gardens we may observe the rhubarb and the peony, as examples of this fact, while the ferns or brakes of our heaths and woods present an interesting specimen of this arrangement. The buds of trees, which now also begin to unfold themselves, are likewise folded up in a similar way. The large buds of the horse-chestnut and the sycamore are well fitted for examination in this respect: the scales, which form the outer coating of these, serve to protect them against the severe cold of winter, while the resinous or balsamic juice which is spread over them prevents the penetration of wet, which would rot the buds and destroy the principle of life, or, if accompanied by some warmth, would hurry them into premature expansion, which would equally be followed by the destruction of the central and vital part of the buds. So long as buds remain closely folded up, they are in general secure from the most intense cold; but if, from the too early rise of temperature, which often takes place in our springs, they have begun to expand, they are liable to be destroyed by the return of cold weather. This is equally the case with seeds; hence, annuals, if sown very early, are apt to be nipped by the frosts; and the more valuable seeds for crops are often much injured if too soon committed to the earth. A late sowing is therefore followed in general by a more certain as well as abundant crop than an early one.

The industrious husbandman now zealously unites with the elements in fitting the earth for the reception of the seeds, the produce of which is to be the subject of his future cares for many of the following months. The previous and now excessive moisture of the earth is lessened by the increased evaporation, and the steady blowing of cold dry winds.

APRIL, 1845.

SONNET.

"The poetic birds rejoice,
And for their quiet nests and plenteous food,
Pay with their grateful voice."—Cowley.

Thou gentle herald of the flow'ry Spring:
Mother of violet and pale primrose
(Whose beauty now on every wild bank grows),
Hark! how the joyous birds thy welcome sing!
Some far up in the dewy sky on wing
Well pois'd—some chattering in the hawthorn hedge
Some deep-embow'd in lonely glen or brake,
And others booming from the watery sedge—
All join'd, a various concert for thy sake
Most musically and most fondly make!
Sweet April! whose dear face so oft appears
The semblance of the brightest thing on earth,
(Which is a lovely, laughing girl in tears),
Thy coming wakes the groves to bloom and mirth!

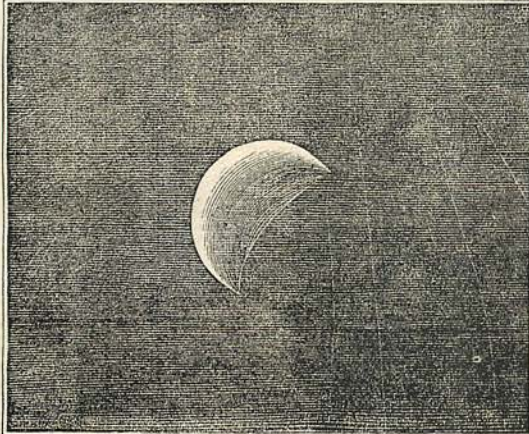
W.

ASTRONOMICAL APPEARANCES.

The planet Mercury will be visible to unassisted vision near the western horizon, in the evenings, about the fifteenth day, to the end of the third week of this month, appearing like a gem in the brilliant twilight. On such rare occasions, its light is seen to be white, like that of Venus, but less intense.

The telescopic observer, with a magnifying power of 150, may see this planet about the 24th of the month, soon after sunset, and it will then resemble a small half-moon of serene lustre. Thus observing him evening after evening, his crescent will be found to become more and more narrow, till it be obscured in the dazzling splendour of the sun's rays; and at last the planet will pass between the sun and the earth, appearing like a black spot on the solar disc. (See next month.)

The steady brightness of Mercury is owing to his nearness to the sun, although a space of no less than thirty-seven millions of miles, intervenes between him and the "ruler of the day." To the same cause, also, is to be attributed the fewness of the discoveries which have been made on his surface by means of the telescope. Copernicus is said never to have enjoyed an opportunity of viewing him during his whole life; and modern astronomers have scarcely ever succeeded in getting a well-defined picture of his form. Schroeter, however, an eminent German astronomer, blessed with an eye for observation, and being otherwise favourably circumstanced, appears to have been more successful. He says that he has not only seen spots, but mountains on the surface of Mercury, and that he succeeded in ascertaining



the altitude of two of these mountains. One of them, the highest which came under his notice, measured ten miles and 1,378 yards, or four times the height of Mount Ætna.

The light which falls on Mercury, is nearly seven times greater than what falls upon the earth; for the proportion of their distances from the Sun is nearly as three to eight, and the quantity of light diffused from a luminous body is as the square of the distance from that body. The square of 3 is 9, and the square of 8, 64, which, divided by 9, produces a quotient of 7, 1-9th, which nearly expresses the intensity of light on Mercury, compared with that on the earth. Or more accurately thus:—Mercury is 36,880,000 miles from the sun, the square of which is 1,360,134,400,000,000; the earth is distant 95,000,000 miles, the square of which is, 9,025,000,000,000,000. Divide this last square by the first, and the quotient is about 6 $\frac{2}{3}$, which is very nearly the proportion of light on this planet. As the apparent diameter of the sun is likewise in proportion to the square of the distance, the inhabitants of this planet will behold in their sky a luminous orb, giving light by day nearly seven times larger than the sun appears to us; and every object on his surface will be illuminated with a brilliancy seven times greater than the objects around us on a fine summer's day. The splendour which is thus reflected from every object is in all probability associated with colours of a most vivid and gorgeous description.

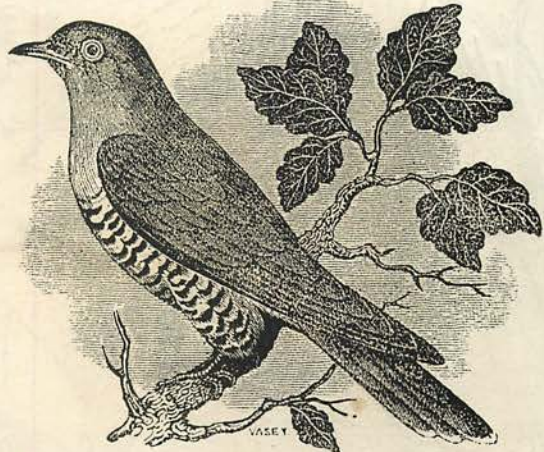
At the end of this month, at break of day, Saturn will begin to make his advent near the south-eastern horizon, appearing below the planet Mars.

On the 28th, Mars will appear in the vicinity of the Moon, and Saturn will be in the neighbourhood of the same luminary on the 29th and 30th.

The present month is a very fine one for making telescopic observations, as the air contains a suitable quantity of moisture. The hygrometrical state of the air is of the greatest consequence for astronomical observations, as it involves circumstances which affect astronomical vision to an extent not ordinarily considered. Dr. Robinson considers the state best suited for observation, to be very near the point of saturation, as the difference between the wet and dry bulb thermometers of more than a degree or two, he has found to preclude all accurate definition, the brighter stars having then a tendency to throw out scintillations of radiating light; and it was only in a moist condition of the air they appeared distinct in themselves, although surrounded by faint coloured rays.

NOTICES ON NATURAL HISTORY, &c.

APRIL.



THE CUCKOO.

The following quaint rhymes mark the various stages of his progress through the seasons:—

In April,
Come he will.
In May,
He sings all day.
In June,
He alters his tune.
In July,
He prepares to fly
Come August,
Go he must.

The Cuckoo neither makes a nest nor hatches her own eggs, nor does she nourish her offspring. The eggs are generally deposited in the nests of hedge-sparrows; but occasionally they are found in the nests of the following birds:—hedge accentor, robin, redstart, white-throat, willow-warbler, pied wagtail, meadow-pipit, rock-pipit, skylark, yellow-bunting, chaffinch, greenfinch, linnet, and blackbird.—Yarrell.

The cuckoo visits us early in the spring; its well-known cry is generally heard about the middle of April, and ceases the latter end of June; its stay is short, the old cuckoos being said to quit this country early in July.

The following account of the economy of this singular bird in the disposal of its egg, was communicated by Mr. Edward Jenner, to the Royal Society, and published in the seventy-eighth volume of their Transactions, part II.—He observes that during the time the hedge-sparrow is laying her eggs, which generally takes up four or five days, the cuckoo contrives to deposit her egg among the rest, leaving the future care of it entirely to the hedge-sparrow. This intrusion often occasions some discomposure, for the old hedge-sparrow at intervals, whilst she is sitting, not only throws out some of her own eggs, but sometimes injures them in such a way that they become addle, so that it frequently happens that not more than two or three of the parent bird's eggs are hatched with that of the cuckoo; and, what is very remarkable, it has never been observed that the hedge-sparrow has either thrown out or injured the egg of the cuckoo. When the hedge-sparrow has sat her usual time, and has disengaged the young cuckoo and some of her own offspring from the shell, her own young ones, and any of her eggs that remain unhatched, are soon turned out; the young cuckoo then remains in full possession of the nest, and is the sole object of the future care of its foster parent. The young birds are not previously killed, nor the eggs demolished, but all are left to perish together, either entangled in the bush which contains the nest, or lying on the ground under it.

According to Dr. Jenner's observations, the Cuckoo is invariably a polygamist, and never pairs in this country.

The summer birds of passage now appear, and with them that beautiful little bird, the wryneck. The swallow, cuckoo, willow-wren, blackcap, white throat, &c., commence their vernal songs. The nightingale, in Kent and other southern counties, pours out his wild musical strains all the night long. Various insects, chiefly butterflies, are seen.

If we remark the early flowers of spring, we shall find them all either close to the earth, concealed among the leaves (like the sweet-scented violet), or if raised above it, borne on stems so graceful and slender as to yield to every breath of air, like the *Anemone nemorosa*, or wind-flower. By this arrangement they are preserved from the violence of the winds, and at once adorn our fields and flower-borders, and furnish nourishment to the insects which begin to come abroad from their winter retreats, or are then born. The bee commences its industrious search for honey, to supply which many of our cottage-gardens are furnished, or should be so, with early flowering-plants. Some of the early-flowering wild plants are very useful in this respect, especially the coltsfoot and butter-bur; the former of which, though very troublesome, from its spreading roots, in cultivated lands, should be encouraged to grow along the banks of rivers, the shelving sides of which it would support by its roots, while its flowers yield a large quantity of honey.

In exploring the haunts of insects, which are frequent among the hedges, and in gathering, to examine, the flowers which spring so profusely in our meadows and fields, we secure a useful and pleasing recreation after hours of labour. Wherever a taste for such pursuits exists, the mind is raised above the grovelling ideas of the uncultivated mind, and the baser passions are supplanted by purer and loftier ones.

MAY, 1845.

SONNET.

MONTH of the nightingale, and rival birds,
Who out of her sweet honey-breathing mouth
Would steal or echo all its music-words,
Thou'rt here again, once more from the soft south,
Where thou sojourning hast been since the time
Thou hast wert banish'd from our fickle clime!
Yes! yes!—thou com'st again as fresh in charms
As e'er we do remember thee invest—
The very rustling of thy pinions warms
And wakes all Nature from a sullen rest!
Thou art like Hope unto an aching heart
Which often bidden by Despair to go—
Will but awhile (and then but seem) depart—
Returning soon new solace to bestow!¹⁸

W.

ASTRONOMICAL APPEARANCES.

ECLIPSE OF THE SUN.

On the 6th day of this month, an Eclipse of the Sun, visible at Greenwich, will take place. The subjoined cut exhibits the different stages of its progress. It begins at Greenwich at 31 minutes past 8 in the morning, mean solar time; and ends at 47 minutes after 10. In the cut,

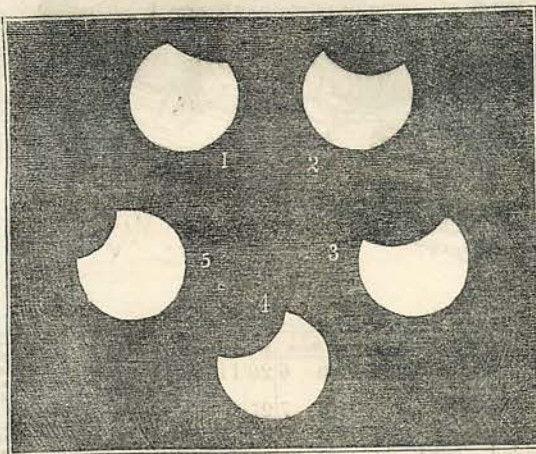
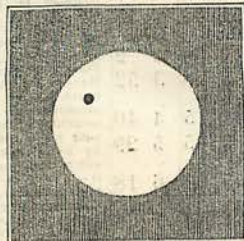


Figure 1 represents the appearance of the Sun at Greenwich
53 minutes after 8, A.M.,
being 22 minutes after the beginning of the Eclipse.
2 15 minutes after 9.
3 37 minutes after 9,
being the time of the greatest obscuration.
4 — exactly 10.
5 23 minutes after 10.

TRANSIT OF MERCURY.

This eclipse will probably furnish observers with an opportunity, which, we trust, will be eagerly embraced, of determining, in some degree, the character of the spots on the surface of the sun. These spots are of all sizes, from the one twenty-fifth part of the sun's diameter, to one five-hundredth part and under; or, to use popular language, the smallest of them is four or six hundred miles diameter. The number of the spots is very various; sometimes there are only two or three, sometimes above a hundred, and sometimes none at all. They are constantly changing, and when watched from day to day, they are seen to enlarge or contract their forms, and at length to disappear altogether. Sometimes they keep a permanent form for two months together, but ordinarily three weeks is the average time of their duration. Very absurd notions have been promulgated respecting their nature. The most probable conjecture regards them as fissures in a luminous envelope, supposed to enclose the solid and opaque body of the Sun. Observers will therefore be anxious to watch the apparent contact of the moon's edge with any of these "cavities," and to see if the points of contact exhibit anything which would lead to the inference that they are, as supposed, cavities or depressions of surfaces.

To an astronomer, no celestial phenomenon equals in interest the transit of a planet across the disc of the Sun; it is remarkable as well for its singularity as its rarity; it can occur only with the inferior planets, and with them in the



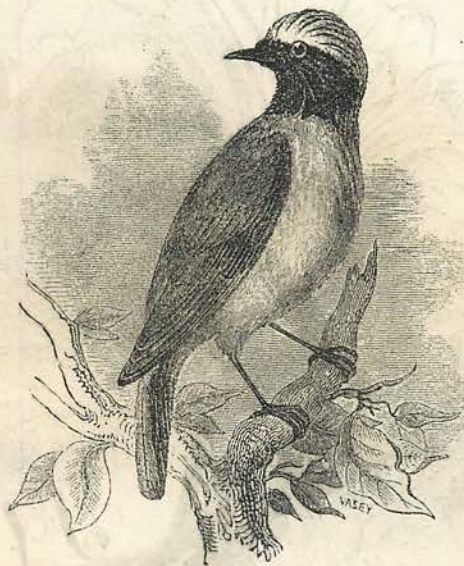
present century, only thirteen can occur with Mercury, and two only with Venus in the same period. On the 8th of this month, in the afternoon, at 19 minutes past 4 o'clock, mean solar time, at Greenwich, Mercury will appear to enter on the Sun's edge in the form of a circular black spot, and may be seen moving across the Sun to the time of his setting. The transit will end 51 minutes past 10 at night. Our drawing represents the transit at the hour of 6 in the evening.

Mars and Saturn are to be seen not far from each other at the break of day, and on the 26th they will be in the neighbourhood of the Moon. Jupiter may be seen at the same time, to the left, and nearer the horizon.

* The ill-requr'd May that bears no thought
Of last year's wrongs in memory, but strews
From out her charitable lap untir'd,
Her blessings o'er this thankless, thoughtless bubble!—*Old Play.*

NOTICES ON NATURAL HISTORY, &c.

MAY.



THE REDSTART.

The redstart is migratory; it appears about the middle of April, and departs in the latter end of September, or beginning of October; it frequents old walls and ruinous edifices, where it makes its nest, composed chiefly of moss, lined with hair and feathers. It is distinguished by a peculiar quick shake of its tail from side to side, on its alighting on a wall or other place. Though a wild and timorous bird, it is frequently found in the midst of cities, always choosing the most difficult and inaccessible places for its residence; it likewise builds in forests, in holes of trees, or in high and dangerous precipices. The female lays four or five eggs, not much unlike those of the hedge-sparrow, but somewhat longer. These birds feed on flies, spiders, the eggs of ants, small berries, soft fruits, and such like.

The redstart is an imitator of the notes of other birds; and some have been taught, like the bullfinch, to repeat a tune. Mr. Sweet possessed a redstart that whistled the Copenhagen Waltz.—*Yarrell.*
The redstart sings on the tops of trees, the white-throat warbles in the hedge-rows; the skylark salutes the rising sun with his sweet airs. Various other birds are now in full song. Various tribes of insects now appear, especially of the lepidopterous kind. Some of the small species of dragon flies appear on the banks of ditches.

At this particular time, the woods and rural lanes teem with life and enjoyment. The assiduity displayed by the different members of the feathered tribe in building their nests, or employing them for incubation, is unceasing. Each pair constructs a nest adapted to its particular shape and habits, and places it in a situation most convenient, as well as least likely to be discovered; the external materials are also generally selected with a view to this end, being mostly of a colour nearly resembling the substances on which they rest. One exception to this rule of each preparing its own nest is found in the custom of our annual visitant, the cuckoo, which, instead of building one for itself, makes use of the nest of some other species, but not of any bird indiscriminately, since it prefers the nest of the wag-tail, the hedge-sparrow, the tit-lark, the white-throat, and the red-breast, all soft-billed, insectivorous birds.

We now receive many other migratory birds, as well as the cuckoo, the most welcome and favorite of which is the nightingale, who comes amongst us when the woods and groves hasten to perfect their leading. Nor do leaves alone come forth; but the lilac waves its top of flowers, the horse-chestnut and the sycamore deck their green foliage with their ornamental spikes, and the laburnum hangs its festoons of bright and golden blossoms. A canopy is thus spread out for them, where, sheltered from sight, the female faithfully broods over her eggs, while the male generally sits by warbling his early song. To walk forth into the fields, to listen to such melodies, is a luxury which all may enjoy, either at morn or eve. In either case they will be regaled with the delicious freshness of the atmosphere, now laden with the odour of plants; and the moisture which still exists in the air, especially during the cool of dawn or twilight, renders it well fitted to convey the fragrance of flowers. Every breeze is now scented with the perfume of the white-thorn, familiarly called MAY, a term which our neighbours, the Germans, apply to the lily of the valley; and the sweet-scented meadow-grass, gives out its odour, both in flowering and still more when cut down and drying for hay.

As frosts and cold easterly winds are common in the beginning of this month, those who have a flower garden should not be precipitate in planting out their tender annuals or dahlias, which often experience a fatal blight, or receive a severe check, if exposed in the open ground before the middle of the month.

SONG—1600.

Spring, the sweet spring
Is the year's pleasant king;
Then blooms each thing,
Then maids dance in a ring;
Cold doth not sting;
The pretty birds do sing,
Cuckoo—juggle, juggle,
Pu we, to witta woo.

The palm and May
Make country houses gay,
Lambs frisk and play,
The shepherds pipe all day;

And we hear aye
Birds tune this merry lay,
Cuckoo—juggle, juggle,
Pu we, to witta woo.

The fields breathe sweet,
The daisies kiss our feet,
Young lovers meet,
Old wives a sunning sit;
In every street.

There tunes our ears do greet,
Cuckoo—juggle, juggle,
Pu we, to witta woo.

JUNE, 1845.

SONNET.

I.
 FAIR Season! sacred to the blushing flow'r,
 Whose leaves were stain'd by Venus' wounded feet
 When her Adonis she would save—most meet
 For ev'ry bird too, in both grove and bow'r,
 To send its minstrelsy forth, loud and sweet,—
 Thee, with as fond but meaner music's pow'r,
 We welcome, and thy gen'rous advent greet!
 Thou bring'st with Thee an Alchemy most strange
 Compounded of the sweetest things on earth:—
 Through the wide round of vast creation's range,
 Or circling dance of its eternal change,
 No Month like Thee, produces at a birth
 Such fruit and flowers—melody and joy,—
 Which, it would seem no winter might destroy!

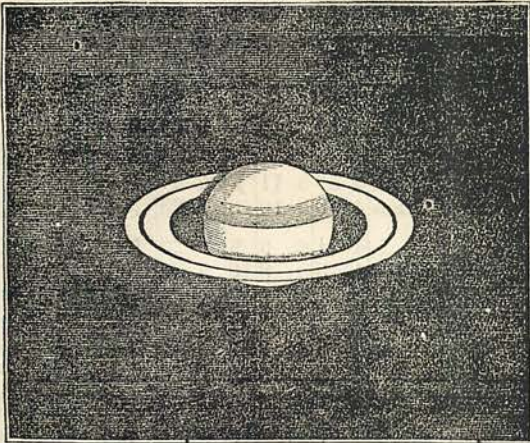
II.
 And yet—amidst thy garland of delights,
 'Tis sad to find some lurking poison there—
 Thy nightingales may sweetly sing o' nights
 By day thy humblest flow'rs may seem most fair;
 But in some secret place we may espy
 The deadly nightshade* crawling o'er thy bloom!
 As an unhappy melancholy sigh,
 Will ev'n amidst the gayest revelry,
 Upheave the heart with sad foreboding gloom,
 And tell it that its time is near to die!
 Thus, o'er the brightest sun will come eclipse—
 Sorrow's a weed will nestle amid flow'rs—
 And while we fancy sweets are on our lips,
 'Tis then, perhaps, we taste Life's sharpest sours!

III.
 Besides, fair June! thou'rt hardly present here
 Before thou sing'st the cadence of the year!
 Thou'rt like a verdurous mountain top, which won,
 By many a joyous step, on farther side
 Presents a prospect, and a dreary one
 Contrasted with the path we upward plied!
 Full soon will day beyond thy crowning height
 Begin to fade before the length'ning night!
 And though thou promisest the golden field,
 And all the fruit that Autumn ripe can yield,—
 Still 'tis a hast'ning to the gloomy time
 When the brown year will wear December's snow!
 Sad emblem that when Man doth reach his prime,
 Down—down the Hill of Life his steps must go!

* The *Bella Donna* flowers in June.

ASTRONOMICAL APPEARANCES.

At the commencement of this month Saturn will rise soon after midnight, and as the Sun will ascend above the horizon before four o'clock, the best time for taking a telescopic view of him, will be about two o'clock: at the end of the month he will rise about half-past ten, and may be observed between midnight and one o'clock in the morning: his appearance, at all times splendid, will then be most impressive, as his rings will be admirably disposed for perfect exhibition. Attention should be given by observers to the



dusky spots which appear on his surface, by whose motion the diurnal rotation of the planet has been determined. The belts—as they are called—the shadowy bands which may sometimes be seen embracing the diameter of the disk, should also be carefully watched, as they are indicative of a structure wholly different from anything with which we are acquainted.

The cut exhibits the position of the rings as they will appear during the month of June; but, at other times they represent a variety of aspects, according to the position of Saturn in the heavens. Sometimes the planet will seem to be completely divested of his rings. Sometimes they appear only like a short luminous line, and, at other times, like a large brilliant oval, surrounding and embracing the body of the planet. These changes are owing to the circumstance that the rings never stand at right angles to our line of vision.

The planet Mars, will, during this month, be gradually approaching the Earth, and, of course, will appear to increase in magnitude: he will appear in the vicinity of Saturn, throughout the month, but may be easily known from Saturn, to unassisted vision, by his ruddy appearance.

On the 2nd., at 26 minutes past one in the morning, these two planets are in conjunction in right ascension, when Mars will be 2° 4' to the south of Saturn.

The Moon will be seen in the neighbourhood of Saturn and Mars, on the 23rd and 24th, and on the 29th, near Jupiter.

NOTICES ON NATURAL HISTORY, &c.

JUNE.



THE LINNET.

WITHIN the bush, her covert nest
 A little linnet fondly pressed,
 The dew sat chilly on her breast
 Sae early in the morning.
 She soon shall see her tender brood,
 The pride, the pleasure o' the wood,
 Among the fresh green leaves bedewed,
 Awake the early morning.

BURNS.

LINNETS are birds of gentle dispositions, easily tamed, and capable of very considerable attachment to those who feed and attend them; if taken young, the males can be taught to sing; but the females have no song, and the old males do not utter their note. The young, however, may be made to imitate the songs of several other birds; and there have been instances in which they have been brought to articulate a few words. In disposition, this bird is gentle and docile, and is much admired for its song, which is lively and sweetly varied, and preferable to that of most other small birds. Upwards of five guineas have been given by a bird-catcher, for a call-bird linnet.

The linnet builds its nest concealed in furze bushes; the outside is made up of dry grass, roots, and moss; it is lined with hair and wool. The female lays four or five eggs, they are white, tinged with blue, and irregularly spotted with brown at the larger end: she breeds generally twice in the year.

The linnet is partially a migrant within the country, though the sexes do not separate in the same decided manner as the chaffinches. During the inclement season, the birds resort to the lower grounds, especially to those near the sea-shore. They appear in considerable flocks, the young birds appear earliest, then the females, and lastly, the mature males, which may be said to be the order of movement with all autumnal birds, how limited soever may be the distance to which they migrate.

In the flocking time, against which the male has lost the red on the breast, linnets fly very close and crowded, but with a smooth and straightforward flight.

THIS, which has been called "the leafy month of June," is well entitled to the appellation, since each tree is now in full and perfect foliage. At this season we have an opportunity of observing the various shades of green which so diversify the exterior of the woods. One uniform shade, even of green, would be as fatiguing to the eye, if it rested long upon it, as the more flaming colours are when gazed upon for a short time; but we are gratified by an infinite variety of hues, from the deep and sombre green of the yew and Scotch fir to the light and cheerful colour of the sycamore and the ash. The foliage of trees has a great share in furnishing characteristic features to landscape scenery.

The occupations of the agriculturist keep pace with the changes of external nature. As the weather is not yet oppressively warm, the business of hay-making is carried on with less fatigue than the grain harvest; and the serenity of the evenings invites the toil-worn citizen to breathe the perfumed air of mead and dale. Some persons, however, are so powerfully affected by the odour of plants, and especially of the hay, as to be driven from the country, and compelled to take refuge from its influence on the sea-coast. The smell of new hay is principally derived from the sweet-scented vernal meadow-grass (*anthoxanthum odoratum*), the perfume of which appears to be owing to the presence of benzoic acid.

In the pastoral districts this month is usually selected for the business of sheep-shearing, which is no less a rural festival than hay making. With our ancestors it was a time of great mirth and jollity; and though it has become more of a calculating operation, in which the gains to be derived from it occupy the thoughts to a greater degree than formerly, we trust that a reasonable cheerfulness is still spread over the mind at this interesting time, and that there mingle with this, and all our other works, a due sense of our dependence for ultimate success and reward on Him who "tempers the wind to the shorn lamb."

Towards the end of the month the air becomes dry, and often sultry, except when cooled and moistened by rain, which often falls in considerable quantity. Thunder-showers are also frequent, with their accompanying phenomena. These are preceded, in general, by a calm and stillness, which shows itself alike in the animal and vegetable kingdoms, no members of which exhibit the least motion till the commencement of the storm, when the birds fly to a covert, and the cattle flee for shelter, and "the leaves all tremble with instinctive dread." This, however, like every other occurrence in nature, is productive of good, and is followed by a purity and freshness of the air which is owing to plants exhaling more oxygen after the excitation of a storm than before; animal life also revives, and all nature seems to rejoice in the recovery of her wonted tranquillity.

JULY, 1845.

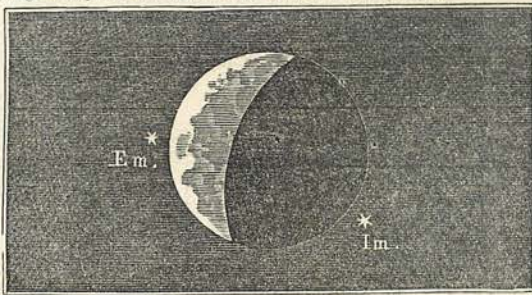
SONNET.

Now is the time to see the glorious Sun
 At early dawn his chymistry begin—
 To see him hang, on threads the dews have spun,
 Pearls, sapphires, rubies—and far up, within
 The greeny clouds, a golden tissue weave,
 Whose splendour drowsy-heads can ne'er believe!
 A poet's fancy only can conceive
 The gorgeous beauty of a summer's morn
 At that sweet time when young Aurora's born
 To shed her smile on fields and groves and bow'rs,
 And tell the rustling minstrels on each thorn
 To mix their music with the breath of flow'rs!
 Oh! there's no time can give such pure delight,
 As when the Day first flees th' embrace of Night.

W.

ASTRONOMICAL APPEARANCES.

THE fine clear nights of this month, present eligible opportunities for observing that interesting phenomenon—the occultation or passage of one heavenly body over another. With the assistance of the subjoined engraving we shall endeavour to make a striking example of such an occurrence in the punctual heavens, intelligible to the least practised observers. The cut represents the telescopic appearance of the moon and the small star in the constellation Leo, called *g*, as they will be seen on the evening of the 9th of July, at 36 min. past 8 o'clock; the moon, in its course, will appear to strike the star, and cause its instant disappearance. The contact is called, in astronomical language, the *Immersion* of the star. On this occasion, the apparent extinction of the star, will, as a popular spectacle, be made more striking, from the circumstance of its being the dark side of the moon which will first cover it. At 32 minutes past 9, the star will reappear at the bright edge of the moon, constituting what is called its *Emersion*. A powerful telescope will be required for the observation, as the star is small, and a strong twilight will prevail through the whole time of the occultation.



In the wonderful regularity, the exact time-keeping which attends these and all the phenomena of the heavens, "we may see," says Dr. Dicks, "what a beautiful and divine fabric the stellar universe exhibits. Like all the arrangements of Infinite Wisdom, its foundations, as far as they have been discovered, are plain and simple, while its superstructure is complete and diversified. The causes which produce the effects, are, apparently, few, but the phenomena are innumerable. In the solar system, while the ends to be accomplished are numerous and various, the means are the fewest that could possibly bring the design into effect. What a striking contrast is thus presented between the works of Omnipotence, as they really exist, and the bungling schemes of the ancient astronomers! who, with all their cycles, epi-cycles, concentric and eccentric circles, their deferents, and solid crystalline spheres, could never account for the motions of the planetary orbs, or predict the periods of the most ordinary celestial phenomena. The plans of the Almighty, both in the material world and in his moral government, are quite unlike the circumscribed and complex schemes of man. Like himself they are magnificent, stupendous, and yet accomplished by means apparently weak and simple. All his works are demonstrations, not only of his existence, but of his inscrutable wisdom and superintending providence. As the accomplishments of every workman are known from the work which he executes, so the operations of the Deity evince his supreme agency, and his boundless perfections. What being, less than infinite, could have arranged the sidereal system, and launched from his hand huge masses of the planetary worlds? What mathematician could so nicely calculate their distances and arrange their motions? Or, what mechanic so accurately contrive their figures, adjust their movements, or balance their projectile form with the power of gravitation? None but he, whose power is supreme and irresistible, whose agency is universal, and whose wisdom is unsearchable."

Mars will appear this month much larger than he did in June, owing to his approaching the Earth: he is not far from Saturn during the whole revolution of this month; the time will therefore be a good one for examining the singular patches of colour, which, with a good telescope, are observable on his surface. These markings, or "spots," are not always well defined, and may frequently change their form. Some of them have been seen to stretch across the face of the planets like one of the broad belts of Jupiter, in course of dissolution; others in clusters of radiating spots; and others again in sinuous masses, resembling delineations of estuaries and mouths of rivers, as they appear in maps.

It has long been observed that the stars shine with different colours; for the diversity is apparent to the naked eye. Among those of the first magnitude, for instance, Sirius, Vega, Altair, Spica, are white, Aldebaran, Arcturus, Betelgeux, red, Capella and Procyon, yellow. In minor stars the difference is not so perceptible to the eye, but the telescope exhibits it with equal distinctness. It is likewise far more striking in countries where the atmosphere is less humid and hazy than ours; in Syria, for instance, one star shines like an emerald, another as a ruby, and the whole heavens sparkle as with various gems. There is no doubt that, in the course of long periods of time, stars change their colours. Sirius was celebrated by the ancients as a red star, now it is brilliantly white; and other changes have occurred of a like nature. It were more than vain to speculate regarding the causes of these variations. They are indicative of a set of laws whose nature is yet wholly unknown.

Other important discoveries have recently been added upon the properties and power of the light emitted by these varied colour stars; and the concentrated rays from some have been found of sufficient strength to trace a delicate outline upon some of the most sensitive of the photogenic papers prepared by Sir J. Herschel and others.

NOTICES ON NATURAL HISTORY, &c.

JULY.



THE SWALLOW.

OF all the various families of birds, which resort to this island for food and shelter, there is none which has occasioned so many conjectures respecting its appearance and departure as the swallow tribe. The swallow lives habitually in the air, and performs its various functions in that element; and whether it pursues its fluttering prey, and follows the devious windings of the insects on which it feeds, or endeavours to escape the birds of prey by the quickness of its motion, it describes lines so mutable, so varied, so interwoven, and so confused, that they hardly can be pictured by words. The swallow tribe is of all others the most inoffensive, harmless, entertaining, and social; all, except one species, attach themselves to our houses, amuse us with their migrations, songs, and marvellous agility, and clear the air of goats and other troublesome insects, which would otherwise much annoy and incommode us.

Swallows are found in every country of the known world, but seldom remain the whole year in the same climate; the times of their appearance and departure in this country are well known: they are the constant harbingers of Spring. And on their arrival all nature assumes a more cheerful aspect. The bill of this genus is short, very broad at the base, and a little bent; the head is flat, and the neck scarcely visible; the tongue is short, broad, and cloven; tail mostly forked; wings long; legs short.

THE year having attained its height, as well as the day its greatest length, in the preceding month, all things seem now hastening to maturity, in order to complete the object of their creation ere the winter arrive. But even now we miss many of the enlivening and cheering appearances of the earlier months: the incubation of birds having been completed, many of the merry minstrels of the grove cease to warble their sweet strains, and a brown or russet hue clothes the fields of waving grain, instead of the fresh and tender green of May. There exist, however, on every hand, appearances and changes, sufficient both to delight the eye and gladden the heart and mind of man.

Though the external part of the flowers of the fruit-trees, with their delicate tints and smell, have disappeared, we see them succeeded by their luscious and useful fruits, to which they were merely intended to serve as a protection while young and apt to be injured by the cold nights of early spring. The warmth which now prevails is very favourable to the thorough ripening of such fruits as the gooseberry, the currant, and the cherry, and the influence of this warmth is so great that fruits, which are acid in the morning, often become sweet before night. The presence of a considerable quantity of sugar in fruits assists to preserve them; hence, in dry warm summers, apples and pears keep much better than in cold cloudy seasons; and preserves or jellies may be made with less sugar in bright sunny years than in wet and gloomy ones.

The absence of rain is, in some degree, compensated for by the very heavy dews which fall on the clear cloudless nights, and which refresh and nourish the grain, now advancing to maturity. After the ear is well filled, dry weather is very desirable, to harden the seed, which then keeps better, is more easily threshed, and furnishes better flour.

The insect tribes are now extremely numerous; the cheerful hum of the grasshopper enlivens the fields; and the beetle, buzzing through the air, breaks the silence of evening. The annoyances produced by many insects are so incessant as to lessen the pleasure of a twilight walk, though we may as often console ourselves by reflecting that they are not so troublesome and dangerous as those of tropical countries. The domestic animals seem to suffer from their bites more than human beings. These wounds of insects are sometimes made to obtain nourishment, at other times to deposit their ova; but most insects for this purpose resort to the plan's or to the earth.

The cool and grateful shade of trees is now too inviting to be neglected, and amid the woods we may meet with some of the most beautiful wild-flowers which this country produces, as well as many which furnish indications of the weather, which no one should neglect, if they desire to escape those sudden showers, or the approach of which we have no other intimation. The scarlet pimpernel, or *Anagallis arvensis*, has received the name of "the poor man's weather-glass." The observation of this, and other plants, the opening and closing of which are regulated by the degree of light, is at once interesting and instructive.

At early morn
 Court the fresh air, explore the heaths and woods,
 And, leaving it to others to foretell,
 By calculation sage, the ebb and flow
 Of tides, and when the moon will be eclipsed,
 Do you, for your own benefit, construct
 A calendar of flowers, plucked as they blow,
 Where health abides, and cheerfulness, and peace.

WORDSWORTH.

AUGUST, 1845.

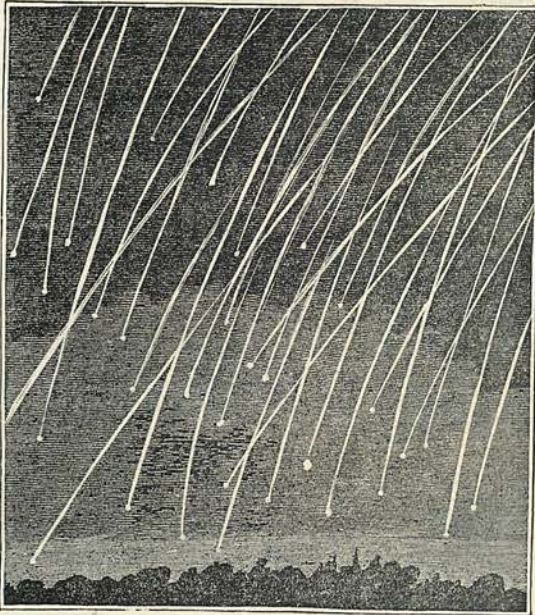
SONNET.

WITH lingering kiss, the drowsy Lord of Light
Like Antony, when to th' Egyptian Queen
He bade farewell, hangs on the cheek of Night
Within her chamber of the deep!—I ween,
He'll hasten thither too at evening hour,
Leaving grey Twilight as his deputy
To keep awake the eyes of ev'ry flow'r
That weeps the Day's decline so soon to see!
Or is't that Sol at this young Bacchus' birth,
Drinks of the juicy grape, and ebriate
Hurries to Tethys' wat'ry couch, from Earth
To hide himself?—he rises now so late,
With face all flush'd, that e'en cold Dian's orb
Seems something of the red-grape to absorb!

W.

ASTRONOMICAL APPEARANCES.

ABOUT the 10th of this month look for the appearance of showers of falling stars. Strange as this announcement may appear, it is nevertheless true, that at that time and in a still more profuse degree, on the 12th or 13th of November, immense flights of these extraordinary meteors take place. In the central States of America, and in all the temperate countries of Europe, thousands of them have appeared to sweep along at once, and in continued succession for several hours, so that almost the whole visible canopy of the sky seemed to be in a blaze. So regular have these appearances become, they are considered by the scientific men of most countries to be regular periodical phenomena. They appear to have their origin beyond the limits of our atmosphere; to fall towards the earth by the attraction of gravity; to travel the earth's atmosphere at a rate equal to four or five miles in a second; to be composed of light materials, and to undergo combustion during their flight. What they are, and whence they come, is a mystery. Shakspeare calls them "bright exhalations of the evening," but that, we may intimate, was before *electricity* was discovered. Our readers should observe and record their observations.



The apparent magnitude of these meteors is widely different. The greater part of them resemble stars of the 3rd, 4th, 5th, and 6th magnitudes; but some occur which surpass stars of the 1st magnitude, and even exceed Jupiter and Venus in brilliancy. In some of them the globular form can be easily recognized: these are, in every respect, similar to *fire-balls*; and, in fact, it is impossible, from their appearances, to make any distinction between the larger shooting stars and the smaller individuals of meteors to which the name of fire-balls is usually appropriated.

Shooting stars appear to be equally numerous in every climate. The weather seems to have no influence upon their number. They are observed at all times of the year; but, generally speaking, they appear to be more abundant in the end of summer and autumn than at the other seasons.

Some of the shooting stars leave a luminous train behind them, which marks their path through the sky with a milk-white light. These trains for the most part disappear in a few seconds; but sometimes they continue longer, and even for several minutes. In the case of actual fire-balls, Dr. Olbers observed trains which continued from six to seven minutes; and Brandes, in one instance, estimated that fifteen minutes elapsed between the extinction of the fire-ball and the disappearance of the luminous train. The trains in general assume the form of a cylinder, the interior of which is void of luminous matter; and not unfrequently, before their disappearance, they take a curved form. The most probable explanation is, that they are caused by a gaseous matter left behind by the meteor, and bent by currents of air. Deluc maintained that certain phosphoric exhalations generated in the earth, and becoming inflamed in the sky, formed the true essence of the shooting stars.

Towards the end of the month, when the evenings are very clear, the planet Venus may be seen very near the western horizon sometime after sunset. Mars, towards the east of Saturn, gives at midnight a splendid appearance to the southern skies. He will be in opposition to the Sun on the 18th, when he will be at his least distance from the earth, and appear the largest. Saturn and Mars will be favourably situated during the month for telescopic observation.

NOTICES ON NATURAL HISTORY, &c.

AUGUST.



THE WOODLARK.

THE woodlark is generally found near the borders of woods, from which it derives its name; it perches on trees, and sings during the night, so as sometimes to be mistaken for the nightingale; it likewise sings as it flies, and builds its nest on the ground, similar to that of the skylark. The female lays five eggs, of a dusky hue, marked with brown spots. It builds very early, the young, in some seasons, being able to fly about the latter end of March. The sprightly and ever-varying song of this bird is most welcome to the ear

Of one who long in populous city pent,
Where houses thick and sewers annoy the air,
Forth issues on a summer's morn to bathe
Among the pleasant villages and farms.

THE cares and toils of the husbandman are now about to receive their full reward. The seeds, committed to the earth in spring, having been watered by the gentle showers of April and May, warmed and nurtured by the suns of June and July, have attained their perfect stature, and brought forth, according to the soil and situation, some ten-fold, and some a hundred-fold.

Beautiful as is the sight of wide fields of yellow corn, waving its richly laden top before the breeze, it is infinitely more animating and delightful to see the stately stems fall before the regular and measured stroke of the reaper, whose toil is lightened by the thought that abundance is thus poured from the lap of earth into the garner of her children, to support them when the season of unfruitfulness is high. It is a subject worthy the consideration of every one, to calculate what a vast quantity of nourishment is, by the agency of the vital principle in seeds, thus annually abstracted from the atmosphere and the earth, and reduced to a state fit to minister to the sustenance of men and animals. We shall thus find that the existence of most animated beings is dependant for its continuance on the law or principle, inherent in plants, of producing a seed similar to that from which it sprang. The perfecting of this seed is the grand object of the various processes and actions which take place in the plant, from the commencement of germination; and, when it is completed, the end for which the plant was formed is accomplished, as far as the cereal grains are concerned, in respect to the interests of man and the domestic animals. To secure this precious treasure, all persons, young and old, engage in the work of the harvest; and the termination of their toils was formerly, and in some places still is, celebrated by a festival called Harvest-home. But, whether the festival be observed or not, we hope that there are few who can witness the additions made to our stores of provisions, without experiencing a feeling of exultation, ending in grateful emotions and thankfulness to Him who promised that "seed-time and harvest should not fail," and

Whose blessings fall in plenteous showers
Upon the lap of earth,
Which teems with foliage, fruits, and flowers,
And rings with infant mirth.—J. MONTGOMERY

The fruit-trees also yield their share of luxuries to our tables, or materials for preserves, or the still more wholesome beverage, cider.

The plants now in flower belong mostly to the tribe of compound plants, such as the dahlias and sunflowers in the gardens, and the different species of thistles in the fields. The seeds of these supply much food to certain kinds of birds, especially the goldfinch, which, from feeding chiefly on the thistle, is called *fringilla carduelis*. Now it is worthy of remark, that while most birds have finished the process of incubation, and their young are fledged and on the wing nearly two months ago, it is only about the middle of this month that the young goldfinches appear, shortly after the plants have begun to flower from which they are to obtain their food. This regular succession of plants and birds holds everywhere; but is best seen in the Himalayan mountains, where, from the wide difference of temperature at different seasons, the character of the vegetation is totally changed, and in proportion as this takes place, a difference is observed, not only in the birds, but also in the animals and insects which frequent these regions. The entomologists of our own country are well aware of this relation between the appearance of particular plants and particular insects, which resort to these either for food or to deposit their eggs. During this month some of the most beautiful of the butterfly tribe are to be seen.

While these winged insects are only making their appearance, some of our migratory birds prepare to leave us. The earliest of these is the puffin, which rarely prolongs its stay beyond the 11th of August.

Ceaseless change pervades all the works of nature, and furnishes both to the eye and mind subjects which are constantly withdrawn and again renewed for observation and reflection.

SEPTEMBER, 1845.

SONNET.

Now comes apace the evening of the year,
 With all its sunset glories spread around—
 How beautiful the gilding doth appear
 On that high waterfall, whose distant sound
 Murmurs a diapason to the song
 Of warbling treble pipes the groves among,
 Which blackbird, thrush, and woodlark sweetly blow.
 Poor innocents! they do it not for show,
 Or gain,—but from some inward thankfulness
 That they are free from prowling man's design,
 Who at this season levies his distress
 On many a partridge home, and doth consign
 The parent, or the offspring bird, or mate
 To be henceforth bereaved or desolate!

W.

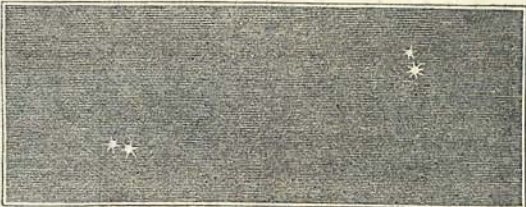
ASTRONOMICAL APPEARANCES.

WHEN a telescope of considerable power is directed to certain stars which appear single to the naked eye, another star, generally much smaller than that which appears to the unassisted eye, is seen quite adjacent to it. These form what is called a DOUBLE STAR. Not more than six or eight of such stars were known to the astronomers of the 17th century; but now, such is the pertinacious industry of observers, upwards of six thousand have been discovered, named, and registered. One of these beautiful objects, the fine double star Castor, will entertain the lover of astronomical phenomena in the clear mornings of this month. The best time for viewing him will be about



3 o'clock, when it will appear pretty high in an easterly direction. After observing this object he may lower his telescope a little, and, turning it to the south-east, observe the stars of Orion and the nebula in that constellation. The time will also be a favourable one to inspect Jupiter, who will be shining high in the southern skies.

In the evenings of this month, the double star E in Lyra (bring then high in the western parts of the heavens) will form an interesting subject for investigation. This star, with a low telescopic power of 5, resembles Castor when magnified with 450. With the power of 120, this beautiful double-double or quintuple star may be seen as the annexed figure represents. The right ascension of E in Lyra is 18h. 30m., and its declination 39d. 31s., North.



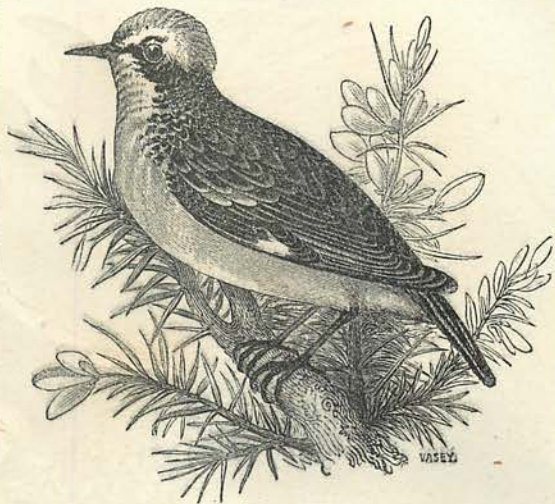
The following seven double stars are believed to revolve in the subjoined periods: γ Coronæ in 43 years; ζ Cancri, 57 years; ξ Ursæ Majoris, 61 years; ϵ Ophiuchi, 80 years; σ Coronæ, 200 years; Castor, 215 years; γ Virginis, 513 years. In 1830 Sir J. Herschel measured 1236 double stars. The observation of astronomers should be steadily directed to the progressive changes of the fixed stars, for it is among them that great and rapid discoveries may be most confidently expected.

The occurrence of triple stars or of approximate conjunctions of three, is much rarer than that of Pairs, but still we find numbers sufficient to excite a profound interest. Struve has specified 11 sets of bright triple stars, that is of conjunctions of three bodies, within the space of 32" and none of which is too small to be seen with an ordinary telescope (none being smaller than his 8th magnitude); and of these 11 the calculation of probabilities will not permit us to suppose that more than one system owes its character to mere optical proximity. Systems of three suns connected by the physical law of attraction, and revolving perhaps round their common centre of gravity, are thus at once brought upon the scene. In another list our astronomer records 57 more within the same distance of each other, but in which one attendant belongs to the class of smaller magnitudes,—a list containing likewise without doubt, many physical systems; and in a third series of 59 similar combinations, not confined, however, within the limits of 32" of distance, he exhausts our present knowledge of the subject.

These combinations of stars exhibit relations of the most extraordinary and exciting interest. By long observation many of them have been found to have regular motions round each other; to vary periodically in their amount of illumination, and to be adorned with complementary colours. Are these, then, the suns of space? Are they central luminaries of great planetary trains? That they are so, is beyond question; and "yet," says Nichols, "how wonderful is it! and how wide the field of novel contemplation opened by their discovery! How strange the notion of such mighty orbs rolling round each other, as a small planet revolves around our Sun! It is when one goes into regions so new and remote, that the character of the universe, in its majesty and infinite variety, appears in its most striking attributes. In search of magnificence, it is true, we need not wander far,—witness the fields which encircle your home, the blade of the modest grass which adorns them; but those heavens are fresh, and familiarity has not left its foot-print on their untrodden floor. In the silence of midnight, that noble curtain stretched out above me, and the idea present and impressive, of its great orbs obediently pursuing their stupendous paths, I confess there is a solemnity which sometimes falls upon the spirit, not unlike the feeling of the Patriarch, when he heard that "still small voice," and knew it to be the presence of God!"

NOTICES ON NATURAL HISTORY, &c.

SEPTEMBER.



THE WHINCHAT.

THE Whinchat is a solitary bird, frequenting heaths and moors; it has no song, but only a simple unvaried note, and in manners very much resembles the stonechat; it makes its nest very similar to that bird, and is generally seen in the same places during the summer months; the female lays five eggs, of a lightish blue, very faintly sprinkled with small rusty spots. In the northern parts of England, it disappears in winter; but its migration is only partial, as it is seen in some of the southern counties at that season. It feeds on worms, flies, and insects. About the end of summer it is very fat, and at that time is said to be scarcely inferior in delicacy to the ortolan.

One of these birds brought up from the nest by Mr. Sweet, used to sing the whole day through, and very often at night. It sang the notes of the whitethroat, reedstart, willow warbler, missel thrush, and nightingale.—*Yarrell.*

THE great annual business of the vegetable world being now nearly concluded, Nature begins to shew signs of her determination to rid herself of all superfluous ornaments and outworks, and to retire to her inmost recesses. In the latter part of this month the swallow takes its departure to warmer climes. The other summer birds are also gone from us—broods of young goldfinches appear—the linnets congregate. Few winter birds visit us till the following month, yet we may see the woodcock, the fieldfare, and the ring ouzel. The stormy petrel ventures further south than is her wont in brighter and milder weather; while many other sea birds change their habitation, the sea gulls—the Manx puffin, and the Solan goose. Owls are more noisy in this month than before. Many of the songsters of the spring resume their vernal notes, though with less brilliancy and constancy than at an earlier period. The note of the woodcock is now in its greatest perfection. Many flies become blind and die; yet a few other tribes of insects abound still more than during the hot weather. The earwigs are found in every garden, and the spider's webs hang on every bush. The gardens and the hedge-rows are still gay, but their gayness is of a different character. Red, white, and blue colours in flowers are much less abundant than at an earlier season, and yellow flowers take their place. By far the greater number of the compound flowers are yellow, and this is the season of their greatest abundance. The bright green leaves, which so lately wore an appearance of long-enduring life, and fluttered joyously in the breeze, now assume a wan and sickly look, and rustle in the wind, which is soon to sweep them from their place of growth. Leaves are intended as an extension of the surface of plants, in order to facilitate the preparation of those juices which are necessary for their growth and well-being; but as this growth, and consequently the demand for increased nourishment, is carried on, in most vegetables, solely in spring and summer, the additional surface is no longer required, and consequently the leaves begin to decay. Their destruction, or rather decomposition, is greatly assisted and hastened by the development and operation of a number of fungi which now make their appearance. These may be seen spotting with black the leaves of the sycamore, and other maples. Nature is ever economical of her means, and never fails to "gather up the fragments, that nothing may be lost." Accordingly, whatever has served the primary object of its formation is immediately subjected to processes which fit it for some secondary use. Both animal and vegetable substances are liable to the attack of fungi, which derive their nourishment solely from the juices of the matters they fix on. Hence the immense number of these which we see in autumn engaged in this work of destruction. Many of these are extremely beautiful in form and colour; several of them are regarded as luxuries, and are extensively used, while others are extremely poisonous. A careful examination of them is necessary to secure us from the effects of mistaking poisonous for wholesome sorts; but even the common mushroom is often unwholesome from its particular state or place of growth. It is a good general rule to take those only which are young and small, and to avoid those which are of a pale colour, or which grow under the shade or drip of trees.

With the retirement of our side of the earth from the sun, shorter days and cooler mornings and evenings become our lot. The animal as well as the vegetable world display their sense of this change; and those delicate and most correct of all barometers and thermometers—the migratory members of the bird tribe—act upon this feeling with a regularity and accuracy which excite our highest wonder, and merit the most careful investigation. The swallows, from being so much on the wing, and so constantly before our eyes, are the most observed; and may be seen about the end of the month congregating in vast numbers, preparatory to their departure. The precise period of this departure is regulated by the mildness or severity of the weather, as in very warm autumns they linger till October, and even a few may be seen in November. To compensate for their absence, the redwing and fieldfare, which left us in March, now return.

OCTOBER, 1845.

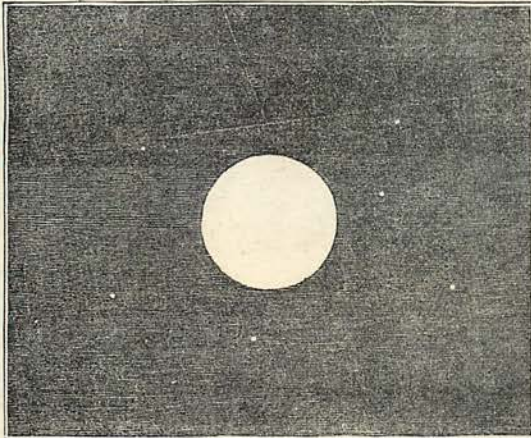
SONNET.

THIS is the time for mute soliloquy.—
Heart contemplation in a lonely wood,
Whose paths by many a fallen leaf bestrew'd
Lead you away as to Eternity,
From all the noise and trouble, of this life,
Soothing the soul with dreams of future bliss
Although where'er you turn each scene is rife
With Nature's quick decay!—But still from this
We can imbibe by sympathy refin'd
A resignation to our own defeat,
By that arch-enemy, old Time, and find
A thrilling pleasure—a reflection sweet
That when his scythe is done—Himself at rest,—
Immortals we may be amongst the blest!

W.

ASTRONOMICAL APPEARANCES.

To the illustrious Herschel astronomy is indebted for discovering a new primary planet—URANUS, which may be viewed this month to advantage.



That great man, while pursuing a design which he had formed, of making minute observations on every region of the heavens, on the 13th of March, 1781, observed in the foot of Castor, a small star, the light of which appeared to differ considerably from all others in its neighbourhood. On using a high magnifying power, it appeared evidently to increase in diameter; and two days afterwards he perceived that its place was changed. From these circumstances he concluded it was a comet; but it was not long before the error of this conclusion was determined, and the true character of his great discovery proved. Herschel named the planet Georgium Sidus, in honour of his zealous patron, George III; but foreign astronomers for a considerable time gave it the name of Herschel, but afterwards changed it to Cybele, Neptune, and finally to Uranus, the name of the astronomic muse. His distance from the sun is 1,800,000,000 miles; his nearest approach to the earth is at a distance of 1,705,000,000 miles; his orbit 11,314,000,000, through which he moves in 30,656 mean solar days, or about 84 years. The best time for viewing him is when he is on the meridian, or due south, which we find to be as follows:—on the 1st of the month, at 49 minutes past 11; on the 15th, at 52 minutes past 10; and on the 31st, at 47 minutes past 9. The "sixth satellite" should be earnestly sought, as its existence has been doubted.

This month is a good one for investigating the Milky Way.

No one except Sir W. Herschel has ever seen all the satellites of Uranus. Sir J. Herschel has very lately determined some elements of the first and second which accord very closely with those given by his father; he has not found the rest which may arise, from the unfavourable southern position of the planet. The periodic times deduced from his observations are respectively 8d. 16h. 56m. 31.3sec., and 13d. 11h. 7m. 12.6sec. The orbits are nearly circular, and almost perpendicular to the ecliptic, being inclined to that plane in an angle of 78°55'; and what is extremely remarkable, as contrary to the otherwise unbroken analogy of the solar system, the motions of the satellites in their orbits are retrograde, or from east to west.

It is, indeed, attractive, to revert to the period when the forty-feet telescope first interrogated these profound heavens! The enthusiastic observer in the act of discovery rises before the imagination, and the peace of midnight and the beauteous twinkling of stars. The astronomer, during these engrossing nights, was constantly assisted in his labours by a devoted maiden sister, who braved with him the inclemency of the weather—who heroically shared his privations that she might participate in his delights—who planned the labour of each succeeding night, who reduced every observation, made every calculation, whose pen committed to paper his notes of observation as they issued from his lips; and she it was—Miss Caroline Herschel—who aided our astronomer to gather an imperishable name.

The limits to the space-penetrating power of telescopes is manifestly this:—No object fainter than the general light of the skies—a light constituted by the intermingling of the rays of all the stars—will ever be seen. Herschel calculated, however, that a telescope, at least three times more powerful than his, might be used. We are therefore led to rejoice that his speculations will be partly carried out by that high-minded and scientific nobleman, Lord Rosse, who seems to love science for its own sake, and, uninterrupted by any desire for applause, has particularly distinguished himself by attaining an end which has been for a long time a desideratum to scientific men—the production of large metallic reflectors. Until he accomplished the casting of his speculum, six feet in diameter, it was thought to be impossible; its focal distance is 52 feet; and its magnifying power may be judged of by the fact that a portion of the moon, the size of a common house, will be visible at one time, and the objects as they pass the meridional line, can be kept in the field of view or half an hour, therefore we may hope for great additions to this interesting department of science.

NOTICES ON NATURAL HISTORY, &c.

OCTOBER.



STARLING.

THESE birds are very social, flying and feeding and roosting in large flocks. In feeding they will associate with the rook, the pigeon, or the daw. There is something singularly curious and mysterious in the conduct of these birds previous to their nightly retirement, by the variety and intricacy of the evolutions they execute at that time. They will form themselves perhaps into a triangle, then shoot into a long pear-shaped figure, expand like a sheet, wheel into a ball, as Pliny observes, each individual striving to get into the centre, &c., with a promptitude more like parade movements than the actions of birds. As the season advances these prodigious flights divide, and finally separate into pairs, and form their summer settlements.—*Journal of a Naturalist.*

Charles Waterton, whose practical observations on Ornithology are well known, made twenty-four holes in the walls of an old ruin, near his residence in Yorkshire, to induce the starlings to remain and breed there. In the following spring each hole was occupied by a pair of starlings. He says, "The starling shall always have a friend in me. I admire it for its fine shape and lovely plumage; I protect it for its wild and varied song; and I defend it for its innocence."

Broods of young goldfinches appear, linnets congregate, and rooks are very noisy as they return home at sunset; the little flycatcher disappears, and the owl hoots; butterflies and moths are still numerous, and lady-birds are often seen.

THE progressive decay of leaves, which had begun about the end of last month, proceeds with steady pace, and their vital actions and properties have been wrought upon, so as to cause the changes of colour and shrivelled aspect observable in the foliage of most of our trees. It is supposed that plants, in autumn, continue to absorb oxygen during the night, but lose the power of giving it out again, and restoring it to the atmosphere during the day, and that in this way some of the juices become so acid as to change the colour of the rest. This may be the case to a certain extent, and in some trees; but it does not appear to apply to all. Those leaves which become red—such as the cherry—may be affected in this way; but this is far from being the general colour. The plane-tree acquires a tawny colour; the oak, a yellowish green; the hazel, a yellow; the sycamore, a dirty brown; while the maple becomes pale yellow; the hawthorn, a tawny yellow; horn-beam, a bright yellow; the ash, a fine lemon; and the elm, an orange.

These varied hues give to woodland scenery, at this season of the year, its gorgeous appearance. He who now looks upon what he sees taking place before him, not merely with a painter's or a poet's eye, but with the spirit of a philosopher, has ample room for inquiry and investigation into the causes which enable some trees to retain unchanged their leafy honours, while others are compelled to resign them to become the sport and plaything of the wintry blast.

What is termed the fall of the leaf has been the subject of numerous speculations and hypotheses, all alike unfounded and unsatisfactory. It strikes us that the most universal and efficient, as well as most simple, cause of this act has been overlooked. What we are about to state refers merely to the fall, and not to the death of the leaf; the one of which actions is vital, while the other is, in a great measure, if not solely, mechanical. In what is termed the axilla or arm-pit of a leaf, that is, the point where it joins the stem or branch, upon careful inspection will be found a bud, or future stem or branch. This bud, in the greater number of trees, begins to swell in autumn; indeed in very warm seasons, it actually expands to its full size and length, as it should do in spring; and as this bud is always immediately above the old leaf, so in the process of expansion it pushes the footstalk of the leaf downwards, and causes it to break off at the joint or given point of connexion, which subsists between all leaves and the stem or branch. Evergreens retain their leaves till spring, as the buds in their axilla do not swell till that time. As a satisfactory proof that this is the real cause of the fall of the leaf, we may observe what happens when shrubs are transplanted. If by this operation the life of the plant be not destroyed, though the present leaves wither, new buds will expand, and push the old leaves off; but if the vital principle be destroyed, the leaves will wither as before, but will remain attached to the stem—a circumstance which every practical gardener deems an evidence that the plant is dead.

Most seeds and fruits are now perfectly ripened, and furnish their share of subsistence to man, bird, and beast. This is a time of abundance,—a season of plenty,—and that portion which cannot be consumed at the period of its maturity is stored up in various ways, and by different means, as provision against a time of need. Though we boast not the vine and its clustering grapes, or tread its juice into our vats, the animation of the wine countries is nearly equalled by the hop-gathering and cider-pressing of our midland, western, and southern counties.

NOVEMBER, 1845.

SONNET.

THE mournful music of bleak forest trees,
The noisy gushing of the yellow brook,
In miniature a Tyber, and the bock
Of Nature's leaves wide scattered—the rude breeze
That comes not gently, as it did in Spring
To fan the flowers with its dewy wing,
All lead the mind to sad philosophy,
And make it ruminate upon the change
That is in motion quick eternally!—
Where'er we turn—where'er our thoughts may range,
We see some emblem of our life's decay—
At least, upon this earth—if up we flee
On wings of thought where spherul minstrels play,
Immortal then we know ourselves to be!

W.

ASTRONOMICAL OBSERVATIONS.

LATE in the night of the 13th, and early in the morning of the 14th, we shall be favoured with a large partial eclipse of the Moon. The eclipse will begin at Greenwich at 10 minutes after 11 o'clock, P.M., of the 13th; the Moon passing into the Earth's shadow, will present, at 43 minutes past 11, the appearance shown in our cut (Fig. 1). As the orbs of heaven never stand still,



the Moon, gliding along her orbit, will get more deeply immersed in the shadow of our world, till, at 49 minutes past 12, 9 parts out of 12 of her surface will be eclipsed, when the greatest point of obscuration being reached, her appearance will be that shown in our second figure. At about 2 o'clock in the morning of the 14th, the Moon passing out of the shadow, will be seen in the form of our third figure. From that time the eclipse will rapidly diminish, and at 28 minutes past 2, the fair luminary of night will recover her wonted splendour.

The Moon will be in the neighbourhood of Venus on the 3rd, and on the 6th near Saturn; she will pass above the ruddy orb of Mars on the 8th, and on the 12th, she will appear near the bright planet Jupiter.

The revolutions of the Moon and the node are as 223 to 10, so that in every 19 years the eclipses are repeated.

Bailey and others, in observing the annular eclipse of May, 1836, near the central path, observed such an optical, though peculiar protrusion in the Moon's limb on approaching and leaving the Sun, as led to the conclusion that it must have been produced by an atmosphere.

As there are 235 lunations or new Moons, in 19 years, within 1½ hour, the phenomena recur. 12 lunations are 354 days 8 hours 48 min. and 36 sec. The hour and half is a day in 16 cycles, or 300 years.

When the new Moon is within 18° of the node, there is an eclipse of the Sun; and when the full Moon is within 12° of the node, she will pass in the Earth's shadow, and be eclipsed. According to Séjour, an eclipse of the Sun can never be annular longer than 12 min. 24 sec., nor total longer than 7 min. 58 sec., and the duration cannot exceed two hours.

The Harvest Moon arises from the varied angle of the ecliptic with the horizon, so that the Moon rises several days within nearly an hour. In 1857 there will be a striking Harvest Moon.

The enlargement of the light part of the Moon, and the enlargement in the horizon, are optical illusions—one owing to bright objects enlarging pencils of light, and the other owing to the mind placing the Moon at a greater distance—angle the same.

The Moon is 24 minutes longer in performing her orbit, when the Earth is in its perihelion than its aphelion.

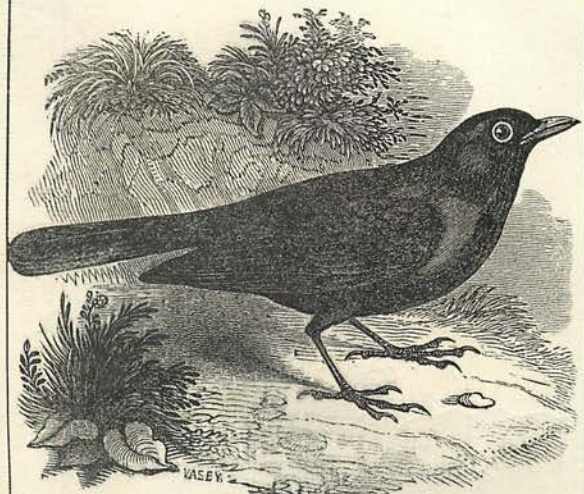
In the Earth and Moon, one of the two forces, the central, is the common progression in the Earth's orbit. The other force, the tangential, is the exact product of the Earth's reciprocating motion in its terro-lunar orbit into its mass.

Owing to the Moon's libration in latitude, we sometimes see one pole, and then the other. By the libration in longitude, more of the western limb is at times seen; and at other times more of the eastern.

The annual equation is the increase of the Moon's orbit and period when the Earth is in perihelion, and the decrease of orbit and period in aphelion.

NOTICES ON NATURAL HISTORY, &c.

NOVEMBER.



THE BLACKBIRD

LIKE some other birds gifted with great powers of voice, the blackbird is an imitator of the sounds made by others. He has been heard to imitate closely part of the song of the nightingale; three or four instances are recorded of his crowing exactly like the common cock, apparently enjoying the sound of the responses made by the fowls of the neighbouring farm-yard, and Mr. Neville Wood, in his "British Song Birds," has mentioned an instance in which he heard a blackbird cackle as a hen does after laying.—Yarrell.

The males, during the first year, resemble the females so much as not easily to be distinguished from them; but after that, they assume the yellow bill, and other distinguishing marks of their kind. The blackbird is a solitary bird, frequenting woods and thickets, chiefly of evergreens, such as holly, pines, firs, &c., especially where there are perennial springs, which together afford it both shelter and subsistence. Wild blackbirds feed on berries, fruits, insects, and worms; they never fly in flocks like thrushes; they pair early, and begin to warble nearly as soon as any other songsters of the grove. The female builds her nest in bushes or low trees, and lays four or five eggs, of a bluish green colour, marked irregularly with dusky spots. The young birds are easily brought up tame, and may be taught to whistle a variety of tunes, for which their clear, loud, and melodious tones are well adapted. They are restless and timorous birds, easily alarmed, and difficult of access; but Buffon observes that they are more restless than cunning, and more timorous than suspicious, as they readily suffer themselves to be caught with bird-lime, nooses, and all sorts of snares. They are never kept in aviaries; for, when shut up with other birds, they pursue and harass their companions in slavery unceasingly, for which reason they are generally confined in cages apart. In some counties of England, this bird is called simply the ouzel.

Most of the feathered tribe are now mute; the blackcap, the chiff-chaff, and the yellow-hammer are occasionally heard. Moths and butterflies abound, and the glow-worm shines at twilight hours. The death-watch beats, and the grasshopper sings.

THIS month is commonly made the subject of unmeasured disparagement, and has applied to it epithets calculated to give that gloomy tendency to the mind which the appearances themselves do not always occasion. It cannot be denied that

The year's departing beauty hides
Of wintry storms the sullen threat,

and that the landscape is no longer pranked in the gay attire of the summer months; but it is not difficult, when the mind is imbued with

That spirit which, undimmed by toil,
Spreads over earth and air
A charm—a glory—a delight—
Making the very tempest bright,

to discover a moral beauty, by observing the fitness of means to ends which characterize all the operations of nature.

The cloud-compelling winds, which to the melancholy mind, sound, as they rush through the forest, like

Nature's sick convulsive sighs,

are the agents by which the dry and withered leaves are detached from their slight holds, and diffused over the surface of the earth. The rains and the fogs supply that moisture which is necessary to effect their decomposition, and which is greatly assisted by the warmth still retained by the earth, and obtained from the air during the change of the vapour into rain. A provision is made for the future crops by the decomposition of the remains of the former. But verdure is never wholly absent from the earth: the fogs and general humidity of this season revive the mosses, which had been shrivelled by the droughts of summer. This pleasant renovation of mosses has been so correctly and picturesquely described by Linnæus, that we here introduce the passage:—"When all around us becomes torpid and languid—when the rivers cease to flow, and the cheerful voices of the grove are silent—when snow covers the plains, and nought is heard but sounds of lamentation—when the face of the country is desolate, presenting only a sad image of death—then the mosses, emerging as it were from among the ruins of vegetation, and shining in silken hues, clothe the naked rocks and stones."

The leaves of mosses display a structure more beautiful than is to be observed in the foliage of the loftiest and most enduring tree of the forest; the examination of them by the microscope will open up to us a new wonder and delight.

Foos have a remarkable influence upon some birds: during a fog of twenty-four hours' continuance, thrushes, wheat-eats, orioles, and red-breasts, are reported to become so fat that they are unable to fly from the sportsman.

DECEMBER, 1845.

SONNET.

How different are the cloths of each year.
 Old Nature seems to change her garb, and dress
 With all her child's (fair woman's) fickleness!
 For sometimes at this season she'll appear
 In robes of snowy whiteness—sometimes clad
 In rainbow hues of summer morning skies,
 Bedeck't in field and grove with thousand dyes
 Of gaiety—and then again as sad
 Will be her gloomy cloak and stormy train!
 Alas! how like the closing hours of life!
 Some Hope-led, smiling on their present pains—
 Others, with horrors, darkly impending, rife,—
 Some scoffing at the sun-set of their soul,*
 On Earth!—some running upwards to Heaven's goal!

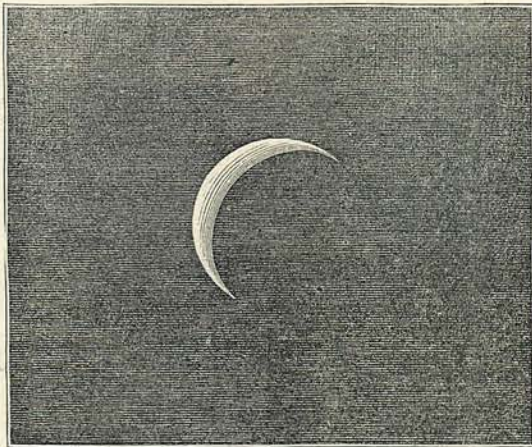
* Vide the account of Rousseau's last hours.

ASTRONOMICAL APPEARANCES.

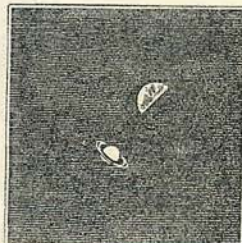
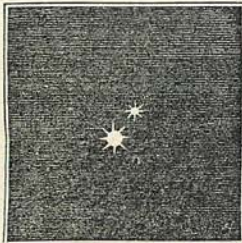
THE brilliancy of Venus will be such that, towards the end of the month, she will give sensible shadows to objects, and seem to shine like a little moon, cheering the long evenings of December, and leading us to think even Cunningham scarcely extravagant in her praise when he says—

Gem of the crimson-coloured even,
 Companion of retiring day;
 Why at the closing gates of heaven,
 Beloved star, dost thou delay?
 So fair thy pensile beauty burns
 When soft the tear of twilight flows;
 So due thy plighted steps returns
 To chambers brighter than the rose.

May we not hope, also, that as the season of Christmas approaches, the brightness of our favourite star may lead us in the multitude of its tender associations to Him "who made the worlds"—"The Star of Bethlehem?" Venus, seen with an ordinary telescope, will, about the 3rd week of the month have the appearance shown in our cut of a half moon.



On the 19th, Venus and Saturn will be in conjunction, when they will appear according to the annexed figure, the brighter object of course representing Venus; but through a good telescope of inverting power they will be seen as follows.



When the elongation of Venus is $39^{\circ} 44'$ between its inferior conjunction and greatest elongation, it appears brightest; for then, though its phasis be but the $53\text{--}200$ ths of a circle, it is so much nearer the earth than in its superior conjunction, when it appears with a perfect disc, that the want of surface is more than compensated by intense light. In that situation, Venus is often seen by the unassisted eye in broad day-light. When Venus is to the west of the sun, it rises before the sun, and is called a morning star, this appearance continuing about 290 days together.—When it is to the east of the sun it sets after, and is called an evening star, for about the same period of 290 days.

There will be no transit of Venus till December 8, 1874; and no other till 2004.

Thirteen periods of Venus is nearly equal to 8 of the earth, and they return to similar positions in 239 years.

The plane of Saturn's rings is that of his equator, a further proof that the ring is an effect of centrifugal force. If the earth's rotation was such that parts flew off in tangents, they would be likely, at a given distance, to produce the regular form of a ring.

NOTICES ON NATURAL HISTORY, &c.

DECEMBER.



THE REDBREAST.

THE red-breast, sacred to the household gods,
 Wisely regardful of th' embroiling sky,
 In joyless fields and thorny thickets leaves
 His shivering mates, and pays to trusted man
 His annual visit. Half afraid, he first
 Against the window beats; then brisk alights
 On the warm hearth; then, hopping o'er the floor,
 Eyes all the smiling family askance,
 And pecks, and starts, and wonders where he is;
 Till, more familiar grown, the table crumbs
 Attract his slender feet.

THOMSON.

ALTHOUGH the redbreast never quits this island, it performs a partial migration. As soon as the business of incubation is over, and the young are sufficiently grown to provide for themselves, he leaves his retirement, and again draws near the habitations of mankind: his well-known familiarity has attracted the attention and secured the protection of man in all ages; he haunts the dwelling of the cottager, and partakes of his humble fare: when the cold grows severe, and snow covers the ground, he approaches the house, taps at the window with his bill, as if to entreat an asylum, which is always cheerfully granted, and with a simplicity the most delightful, hops round the house, picks up crumbs, and seems to make himself one of the family.

The young redbreast, when full feathered, may be taken for a different bird, being spotted all over with rust-coloured spots on a light ground; the first appearance of the red is about the end of August, but it does not attain its full colour till the end of the following month. Redbreasts are never seen in flocks, but always singly; and when all other birds associate together they still retain their solitary habits.

THE same circumstances exist throughout this month as the former, but the changes are less rapid; for while the humidity is greater, the warmth is less, and therefore the process of decomposition goes on more slowly. In more northern climes the cold now begins to be severely felt, and a greater number of birds, mostly aquatic, and chiefly of a large size, such as the wild swan and laughing-goose, pay us a brief visit.

Our old friend robin is musical in all weathers; the little wren sings amongst the snow; and birds of the finch tribe creep near our dwellings for shelter and food, all tending to enliven the cheerless scene.

The intense cold of January, and still less the moderate cold of December, cannot prevent the laurustinus from unfolding its white and enduring blossoms, which contrast strongly with the red and shining berries of the prickly holly. The pine trees still retain their sombre needle-like leaves, which attract our attention when the gayer and gaudier foliage of the other forest trees has mouldered into dust. The mind now eagerly rests upon every thing which gives proof of prolonged existence, and which continues to assert the supremacy of nature over the destructive agents now at work. This is a season of the year when the short days preclude our spending much time in the open air and in the active observation of nature; but we would not have it supposed that, even at this time, when universal nature seems to sink into a death-like slumber, the naturalist is incapable of detecting proofs that she still retains the principle of life; of this the numerous mosses, lichens, and even fungi, are sufficient evidence.

Vegetation is arrested when the heat is too little to prevent the crystallization of the fluids, and keep up the circulations. Great summer heats confer strength on trees, to enable them to bear frosts; and long tap roots, which descend into depths of warm earths, old trees, whose layers protect the pith, and fluids mixed with resins stand the cold of winter best. But snow and ice being bad conductors of cold, when the ground is covered with snow, or the surface of the soil frozen, the roots or bulbs of plants beneath are protected by the congealed water from the influence of the atmosphere, and this water becomes the first nourishment of the plant in early spring. The expansion of water during its congelation, at which time its volume increases one-twelfth, and its contraction in bulk during a thaw, tend to pulverize the soil, to separate its parts from each other, and to make it more permeable to the influence of the air.

Circumstances and customs induce all now to take a retrospective glance at the year which is past; and we cannot but hope that they who have learnt to look upon nature with the eye of an affectionate child, will have found in each month, as it passed, something to excite their wonder and admiration. Feelings of a more exalted kind should be excited by a recollection of the numerous blessings they have enjoyed, each suited to the revolving season, and the thoughts raised with increased fervour, in grateful acknowledgment to Him from whom they flowed—"the Giver of every good and perfect gift."