

**The pocket encyclopaedia of natural phenomena; for the use of mariners, shepherds, gardeners, husbandmen, and others; being a compendium of prognostications of the weather, signs of the seasons, periods of plants, and other phenomena in natural history and philosophy / compiled principally from the manuscripts and ms. journals of the late T. F. Forster ...
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Forster, Thomas Furley, 1761-1825.
Forster, T. 1789-1860.

Publication/Creation

London : J. Nichols and son, 1827.

Persistent URL

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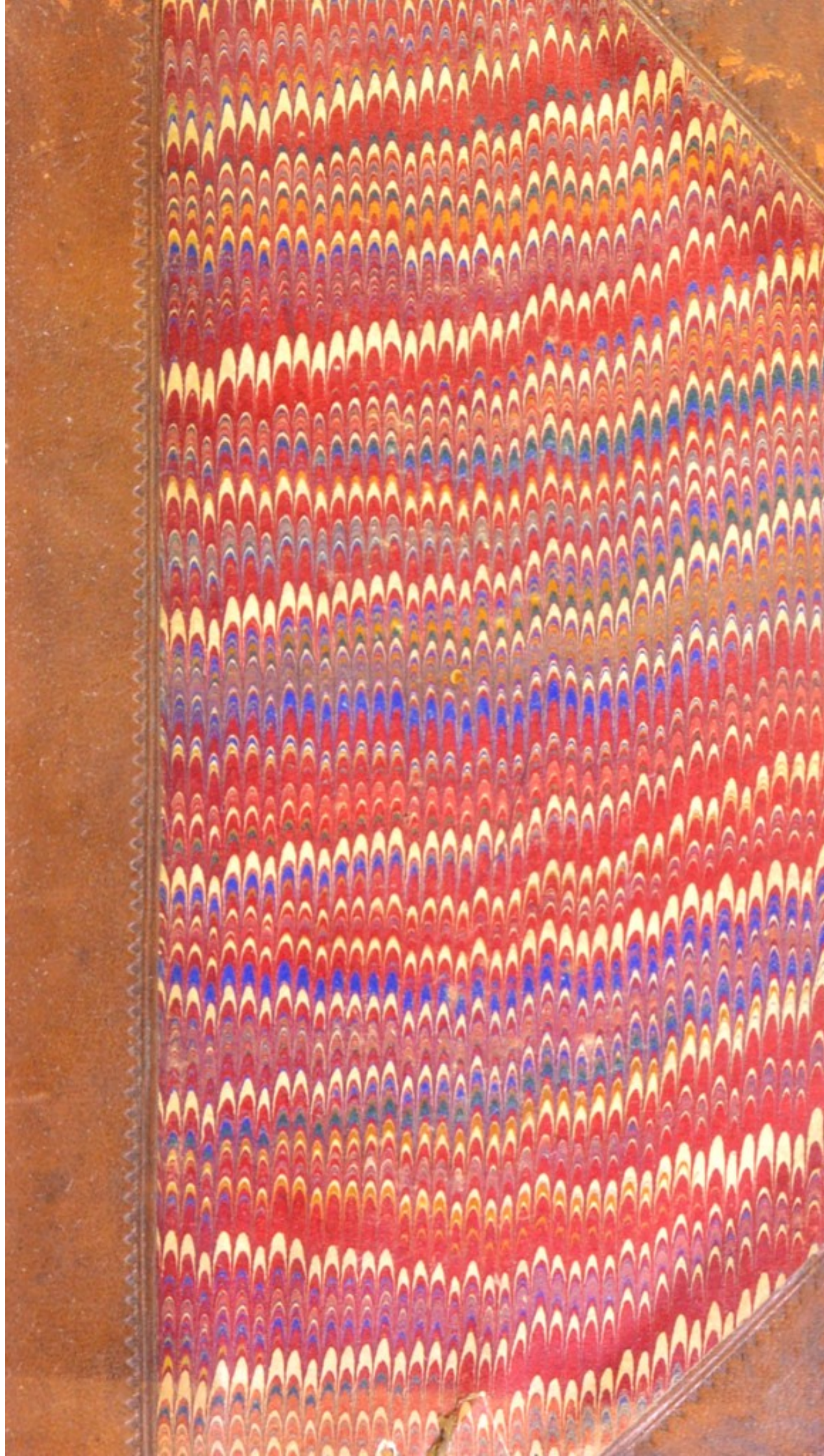
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THE
POCKET ENCYCLOPAEDIA
OF
NATURAL PHENOMENA;

FOR THE USE OF

Mariners, Shepherds, Gardeners, Husbandmen,
AND OTHERS;

BEING A COMPENDIUM OF

PROGNOSTICATIONS OF THE WEATHER,
SIGNS OF THE SEASONS,
PERIODS OF PLANTS,

AND OTHER

PHENOMENA IN NATURAL HISTORY AND PHILOSOPHY;

COMPILED PRINCIPALLY FROM

THE MANUSCRIPTS AND MS. JOURNALS OF THE LATE

T. F. FORSTER, ESQ. F.L.S. &c.

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LONDON :

PRINTED BY AND FOR JOHN NICHOLS AND SON,
25, PARLIAMENT STREET.

1827.



PREFACE.

THE usefulness of distributing scientific observations into the alphabetical form, as a means of ready reference, is too well known and generally acknowledged to need any apology. In the present work my object has been to compress as much matter into as small a compass as possible, in order to render it compendious and portable. I have found the great benefit of this sort of Dictionary myself, and have been in the habit of recording any phenomena which might occur in a Common Place Book lettered according to the arrangement of the alphabet; and the extensive observations which I found in Natural History, in its various branches, among the MS. and valuable books left me by my father, suggested the idea of putting together enough of such observations as might constitute a book of popular entertainment and utility. It afforded to me amusement while compiling it, in the

few leisure hours that professional and other pursuits left unoccupied; and it is of a popular nature likely to become the amusement of young beginners in the study of a science which, independent of its utility, is now every where cultivated, from its being allowed to possess the double advantage of exciting to active and wholesome exercise abroad, and thus conducing to health, while it furnishes to the mind a source for the most pleasing reflections on the eternal variety, beauty, and harmony of Nature.

INTRODUCTION TO PART I.

ON THE PROGNOSTICKS OF THE WEATHER.

PERHAPS one of the most useful purposes to which meteorology can be applied, is that when accurately studied with reference to the prognosticative import of particular phenomena, it enables us to predict with greater certainty the future changes of the weather. Soon after my attention was directed to atmospherical science I observed that mariners, shepherds, husbandmen, and others whose employment kept them constantly out of doors, could foretel with more certainty what sorts of weather were coming than the more scientific meteorologists could do; they seemed to me to have a sort of code of prognosticks of their own, founded partly on tradition and partly on experience: they used numberless trite sayings and proverbial adages respecting the weather which were handed down from the remotest antiquity, but which, in the long run, seldom failed to be right. I collected these, and compared them with the most antient Grecian and Roman writers, and

also with my own observations. I perceived a striking agreement between the prognosticks of Theophrastus, Aratus, Virgil, Columella, and other antient writers, and the proverbial prognosticology of more recent times; and the same was confirmed by my own experience. It soon after occurred to me that a collection of them alphabetically arranged, in the form of a small Pocket Dictionary, might prove a useful compendium of signs of the weather: hence originated Part I. of the present little work, wherein will be found each prognostick under the first letter of its name, with some of the antient authorities subjoined; so that when any particular phenomenon is noticed, which is accounted to be a sign of weather, by referring to it under its name, its particular indication will be found, and a few of the most reputed authorities cited.

For example, if after continued fine weather in summer, we should perceive the sky mottled with sonderclouds or streaked with waneclouds, or with those called Mare's Tails, if it at length get more obscure, and were covered with a thick veil of nebulosity, if the swallows were seen flying low and skimming over the surface of the water and of the meadows, the cattle stretching out their necks and seeming to snuff in the air with widely distended nostrils, if spiders came out in unusual numbers on the walls, and other unwonted motions and habits of animals were noticed, we should then say rain was coming, and by referring to each of

these signs under its proper name we should find at one view what had before been observed of its prognosticative importance by various writers both antient and modern. If other more unusual signs appeared, as meteors, electrical lights in the air, *ignes fatui*, and other extraordinary appearances, we should find their particular bearings with respect to the approaching changes of wind and weather duly set down in their proper places, and thus be better enabled to judge of what was about to take place in the atmosphere. I consider this as the most useful part of meteorology; its utility is so extensive and important, both by sea and land, that it justifies an attempt to place it in the most conspicuous point of view, and by an alphabetical arrangement of particulars to facilitate the means of acquiring a knowledge of prognosticks in general. By keeping an interleaved copy of this book by him the careful observer of nature may add many newly discovered prognosticks to this catalogue from his own experience, and greatly to his own profit and entertainment.

Some of the most antient prognosticks are to be found described in the Bible; Aristotle among the Greeks first accurately noticed atmospherical phenomena; Theophrastus the botanist and physician collected all the popular prognosticks of his day; Aratus put them into Greek hexameter verse in his *Diosemea*; Lucretius copied many of them into his book *De Rerum Naturâ*; Virgil expressed the same in the most elegant language in the *Georgicks*;

Lucan, Plautus, Seneca, and others, and particularly Pliny, wrote much of them in their various works, either by way of allusion to popular opinions on the subject, or in the form of distinct treatises; and lastly, the commentators on all these authors have expatiated largely on them in the copious notes, illustrations, and various readings that issued from the classical press after the invention of printing. I have collected, embodied, and arranged them here alphabetically, and given them to the public for more general use in the form of a dictionary.

INTRODUCTION TO PART II.

INDICATIONS OF THE SEASONS.

WHAT I have said respecting the utility of an alphabetical arrangement in the Introduction to Part I. applies also to this. The various indications of the approach of the different seasons of the year constitute a subject of considerable interest; they are to be deduced principally from the periodical return of certain natural phenomena, such as the return and migration of birds of passage, the flowering of plants, the ripening of fruits, and the periodical pairing, nestling, parturition, and other habits of animals. These phenomena vary a little as to the precise times of their appearance in different years, and an interleaved copy of this work kept for noting the varieties of the different seasons in each successive year, may become a source of great amusement, and may lead to much new information on the subject, as the text of the book will be the mean standard of comparison. For the periods of flowering, leafing, and other phenomena noted therein, are the mean periods, being reduced to an average, by dividing the sum of the observations by their number. And they have

been taken from an accurate journal of the weather and seasons kept in the author's family by three successive generations, and comprising a span of about sixty years, during which time I cannot find that there has been a single *hiatus*, something having been recorded of every day. My late grandfather Edward Forster, of Walthamstow, kept a journal of the weather from January 1767 till April 1812; my father from 1789 till October 1825. In his later journals some omissions occur, but the *hiatus* were supplied by my journal, which has been kept from July 1805 to the present time. My father's notations of the flowering of plants (the most copious and most accurate of his diaries) continue from the spring of 1780 to within a few days of his death, October 28, 1825. In all the journals above alluded to I have found numerous notations of the times of flowering, and other periodical phenomena of the seasons, recorded by different members of the family; and it is from these, as well as from my own, that I have deduced the average periods herein recorded and arranged alphabetically for general use and amusement. It will readily be seen by any reflecting person that the indications of the seasons must vary as to their times in different climates, the same plants flowering, for example, a month earlier in the Levant than at Paris or London, so that it is necessary to admonish the reader that the space of country to which these observations will apply extends only from the central part of England to Paris. In Scotland,

and the more northern parts of our country, the periods are somewhat later, and they are earlier in the south of France and in Switzerland, as I had occasion to observe during a tour through the Highlands in 1816, and in the south of France, Switzerland, and Germany in 1822. The few observations I made then corresponded with what might rationally be expected from the difference of latitude. How far the same observations, as to periods, will apply in different longitudes, I am unable to determine precisely; but it seems to me that the Flora is earlier in countries situated considerably eastward, and later in those westward of any assumed central point in Europe. The seasons, for instance, in Holland precede those of the west of England. Flora wends along the isothermal line.

But though plants will flower sooner by being brought into earlier and more temperate climes, yet their periods will never be wholly changed, the vernal plants cannot, generally speaking, be made to blossom in autumn, nor those of the Brumal Season to change their time of flowering for midsummer. Change of climate would not produce tulips and narcissi in October, nor could we get black Hellebore and the sweet Coltsfoot to put forth their blossoms in June. Hence we come to the consideration of the particular season to which each plant may belong.

To me it appears that there are six principal seasons or divisions of the year, to one of which we may venture to refer almost all the wild and most of the hardy herbaceous plants which grow in

our climate. This arrangement into six instead of four seasons corresponds better with the actual course of phenomena.

We may consider the first or Primaveral Season as beginning at Candlemas, on the first opening of the early spring flowers; the second or vernal, about old Ladytide; the Solstitial about St. Barnabas; the aestival about St. Swithin; the autumnal about Michaelmas; and the brumal about the Conception. The last three weeks of the brumal season may be called *hyemales*, or days of bad weather, from *ἕϊν*, to rain, and they correspond with the last fortnight of the solstitial season called *canini* or dog days, from the antient heliacal rising of Sirius, and the commencement of the Egyptian or cynic year.

The above arrangement, however defective it may be as to the unequal number of days comprehended by each season, is nevertheless the best division that I can make of the year agreeable to the phenomena of each period; and I shall therefore proceed to describe them accordingly. But I must first observe, that many plants said to belong to one season from first flowering plentifully therein do nevertheless continue to flower, or, more properly speaking, remain in blow, through great part of the next, as the Primrose, which opening in the primaveral continues in full flower through great part of the vernal season. The China Aster, blowing in the Aestival, lasts all through the Autumnal, and abides till, in the beginning of the Brumal Season, it is cut off by frost; and some plants shew flowers more or less all the

year. These, however, have generally one time of the fullest flowering or efflorescence, and from the period of this first full blowing their proper season is determined. The Dandelion, for instance, is seen in flower during all times except the end of the brumal season, nevertheless its efflorescence takes place about the 11th of April, and it gilds the meadows with its beautiful yellow during the early part of the vernal period, till it is gradually succeeded by the Crowfoots and Buttercups. Habit of observation will soon reconcile the attentive naturalist to this division, and will enable him to refer each plant to its proper season, each of which I shall now speak of separately, together with its most prominent phenomena.

The PRIMAVERAL SEASON begins about Candlemas. The increasing day is now sensibly longer, and the lighter evenings begin to be remarked by the absence of candles till near six o'clock. The weather is generally milder, and the exception to this rule, or a frosty Candlemas day, is found so generally to be indicative of a cold Primaveral Period, that it has given rise to several proverbs related in the subsequent part of this work. We have all heard from our infancy the adage,

“ If Candlemas day be fair and bright,
Winter will have another flight;”

and I find by examining journals that this is generally correct.

About this time the first signs of the early spring appear in the flowering of the Snowdrops; they rise above ground, and generally begin to flower by

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Candlemas eve, being recorded, during the old style, in numbers about the feast of the Purification of the Virgin Mary. The yellow Hellebore, or Flower of St. Paul, accompanies, and even anticipates the Snowdrop, and lasts longer, mixing agreeably its bright sulphur yellow with the deeper and orange yellow of the spring Crocus, that blows on an average about St. Agatha, Feb. 5th, and continues throughout March, fading away before Ladytide. The first blowing of the Snowdrop is thus described by Mrs. Barbauld :

“ Already now the Snowdrop dare appear,
The first pale blossom of the early year,
As Flora's breath by some transforming power
Had changed an icicle into a flower ;
Its form and hue the scentless plant retains,
And winter lingers on its icy veins.”

The Crocuses that accompany the Snowdrops are of three several sorts, the other species blowing a fortnight later. The three earliest sorts are the yellow Garden Crocus, of a deep orange yellow ; the Cloth of Gold, of a golden yellow striped with chocolate stripes ; and the Scotch or white striped Crocus ; they will all be found described in the Calendar, being Part IV. of this work. The blue, the red, and the white Hepatica, or Noble Liverworts as they used to be called, now flower, and brave the cold and changing weather. All these disposed in clumps round our parterres, and alternating with Snowdrops, Crocuses, and Hellebores, give to a well conducted garden a very brilliant aspect :

“Crocuses like drops of gold
Studded on the deep brown mould,
Snowdrops fair like flakes of snow,
And the bright Liverworts now blow.”—ANTHOL.

At this time birds begin to pair, and many of the earlier songsters to warble, as the Chaffinch, the Redbreast, and the Wren; the Thrush, the Mistlethrush, and the Blackbird are singing; the Woodlark renews his note; Turkeys produce their gabbling and peculiar sound; Owls begin to hoot, and continue all this season; Bulfinches return to our gardens, and are very useful, destroying those buds alone which contain the larvae of destructive insects; the loud and shrill laugh of the Yaffle or green Woodpecker is heard in the woods; Pidgeons coo, and by this time usually have young. The Raven lays, and the Crow soon follows her in the incubatory work, while the busy Rooks, already returned to their nests, are heard, particularly in the morning, while employed in repairing the effects of winter. As this season advances, early in March, the continual progress of the increasing light produces other phenomena; the early shrubs bud, the yellow Coltsfoot blows, early Daffodils and the great early Jonquils adorn our gardens, and in some places the former covers whole fields with its pale yellow; Daisies are seen in the fields; the sloping glades and the shaded banks and fields are soon spangled with the little golden stars of the Pilewort; the Sweet Violet blows in our gardens, and its rich odour is often smelt as we walk along the path, before the

clump of deep blue flowers from which it issued is discerned, which reminds one of Shakspeare's beautiful lines on these flowers, and of the verses of Lorenzo de Medici. Frogs are now heard croaking from the ponds, ditches, and other waters; Snails are found clustered on the warm south walls by the early blossoms of the peach tree; Toads make now an unusual grating noise, and the Stone Curlew, which arrives during the last days of February, is now heard by night flying over our heads unseen and uttering its harsh and shrill cry. In fine days towards Ladytide the early sulphur Butterfly is seen about, and the Bees come abroad. At a more advanced period of this season, and soon after Ladytide, the red and the yellow Crown Imperials and the Dogs Tooth Violet blow. The Primroses and Dog Violets, which have blossomed sparingly before, now cover every bank and brae in profusion, and mix agreeably together. These plants extend their flowering into the beginning of the next season, and are scarcely out of blow by the 24th of May, a day on which the two Floras almost meet, and when the greatest number of plants are in flower in all temperate climates, the day on which, as if to become the favourite of the Goddess of Blooms, the great Linnæus was born.

The weather, as the Primaverall Season advances, gets more and more variable; a cold biting north east wind, with sudden sunfits casting a temporary gleam on the growing green corn, a warm and drying day or two producing dust, rapid showers

of snow or hail alternating with bright sunshine, with frosty nights, or warm days, all alternate with each other, and succeed the rain, which often falls pretty copiously earlier in the season, so that the proverbial adages of February filldyke, and of March manyweathers, applies successively to the two portions of the primaveral period. This season is by no means devoid of beauty; we have mentioned the flowering of some very brilliant early spring plants, and to that number we might add many more; the blossoming of many early shrubs and trees too, is another striking and beautiful feature of this season. The Mezereon is a bush covered with bright pink flowers without leaves, and stands up in our leafless primaveral gardens a most conspicuous ornament. The Almond tree and double Peach are often covered with pink, and the early Plums with white blossoms that have a fine distant effect combined with the above described phenomena, while the season advancing gives place at length to one still more agreeable, and which I shall proceed to describe.

The VERNAL SEASON begins about old Lady-tide, April 6th, and it is during this period that the trees gradually acquire their leaves, which are perfected by the latter end of it. The weather is now generally fine, and for the most part dry; a sort of clear weather often occurs, with northerly and easterly winds, cold nights, and very bright days with deep blue sky; this alternates at times with the electrical showers of springtime, and we

have more hail perhaps during this than at any other period, and at times very cold east and north east winds, particularly about Easter, which is said to be a Saxon word derived from the prevalence of the east wind. Thunderstorms sometimes happen in this season, but are not frequent. During all these vicissitudes of weather the average temperature and evaporation encrease, and bring us gradually to the warmth of summer. Early in this season the Dor Beetle *Scarabeus fimetarius*, begins to be heard humming by us in the dusk of the evening, and the Flittermouse is on the wing whenever the air is mild at eventide.

One of the most striking phenomena of this season is the return of the vernal birds of passage, which arrive by degrees, and fill the woods and gardens with their melody; those birds too which remain with us all the year are now in full song. The Nightingale, the Redstart, the Blackcap, and all the Willow Wrens arrive in April.

The most remarkable genus of birds that arrive in spring are the Swallows, and the interest always taken in their natural history, and particularly in the wintry retreat of those birds, may be judged of by the circumstance that there is scarcely a writer on natural phenomena, ancient or modern, who has not mentioned the swallow. Above fifty letters on the hybernation of the Swallow have been written in the Gentleman's Magazine, and the question was hardly settled till very lately,

“Whether they lie torpid in winter or migrated.”*
The fact is, that, like other summer birds, Swallows migrate to more southern countries in autumn.

Ever found to be the harbinger of spring, and living on winged insects that would be otherwise noxious to us, the Swallows have always been favourites. In Greece the children used to make a sort of holiday on the first arrival of the Swallows. In Greece, Italy, and other southern countries, the Swallow arrives about the first of March; with us their arrival is much later. The chimney Swallow appears between the fifth and 19th of April, and the common Martlet and sand Martin between the 20th and 30th of that month. The Swift or black Martinet is first seen about the feast of the Apparition of St. Michael, May 8th; but it is about the 14th that the great arrival happens, and they are then seen in numbers about towers, steeples, and ruined buildings, while the Swallows resort to our chimneys, the Martlets to the eaves of houses and the sides of windows of churches and other buildings, and the sand Martins to steep banks.

During the middle and latter part of the Vernal Season the business of nestmaking takes place, and the first broods are hatched, fledged, and fly before the close of the period, during which time the cock birds are in full song. Every bird has a note or a modulation of notes peculiar to himself, yet, what

* See Nat. Hist. Swallows, by Dr. T. Forster, London, 1817.

seems extraordinary, many birds decidedly imitate the notes of others. The Blackcap and the Thrush mock the Nightingale; and hence it happens that in the north and west of England, where Nightingales do not abound, the notes of these mocking songsters is less musical and less varied. Many other birds mock the Nightingale, and also mock each other. In Part II. I have noted the average days on which birds arrive, which may be found out by the naturalist from their notes as well as by seeing them; and to those who are skilled in the music of the grove this forms a very pleasant amusement during the bright fine weather of a vernal morning. I have known persons who could distinguish the notes of every bird in the garden immediately on hearing him, but who at the same time were so little favoured by Apollo with regard to common music, that they could not tell Rule Britannia from the College Hornpipe. The cooing of the Ringdove, the wild Pidgeon, and the Turtle, are sounds too which are characteristic of the period we are describing, but above all the rest that mark the Vernal Season we must commemorate the well known song of the Cuckoo. This bird usually arrives with the Wryneck in the middle of April, and I have remarked that between the 14th, which is called in Sussex Cuckoo day, and the festival of St. Mark, April 25th, this bird is always first heard, but more usually towards the end of that time, or from the 20th to 23d April. All May he sings, as the proverb says, night and

day, becomes hoarse, and sings seldomer in the Solstitial Season, and before the commencement of the Aestival he leaves us, or at least ceases to sing cuckoo.

Cuckoos in general build no nest, and what is more extraordinary, the female deposits her solitary egg in the nest of another bird, by whom it is hatched. The nest she chooses for this purpose is generally the hedge Sparrow's, though she occasionally resorts to that of the water Wagtail, Titlark, &c. This bird flies from hedge to hedge, and from tree to tree: and

Hid in some bush now sings her idle song
 Monotonous, yet sweet, now here, now there;
 Herself but rarely seen.

The Cuckoo begins early in the season, with the interval of a minor third; the bird then proceeds to a major third, next to a fourth, then a fifth, after which his voice breaks out without attaining a minor sixth. An old Norfolk proverb says,

In April the Cuckoo shew his bill,
 In May he sing night and day,
 In June he change his tune,
 In July away he fly,
 In August away he must.

The insects which appear in this season are numerous, and there appear to be certain fine days in which thousands of species make their first appearance together. The early sulphur Butterfly, which appears first in the last season, is now seen every fine day, and is soon followed by the tor-

toiseshell, the peacock, and lastly by the white cabbage Butterflies, which come towards the end of the period we are describing.

The principal objects that demand our attention at this season are the march of vegetation in general, the developement of the leaves on the trees, and the flowering of plants. There is perhaps no time when Flora reigns more luxuriantly; from the very commencement to the end of the period, some new flower is added every day, so that all we can do is to describe a few of the most prominent plants of the season. In the meadows the first plant that covers them with a golden yellow is the Dandelion, which blows plentifully all this time, but is in the greatest perfection from about the second to the fourth week of April, and is succeeded by the bulbous Crowfoot at the end of that month. Early in May the creeping Crowfoot in the uplands, and the Buttercups in the low meadows, cover the grass with the most brilliant golden yellow, while in other places on shady slopes, and on ground over which the trees may have been newly felled, the field Hyacinth covers the whole surface with its rich blue flowers. The meadow Lychnis succeeds, and all are at length mowed down in the undistinguishable mow of meadow hay in the next season. During the Vernal Period the banks are still covered with Primroses and Violets, and here and there with Pilewort; in the hedges the black Thorn first, and afterwards the white Thorn, blossom. In the orchard a succession of blossoms on the Plum, the Cherry, the Pear, and the Apple trees give a re-

markable richness to the face of nature, and convey an idea of plenty. It is then that the husbandman looks with a prospective pleasure on the blossoms of the orchard, and his anxiety increases till the *setting*, as it is called, of the fruit ; for

Quotque in flore novo pomis se fertilis arbor,
Induerat, totidem autumnno matura tenebit.

In our gardens we have at this time the richest variety of flowers, and some of the most brilliant colours. Some botanists have said that yellow was the prevailing colour of both spring and autumnal flowers, white of primaveral, and red of solstitial. This, however, is quite incorrect ; we have all colours in nearly proportional quantity in each season. In spring the bright ultramarine blue of the *Cynoglossum Omphalodes*, or of the *Veronica Chamædrys*, which latter covers every bank in May, may be used as conspicuous examples of blue ; the Harebell is also blue, and in some places is as common as the yellow Crowfoot. The early Van Thol Tulip *Tulipa suaveolens*, and the Clarimond *Tulipa præcox*, begin to blow out of doors early in April, amidst the remains of the primaveral Flora, and exhibit fine examples of red and of crimson. The Hyacinths of various colours, some of the Narcissi, and the Polyanthus of unnumbered dyes, all exhibit their flowers in the early part of this period, with Heartseases, and other flowers far from being yellow. Early in May the standard Tulips are in full blow, exhibiting every tint, stripe, and variety of colour. Towards the middle

of the month the rich crimson of the Piony may be compared with the bright light red of the monkey Poppy; they both come into blow at nearly the same time; but what is remarkable, there are individual plants of the monkey Poppy that always blow a month later than the generality, beginning early in June, and continuing far into the Solstitial Season. The young plants propagated from these do the same, and it may be called a permanent variety, characterised by the circumstance of its belonging to the solstitial instead of the vernal Flora. This variation, however, enables me to compare this species with the common garden Poppy, a well known ornament of the summer solstice, which exhibits a great variety of tints. The yellow Poppy flowers in the Vernal Season, and but continues after its general flowering is over to blow sparingly all the summer.

Towards the close of the Vernal Season the weather gets warmer, and is generally fine and dry, or else refreshed by showers; it is, however, seldom hotter than what may be called temperate, and the nights, when the wind is northerly, are still cold; Flora reigns triumphant, every hedge, and bush, and bank, and field are in bloom. The blossoms of the fruit trees gradually go off, the grass in the meadows gets high, and partially obscures the yellow Ranunculi which decorated them in spring, and by the first week in June the setting in of the Solstitial Season is manifest by the absence of dark night, and the blowing of a new set of plants.

Of the SOLSTITIAL SEASON perhaps it may be said that it is the most delightful of the whole year; for though the period we have just been considering is the most adorned with blossoms, yet the days are now attained to their full length, a beautiful twilight takes the place of night, and we seldom or never feel cold, except in particular unseasonable years. Besides this the air is generally calm and wholesome, and though sometimes great heat prevails, yet it is relieved by thundershowers, and the evenings are refreshing and delightful.

Full grown grass in the meadows, the flowering of the purple Clover, of the midsummer Daisy, of the Yellow Rattle *Rhinanthus Crista Galli*, and in the corn fields of red Poppy, mark the approach of the solstice. In our gardens the Scarlet Lightning *Lychnis Chalcedonica*, the Sweet Williams *Dianthus barbatus*, Pinks, and the whole of that beautiful tribe the Roses, besides numerous other plants, are peculiar to this season, and would be a certain mark of its presence to any botanist who might, after a long voyage, be shipwrecked without any almanack on our shores. Sheepshearing takes place early in this season. Dyer, in his Poem of the "Fleece," says:

"——— If verdant Elder spread
Her silver flowers, if humble Daisies yield
To yellow Crowfoot and luxuriant grass,
Gay shearing time approaches."

The flowering of the Elder is a phenomenon of the early part of this season; the Hawthorn still con-

tinues in bloom, but the fruit trees are out of flower and the fruit set.

Most of the Lilies flower in this season, the yellow Pompoon is the first, the orange Lily follows; last the Turk's caps and the white Lily. In the early part of the season the major part of the species of Iris flower.

Some fruits are ripe towards the end of this season. Scarlet Strawberries come into season about the 15th June, the larger sorts before midsummer day; Maydock Cherries ripen at the same time, and the first week of July generally colours the red, white, and black Currants. The average times of all these phenomena are accurately indicated in Part II. I must here observe that there is an apparent discrepancy between the times of certain natural occurrences as put down in Part II. and as noticed in the journal in Part IV. This arises from the one being taken from my own and the other from my father's observations, in different situations: some from cotemporary observers.

During the Solstitial Season the interesting business of haymaking takes place. Meadow grass is generally cut about London by the 15th of June; indeed the haymaking of this district usually occurs between St. Barnaby tide and St. Swithin; in London's immediate neighbourhood it is usually over a week or ten days sooner than in the country. Milton, in "l'Allegro," well depicts the scenery and manners of a haymaking in the country, and gives us a lively and natural picture of its rustic festivities.

This season often closes with very hot weather, which gives place to the aestival rains during the ensuing season; the last fourteen days are called the Dog days.

The AESTIVAL SEASON begins about St. Swithin's day, July 15th, and continues till Michaelmas. It is on the whole the hottest season of the year, but the heat gradually declines, and towards the close of the period the nights begin to get cold, and the daily temperature to be much diminished. It is in this season, and particularly in August, that the most beautiful and picturesque skies are seen, and that small meteors most abound; the landscapes too have a peculiar softness of colouring not seen at any other time. As the Solstitial Period is called the early summer, so this season is called the late summer. If it set in with showery weather the chances are that the greater part of the period will be showery, and hence the popular proverb which ascribes forty days' rain to St. Swithin. When the weather is fair in this season the mornings often become gradually more and more obscured by the stratus of the foregoing night.

One remarkable circumstance in this season is the silence of the grove, nearly every bird ceasing to sing, and continuing mute till near the close of the season, when they begin to sing a little again. Many birds now begin by degrees to congregate, and to form large flocks ranging the corn fields together. Starlings are flocked by the end of July, and Linnets by the middle of September; the

Swifts leave us about the festival of the Assumption, Aug. 15th, and nothing but an accidental straggler is to be seen left behind.

The fruits of the Aestival Period are delicious. Currants and Gooseberries get quite ripe about the beginning of July, and the various summer Pears, Apricots, Plums, Peaches, Nectarines, and Melons follow; it is indeed the season of fruits, and at no time does Pomona make a greater show than in this season, which before it closes exhibits the orchard in its perfection. In our climate the Vine is not yet productive of ripe Grapes, but in the south of Europe they are gathered early in September.

The aestival Flora cannot be mentioned as the most beautiful of the year, though if well managed a great display of colours may be produced in the garden; the Dahlias, China Asters, French and African Marigolds, Chrysanthemums, Sunflowers, and a great variety of other syngeneceous plants flower during this period, and many of them continue till late in autumn. In the fields the flowering of the yellow autumnal Dandelion *Apargia autumnalis*, gives to certain meadows the appearance of a second spring.

Mushrooms, and a few other Fungi, appear towards the close of this period, and are particularly abundant when, after a dry summer, which occasionally happens, the aestival rains set in late and copiously.

I have otherwise said that a skilful naturalist, if landed suddenly from a long cruise on any part of

France or England, would immediately recognise the particular season by the appearance of vegetation. If it happened to be in the aestival, he would instantly know it by the yellow corn, the appearance of harvest, and by every thing being in seed; just as in spring all vegetable life seemed in flower.

The Aestival Season closes with a considerable reduction of temperature and a diminished evaporation, producing mists and a moist atmosphere.

The AUTUMNAL SEASON sets in about Michaelmas with a cooler air, often cold nights, but for the most part fine weather; as it advances, and the temperature continues to decline, it frequently produces showers and wet weather, accompanied with high gales of wind which prevail most during the night, and are often succeeded by dead calms in the day time. Fogs begin to become denser and to last all day, overspreading the meadows to a great extent in low and flat situations, and not being overcome even by the sun's midday rays; Phœbus cannot say of himself as he did in Ovid's time:

“Qui modo pestifero tot jugera ventre prementem,
Stravimus innumeris tumidum Pythona sagittis.”

About Allhallowtide in the neighbourhood of London and of Amsterdam the faint beams of the sun are hardly seen for two hours in twenty four, and this for many days together. Occasionally fogs happen at every period of the autumn and winter, but this is the season of their prevalence.

The retreat of the Swallows and Martlets constitutes one of the most remarkable features in the history of this period. Swallows assemble early in September, and so continue to appear in vast quantities, roosting on the tops of houses and lofty buildings; their migration begins with the Autumnal Season, and the greatest part of the species migrate between new and old Michaelmas day; Martlets retire a few days later; straggling Swallows are seen about till the middle of October, and Martlets sometimes till the end of that month. Many birds now arrive in flocks; wild Geese and Ducks perform partial migrations, and Woodcocks and Snipes arrive. The flowering of the Saffrons, the autumnal Crocus, the purple and the white varieties of the Colchicum in our gardens, Michaelmas Daisies, and other late Asters, are indications of the approach of this season. Fungi now become very abundant in moist places.

The leaves during the Autumnal Season turn yellow, red, or brown, and at length falling, by degrees cover the ground with a thick carpeting. The Beech, the Oak, and a few deciduous trees keep their old dead leaves till spring.

A colder air, wet fogs, or alternations of wind and fine weather, close this period at the end of November.

The BRUMAL SEASON begins about St. Catherine's day, others date it from the Conception, December 8th. The leaves are for the most part fallen, the days are short and gloomy, and the

nights long and dark ; almost all nature seems at length to slumber, and till the Holly and Ivy berries of Christmas enliven our houses, every thing seems somber and uninviting. The end of this season comprehends the hybernal period of January, so called from being really the cold and dreary season, as bad weather, snow, rain, and all sorts of disagreeable weather now take place, and continue till Zephyr again wakes the sea with western gales and genial showers.

The Sweet Coltsfoot *Tussilago fragrans*, blows in our gardens, and scents the air for a long way all around with a smell that reminds us of that of some of the sweetest primaveral flowers. Some of the Veilthemias and Aletres blow in this season, and are cut off and destroyed by the frost ; but in general there is nothing interesting to be seen in the vegetable kingdom, but Lichens Mosses, and the bright berries of some of our shrubs and evergreens. The severest frosts occur towards the end of this season, and they are often succeeded by great rains and floods before Candlemas, when the period commences which we first described.

The average times of the phenomena of each season have been put down in that division of our work to which these introductory remarks belong ; yet there are great varieties of seasons in different years, which the skilful meteorologist is mindful to put down in his journal.

INTRODUCTION TO PART III.

SIGNS OF THE SEASONS.

ASTRONOMY is among the most antient of the sciences; it can be traced back as far as authentic history reaches, and its origin seems lost in the night of time. The periods of the heavenly bodies were made use of to measure the parts of the year. Their regular returns were compared with the periodical returns of terrestrial phenomena, and made use of to designate the year, the seasons, the months, the days, and the hours. Almanacks, Calendars, and Ephemerides of all kinds are founded on this science, and without it we should be destitute of the means of safe navigation, we should be incapable of acquiring a correct geography of our own planet, and should have but a very imperfect knowledge of the seasons of the year, and the appropriate occupations of the husbandman in each. Astronomy too extends our knowledge of mundane existence; by it we find that the whole of our magnificent solar system is but an immeasurably small part of the whole that we can see of the universe; and we are led to the discovery of worlds,

and of the formation of worlds placed at a distance beyond all human computation, which obliges us to admire the great harmony of nature that prevails in the stupendous mechanism of the heavens. But it is chiefly to the practical utility of the science to the mariner, the farmer, and the husbandman that Part III. relates. The great antiquity of the constellations, and the fullness of all antient works on natural history, with astronomical allusions, and of all poems with astronomical fables, shew the important place that this science held in the estimation of our forefathers from time immemorial. Agricultural observations in antient times were regulated by the rising and setting of the signs of the Zodiac, and other constellations, and these, accurately compared with the flowering of plants, the arrival of birds, and other natural phenomena, became the basis of the earliest rustic calendars, as we shall speak of more closely by and by, in the introduction to Part IV.

Virgil begins his poem of the Georgicks with the celestial Signs of the Seasons, whence, he says, he dates the subjects of his song :

“ Quid faciat laetas segetes ; quo sidere terram
 Vertere, Maecenas, ulmisque adjungere vites,
 Conveniat ; quae cura boum, qui cultus habendo
 Sit pecori ; apibus quanta experientia parcis ;
 Hinc canere incipiam. Vos, ô clarissima mundi
 Lumina, labentem coelo quæ ducitis annum.”

The familiar acquaintance with the times of rising and setting of the stars, must have been a source of

great amusement as well as profit to shepherds, mariners, and husbandmen of old, who, being constantly abroad in a fine climate and beneath a sky almost perpetually serene, must have had an abundant opportunity of observing the heavenly phenomena. Cicero lays the foundation of the science of the signs to the Assyrians and Babylonians; others ascribe it to the Indians and the Egyptians. Be this as it may, it was highly cultivated in Greece and Rome at an early period; it was the prop of the Phoenician navigation, and consequently the support of early commerce and of the discovery of new countries. Steering by the stars is as old as any recorded instance of navigation. Planting, sowing, and ingathering by the stars, is as antient as any record we possess of agriculture, and pastoral life has left no traces behind it unconnected with accounts of the celestial warnings of the heavenly spheres. The antient mariner had his 'Tyrian Cynosure,' the steadfast index of the northern pole; he watched for the rainy Hyades, the stormy Orion, the *signum pluviale Capellae*, and he knew by the rising of the Pleiades the time when the seas were open for sailing, and guarded against tempests by the setting of Arcturus and the rising of the Hoedi. He knew the hour of the day by the Sun, and kept the night watches by the Bear. The husbandman, likewise, marked the seasons by the Stars; he waited for the annual overflowing of the Nile, till admonished of its approach by Sirius; he knew the *atrox hora Caniculae*; he marked the return of

spring in the setting of Pisces, and he compared it with the coming of the Swallow; in short, all rustic operations had their admonitory signs, and the knowledge of agriculture began with the science of the Zodiac. While the shepherd, in his turn, no less dependant than the rest on the heavenly movements, had his star of Arcady, and his Pascal Aries: he drove a field with the morning ray of Phosphorus, and at eventide watched for the *Star that bid the Shepherd fold*.

In Part III. I have collected all these antient Signs of the Seasons, have compared them with modern discoveries, and have put up the whole in the form of a dictionary for popular use and amusement.

In speaking of the Constellations I have not omitted to notice the origin of many, which constitutes a very curious object of antiquarian research. For we find the greater part of them to have been designated by their present names at the remotest period to which our authentic history reaches. Some of the most curious specimens of antiquity are the antient Zodiacs found carved or engraven on stones in the eastern parts of the world. Many of these inscriptions are probably four thousand years old. The best collection of antient Zodiacs and Constellations is to be found in Dupuis's *Essai sur l'origine de tous les Cultes*, and in Sir William Drummond's *Oedipus Judaicus*.

Some of the constellations are mentioned in the antient Jewish records. In Job we find allusion

to “ Arcturus, and Orion, and the Pleiades, and the chambers of the south ;” and in another place we read, “ Who shall bind the sweet influence of the Pleiades, or loose the bands of Orion.” Hesiod and Homer mention the Pleiades and many other constellations. Aratus wrote a poem on them in Greek, in which he mentions nearly all according to their order of rising. Manlius imitated him in a Latin poem; and Ovid’s *Tristia* is a sort of poetical calendar indicating the times of rising of all the then known constellations. Of all these works I have made use under the heads of the different constellations.

While the astronomy of our system of planets is of the greatest use as applied to the measurement of time, to navigation, and to geography, while the history of astronomy furnishes a clue to the explanation of antient fable and the origin of numerous religions; the higher branches of that science, or such as relate to the structure of the heavens and the classification and varieties of the fixed stars, is calculated to excite in the human mind the greatest astonishment and the sublimest conceptions of the mighty ALL, of which we form but a minute part. And the wonderful history of nebulae, clusters, and groupes of stars furnishes to the speculative astronomer the most ample subjects for the calculation of probabilities, as to the existence of infinitely numerous inhabited worlds and other curious subjects, of which some hints may be taken from our articles under these respective names.

INTRODUCTION TO PART IV.

THE RUSTIC CALENDAR.

THE fourth division of the ensuing volume comprises a Calendar of Nature, or an arrangement of certain conspicuous natural phenomena according to the times of their annual occurrence. By looking over this Calendar daily the naturalist may see what particular appearance may be expected, such as the flowering of plants, the return of birds of passage, and other phenomena of the year. It will immediately strike the reader that I have introduced at the head of each day the name of the particular Saint and Festival which the church has assigned to it in the Christian Calendar; and it may be questioned by some why in a natural ephemeris I have introduced the names of so many legendary Saints and obsolete observances; to which I reply, that independent of the fact that these holy names and observances begin again to be respected, and to be affixed to the majority of European Almanacks, there is, moreover, a curious piece of botanical history connected with them. The origin of the provincial and other popular names for plants, birds, and animals in

the different countries of Europe, has long been a subject of curious investigation. It was not till lately that I discovered a clue to many of these in the examination of the Calendar. I found that many of the names of animals and birds, and indeed most of the less obvious names of plants, were given to them by the monks and religious orders of the middle ages at a time when every thing wore a devotional aspect, when Catholicism prevailed and flourished, and when all the natural objects of human contemplation were converted into memorials of subjects in religious history. As the monks and friars were our earliest, and perhaps our best physicians, so they were also the first to revive the knowledge of botany in Europe, and to adapt the discoveries of Aristotle, of Theophrastus, of Dioscorides, and of Pliny to the prevailing sentiments of more modern times and to the climate of their respective countries. Regarding medicinal relief as a part of those benevolent exertions for the general good of mankind that they were bound to practise, the friars studied the healing art, and made themselves acquainted with the characters and medicinal virtues of plants; while botany afforded to vestal virgins and celibate recluses in the retirement of their monastery gardens, a delightful recreation, and a succedaneum for the numerous pleasures of the world in which the rules of their severe orders forbade them to participate. Hence are derived the numerous religious names given to particular flowers. For a long time I could

not guess at the origin of the particular choice of names till I found that conspicuous plants were often called after the name of the Saint who was celebrated in the Calendar about the time of their flowering; what St. John the Baptist could have to do with the Hypericum, or our Blessed Lady with the Cypripedium or the Cuckoo flower, I could not at first divine or imagine, till I recollected that the former flowered about midsummer, and the latter about the festival of the Annunciation. A few examples will suffice to illustrate this question; and I shall begin with the festival of the Nativity, which is the first and principal feast in Christianity; consequently I must begin with the Brumal Flora.—The Sweet Colts-foot *Tussilago fragrans*, flowers with us in the very beginning of Advent; it is in bloom often on St. Catherine's day, Nov. 25th, and has been dedicated to her. In its native countries it is always in flower by that time, and is called *Pastore di Madonna* or Shepherd of Madonna, in commemoration of the shepherds who awaited the delivery of our Lady, as Milton represents them in a rustic row, or of the Magi, the wise men of the East. The plant flowers through Advent, shedding at this dark season the sweet perfumes of spring on the garden of dead haulme and decaying stalks, and it is usually cut off by the new year's frosts towards the close of the period. Next comes the Christmas Rose, a name of the black Hellebore *Helleborus niger*, that shews his large white flowers as early as old Christmas

day, or even in some mild winters by that day in the new style. It also received the name of Flower of St. Agnes, being in full blow on the 21st of January.

The Snowdrop *Galanthus nivalis*, the harbinger of the early spring and constant ornament of Candlemas, received from thence the name of Our Lady of February, soon converted into Fair Maids of February. The Ladysmock or Chemise de Notre Dame *Cardamine pratensis*, regularly flowers on old Ladymas day April 6th, and continues through May. The early Daffodil *Narcissus pseudonarcissus*, from blowing all Lent, is called Lent Lily. The Crocus or Hymen's Torch *Crocus maesiacus*, is dedicated from its period to St. Valentine. Herb Robert *Geranium Robertianum*, first shews its little pink blooms about the day of St. Robert, April 29th, the founder of the Carthusians. Crossflower *Galium Cruciatum*, flowers about Holy Cross day, May 3d; and the Passion Flower *Passiflora coerulea*, is in full flower on Holy Rood day, Sept. 14th. The Candela-brum St. Johannis or Scarlet Lightning *Lychnis Chalcedonica* blows about St. John the Baptist, June 24th. Virgin's Bower or Traveller's Joy *Clematis Vitalba*, begins to flower about the Visitation, July 2d, and is in full flower on the Assumption, Aug. 25th. The Sunflower or St. Bartholomew's Star, flowers about August 24th. The Herb Margaret *Bellis perennis plena*, about St. Margaret of Cortona, Feb. 22d. The Dragon's Blood *Dra-cocephalum Virginianum*, about St. Margaret's day,

July 20th. Numerous other examples to the same effect might be adduced.

I shall conclude these observations with a quotation from a work now scarce, the *Catholic Friend*, being quite to the point:

“Among the vestiges of Greek and Roman science preserved through the early ages of the church in the monasteries, may be enumerated that of botany. The monks cultivated and improved on this science, discovered what plants were intended by the Greek names, found the same plants with numerous others in our climate, and applied and taught in England all the popular medical doctrines and receipts of the Greek physicians, which were founded on a knowledge of physiological botany. Thus the gardens of monasteries in France, England, and indeed all over Europe, became physic gardens for the use of the public at large, but particularly for the poor. Besides this general use of the science, certain intelligent monks became amateur botanists, and many abbey gardens became celebrated for the cultivation of beautiful plants, and hence we have derived most of the double or full varieties of our British flowers, which were the only ornaments of our parterres before the wars of the crusades afforded an opportunity to Europeans of bringing foreign plants from the Holy Land, and of introducing the taste for more ornamental gardening from the East. It has been falsely asserted that we derive our botany from Clusius, and other gardeners of the fifteenth and sixteenth centuries; but though many rare plants were introduced about that time, yet the bulk of our popular botany and medicine can be traced many hundred years further back. And that it originated

with, or was modified by the religious orders, is proved by the very names of the most conspicuous plants, as I have before hinted at.

“ The pilgrimages and the travelling of the mendicant friars, which began to be common towards the close of the twelfth century, spread this knowledge of plants and of medical nostrums far and wide, and we have the traces of this extended knowledge in the popular, and I might almost say, legendary medicine of our country practitioners. Though many of the vegetable specifics I allude to, have been of late years erased from our pharmacopoeias, yet their utility has been asserted by some very able writers on physic, and the author of these observations has himself often witnessed their efficacy in cases where regular practice had been unavailing. Mr. Abernethy has alluded to the surprising efficacy of these popular vegetable diet drinks, in his book on the Digestive Organs. And it is a fact curiously corroborating their utility, that similar medicines are used by the North American Indians, whose sagacity has found out, and known from time immemorial, the use of such various herbs as medicines, which the kind hospitable woods provide; and by means of which country empyrics are daily making many excellent cures of diseases. But it is time to proceed to a closer examination of early botany, by a brief survey of several species of plants, and their names, by which their cultivation by the religious orders will become apparent. I shall begin with certain plants noted as flowering about the time of certain religious festivals, and shall proceed in the order of the Calendar.

“ The Snowdrop *Galanthus nivalis*, whose pure white

and pendant flowers are the first harbingers of Spring, is noted down in some Calendars as being an emblem of the Purification of the spotless Virgin, as it blows about Candlemas, and was not known by the name of Snowdrop till lately, being formerly called Fair Maid of February, in honour of Our Lady. Sir James Edward Smith, and other modern botanists, make this plant a native of England, but I can trace most of the wild specimens to some neighbouring garden, or old dilapidated monastery; and I am persuaded it was introduced into England by the monks subsequent to the conquest, and probably since the time of Chaucer, who does not notice it, though he mentions the Daisy and various less striking flowers.

“The Ladysmock, *Cardamine pratensis*, is a word corrupted of Our Lady’s Smock, a name by which this plant (as well as that of *Chemise de Notre Dame*) is still known in parts of Europe: it first flowers about Ladytide, or the festival of the Annunciation, and hence its name.

“Crossflower *Gallium Cruciatum*, which begins to flower about the Invention of the Cross, May 3d, was also called Rogation Flower, and was carried by maidens in the processions in Rogation week, in early times. The monks discovered the quality of producing milk in nursing women in another plant, which was called Milkwort. Indeed so extensive was the knowledge of botany, and of the medical power of herbs among the monks of old, that a few examples only can be adduced in a general essay; and indeed it appears that many rare species of exotics were known by them, and were inhabitants of their monastery gardens, which Beckman in his *Geschichte der Erfindungen*, and Dryander

in the *Hortus Kewensis*, have ascribed to more modern introducers.

“ What is very remarkable is, that above three hundred species of medical plants were known to the monks and friars, and used by the religious orders in general for medicines, which are now to be found in some of our numerous books of pharmacy and medical botany, by new and less appropriate names, just as if the Protestants of subsequent times had changed the old names with a view to obliterate any traces of Catholic science. Linnæus, however, occasionally restored the antient names.

“ The following are some familiar examples which occur to me, all of medicinal plants whose names have been changed in later times. The Virgin's Bower, of the monastic physicians, was changed into *Flammula Jovis*, by the new pharmacians; the Hedge Hyssop into *Gratiola*, the St. John's Wort (so called from flowing about St. John's day) was changed into *Hypericum*, Fleur de St. Louis into *Iris*, Palma Christi into *Ricinus*, Our Master Wort into *Imperatoria*, Sweet Bay into *Laurus*, Our Lady's Smock into *Cardamine*, Solomon's Seal into *Convallaria*, Our Lady's Hair into *Trichomanes*, Balm into *Melissa*, Marjorum into *Origanum*, Crowfoot *Ranunculus*, Herb Trinity into *Viola tricolor*, Avens into *Caryophyllata*, Coltsfoot into *Tussilago*, Knee Holy into *Rascus*, Wormwood into *Absinthium*, Rose Mary into *Rosmarinus*, Marygold into *Calendula*, Herb St. William into *Sweet Williams*, and so on. Thus the ancient names were not only changed, but in this change all the references to religious subjects, which would have led people to a knowledge of their culture among the monastic orders, were carefully left out. Mark well this circum-

stance ; for trifling as it may appear, it will gain importance with reference to my argument, when I shall shew by and by, that similar attempts have also been made in other sciences to obliterate the traces of Catholic science, utility, and humanity.

“ The Thorn Apple *Datura Stramonium*, is not a native of England ; it was introduced by the friars in early times of pilgrimage ; and hence we see it on old waste lands near abbeys, and on dunghills, &c. Modern botanists, however, have ascribed its introduction to Gipsies, although it has never been seen among that wandering people, nor used by them as a drug. I could adduce many other instances of the same sort. But vain indeed would be the endeavour to overshadow the fame of the religious orders in medical botany and knowledge of plants ; go into any garden and the common name of Marygold, Our Lady’s Seal, Our Lady’s Bedstraw, Holy Oak (corrupted into Holyhock) the Virgin’s Thistle, St. Barnaby’s Thistle, Herb Trinity, Herb St. Christopher, Herb St. Robert, Herb St. Timothy, Jacob’s Ladder, Star of Bethelam, now called *Ornithogalum*, Star of Jerusalem, now made *Goats-beard*, Passion Flower, now *Passiflora*, Lent Lily, now *Daffodil*, Canterbury Bells (so called in honour of St. Augustine), now made into *Campanula*, Cursed Thistle, now *Carduus* ; besides Archangel, Apple of Jerusalem, St. Paul’s Botany, Herb St. Basil, Herb St. Barbara, Bishopsweed, Herba Christi, Herba Benedicta, Herb St. Margaret (erroneously converted into *La Belle Marguerite*), God’s Flower, *Flos Jovis*, Job’s Tears, Our Lady’s Laces, Our Lady’s Mantle, Our Lady’s Slipper, Monk’s Hood, Friar’s Cowl, St. Peter’s Herb, and a hundred more such. Go into any garden,

I say, and these names will remind every one at once of the knowledge of plants possessed by the monks, most of them have been named after the festivals of the Saints' days on which their natural time of blowing happened to occur; and others were so called from the tendency of the minds of the religious orders of those days to convert every thing into a memento of sacred history and the holy Catholic religion which they embraced.

INTRODUCTION TO PART V.

FLORA SPECTABILIS.

THE Fifth Part is a compendious catalogue of the times of flowering of plants which compose our *Flora Spectabilis* or Conspicuous Flowers. My father, who was indefatigable in researches into the physiology of botany, and indeed into every branch of natural history, made the principal observations on which this part is founded, the words in *italics* in the three last columns indicating those notices which were confirmed by myself from my own journals. I have added a catalogue of all the Birds of Europe, with their synonyms, a reference being frequently made to many of them in the course of the work. Some curious Tables and other Addenda have been added in the Supplement, which were either accidentally omitted in the body of the work or have come to my knowledge since its commencement.

I have to apologize for several errors and omissions owing to the numerous other avocations which have prevented a more close attention to the progress of the press. At the same time, when I consider this necessary remissness on my part, and

the almost illegible handwriting of the MS., I feel disposed to render due justice to the printer and compositor, who deserve praise for issuing from the press the work in its present state of correctness.

PART THE FIRST :

CONTAINING THE

PROGNOSTICS OF THE WEATHER,

DEDUCED FROM ACTUAL OBSERVATION,

AND COLLATED WITH THE MOST APPROVED AND
MOST ANTIENT AUTHORITIES.

THE FIRST PART

PART THE FIRST

THE HISTORY OF THE WEATHER

AND THE EFFECTS OF THE SEASONS
AND THE EFFECTS OF THE SEASONS
AND THE EFFECTS OF THE SEASONS

PROGNOSTICS
OF
THE WEATHER, &c.

ACHES AND PAINS in the body of various kinds frequently forbode rain. Persons for example subject to rheumatism feel more pain in the affected limb or part of the body before a change of weather, particularly when fair is to be exchanged for wet. Old carious teeth are also troublesome, and pains in the face, ears, and gums are sometimes experienced. Limbs once broken also ache at the place of their union, and various other aches and pains too various and trifling to be specified have been from time immemorial found to be signs of changes of the weather.

Animals, by some peculiar sensibility to electrical or other atmospheric influence, often indicate changes of the weather by their peculiar motions and habits, all which will be found under their respective heads. See *Ass, Dogs, Swallows, &c.*

Virgil well observes on this interesting subject,

Haud equidem credo, quia sit divinitus illis
Ingenium, aut rerum fato prudentia major;
Verum, ubi tempestas et coeli mobilis humor
Mutavêre vias, et Jupiter humidus Austris
Densat, erant quæ rara modo, et quæ densa relaxat:
Vertuntur species animorum, et pectora motus
Nunc alios, alios, dum nubila ventus agebat,
Concipiunt; hinc ille avium concentus in agris,
Et lætæ pecudes et ovantes gutture corvi.

VIRG. *Georg.* lib. i.

Ants.—An universal bustle and activity observed in anthills may be generally regarded as a sign of rain. The ants frequently appear all in motion together, and carry their eggs about from place to place.

This is observed by Aratus, Virgil, Pliny, and others.

There are several species of ants, but we believe this prognostic to be common to nearly all of them; nor do we know precisely to what species Virgil alluded when he said, alluding to signs of rain,

Saepius et tectis penetralibus extulit ova
Angustum formica terens iter.—*Georg.* I. 379.

Aselli or *Asini*, two small stars in the constellation of the Crab, between which is a beautiful cluster of minute stars, which to the naked eyes appear like a nebula, and is called *Praesepe*, the manger. The poets of old pretended, that when these two stars and the said nebula became dull it foretold rain.

It seems owing to some stars being duller in light than others that they became the soonest obscured by the condensing of the sky into cloud before rain; as, for instance, the two small stars of the *Aselli* in the constellation of the Crab, of whose peculiar prognostic so much is said by Aratus. The *Pleiades* are remarkably brilliant for their size. One should expect that the light of the different Stars would produce differences in the coloured halos seen sometimes to surround them.

The original composition of the light of the different stars is very different, and consequently no general tables of refraction can be constructed to apply to all stars. *Aldebaran*, *Arcturus*, *Betulgeus*, and *Alpliard*, for instance, are red stars; *Capella*, yellow; and *Sirius*, *Procyon*, and *Atair*, white; while *Lyra* and *Spica Virginis* are blueish. The planets differ much *inter se*.

Asses.—When asses bray more than ordinary, particularly if they shake their ears as if uneasy, it is said to predict rain, and particularly showers. I have noticed, that in showery weather a donkey confined in a yard near the house, has brayed before every shower, and generally some minutes before the rain has fallen, as if some electrical influence, produced by the concentrating power of the approaching raincloud, caused a tickling in the windpipe of the animal, just before the shower came up. Whatever this electric state of the air preceding a shower may be, it seems to be the same that causes in other animals some peculiar sensations, which makes the peacock squall, the pintado call “comeback,” and which creates a variety of prognosticative motions in the different species of the animal kingdom. At the same time old wounds, decayed teeth, and bones that have been broken begin to ache. See these articles.

An expressive adage says,

When that the ass begins to bray,
Be sure we shall have rain that day.

We have repeatedly been able to give our hay-makers useful admonitions founded solely on the braying of the ass. Thus the proverb says truly,

'Tis time to cock your hay and corn
When the old donkey blows his horn.

Bats flitting about late in the evening in spring and autumn, at which seasons they are most commonly seen, foretell a fine day on the morrow, as do dorbeetles, and some other insects.

On the contrary, when bats return soon to their hiding places, and send forth loud cries, bad weather may be expected. In April 1809, at Wokey Hole, near Wells, we saw many hundreds of torpid bats clinging to the roofs of that great cave.

Barometer.—There is no instrument now more generally used for ascertaining the coming weather than the barometer. It may however be remarked, that it is more from its rising or falling, than from its height or lowness that we are to infer fair or foul weather. Generally speaking, the rising of the mercury presages clear fair weather, and its falling, foul weather; as rain, snow, high winds, and storms.

In very hot weather, the falling of the mercury indicates thunder.

In winter the rising indicates frost, and in frosty weather, if the mercury fall three or four divisions, there will follow a thaw; but in a continued frost, if the mercury rise, it will snow.

When foul weather happens soon after the falling of the mercury, expect but little of it; and, on the contrary, expect but little fair weather when it proves fair shortly after the mercury has risen.

In foul weather, when the mercury rises much and high, and so continues for two or three days before the foul weather is quite over, then expect a continuance of fair weather to follow.

In fair weather, when the mercury falls much and low, and thus continues for two or three days before the rain comes, then expect a great deal of wet, and probably high winds.

The unsettled motion of the mercury denotes uncertain and changeable weather.

The words engraved on the register plate of the barometer, it may be observed, cannot be strictly relied upon to correspond exactly with the state of the weather; though it will in general agree with them as to the mercury rising and falling.

When the thermometer and barometer rise together in summer, with rain in large drops, a wholesome state of the atmosphere is at hand.

A great and sudden rising of the barometer, that is to say, a great accession of atmospherical pressure, will, in some persons, occasion a slight temporary difficulty of hearing and tingling in the ears, similar to that which is experienced in descending from high mountains, or from the air in balloons.

Balloons have been made use of to ascertain the direction of upper currents of air; and as their currents by degrees get lower and support the current blowing near the earth's surface, we may often by means of small air balloons foretell what will be the direction of the breeze at the next change of wind. See *Current, Kite, &c.*

Berries in the hedges often forbode a hard winter, and severe weather frequently occurs in seasons when they are particularly plentiful on the Maybush and Blackthorn. This rule is not however without its exceptions. But, at all events, peculiarities of the seasons have a wonderful influence on the quantity of berries, particularly those of Holy. In winter 1823-4 they were very numerous, though the season was mild. In 1824-5 scarcely one was to be seen; the season was also mild. The peculiarities of the seasons, and their influence on plants, constitute a very curious subject of research; it comprehends the whole doctrine of special blights, whereby only certain tribes of plants are affected. For example, the summer of 1810 killed the plane-trees almost every where in this island. The spring of 1824 destroyed the mezereon shrubs. Epidemics and epizooties come under the same class, and are referable to specific conditions of the atmosphere.

Beetles flying about late in an evening often foretell a fine day on the morrow.

Blue Sky.—When there is a piece of blue sky seen in a rainy day big enough, as the proverb says,

“to make a Dutchman a pair of breeches,” we shall probably have a fine afternoon.

Bones which have once been broken, and are reunited, are apt to ache before rain at the place of their re-union. See *Aches and Pains*.

Butterflies, when they appear early, are sometimes forerunners of fine weather. The first sort which appears in spring is the sulphur butterfly *Papilio sulphurea proecox*, whose wings are of a pale greenish yellow. These come in March if the weather be fine and warm. The next sort are the tortoiseshell butterflies, early in April. And in May come the common white or cabbage butterflies. Moths and Sphinxes are also signs of fine weather, when they are common in an evening.

Calm.—A dead calm often precedes a violent gale; and sometimes the calmest and clearest mornings, in certain seasons, are followed by a blowing showery day. Calms are forerunners of the hurricanes of the West Indies and other tropical climes.

Candles, as well as lamps, often afford good prognostics of weather. When the flames of candles flare and snap, or burn with an unsteady or dim light, rain, and frequently wind also, are found to follow. The excrescences from the wicks called fungus also denote rain and wind. The curious forms assumed by the excrescent wicks of candles has led to many superstitions. We quote the following from a calendarian account of Childermas.

“In the year 1819, on the Eve of the Holy Innocents, the wick of a candle, left for a long time unsnuffed, had by degrees assumed a complete cruciform shape, which being viewed by the common people a standing up amidst the gloomy

flame of the candle, was fearfully set down by the people as a memento of the sufferings of Jesus Christ on the cross, who, as they fancied, mysteriously declared thus again, by appearing in a flame, *I am the light that lighteth every man that cometh into the world.* The fearful appearance of this phenomenon was rendered more impressive to the minds of the credulous, in consequence of its happening on the vigil of Childermas, which has been ever regarded a day of unlucky omens."—*Perpetual Calendar.* See *Lamps.*

Candlemas Day.—If this day be clear and frosty it is said that winter will be still of some continuance, and that the weather will be colder after the festival than before, according with the old proverb,

*Si sol splendescat Maria purificante,
Major erit glacies post festum quam fuit ante.*

We have noticed this to be a critical time of the year with respect to the weather, and that when mild and wet, winter is actually gone, and we may calculate on no more frost.

Another metrical proverb, frequently quoted in Poor Robin's, Moore's, and other Almanacks, reminds us,

If Candlemas day be fair and bright,
Winter will have another flight;
But if Candlemas day be clouds and rain,
Winter is gone and will not come again.

Cats are said, when they wash their faces, or when they seem sleepy and dull, to foretell rain. The same is said of them when they appear irritable and restless, and play with their tails.

Cattle, when they gambol about in their pastures more than ordinary, foreshew rain, and in general a change of weather.

Chickens, when they pick up small stones and pebbles, and are more noisy than usual, afford, according to Aratus, a sign of rain. Other authors prognosticate the coming of rain from the habit fowls have of rubbing in the dust, and clapping their wings; but this applies to several sorts of fowls, as well as to the gullinaceous kind.

Cherryclacks offer admonitions of the existence and nature of the gales and breezes by night. In the cherry season of July, the noise of these scare-birds is often troublesome, as the following lines from the *Anthologia Bor. et Aus.* so naturally remind us:

The lamplight student wan and pale,
 In his chamber sits at ease,
 And tries to read without avail;
 For every moment the light breeze
 Springs up and nestles in the trees.

And then he startles at the sound
 Of the noisy Cherryclack,
 That drives its flippant windsails round
 With Lybs still puffing at his back,
 Provoking endless click-a-tee-clack.

The scholar tries, and tries again
 To read, but can't; then damns the cherries,
 And swears that every effort's vain
 To answer all his master's queries;
 For Greek and Latin quite a jeer is,

Where every chorus, every verse
 Is interrupted; for alack!

When he begins one to rehearse,
 The thread is broke, himself thrown back,
 By this perpetual click-a-tee-clack.

There is no doubt that a whistler, to scream by the wind, might be so constructed as to point out the fluctuating strength of the blowing gale.

Chilliness, and a sensation of cold greater than the indication of temperature by the thermometer leads us to expect, often forebodes rain, as it shews that there is already an increased moisture in the air, which experience has shewn to be referable to its decomposition and the first formation of cloud.

Cirrostratus or Wanecloud whenever it prevails usually forebodes rain, snow, or hail; but there are, nevertheless, some nice distinctions to be made, and which a discriminating meteorologist may soon learn to make. For example; when a plain sheet of the wanecloud is spread over a large surface at eventide, or when the sky gradually thickens with this cloud, a fall of steady rain is usually the consequence.

Before storms we see sometimes a curious sort of wanecloud, consisting of bars curiously carved like the cyma of architectural ornaments. But the forms of this cloud are very various, and the peculiar indications of each of them have not yet been duly noticed. This cloud has been defined *a shallow extended cloud, subconcave or undulated, or a congeries of small clouds of this sort.**

The figure of the cirrostratus, like that of the cirrus, is very various: sometimes it consists in dense longitudinal streaks; at others it looks like shoals of fish; sometimes the whole sky is so mottled with it as to give the idea of the back of the mackerel; this has been called the mackerel-back sky: frequently it appears like the grains of polished wood, or is composed of fine fibres, disposed after the manner of the fibres of muscles, which often intersect each

* They are minutely described in "Researches about Atmospheric Phenomena, by T. Forster," 823.

other. I have seen the cirrostratus assume the reticular form, like the cirrus, from which it can then only be distinguished by its greater degree of density. This cloud is sometimes spread out into a plane horizontal sheet, more or less dense; this is the form in which the halo generally appears. All clouds are capable of becoming lighter or darker, according to their relative position with respect to the sun: the cirrostratus, however, is remarkable for exhibiting a great variety of beautiful colours, according to its variation in density, to other peculiarities in its structure, or to its relative position. These appearances are best seen in the morning and evening, when the sun is near to the horizon. They have been well described by the ancient poets, who have likewise described them as precursors of rain and tempestuous weather.

Virgil, speaking of the prognostics of rain, alludes to several appearances which must be ascribed to the intervention of this cloud:

Sol quoque et exoriens et quum se condit in undas
 Signa dabit ; solem certissima signa sequuntur ;
 Et quae mane refert, et quae surgentibus astris.
 Ille ubi nascentem maculis variaverit ortum
 Conditus in nubem, medioque refugerit orbe,
 Suspecti tibi sint imbres, namque urguet ab alto
 Arboribusque satisque Notus, pecorique sinister.
 Aut ubi sub lucem densa inter nubila sese
 Diversi rumpent radii, aut ubi pallida surget
 Tithoni croceum linquens Aurora cubile ;
 Heu male tum mitis defendet pampinus uvas,
 Tam multa in tectis crepitans salit horrida grando.
 Hoc etiam emenso quum jam decedet Olympo
 Profuerit meminisse magis ; nam saepe videmus
 Ipsius in vultu varios errare colores.
 Coeruleus pluviam denunciat, igneus Euros ;
 Sin maculae incipient rutilo immiscerier igni,

Omnia tunc pariter vento nimbisque videbis
 Fervere. Non illâ quisquam me nocte per altum
 Ire, neque à terrâ moneat convellere funem.
 At si quum referetque diem, condetque relatum,
 Lucidus orbis erit ; frustra terreberè nimbis,
 Et claro sylvas cernes Aquilone moveri.

VIRG. *Geor.* lib. i. 460.

Cirrocumulus or Sondercloud is a congeries of small roundish little clouds in close horizontal apposition. The cirrocumulus is not always uniform in its appearance; it varies in the size and rotundity of its constituent nubicolæ, and in their closer or more distant arrangement. It is frequent in summer, and often forms very beautiful skies: at all times of the year it may be seen, in the intervals of showers, and before an increase of temperature, of which its prevalence is a pretty certain prognostic. Before thunderstorms a very dense sphere of this cloud may be noticed, whose nubicolæ are close, compact, and very round, and indicate a high electrical change.

The poet Bloomfield beautifully describes the appearance of these clouds floating in large beds at different altitudes by moonlight :

Far yet above these wafted clouds are seen,
 In a remoter sky, still more serene,
 Others detached in ranges through the air,
 Spotless as snow, and countless as they 're fair ;
 Scatter'd immensely wide, from east to west,
 The beauteous semblance of a flock at rest.

The Farmer's Boy.—Winter.

Cirrus or Curlcloud.—When, after much fine weather, this cloud first appears like a white line pencilled along on the azure sky, we may generally reckon on a change; and if the cloud increases, and others are added to it laterally, or if

it change to the wanecloud, rain will probably follow before long.

The tufts of cirrus, called mares' tails, are known to be a sign of wind, which has frequently been found to blow from the quarter to which these curl-clouds have previously pointed.

In wet weather, when the air is damp, the cirrus, which is seen in the intervals of the rain, is ill defined, and often of a plumose figure; and has less of the fibrous structure: this may be attributed to its being surrounded with moister air, which being a conductor, though an imperfect one, there is not the same necessity for the cirrus to be drawn out into fine transmitting points; as the fluid would fly off more generally from all parts of it. Cirri of this kind are generally of short duration; there is often a haziness in the atmosphere when they appear, and they are soon followed by rain. They seldom appear in fair weather; and if cirri, which have been previously fibrous, put on the plumose and indefinite character, a change to wet weather may be expected.

Clouds of any sort, when they increase much, portend rain, particularly at eventide; when they are very red they often foreshew wind; when they form a dappled grey sky, with north wind, fair weather; when they rapidly form and evaporate, variable weather. Clouds fretted and spotted covering the sky after fine weather, or wavy like the undulation of the sea, forbode rain.—See *Stratus, Cirrus, &c.*

Colours of various kinds in the sky and clouds, tokens severally of different phenomena. Much red always forebodes wind and rain, particularly in

the morning; in the evening it sometimes indicates a fine day, particularly if the morning be grey. A proverb says,

An evening red and a morning grey
Will set the traveller on his way ;
But an evening grey and a morning red
Will pour down rain on the pilgrim's head.

It comes from the Italian,

Sera rosa e nigro mattino
Allegra il pellerino.

A greenish colour of the sky near to the horizon, often shews that we may expect more wet weather. The most beautiful and varied tints are seen in autumn, and in that season the purple of the falling haze is often a sign of a continuation of fine weather.

When the clouds become more coloured than ordinary, and particularly when red prevails, it sometimes indicates an east wind.

Cold and Heat.—The coldest weather, on an average, happens in the middle of January, and the hottest in the middle of July. In July 13th and 14th, 1808, the thermometer stood at 94° and 96° of Fahrenheit, in the shade.

“ Excessive cold weather occurred on the 14th of January, 1820. The quicksilver in my thermometer fell to 5° at eleven o'clock at night. Another thermometer was also observed, hanging in a window in the house, to be likewise much below Zero. At the same time, and during the night, I ascertained by a Six's thermometer, that the cold had been 10°, that is ten degrees below 0 of Fahrenheit's scale, or forty degrees below the freezing point. This extraordinary degree of cold

appeared to be partial, and to occur in a particular line of places, as if a stream of excessive cold air were drawn along over partial tracts of country.”—

Atmospheric Phenomena.

The nearer approach of small birds to the windows of our habitations usually forebode cold weather.

Cocks, when they crow at unwonted hours, often foretel a change of weather. We have often noticed this before rain. But this is by no means so certain a sign as many others, because at particular seasons, and in particular kinds of weather, cocks habitually crow all day. During the calm, still, dry, dark, and warm weather sometimes occurring in the winter months, and which may be called the halcyon days of our climate, cocks keep a constant crowing all night and day. There appear to be three principal cock crowings in ordinary weather, namely, about midnight or soon after, about three in the morning, and at daybreak; the latter is never omitted. We have noticed, however, that when cocks crow all day, in summer particularly, a change to rain has frequently followed*.

Shakespeare, in *Hamlet*, has a well known and beautiful passage relative to the crowing of cocks all night at Christmas. The fact is, that during the dark months of midwinter these fowls actually do crow on some occasions the whole of the night.

Cocks are said to clap their wings in an unusual manner before rain, and hens to rub in the dust and seem very uneasy.

* See *Perennial Calendar*, also *Researches about Atmospheric Phenomena*.

Coronas round the sun or moon portend rain. Coloured crowns of light, and compounded halos, are more sure signs of a fall. See *Halo*.

Cream and Milk when they turn sour in the night often indicate thereby that thunderstorms are about, and will probably shortly take place. The effect is referable to the electricity of the air at the time.

Cranes are said of old to foretel rain, and on this subject there is a passage in Virgil about which the learned have always disputed much as to its exact import :

— Numquam imprudentibus imber
Obfuit ; aut illum surgentem vallibus imis
Aeriae fugere grues, &c.

The passage in Aratus (Dios. 300) from which the Virgilian prognostic is taken, certainly favours the notion that the cranes retreat to the valleys, and return from their aerial flight when they foresee rain coming. See the Prognostics of Theophrastus, and also Aristotle's *Hist. Anim.* ix. 10. and Prof. Heyne's *Virgil, Not. ad. Georg.* i. 375. Buhl, the editor of Aratus, also adopts this explanation.

The high flight of cranes in silence indicates fine weather.

Crocuses, particularly the yellow crocus, generally blow in our gardens about the feast of St. Valentine, and are hence called *Hymen's torch*, and *flame of Hymen*. They blow through March, and decay in April. The striped crocus comes later, as do the white, the blue and white, and the blue; this last seldom blowing till the beginning of March.

Crows utter a peculiar cry before rain, different from their usual voice, as is noticed by Aratus and Virgil. *Corvus aquat.* is quite a common proverb, but this may also allude to the *Raven*, which see.

Currents of Air change their course frequently in the higher regions of the air first, and are afterwards continued to the earth's surface; hence we can often foresee a change of the wind by observing the way in which the clouds above move. Both the strength of a coming gale, and the point of the compass from which it will blow, may usually be foreseen some time beforehand by noticing the velocity and direction of the clouds floating along in the upper current, or by means of balloons.

Cumulus or Stackencloud is that large and irregular hemispherical kind of cloud which, in fair weather, usually forms in the day and subsides in the evening. These clouds, when they are very irregular in their shapes, when they are full of protuberances and fleeces, or when their fleeces curl inwards as they pass along in the wind, indicate rainy or showery weather. Their increase, instead of vanishing, at eventide also portends the same thing, as does their change into twainclouds.

Cumulostratus or Twaincloud compared with cumulus, which it resembles, is more dense, and overhangs its base in uneven or rugged folds; a pre-existing cirrus, cirrocumulus, or cirrostratus, or one perhaps immediately formed for the occasion, alights on its summit, and inosculates. Many of these cirrostrati are sometimes seen attached to the cumulostratus, and sometimes to intersect it. Cumulostrati frequently remain in this state for a long time, and constitute very picturesque skies.

At other times the processes are more rapid. The cirri, or cirrostrati are soon lost in the cumulostratus, which increases in density, and soon becomes the nimbus described in its proper place. See *Nimbus*.

The cumulostratus is one of the stages in the process by which rain is ultimately effected, of which it may therefore be regarded as a prognostic. In Switzerland, Wales, Spain, and other mountainous countries, it may be confounded at a distance, in its early stages, with distant mountains.

Dandelion the *Taraxacum Dens Leonis* is a common plant, which flowers early, and remains in blow more or less all the year. The general flowering, however, of this plant takes place about the 8th of April, and for a month it bespangles the fields, mixing agreeably with the daisy.

Daffodillies, of which there are several sorts, blow in March and April; the early daffodil comes about the 10th of March; the great double variety is called *Lent lily*. There are several kinds which blow later in the month.

Dead Nettles blow early and all the year; the red, or purple kind, are scarce all winter. They afford a sign of a mild season when they come in winter in abundance.

Dolphins, as well as *Porpuses*, when they come about a ship, and sport and gambol on the surface of the water, betoken a storm; hence they are regarded as unlucky omens for sailors. According to ancient fable they formerly offered themselves in times of storm to convey shipwrecked mariners to the shore; but this is, of course, a story of a mere human invention. The fable of Arion is well known.

Donkey, brays before rain. See *Ass*.

Dogs, before rain, grow sleepy and dull, and lay drowsily before the fire, and are not easily aroused. They also often eat grass, which indicates that their stomachs, like ours, are apt to be disturbed before change of weather. It is also said to be a sign of change of weather when dogs howl and bark much in the night; they certainly do this much at the full moon, which has given rise to the saying relative to the *Dogs that bay at the moon*. Dogs also dig in the earth with their feet before rain, and often make deep holes in the ground.

Dreams of a hurrying and frightful nature, also incubus, and other symptoms of oppressed and imperfect sleep, are frequent indications that the weather is changed or about to change. Many persons experience these nocturnal symptoms on a change of wind, particularly when it becomes east. In all these cases the effect seems to be produced immediately on the nervous system, and through it on the stomach, so that the stomach shall again re-act on the sensorium. The symptoms are enhanced by a full stomach and other sources of indigestion. See *Wind*, also *East Wind*.

Drains and sespools smell stronger than usual before rain.

Drowsiness and heavy sleep, both in men and animals, often forebodes a heavy fall of rain or snow.

Ducks.—The loud and clamorous quackling of ducks, geese, and other waterfowl, is a sign of rain. It is also a sign of rain when they wash themselves, and flutter about in the water more than usual. Virgil has well described all these habits of aquatic birds. See *Geese*.

The above prognostics apply to various other species of water birds. See our article *Virgilian Prognostics*.

Ears, when there is a tingling noise, or what is called a singing in them, afford thereby a sign of a change of weather, not simply of rain, as has been said, but of barometrical pressure in general. The sudden increase of pressure, like the descent from high mountains, or from balloons, causes in many persons a temporary deafness and roaring in the ears. A sudden fall of the barometer affects also the ears, but in a different manner, like mounting a high hill.

East Wind is frequently made known to nervous people in the night by imperfect sleep, headache, and hurrying dreams. It is remarkable that good astronomical observations cannot be made when the wind is east. And frequently when the celestial objects seem to wave and move about in the field of the telescope, an east wind is found to follow, for it has already begun above in the higher regions of the air.

Eclipse Weather is a popular term in the south of England for the weather following an eclipse of the sun or moon, and it is vulgarly esteemed tempestuous, and not to be depended upon by the husbandman.

Epidemics are disorders of health brought on by atmospherical influence; and modern discoveries have shown how much most prevailing diseases partake of an epidemical nature. Scarlet fever, typhus, the plague, and indeed most diseases of this sort, are now considered epidemical. It would seem that there were a most immediate connexion between the peculiar state of the air and the kind of disorders which might be thereby

excited. For it may be observed, that even of those disorders which are not generally admitted to be contagious, one particular kind will prevail for a long time. Thus, in winter, the different symptoms of that state of body which we call a cold, appear, in some measure, to prevail and vary together; so that it is common to hear people talking of the fashionable complaint. Coughs, for a while, are the prevailing symptoms; then sore throats are the most common. It is in spring that certain kinds of cutaneous eruptions usually appear; and in autumn, that those irregularities in the functions of the digestive viscera, called cholera morbus, &c. happen, and which have been erroneously attributed to eating much fruit. On the other hand, it cannot be considered that atmospheric peculiarities alone produce epidemic and other complaints, which must be regarded as having a compound origin, and as resulting from the operation of peculiar states of atmosphere on persons of particular states of constitution; otherwise all persons would be affected, which is contrary to experience. There are, probably, innumerable varieties of temperament of general habits of life, and of pre-existing diseases, which, in different subjects, vary the effects of the air. And many persons, perhaps, enjoy a state of health, and perfect action, which may be capable of resisting its evil influence altogether. It would, perhaps, be productive of useful results, if physicians of extensive practice would make accurate meteorological registers during the prevalence of any epidemic or contagious disorders: such as the influenza, which, a few years ago, took a range of some miles round London, but was also prevalent in other parts of the country.

Epizootie is a name for epidemic disorders occurring among animals, of which we have many and various instances on record. The state of the electrometer and other atmospherical instruments should be carefully examined during the prevalence of such pestilences.

Erodius is the name of some seabird, the species not being precisely ascertained, of which Aratus writes a great deal, as being a bird of ominous import.

Καὶ δ' ἂν ἐπὶ Ζηρὴν ὅτ' ἐρωδιὸς οὐ κατὰ κόσμον
Ἐξ ἄλως ἔρχηται, φωνῇ περὶ πολλὰ λεληκώς,
Κινομένου κε θάλασσαν ὑπερφορέοιτ' ἀνέμοιο.

Various other prognostics are by the same author deduced from this bird. But indeed the writings of the ancients abound with allusions to the indicative use of sea-fowls. See "*Arati Diosemeri*," edited by T. Forster, London, 8vo. 1815, p. 26.

The above quotation evidently alludes to a prognostic of wind. In another place Aratus describes the flight of the bird to the sea, and his shrill cry before rain,

Ἡ ἐπὶ κῦμα διώκει ἐρωδιὸς ὄξυ λεληκώς.

This prognostic is confirmed by Aristotle and by Theophrastus.

Fair Weather.—The absence of those circumstances which forebode or accompany foul weather, may generally be considered as indicating a return of fair. Virgil mentions the clear and bright appearance of the moon and stars, after they have long been hazy and confused, and other signs, to indicate approaching serenity.

Nec minus ex imbri soles, et aperta serena
Prospicere, et certis poteris cognoscere signis.
Nam neque tum stellis acies obtusa videtur,
Nec fratris radiis obnoxia surgere luna :

Tenuia nec lanae per coelum vellera ferri.
 Non tepidum ad solem pennas in littore pandunt
 Delectae Thetidi halcyones ; non ore solutos
 Immundi meminere sues jactare maniplos.
 At nebulae magis ima petunt, campoque recumbunt;
 Solis et occasum servans de culmine summo
 Nequicquam seros exercet noctua cantus.

VIRG. *Geor.* i. 403.

Tum liquidas corvi presso ter gutture voces
 Aut quater ingeminant, et saepe cubilibus altis,
 Nescio qua praeter solitum dulcedine laeti,
 Inter se foliis strepitant ; juvat imbribus actis
 Progeniem parvam, ducesque revisere nidos.

VIRG. *Geor.* i. 414.

Falling Stars, a small kind of meteors, forbode a change, particularly wind, of which Aratus and Virgil remind us.

Aratus observes in his *Diosemea* :

Καὶ διὰ νυκτὸς μέλαιναν ὄτ' ἄστερες αἴσσωσι,
 Ταρφέα τοί δ' ὄπιθεν ρυμοὶ ὑπολευκαίνωνται,
 Δείδελθαι κείνοις αὐτὴν ὁδὸν ἐρχομένοιοι
 Πνευματος, &c.—ARAT. *Dios.* 107.

And Virgil :

Saepe etiam stellas vento impendente videbis
 Praecipites caelo labi, noctisque per umbram
 Flammarum longos a tergo albescere tractus.

Geor. i. 365.

Feathers, pieces of flue, or dry leaves, playing about on the surface of ponds and other waters, as if agitated by light and varying eddies of wind, often forbode rain, of which both Theophrastus and Aratus remind us. To other signs, Virgil adds,

Aut summâ nantes in aquâ concludere plumas.

Fieldfares, when they arrive early and in great abundance in autumn, foreshew a hard winter, which

has probably set in, in the regions from which they have come. They usually come in November.

Fishes, when they bite more readily, and gambol near the surface of the streams or ponds, foreshew rain.

Fire.—The brightness and heat of the fire in winter, often indicates frost and clear weather, as does the lodgment of the moisture on the windows; for it demonstrates a cold atmosphere abroad. When the fire burns dull, damp weather and non-electric rain often follow: it is said that the air on these occasions has less of oxygen. The real cause however is unknown.

Flowers are many of them excellent indicators of the approaching weather by their opening and shutting, and other motions. See *Pimpernel*, &c.

Fleeces, and Mares' Tails, as they are called, seen in the sky, are signs of rain and wind. By fleeces are meant those clouds which look like fleeces of wool, which the Greeks described as being *ἑρῶν πόκοισιν εἰκότα*. Virgil also, speaking of fine weather, alludes to the absence of these clouds:

Tenuia nec lanae per coelum vellera ferri.

Mares' Tails are the comoid Curlclouds called *Cirri*: their prevalence forbodes wind. They look sometimes like distended locks of hair.

Flies, and various sorts of volatile insects, become more troublesome, and sting and bite more than usual before, as well as in the intervals of rainy weather, particularly in autumn, when they are very numerous, and often become a great nuisance. This observation applies to several sorts of flies. The horseflies likewise of all sorts are more troublesome before the fall of rain, and particularly when the weather is warm.

Flora's Clock, is a term used to denote the periodical opening of flowers, whereby the hours of the day are indicated. Thus the Yellow Star of Jerusalem, *Tragopogon pratensis*, as well as the Purple Star of Jerusalem, *T. porrifolius*, close their flowers exactly at noon. The Syngeneceous plants in general have periods independent of the variations of the weather. The Four o'clock Flower in Jamaica is well known, and so are many others. The Evening Primrose, *Oenothera biennis*, opens at sunset and closes at daybreak; it opens with a snapping noise.

The flower of the Garden Lettuce, which is in a vertical plane, opens at seven o'clock, and shuts at ten.

A species of serpentine Aloes, without prickles, whose large and beautiful flowers exhale a strong odour of the Vanilla, during the time of its expansion, which is very short, is cultivated in the imperial garden at Paris. It does not blow till towards the months of July, and about five o'clock in the evening, at which time it gradually opens its petals, expands them, droops, and dies. By ten o'clock the same night it is totally withered, to the great astonishment of the spectators, who flock in crowds to see it.

The Cerea, a native of Jamaica and Vera Cruz, expands a beautiful coral flower, and emits a fragrant odour, for a few hours in the night, and then closes to open no more. The flower is near a foot in diameter; the inside of the calyx of a splendid yellow; and the numeral petals are of a pure white. It begins to open about seven or eight o'clock in the evening, and closes before sun-rise in the morning.

The flower of the Dandelion possesses very peculiar means of sheltering itself from the heat of the

sun, as it closes entirely whenever the heat becomes excessive. It has been observed to open, in summer, at half an hour after five in the morning, and to collect its petals towards the centre about nine o'clock.

Linnaeus has enumerated forty-six flowers which possess this kind of sensibility: he divides them into three classes. 1. Meteoric Flowers, which less accurately observe the hour of folding, but are expanded sooner or later, according to the cloudiness, moisture, or pressure of the atmosphere. 2. Tropical Flowers, that open in the morning and close before evening every day; but the hour of their expanding becomes earlier or later as the length of the day increases or decreases. 3. Equinoctial Flowers, which open at a certain and exact hour of the day, and for the most part close at another determinate hour.

Forests.—The hollow sound of forests, while the wind is roaring among the woods, is a sign of rain and of storms.

Frogs, by their clamorous croaking, indicate rainy weather; as does likewise their coming abroad in great numbers of an evening; but this last sign applies more obviously to toads.

Virgil observes, as a sign of rain,

Et veterem in limo ranae cecinere querelam.

Abundance of yellow frogs are accounted a good sign in a hayfield, probably as indicating fine weather.

Fungi.—In the damp weather of autumn the fungus tribe become very numerous, and often are the first phenomena which remind us of the decline of summer and the approach of a cooler season, when

Libra dies somni pares ubi fecerit horas.

There is something remarkable about the growth of fungi. Some fungi appear here and there springing up in places where they are least expected, and where they have perhaps never grown before. How do the seeds come in such places? A learned cryptogamist once said, he thought their semina floated in the air, and were carried up into the clouds, and wafted along with them, and deposited by fogs on the earth's surface. Is there any particular aspect or side of trees more obnoxious to the growth of parasitical fungi than others?

Gales of Wind are foretold by the sudden fall of the mercury in the barometer, or the appearance of wanecLOUDS and of curlCLOUDS, and by many of the signs of rain. Varying gales and changing breezes often indicate a change of weather from fair to wet. The most tremendous gales and storms have been foretold by the settling of the stormy petrels under the wake of a ship.

Gallinaceous Poultry in general appear uneasy, and rub in the dust, before rain.

Geese washing, or taking wing with a clamorous noise, and flying to the water, portend rain. Geese are excellent guards to a house against fire or thieves. Hence Ovid, speaking of the former white colour of the crow, observes in allusion to the geese who saved the Roman capital:

*Nec servaturis vigili capitolia voce
Cederit anseribus, nec amanti flumina cycno.*

When Wild Geese are observed to migrate to the southward or westward in greater numbers than usual in autumn or winter, they are said to indicate hard weather: and in general the early ap-

pearance of flocks of these and other wild fowls in the south, foreshew a severe winter.

Gnats afford several indications. When they fly in a vortex in the beams of the setting sun, they forbode fair weather: when they frisk about more widely in the open air at eventide, they foreshew heat; and when they assemble under trees, and bite more than usual, they indicate rain.

Gossamer, as it is called, being the fine web of a certain species of spiders, floating in the air in abundance, and lodging on the trees, or the rigging of ships, and on other objects, affords a sign of fine settled weather in autumn, as does the much covering of the ground and herbage by the woof of the spiders in general. See *Spider*.

In crossing the Channel from Calais to Dover, I have observed that the captains of the vessels have sometimes forboded fine settled weather from the settling on the masts and rigging, of a certain sort of web, which we take to be the woof of some spider, though we have observed it to alight on the ships when some way out at sea.

Hail, Snow, and Sleet have but few appropriate signs. In general the clouds which are destined to pour the cool hailshowers of a March or April day have more defined edges and a different sort of appearance from those clouds which eventually lead to rain. There is also a peculiar dark brownish purple colour in some of the large twainclouds which precede the vernal showers of snow and hail.

Halo.—When this phenomenon is observed round the sun or moon, it indicates the presence of the waneccloud, and shews that hail, snow, or rain, according to the season, will soon follow. Coloured or double Halos are still more certain indica-

tions of rain, and often of wind also. When mock suns or mock moons, bands of light, and other unusual phenomena attend Halos, a peculiar condition of the atmosphere is indicated. The proper *Halo* or luminous ring, is distinguished from the *Corona* or luminous disk, which is sometimes a forerunner of rain also, but is a thing of more frequent occurrence. When Halos are very red, wind almost always follows.

Headaches often foretell a change of weather in persons subject to such complaints. There is also some obscure change of weather near to the periods of new and full moon which causes a certain ephemeral headache that begins usually in the morning, gets worse about two o'clock, and subsides in the evening, attended with an irritated stomach; it much resembles the ordinary bilious headache from repletion, but differs from that which follows immediately on a certain sort of indigestion. Indeed most periodical disorders seem to be connected with some atmospheric changes. And it is very remarkable, that they should so often have their worst paroxysms and the crisis of their terms about the time of the conjunction and the opposition of the moon.

Hogs, when they shake the stalks of corn and spoil them, often indicate rain: also when they rub in the dust, the same or some similar phenomenon may be expected. When they run squeaking about, and throw up their heads with a peculiar jerk, windy weather is about to commence: hence the Wiltshire proverb, that "Pigs can see the wind."

Horses, as well as some other domestic animals, foretell the coming of rain by starting more than ordinary, and appearing in other respects restless and uneasy on the road. It has been ques-

tioned whether those animals do not manifest also some periodical irritability, like that which influences mankind. Possibly the eyes of certain horses, like that of certain persons, may be attended with *muscae volitantes* or other imperfections of sight which render their perceptions of objects less perfect before rain; they may also become more generally irritable. The fact however is true, and has frequently come under our observation.

Hydrometers indicate that the air is moist or dry, and hence become prognosticks of rain, which often follows a general dampness of the air.

Incubus or Nightmare, though it commonly comes of a loaded stomach, will nevertheless often occur on the occasion of a change of weather in the night, which seem to produce the effect by disturbing the digestive organs. The same observation holds good with regard to those frightful and impressive dreams which some persons have in particular kinds of weather, and about the period of change. An east wind beginning to blow in the night will often cause them; and sometimes the same effect is produced by that state of the atmosphere which immediately precedes a large fall of snow; though the latter phenomenon more often produces dullness and languor of the whole animal system of the body.

Jackdaws are said to be more than usually clamorous before rain. These birds frequent the flocks of rooks, and with them go out to feed, as if they were aware of the superior sagacity of the rook in finding out the most productive pasture, and had learnt to avail themselves of it. Starlings sometimes do the same. Sometimes before a change of weather the daws make a great noise in the chimneys wherein they build, and the sound coming down the flue is distinctly heard in the chamber.

Ignis Fatuus, Will with a Wisp, or Jack-a-Lantern, is a kind of meteor which takes place near the ground, neither the cause nor indicative value of which are quite agreed on.

Sir Isaac Newton calls it a vapour shining without heat, and says that there is the same difference between this vapour and flame, as between rotten wood shining without heat, and burning coals of fire.

The *Ignis Fatuus* is said to have been observed to stand still as well as to move, and sometimes seemed fixed on the surface of the water.

In Italy two kinds of these lights are said to have been discovered; one in the mountains, the other in the plains: they are called by the common people *Cularsi*, because they look upon them as birds, the belly and other parts of which are resplendent like the *Pyraustæ* or Fire Flies.

Mr. Bradley supposed the Will with a Wisp to be no more than a group of small enlightened insects.

Mr. Francis Willoughby and Mr. Ray were of opinion, that the *Ignis Fatuus* is nothing but the shining of some night flying insect.

Dr. Derham, on the other hand, thought this phenomenon was composed of fired vapours.

Various have been the conjectures of different philosophers about the causes of these igneous meteors: their precise cause has, however, never been ascertained. M. De Luc ascribes them to certain phosphoric exhalations, which ascend from the earth, and take fire or become phosphorescent in the air.

Some have regarded the *Ignis Fatuus* to be an electrical phenomenon, while most philosophers nowadays regard it as the combustion of some gases.

The following simile, founded on the popular superstition of the Ignis Fatuus conducting its followers into dangerous situations, is taken from "The Times Anatomised in several Characters," by T. F. 12mo. Lond. 1647. Character 24th, "A Novice Preacher;" of whom the author says, "No wonder that instead of shining lights they prove *foolish fires to lead their flock into a maze of errors*, in which they wander, not having the clue of learning or judgement to guide them out." Signat. E. I.—*Brand's Pop. Antiq.* vol. ii. p. 682.

Milton, in his *Paradise Lost*, b. ix. l. 634, observes:—

— A wandering fire

Compact of unctuous vapour, which the night
Condenses, and the cold environs round,
Kindled through agitation to a flame,
Which oft, they say, some evil spirit attends,
Hovering and blazing with delusive light,
Misleads the amazed night wanderer from his way
To bogs and mires, and oft through pond or pool,
There swallowed up and lost, from succour far.

Some persons have confounded the Ignis Fatuus with the St. Elmo's fires, called Castor and Pollux, and described in the *Peren. Calendar*, Jan. 26, p. 32, to which, excepting their difference of local situation, they seem to bear some analogy. If one of these fires is seen alone the sailors call it Helen, but the two they call Castor and Pollux, and invoke them as gods. "These lights do sometimes about the evening rest on men's heads, and are a great and good omen."

These appearances are called by the French and Spaniards inhabiting the coasts of the Mediterranean St. Helme's or St. Elme's Fires; by the Italians the Fires of St. Peter and St. Nicholas, and they are frequently taken notice of by the writers of voyages.

Thus in "Greene's Concept," &c. 4to. Lond. 1598, p. 27:—

As when a wave bruised bark, long tost by the windes
in a tempest,
Straies on a forraine coast, in danger still to be swal-
lowed,
After a world of feares, with a winter of horrible
objects—
The shipman's solace, faier Ledas twinnes at an instant
Signes of a calme are seen; and seene, are shrilly
saluted. *Perennial Calendar.*

Jonquils, of which there are several sorts, blow in the open ground in March and April. The Great Jonquil and the Odorous Jonquil blow about the middle of March. The lesser or proper Jonquil somewhat later. When they blow well and early they forbode a fine season.

Kine, when they assemble at one corner of a field with their tails to windward, often indicate rain or wind. During the dead calm before a storm comes up, we may often see them extending their nostrils, and with the head upwards snuffing in the air; this prognostic has been noticed of old by Virgil, and after him by Lord Bacon and others.

— *Bucula coelum*

Suspiciens, patulis captavit naribus auras.

VIRG. Geor.

Cattle are also said to foreshew rain when they lick their fore-feet, or lie on the right side, or scratch themselves more than they are wont to do against posts or other objects. Some say oxen licking themselves against the hair is a sign of wet.

Kingfishers.—These brilliant birds appear above ponds, rivers, and pieces of water at uncertain times; the prognostics which Brown in his "Vul-

gar Errours" pretends to have drawn from these birds seem quite foundationless.

Kites made of paper, such as are usually flown by boys, may be converted into useful prognosticks of the wind. When several of them are let up together, the higher ones being successively tied to the backsticks of those below them, they will ascend to a vast height. We have known the upper kite in these cases ascend to above 1000 feet high. When the upper one gets a direction different from the lower one, the wind will frequently be found to get into the quarter indicated by the upper kite. This law respecting winds is more strikingly manifested by means of small air balloons, whose varying directions, as they ascend, portend the successive changes of the wind, which often take place first in the higher regions of the air. See *Balloon*, *Cloud*, *Current*, and *Wind*.

When by the motion of kites we perceive that the wind vibrates or shifts its direction, we may be sure the weather will be squally. There is also a kind of bobbing motion sometimes imparted to kites by the wind in variable weather. The kite seems to nod backwards and forward, thereby pulling forward the arm of the person who holds it by successive jerks. During many fine afternoons this present summer, when the wind has blown strong, we have repeated all the above experiments, particularly on the following days:—Sunday, July 11; Monday, July 12; Sunday, August 29; and Thursday, Nov. 4.

Kites.—The birds so called *Falcones Milvi* soaring very high in the air, denote fair weather, according to many authors. The same is observed of Ravens.—*Corvi Coraces*.

Lamps, from the manner in which they burn, forbode weather. Before rain they burn less bright, the flame snaps and crackles, and a sort of fungous excrescence grows from the wicks, which Virgil was mindful to put among his prognostics of rain and wind. See *Virgilian Prognostics*.

From this indicatorial property of the burning lights arose many superstitions relating to them; as the blue colour of the flame being a sign of ghosts, and death, and so on, of which the following explanation is already offered in the *Perennial Calendar*.

Numerous were the omens attached by credulous persons, in former days, to the manner in which candles burnt, and particularly to the colour of their flames. When they burned blue, it was accounted ill luck, or else that some ghostly apparition was announced. Now, when the brain and nervous system are in a certain state peculiarly favourable to spectral illusions, the imagination may easily colour the flame of a candle, without its really changing its tint: just as, in fevers, people see spots of colour on the wall, or imagine insects on the bed-clothes. For the same morbid condition of the animal system, which may cause persons to see the spectral prognostic, would, in this case, cause them to behold the subsequent phantom, and thus the omen and its awful consequence would be viewed together to the support of superstition. Besides this, the particular mode of burning observed in the wicks of lamps and candles, is really found to be caused by atmospherical peculiarities, and is a sure sign of rain.

From the same work we quote as follows:—

Nov. 18. This is, perhaps, the most foggy time of the whole year; a dense stratus frequently continuing through the whole night and day. Indeed,

fogs are the usual concomitants of November in London and its neighbourhood, where one effect of a foggy night is often that of diminishing the combustion of oil in lamps and other lights, which shews that misty and damp air cannot furnish oxygen so readily as that which is clear. We remember, frequently after foggy nights, seeing the lamps in the street burning to a late hour next morning. Experiments on the power of the air at different times to furnish oxygen, might be made with Lamps, Candles, and other lights.

We find that fungous excrescences about the wicks of Lamps and Candles have been regarded as signs of rain, time immemorial. Aristophanes has an allusion to it:—

Κοῦκ' ἔσθ' ὄπους οὐχ ἡμερῶν τετάρων τὸ πλεῖστον
 Ὑδωρ ἀναγκαιῶς ἔχει τὸν θεὸν ποιῆσαι,
 Ἐπεισι γοῦν τοῖσιν λύχνοις οὐτοῖ μύκητες
 Φιλεῖ δ' ὅταν ἦ τοῦτ' ἐποιεῖν ὑετὸν μάλιστα
 Δεῖται δὲ καὶ τῶν καρπίμων ἅττα μή'στι πρῶμα
 Ὑδωρ γίνεσθαι κἀπίπνευσαι Βόρειον αὐτοῖς.

Aratus speaks to the same effect:—

Ἡ λύχνοιο μύκητες ἀγείρωνται περὶ μύξαν
 Νύκτα κατὰ σκοτίην· μηδ' ἦν ὑπὸ χείματος ὄρη
 Λύχνων ἄλλοτε μὲν τε φάος κατα κόσμον ὀρώρη,
 Ἄλλοτε δ' αἰσσωσιν ἀπὸ φλόγες ἠΰτε κοῦφαι
 Πομφολογες· ARAT. Dios. 246.

which Virgil with his wonted elegance thus parodizes:—

Nec nocturna quidem carpentes pensa puellae
 Nesciere hyemem; testâ quum ardente viderent
 Scintillare oleum, et putres concrescere fungos.

Geor. i. 392.

Larks, when they fly high, and remain singing a long while in the air, forbode fine weather.

Leaches confined in a glass of water, by their

motions foretell rain and wind, before which they seem much agitated, particularly before thunder and lightning.

Lily.—The Lent Lily, or Daffodil, *Narcissus Pseudonarcissus*, indicates the commencement of March, the Lily of the Valley the middle of May, the Orange Lily the beginning of June, and the White Lily the middle of July. By a familiar acquaintance with flowers we may know not only the coming weather, but the time of day and the time of year. Linnæus is said to have possessed such a knowledge of the periods and indication of flowers, that he wanted neither a watch, a calendar, nor a weatherglass. See *Lily*, in Part ii.

Lychnis.—This plant, usually called Scarlet Lychnis, blows regularly about the 24th of June, and is hence called *Candelabrum Sancti Johannis*. The appearance of its beautiful red flowers are sure indications that the summer solstice is at hand: it blows through July, and fades in August. By an easy corruption it has got the vulgar name of Scarlet Lightning.

Lumen Lambens is an electric light, seen about plants of a summer evening, of which the particular indications as to the coming weather have not been yet accurately discovered.

Magpies, in windy weather, fly often in small flocks of three or four together, uttering a harsh cry. Horace's allusion, *Teque nec laevus vetet ire Picus, nec vulga Cornix*, seems to have reference to some observed prognosticative sign, converted by augurs into a superstitious fable, whereby these birds are represented as unlucky. The absurd foreboding of ill luck from magpies is well known to the vulgar and credulous.

March Dust and *May Sun*, both of which imply a fine dry spring, are said to be particularly good omens for the husbandman. An adage says, "A peck of March dust is worth a king's ransom." We have confirmed, by many years' experience, the truth of the proverb which commends a dry spring, as leading to the most productive summer.

Marygold.—When this plant has its flower well expanded in the morning, the day will be fine. The small Field Marigold, *Calendra arvensis*, affords a more certain sign of rain when its flowers are closed in the morning. Marigolds flower all the year, but are in greatest abundance in July and August.

Mare's Tails, or cormoid curlclouds in the sky, forbode wind, and sometimes rain.

Martins fly low before and during rainy weather. See *Swallow*. The Martins, or Martlets, as they are called in heraldry, arrive a few days later than Swallows, that is, about the 20th of April, and depart in October; previous to which they swarm in thousands, and settle on the roofs of buildings.

Meteors.—Various luminous appearances in the air have obtained the name of meteors; but the sort we now allude to are those commonly called Falling Stars, of which there are several varieties. The most common sort have so much of the appearance of the real stars, that they have probably, from this circumstance, derived their vulgar name: they leave little or no train behind them, and shoot along generally in straight lines, generally obliquely downward, but sometimes horizontally.

The second kind are larger and more brilliant, and generally appear in warm summer evenings, particularly when waneclouds, sunderclouds, and

electric storms abound: some of them are very beautiful, and give much light: they vary somewhat in colour and size. They frequently foreshew a change of weather.

The third sort are strikingly different from the two above mentioned; they are generally small, and of a beautiful blueish-white colour; but their peculiar characteristic is that of leaving long white trains behind them, which remain visible for some seconds in the tract in which the meteors have gone. These tails seem to be lost by dispersion; they appear to fly off from all points, increasing in breadth as they become fainter, till at last they cease to be distinguishable. They are frequently seen in the intervals of showery weather, and are most prevalent before high wind; of which they have been considered by Theophrastus, by Aratus, and by Virgil, as a certain prognostic. These kind of meteors abounded on the night of 10th August, 1811, after a showery day. From what we have been able to observe, their tails seem to result rather from some gas set on fire by the meteor in its passage, than from any of the luminous substance of the meteor left behind it; but this of course is mere supposition. It may be also remarked, that if the larger kind of meteors happen at the same time that these caudate meteors are prevalent, they also leave a similar train of light behind them.

Now it appears by repeated observation, that all except the larger kind of meteors are usually forerunners of a change of weather, particularly when they are very numerous, and that they often shoot towards the quarter from whence the wind is about to blow. In the month of August meteors of all kinds are more common than at any

other time of the year, particularly on nights intervening between changes of weather. Some persons have fancied that meteors were small meteorolites, but this is quite hypothetical. As there is a Meteorological Society now formed in London, it would be very desirable if mariners would note down in their logbooks any atmospheric phenomenon of this kind, and the weather that follows it, and would communicate the same in public journals if sufficiently remarkable. See *Feu St. Elme**.

Mice, when they squeak much, and gambol in the house, are said to portend a change of weather, and often rain.

Missel Thrush.—Before storms the Missel Thrush is observed to sing particularly loud, and to continue so till the commencement of the rain: from which circumstance it is in some places called the Storm Cock.

Moles often afford us a prognostic of rain, by working and throwing up the earth into molehills more than usual.

Muscae Volitantes, or the deceptive appearance of flies flitting before the eyes, which many persons are perpetually troubled with, occurs in general only before rain. Light specks seen on the sky, or on every object which we may happen to be looking at, are also signs that rain will soon fall. The same thing happens in winter before snow and sleet. This effect seems to be produced by some peculiar irritation in the retina or other part closely connected with vision, and which has

* For various accounts of meteors see *Perennial Calendar* for July 30, and Aug. 10.

its remote cause in the peculiar electric state of the air before rain: it is most frequent before the cool rain which sets in after warm weather, and which is preceded by a cooler wind, possessing peculiar characteristics; this wind blows up the dust in clouds, sweeping, as it were, along the ground, and is usually recognized, to use the vulgar phrase, as "*blowing up rain.*" A headache sometimes follows all these *muscae volitantes*, which shews, I think, that the atmospherical cause of them produces them by means of some general irritation of the constitution and stomach.

Moon.—The prognostics from the look of the moon are various, and were known of old. When she looks fiery, or red, like the colour of copper, wind is generally to be suspected; when pale, or confused with ill-defined edges, rain; when very clear and bright, fine weather, all being agreeable to the well known proverb—*Pallida Luna pluit, rubicunda flat, alba serena.*

The hornedness of the moon is also said to be a change of weather, when the horns are clearly defined. Instances occur rarely of a double reflection of the moon, owing to the intervention of thin waneclouds. Pliny observes, "Proxima sunt jure Lunae praesagia. Quartam eam maxime observat Aegyptus. Si splendens exorta puro nitore fulsit, serenitatem; si rubicunda, ventos; si nigra, pluvias portendere creditur. In quinta cornua ejus obtusa pluviam: erecta et infesta ventos semper significant, quarta tamen maxime."—*Hist. Nat.* xviii. 35.

The Virgilian prognostics derived from the moon deserve to be recorded here:

Si vero solem ad rapidum Lunasque sequentes
Ordine respicies, numquam te crastina fallat

Hora, neque insidiis noctis capiere serenae.
 Luna reverentes quum primum colligit ignes,
 Si nigrum obscuro comprehenderit aëra cornu ;
 Maximus agricolis pelagoque parabitur imber.
 At, si virgineum suffuderit ore ruborem,
 Ventus erit ; vento semper rubet aurea Phoebe.
 Sin ortu quarto, namque is certissimus auctor,
 Pura neque obtusis per coelum cornibus ibit ;
 Totus et ille dies, et qui nascentur ab illo
 Exactum ad mensem pluvia ventisque carebunt.

When the moon is near the full, or new, people are more irritable than at other times, and headaches and diseases of various kinds are worse. Insanity at these times has its worst paroxysms, and hence the origin of the term lunacy. The works of Drs. Meade, Sydenham, and Darwin abound with illustrations of this periodical influence, and a distinct treatise on it has been written, London, 1817. See Forster on *Atm. Dis.*

A vulgar prejudice has prevailed from time immemorial in Sussex, that a *Saturday's moon* brings blowing and wet weather. By some accident this has proved very true during the last twenty years. To ascribe such a phenomena to the occurrence of the new moon on the day specially dedicated to Saturn, must, of course, obviously appear superstitious; but there may be natural causes why the conjunction of the sun and moon, happening at some such diurnal periods may, in the long run, turn out to be connected with rough weather; and these periods once falling on a Saturday, would for a long time continue to do so, hence may have arisen this vulgar notion. Old shepherds, gardeners, hunters, and men of education, have alike testified to the fact. Indeed the whole doctrine of periodic phenomena is very little understood.

Nearness of objects.—The greater apparent near-

ness of distant objects, and the unusual clearness of the distances, are signs of rain. The same has been observed of the mountains and hills in the West Indies before the occurrence of the autumnal rains and tempests; some of the most violent hurricanes of our colonies have been preceded by an extraordinary appearance of nearness in the distant mountains. In this country also showery weather is never considered to be at the end, so long as the distant hills appear unusually near. This fact corresponded with the observation of Sir Isaac Newton, that the stars seem clearer and better adapted for observation in the clear intervals of showers, and before a change from fair weather to rain.

Nimbus or Raincloud.—It may be noticed that clouds of any one of the several modifications, at the same degree of elevation, may increase so much as completely to obscure the sky: two or more different modifications may also do the same thing in different elevations, and the effect of this obscuration may be such as would induce an inattentive observer to expect the speedy fall of rain. It appears, however, from attentive observation, that no cloud pours rain until it has previously undergone a change sufficiently remarkable to constitute it a distinct modification, to which the term *nimbus* has been applied. This change seems to consist in the uniting of particles of water differently electrified, which, having a mutual attraction for each other, closely unite, forming visible drops of water, which therefore gravitate and descend in rain. The nature of this process will, perhaps, be better understood if we pay attention to what frequently happens in the rapid production of showers, and closely examine this process for ourselves. The ancient Romans distinguished

Nimbus, or the cloud itself, from *Imber*, or the falling shower of water.

Noises and Sounds, when they are heard from further off than usual, often indicate a change of weather. That sound is heard at a greater distance in calm weather, in the stillness of the evening, and in the direction of the wind, is well known, and is easy of explanation. But independently of these circumstances, there is something particular in the state of the air before rain, whereby it becomes fitter for the conveyance of sound than ordinary. A lofty veil of cloud, which occurs before rain, has been supposed by some philosophers to act as a kind of sounding board, so as to convey the vibrations of sonorous bodies further than clear air; but this explanation is wholly insufficient. The sound of distant church bells, for example, is greater before rain than at any other time; clocks afar off then appear to strike louder, and consequently to be nearer than usual. Other noises too, as sawing, hammering, the whetting of the mower's scythe, or the whirling sound of mills, are all heard further than usual; as are the crowing of cocks, human voices, and music of all kinds.

It is a thing worthy of remark, that distant objects appear also nearer to the sense of sight, as well as to the sense of hearing, before and during showery weather.

Ocean.—There are various prognostics deducible from the appearance of the ocean, of which we shall enumerate a few. When the surface of the sea is rough without any wind blowing at the time, we may be sure of a gale before long; for the wind already blowing in some distant part of the ocean is the cause of the swell imparted to the sea.

We have experienced this circumstance in the British Channel, and it has been followed before long by a gale. It is noticed by Aratus and others.

In the *Cambrian Register*, 8vo. 1796, we find: "It cannot be denied that the Welsh have much superstition amongst them, though it is wearing off very fast. But the instance adduced here (by "The Gleaner,"), that of their predicting a storm by the roaring of the sea, is a curious kind of proof of their superstition. Their predictions, if they may be so called, are commonly justified by the event, and may, I apprehend, be accounted for from causes as natural as the forebodings of shepherds; for which they have rules and data, as well known to themselves, and, perhaps, as little liable to error as any of those established by the more enlightened philosophers of the present day."

Virgil observes,

Continuò ventis surgentibus aut freta Ponti
Incipiunt agitata tumescere, et aridus altis
Montibus audiri fragor; aut resonantia longè
Littora misceri, et nemorum increbrescere murmur.

Evidently from Aratus, who says,

Σῆμα δέ τοι ἀνέμοιο καί οἰδαίνουσα θάλασσα,
Γινέσθω' καὶ μακρὸν ἐπ' αἰγίαλοι βοόωντες,
'Ακταὶ τ' εἰνάλιοι, ὅπῳτ' εὐδίοι ἠχῆσαι
Γίγνωνται, κορυφαί τε βοώμεναι οὐρεὸς ἄκραι.

Ocular Spectra are also frequently signs of weather. The large spots of light which seem as objects, but are in the eyes, denote the fall of rain and a cooler air. For various other signs see *Muscae Volitantes*.

That the change of weather which produces ocular spectra does so by means of disturbing the stomach and nervous system, seems probable from

this circumstance, that similar spectra arise often from overloaded stomachs and indigestion, and from the excitement of the nervous system in fevers.

The ocular spectra of children, who go to bed with too full stomachs, or with irritable nervous systems, are to be referred to modifications of the real impressions of objects seen in the day time, such as the passage of uncouth faces by the bed at night. The forms of specks and freckles, which pass in imagination before us with closed eyes at night, and which continually change their shapes, are referable to the previous impression made on the retina and its auxiliary nervous parts, by accidentally beholding the figured paperings of rooms, or the patterns of printed calicoes during the day.

Owl.—The various omens which vulgar credulity has attached to the hooting and screaming of this bird deserve particular attention. When an owl hoots or screeches sitting on the top of a house, or by the side of a window, it is said to foretell death. The fact seems to be this; the owl, as Virgil justly observes, is more noisy at the change of weather, and as it often happens that patients with lingering diseases die at the change of weather, so the owl seems, by a mistaken association of ideas, to forebode the calamity. Both the screech owl and the howlet seem to be alluded to among the harmful fowls in Spencer's *Fairy Queen*:

The ill fac'd owle, death's dreadfull messengere;
 The hoarse nightraven, trump of dolefull drere;
 The leather winged bat, dayes enemy;
 The ruefull strich still waiting on the bere;
 The whistler shrill, that whoso hears doth die;
 The hellish harpies, prophets of sad destiny.

SPEN. *Fairie Queene*, lib. ii. 12, 36.

The large eagle owl or *bubo* seems to have been the bird of the worst omen among the ancient Greeks and Romans, and its appearance about towns and villages was considered as a terrible presage of misfortune. Dr. Leach, late of the British Museum, in his excellent improvement of the classification of animals, divided the genus *Strix* the owl into several genera. An ancient proverbial adage in verse says,

When the lonlie owle on the chimney howle

In the dead of a wintrie night ;

The devil doth prowle in search of some soule,

They say, that is taking its flight.

But better, I ween, should this bird be seen,

Without brooding on death or slaughter ;

As a prophet in feathers, of winds and of weathers,

Foretelling the falling of water.

Anthol. Bor. et Aust.

Against the return of fair weather after rainy, Virgil observes,

Nequidquam seros exercet noctua cantus.

Geor. lib. i.

See a chapter on meteorological superstitions in *Researches about Atmospheric Phenomena*, Third Edition, London, 1823.

Paruselene or Mock Moons, forebode wind or rain.

Paul's Day is vulgarly esteemed ominous of the sort of year we shall have ; an old proverb says,

Clara dies Pauli bona tempora denotat Anni.

Se fuerint Venti designant poeilia Genti.

Si fuerint Nebulae pereunt animalia quaeque.

Si Nix, si Pluvia, designant tempora cara.

Ne credas certè, nam fallit regula saepe.

Which has been thus paraphrased in our more modern Calendars :

If St. Paul's day be fair and cleare,
 It doth betide a happy yeare ;
 But if by chance it then should raine,
 It will make deare all kinds of graine ;
 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.

In *The Shepherd's Almanack* for 1676, among the observations on the month of January, we find the following: "Some say that if on the 12th of January the sun shines, it foreshews much wind. Others predict by St. Paul's day, saying, if the sun shine, it betokens a good year; if it rain or snow, indifferent; if misty, it predicts great dearth; if it thunder, great winds, and death of people that year."

Parhelia, or Mocksuns, forbode wind and rain. Peculiar refractions of the sun's light of any sort indeed are rather windy signs, particularly when the prevailing colour of the phenomenon is red. The remarkable blue colour of the sun, noticed by Mr. B. M. Forster on the 18th of August, 1821, is described in the *Perennial Calendar* under that day.

Peacocks, when they squall more than ordinary, prognosticate rain. This prognostic is well known in the country, and does not often fail. When the sky has been perfectly clear at eventide, and when farmers have thought the weather about to be settled, I have often foretold a return of the rain from this sign. Particular instances of this sort occurred on the evening of Wednesday, June the 9th, and also on the morning of St. Margaret's day, in 1824; when the indication was made more certain by the crowing of cocks all day, the much

braying of the donkey, the low flight of the swallows, by the aching limbs of rheumatic persons, and by the frequent appearance of spiders on the walls of the house.

The squalling of the peacock by night often foretells a rainy day.

Petrels.—The stormy petrel, *procellaria pelagica*, is found to be a sure token of stormy weather; when these birds gather in numbers under the wake of a ship, the sailors are sure of an impending tempest. See the observations of Pennant and Bewick in their respective works on birds. The name of this bird is derived from its indicating storms. Similar observations, however, apply to other fowls of the sea.

Pigeons.—It is a sign of rain when pigeons return slowly to the dove houses before the usual time of day.

Pintado.—Before rain, the pintados, or guinea fowls, called comebacks, squall more than usual; as do peacocks.

Pilewort.—A small plant of the ranunculus kind, whose small stars of brilliant yellow bespangle the groves, shady banks, and fields in March and April. They begin to flower about the feast of St. Patrick, and continue till May, though in mild seasons, and in mild situations, a flower or two appears much earlier. This plant is the *Ficaria verna* of Linnæus.

Pimpernel.—When this plant is seen in the morning with its little red flowers widely extended, we may generally expect a fine day; on the contrary, when the petals are closed, rain will soon follow. This is the same plant, apparently, which Lord Bacon calls *wincopipe*, and which has also

been styled the *poor man's weatherglass*; it is the *Anagallis arvensis* of Linnæus, and is found in our stubble fields, and in gardens, flowering in June, and continuing all the summer. See *Flowers*.

Pipes for smoking tobacco become indicative of the state of the air. When the scent is longer retained than usual, and seems denser and more powerful, it often forebodes rain and wind.

Pluviometer, or Raingauge, is an instrument to measure the quantity of rain, of which there are many and various sorts.

Plants usually expand their flowers well and perfectly on fine days, but many sorts close their petals against the coming of rain; hence we may often judge of the weather early in the morning by noticing the flowers. Plants are very apt to flag and droop before rain, particularly in summer, when, after long dry weather, the wind that is to bring up the rain begins to blow.

Other plants, by observing particular hours, become horologues, viz. the goatsbeards open with the sun and close at noon; the garden lettuce opens at seven and shuts at ten; most of the syngencious plants have particular hours for opening and shutting, such as the cat's ear, which closes at three, the mousear at half past two, and so on; the marigold is longer open than many of this sort. The prince's leaf is called four o'clock flower, from opening at four, and so on. See *Flora's Clock*.

Many good nautical observations may be made on marine plants.

Porpuses, when they sport about ships, and chase one another as if in play, and indeed their

being numerous on the surface of the sea at any time, is rather a stormy sign. The same may be said of dolphins and grampuses. That the cause of these motions is some electrical change in the air seems probable. Wilsford, in his *Secrets of Nature*, tells us: "Porpoises, or sea hogs, when observed to sport and chase one another about ships, expect then some stormy weather.

"Dolphins, in fair and calm weather, pursuing one another as one of their waterish pastimes, foreshews wind, and from that part whence they fetch their frisks; but if they play thus when the seas are rough and troubled, it is a sign of fair and calm weather to ensue.

"Cuttlles, with their many legs swimming on the top of the water, and striving to be above the waves, do presage a storm.

"Sea Urchins thrusting themselves into the mud, or striving to cover their bodies with sand, foreshews a storm.

"Cockles, and most shell fish, are observed against a tempest to have gravel sticking hard unto their shells, as a providence of nature to stay or poise themselves, and to help to weigh them down, if raised from the bottom by surges.

"Fishes in general, both in salt and fresh waters, are observed to sport most, and bite more eagerly, against rain than at any other time."

Quarries of stone and slate foreshew rain by a moist exudation from the stones. This seems analogous to the dampness on stones, stone-steps, and ornaments in character both of stone and of metal before rain and in damp weather.

Quails are noisy before rain.

Rain.—Some of the various signs of coming

rain, which will be found in their respective places, are thus whimsically recorded by Swift :

Careful observers may foretel the hour
By sure prognostics when to dread a shower.
While rain depends, the pensive cat gives o'er
Her frolics, and pursues her tail no more.
Returning home at night, you'll find the sink
Strike your offended sense with double stink.
If you be wise, then go not far to dine ;
You'll spend in coach-hire more than save in wine.
A coming shower your shooting corns presage,
Old aches will throb, your hollow tooth will rage.
Sauntering in coffee house is Dulman seen ;
He damns the climate, and complains of spleen.

Meanwhile the South, rising with dabbled wings,
A sable cloud athwart the welkin flings,
That swilled more liquor than it could contain,
And, like a drunkard, gives it up again.
Brisk Susan whips her linen from the rope,
While the first drizzling shower is borne aslope :
Such is that sprinkling which some careless quean
Flirts on you from her mop, but not so clean :
You fly, invoke the gods ; then, turning, stop
To rail ; she singing, still whirls on her mop.
Not yet the dust had shunned the unequal strife,
But aided by the wind, fought still for life :
And, wafted with its foe by violent gust,
'Twas doubtful which was rain, and which was dust.
Ah ! where must needy poet seek for aid,
When dust and rain at once his coat invade ?
Sole coat ! where dust cemented by the rain
Erects the nap, and leaves a cloudy stain !

Another author observes of a wet St. Swithin :
Twice twenty days shall clouds their fleeces drain,
And wash the pavements with incessant rain.
Let not such vulgar tales debase thy mind ;
Nor Paul nor Swithin rule the clouds and wind.

If you the precept of the Muse despise,
And slight the faithful warning of the skies,

Others you'll see, when all the town's afloat,
 Wrapt in the embraces of a kersey coat,
 Or double bottomed frieze ; their guarded feet
 Defy the muddy dangers of the street ;
 While you, with hat unlooped, the fury dread
 Of spouts high streaming, and with cautious tread
 Shun every dashing pool, or idly stop,
 To seek the kind protection of a shop.
 But business summons ; now with hasty scud
 You jostle for the wall ; the spattered mud
 Hides all thy hose behind ; in vain you scour,
 Thy wig, alas ! uncurled, admits the shower.
 So fierce Electo's snaky tresses fell,
 When Orpheus charmed the rigorous powers of hell ;
 Or thus hung Glaucus' beard, with briny dew
 Clotted and straight, when first his amorous view
 Surprised the bathing fair ; the frightened maid
 Now stands a rock, transformed by Circe's aid.

And now sharp hail falls down in hasty sallies,
 And all the tiles with dancing showers rattle ;
 And the fair Jewess hies to sheltered alleys,
 To sell her strawberries in brimful pottle ;
 And farmers praise St. Swithin come again
 To wet the crops with forty days of rain.

But of all writers Darwin has given us the most correct account of the signs of rain in a poetical description of the approach of foul weather, as follows :

The hollow winds begin to blow ;
 The clouds look black, the glass is low ;
 The soot falls down, the spaniels sleep ;
 And spiders from their cobwebs peep.
 Last night the sun went pale to bed ;
 The moon in halos hid her head.
 The boding shepherd heaves a sigh,
 For, see, a rainbow spans the sky.
 The walls are damp, the ditches smell,
 Clos'd is the light red pimpernel.

Hark! how the chairs and tables crack,
Old Betty's joints are on the rack:
Her corns with shooting pains torment her,
And to her bed untimely send her.
Loud quack the ducks, the sea fowls cry,
The distant hills are looking nigh.
How restless are the snorting swine!
The busy flies disturb the kine.
Low o'er the grass the swallow wings,
The cricket too, how sharp he sings!
Puss on the hearth, with velvet paws,
Sits wiping o'er her whisker'd jaws.
The smoke from chimneys right ascends;
Then spreading, back to earth it bends.
The wind unsteady veers around,
Or settling in the south is found.
Through the clear stream the fishes rise,
And nimbly catch the incautious flies.
The glowworms, num'rous, clear, and bright,
Illum'd the dewy hill last night.
At dusk the squalid toad was seen,
Like quadruped, stalk o'er the green.
The whirling wind the dust obeys,
And in the rapid eddy plays.
The frog has chang'd his yellow vest,
And in a russet coat is drest.
The sky is green, the air is still,
The mellow blackbird's voice is shrill.
The dog, so alter'd is his taste,
Quits mutton bones, on grass to feast.
Behold the rooks, how odd their flight,
They imitate the gliding kite,
And seem precipitate to fall,
As if they felt the piercing ball.
The tender colts on back do lie,
Nor heed the traveller passing by.
In fiery red the sun doth rise,
Then wades through clouds to mount the skies.
'Twill surely rain, we see't with sorrow,
No working in the fields to-morrow.

We also read,

When clouds appear like rocks and towers,
The earth's refreshed by frequent showers.

The great twainclouds which forerun rain in Sussex are called pillars.

Rainbows are said to be signs that rain will not long continue, a thing easily understood, because they can only be seen in a passing shower. A rainbow is, for the same reason, a sign sometimes of wet, because the first that is seen shews that showers, and showery weather, are at hand. There is a proverb,

A rainbow in the morning
Is the shepherd's warning.

Double rainbows are very rainy signs. But after a rainy day it shews that set rain is giving place to mere showers; and then,

A rainbow at night
Is the shepherd's delight.

A fastidious description of the peculiar indications of the several colours of the rainbow, according as each prevails, is given by some authors, but without foundation.

Raven.—When the raven is observed early in the morning at a great height in the air, soaring round and round, and uttering a hoarse croaking sound, we may be sure the day will be fine, and may conclude the weather is about to clear and become fair.

On the contrary, this bird affords us a sign of coming rain by another sort of cry, the difference between these two voices being more easily learnt from nature than described. They are described by Aelian, Aratus, Theophrastus, and Virgil, besides twenty other writers of less note. Nicander

mentions this bird as a foreteller of rain, and Horace, in a well known passage, calls him,

Imbrium divina avis imminetum.

Aratus deduces a sign. of rain from the *κορώνη*, probably our raven, frequenting the shore and immersing himself in the water :

Ἡ που καὶ λακέρυζα παρ' ἠϊόνι προυχούση
 Χείματος ἀρχομένου χέρσῳ ὑπόκυψε κορώνη·
 Ἡ που καὶ ποταμοῖο ἐβάψατο μέχρι παρ' ἄκρου
 Ὠμοῦς ἐκ κεφαλῆς.—ARAT. *Dios.* 219.

Lucretius attempts to explain the cause why the different sounds of the voice of crows or ravens should at different times foretell various sorts of weather :

Et partim mutant cum tempestatibus una
 Raucisonos cantus, cornicum ut saecla vetusta
 Corvorumque greges, ubi aquam dicuntur et imbris
 Poscere, et interdum ventos aurasque vocare.

As if they got hoarse from alterations of the weather, or had their throats in some way affected by an impending change.

Rays of the sun appearing in a cloud forbode rain. This phenomenon is, in fact, caused by the image of the sun being reflected in an intervening cloud, the reflected image radiating in the cloud. It is noticed by Aristotle.

Redbreasts, commonly called Robin Redbreasts, when they come near to the houses, and with more than usual familiarity lodge on our window frames, and peck against the glass with their bills, indicate severe weather, of which they have a presentiment, which brings them nearer to the habitations of man.

Refractions of Light of any remarkable kind frequently forbode rain, and sometimes storms : at sea

the knowledge of this is very useful. Circles round the sun and moon, mock suns, and other phenomena of this kind, together with the unusual elevation of distant coasts, masts of ships, &c. particularly when the refracted images are inverted, are known to be frequent foreboders of stormy weather. What was the natural cause of that singular phenomenon which gave rise to the story of the flying Dutchman, so well known to mariners?

Rooks gathering together, and returning home from their pastures early, and at unwonted hours, forbodes rain. Virgil notices in the *Georgicks*, among signs of weather,

—— et e pastu recedens agmine magno
Corvorum increpuit densis exercitus alis.

It is also remarked by country people in general, that when rooks whirl round in the air in rapid spirals, and come down in small flocks of a few hundreds together, making a roaring noise as they descend by the united fluttering of innumerable wings, rough weather usually follows. See *Crows*.

Daws and starlings often mix with the flocks of rooks.

On the contrary, when rooks are very noisy about their trees, and fly about them in numbers as if rejoicing, frequently going in and out of their nests, Virgil assures us they foresee a return of fine weather, and an end of the showers:

Tum liquidas corvi presso ter gutture voces
Aut quater ingeminant; et sæpe cubilibus altis,
Nescio qua præter solitum dulcedine laeti
Inter se foliis strepitant; juvat, imbribus actis
Progeniem parvam, dulcesque revisere nidos.

Sheep, and other Flocks and Herds, turn their tails to leeward before and during rough weather, and seem to have a presentiment of its approach.

They also foretell rain by their gambols and unusual agitation.

Sheep's Bell.—When the sheep's bell is heard at a greater distance than usual, it forbodes rain, as it indicates that sonoriferous quality in the air which so generally foreruns that phenomenon. The same of course applies to other sounds and noises.

Simon and Jude's Day, Oct. 28, is said in the old Calendars to be the first of winter. It is said of this day,

Festa Dies Judæ prohibet te incedere nudè,
Sed vult ut corpus vestibus omne tegas.

Seagulls, when they appear in the inland parts of the country, indicate tempestuous weather. See *Waterfowl, Petrel, &c.*

Smells, being condensed, and being longer retained by the air, and perceived farther off than usual, denote the coming of rain. The far propagation of sounds, and also the apparent nearness of distant objects, has the same prognosticative value, and indicate rain. Thus the greater perfections in the functions of three several senses, are alike fore-runners of foul weather; a circumstance well worthy of the notice both of physiologists and meteorologists.

Snowdrops are well known little white flowers, which indicate the first return of spring. The early Catholics in monastery gardens, who first named most of our plants, called them *Our Lady of February*, from their first opening about the feast of the Purification or Candlemas Day. This became more corrupted into *Fair Maid of February*. They continue to blow till March. See our subsequent parts of this work.

Snow.—The indications of this phenomenon are pretty much the same as those of rain, and we must judge of its coming by the state of the thermometer, the time of year, and the wind then blowing. Many persons are unwell before large falls of snow.

Spiders, when they are seen crawling on the walls more than usual, indicate that rain will probably ensue. This prognostic seldom fails. I have noticed it for many years, particularly in winter, but more or less at all times of the year. In summer the quantity of webs of the garden spiders denotes fair weather.

Stars.—Though the obscure and dilated appearance of the Stars denotes rain, because it shews that the atmosphere is thickening, as observed by Virgil; nevertheless, previous to a change to rain, and while the barometer is already sinking, some of the most clear skies are seen: by night, on such occasions, the starry firmament is unusually clear and sparkling, and the milky way seems prodigiously light: this, as Sir Isaac Newton observed, is just before the change: rainclouds soon form, and rain rapidly follows this transparency of the heavens.

Soot, when it takes fire more readily than usual on the back of the chimney, or on the outsides of pots or kettles on the fire, indicates rain. Rain is also said to be foreboded by the falling of soot in small flakes on the garden, which had been previously carried into the air from the chimnies. Soot also falls down the chimnies into the grate more readily against rain.

Starlight.—The dimness of starlight forbodes rain, as its greater brilliancy does also at times. The various colours of different stars when near to

the horizon, and the alternation of colour observed in some of them, are curious subjects of future speculation. Whence is derived their rapid permutations of colour in the fluctuation of stars? See *Phil. Mag.* for 1824.

Smoke frequently indicates the state of the air. A person being accustomed to take his pipe early in the morning, will have occasion to observe, that when the smoke hangs a long while in the air, and scents the place around where he has been smoking, a good hunting day always follows. See *Pipes*. See also *Tobacco*.

When the smoke from chimnies mounts up very straight into the air, it is a sign of fine weather; on the contrary, when it blows down, rain will soon follow. Some chimnies smoke before a change of weather, because the wind often changes first, and gets perhaps into an unfavourable quarter. Chimney pots, cowls, and various contrivances to cure smoky chimnies, have often been resorted to in vain.

St. Swithin.—When it begins to rain on St. Swithin's Day, which is the 15th of July, it is said to indicate forty days of wet weather. Now, though the limitation of this sign to a particular day is perhaps carrying the idea of St. Swithin's power a little too far, yet for many years we have noticed, that if a showery time set in about this day, we have usually several weeks of showery and variable weather in the sequel.*

This prognostic is noticed in many of our old almanacks.

A rainy St. Swithin is well described by Gay:—

* See "Perennial Calendar," under *St. Swithin's Day*, where this is explained. See also *St. John's Day*, June 24.

Now on St. Swithin's feast the welkin lours,
 And every pent-house streams with hasty showers.
 But when the swinging signs your ears offend
 With creaking noise, then rainy floods impend ;
 Soon shall the kennels swell with rapid streams,
 And rush in muddy torrents to the Thames.
 The bookseller, whose shop's an open square,
 Foresees the tempest, and with early care,
 Of learning strips the rails ; the rowing crew,
 To tempt a fare, clothe all their tilts in blue ;
 On hosier's poles depending stockings tied,
 Flag with the slackened gale from side to side ;
 Church monuments foretell the changing air,
 Then Niobe dissolves into a tear,
 And sweats with sacred grief ; you'll hear the sounds
 Of whistling winds, ere kennels break their bounds ;
 Ungrateful odours common shores diffuse ;
 And dropping vaults distil unwholesome dews,
 Ere the tiles rattle with the smoking shower,
 And spouts on heedless men their torrents pour.

Stratus, or Fallcloud, is a fog or mist, so called from being strewed along the ground, and from its consisting of particular kind of clouds, which fall at night time to the ground. A stratus in the morning in autumn often ushers in some of the finest days we enjoy.

There are peculiarities in the appearance of the Stratus, of the causes of which we are utterly ignorant. The fine mists which creep, as it were, along the vallies of a summer's evening, are generally white, and, when seen at a distance by moonlight, have a very fanciful appearance. They are strikingly different from the yellow fogs of November. The Stratus has been found to be electrified positively, and in general to be highly charged. It is proposed by the writer of the article 'Cloud' in Rees' Cyclopædia, to examine the air above, to see whether there be found a negative counter charge.

Stomach.—This organ in persons of weak and irritable constitution, is often deranged at the change of the weather, and its digestive powers are more under atmospherical influence than people are commonly aware of. Before storms it is particularly liable to uneasy sensations.

Swallow.—When the Swallow flies low, and skims over the surface of the ground or the water, frequently dipping the tips of its wings or bill into the latter as it passes over its surface, we may always expect rain.

The probable cause of this bird flying low before rain is, that its insect prey foreknowing the approaching change, get lower in the air, and sport under the shelter of outhouses, by the sides of ponds and lakes, and under the shade of trees. Martins and Sand Martins do the same. I have not noticed this habit to belong to Swifts; but certainly in fine and settled weather all the species of Swallows fly higher in the air than they do just before or during a showery or rainy time.

This prognostic is one of very ancient observance. Aratus, in his *Diosemea*, written above two thousand years ago, after enumerating many signs of rain, observes,

Ἡ λιμνὴν περὶ δηθὰ χελιδόνες αἴσωσαι
Γαστρὶ τυπτούσαι αὐτῶς εἰλυμένον ὕδωρ.

And Virgil, in his *Georgics*, after enumerating the signs of rain, says,

Aut arguta lacus circumvolitavit hirundo.

We have noticed, in addition to the above, that before and during rainy weather, the Swallows flying low, and skimming over the surface of a meadow where there is tolerably long grass, are frequently seen to stop in the course, and hang about

the blades of grass, as if they were gathering insects which might be lodged there.

The Swallow arrives in the temperate part of Europe about the beginning of April, and continues till the end of September or beginning of October. In Sussex the 15th April is about the time of its coming, and it becomes numerous in the course of May. See *Tables* at the end of this work.

Sand Martin.—This bird arrives rather later than the Swallow.

Swifts arrive about the 9th May, are numerous on the 15th, and depart in the middle of August, though stragglers are sometimes seen later. See “*Brumal Retreat of Swallows*,” Lond. 1813; also *Gent. Mag.* 1823.

Swans, when they fly against the wind, portend rain. We have frequently noticed this sign and its fulfilment.

Sweet Williams or Bearded Pink a beautiful garden plant, which begins to flower about the 18th June, and continues throughout July: its more expanded flowers indicate a fine day; but plants of this tribe are not so sensible either of the periodical or occasional influence of the atmosphere as the syngenesious tribes.

Thunder in the morning is often followed by wind in the evening; thunder in the evening by much rain and showers. Thunder is often preceded by hot, and followed by cooler weather.

Tinnitus Aurium, or singing in the ears, often indicates a change of weather. There is also a sensation of this kind, accompanied by temporary deafness, which is caused by a great rise of the barometer. A similar sensation is felt on descending

from air balloons, and from high mountains and hills.

Toads, when they come from their holes in an unusual number in the evening, although the ground be still dry, usually foreshew the coming rain, which will generally fall more or less during the night.

Tobacco and Smoking.—As we find the stronger smell of drains and sespools to be a sign of rain, so we may deduce the coming of the same weather from the odour of tobacco from a pipe remaining longer than usual in the air. This circumstance has enabled us to establish an excellent criterion of good scent for hunting. When the smoke from the pipe remains a long time in the same place, and seems not speedily to disperse, but scents strongly the surrounding air, we may then be sure of a good day for hunting. For the same quality of the air which retains the scent of the tobacco, will also cause the scent of the animal to remain, long after he is gone forward, and hence the dogs can hunt him longer afterwards than usual.

Toothache is often a forerunner of some change of weather, like other pains, and particularly that species which depends on inflammation of a diseased socket or gum. In certain kinds of weather, and particularly before rain or showers, decayed teeth and diseased gums are very uneasy, and the pain often ceases when the rain begins to fall. The periods of that sort of toothache which depends on the exposure of the nerve in the cavity of the tooth, seem to exist independently of any particular weather, and occur most frequently during the night, when the patient first gets warm in bed. The progress of this sort of toothache is often as follows,—the pain after awhile becomes continuous in-

stead of being periodical, and by degrees subsides; but the socket then, and ultimately the gum become diseased, and are thence liable to be affected by the state of the weather above described.

Urchins of the Sea, a sort of fish, when they thrust themselves into the mud, and try to cover their bodies with sand, foreshew a storm.

Vanes or Weathercocks are usually very imperfect instruments for ascertaining the direction and force of gentle currents of air. We are obliged to subjoin the following from *Researches about Atmospheric Phenomena*:—

On Winds, and on the Construction of Vanes.—I have lately remarked a circumstance with regard to the change of winds, which I have never heard mentioned by meteorologists, and which may therefore be worth noticing. I have observed, that when the current next the earth has changed its direction, it has frequently got into and blown from the quarter from which an upper current had previously blown. I was first apprized of this, by observing the motion of an upper stratum of clouds to be different from that of those which were lower, and by the lower clouds afterwards taking the direction of those above; but as I had few opportunities of observing this circumstance, I thought it merely accidental. Subsequent observations on the various directions of air balloons, and the succeeding changes of the wind, have convinced me that it is frequently the case, that the changes of the winds begin above, and are propagated downwards; and I have observed this of several successive currents.

Persons who are desirous of making these observations should have Windvanes accurately constructed, and should compare their indications with those of the clouds above. Weathercocks

should be made with a ball of oil at the top, so constructed as to keep dropping into the circular cylinder on which the fan turns round. I had a vane of this sort constructed, which had a small bell suspended from the point, so that at every change of the wind I was apprized of it by the ringing of this tintinnabulum, as I sat under the trees of the Elm Grove at Walthamstow; and I could, in some instances, hear the sound when in the house at some distance. I contrived this machine in order to ascertain the sort of gales which might blow, as I found them at times blowing straight and steady, but at others so irregular and unsteady, as to produce a constant horizontal vibration of the fan; the consequence was, that the pointed side of the Weathercock corresponding in its motion with it, the little bell kept constantly ringing. I can safely recommend the use of these sort of vanes, as they are very accurate indicators of the wind, when constantly lubricated with oil made to drip into them, and they last a long while without wanting repair. The one above alluded to at Walthamstow was put up in April, 1817, and is still in good order. The same plan has since been followed in other places.

Vanes are of ancient invention, and one of the most perfect was the Aurologium placed in the garden of Varro.

Vernal Birds of Passage.—The earlier or later appearance of our Spring Birds may be found to arise from accidental vicissitudes of the season in those countries from whence they come, and viewed in this light, the time of their arrival becomes an interesting phenomena to note down. Generally speaking, they arrive at the following times, on an average of many years:—

Wryneck	- - - - -	Middle of March.
Smallest Willow Wren	-	March 25.
House Swallow	- - -	April 15.
Martin	- - - - -	April 20.
Sand Martin	- - - - -	April 20.
Blackcap	- - - - -	April 17.
Nightingale	- - - - -	April 10.
Cuckoo	- - - - -	April 21.
Yellow Willow Wren	-	April 20.
Whitethroat	- - - - -	April 16.
Redstart	- - - - -	April 16.
Night Plover or Stone Curlew		March 27.
Grasshopper Lark	- -	April 15.
Swift	- - - - -	May 9.
Lesser Red Sparrow	- -	April 30.
Corn Crake or Land Rail		April 25.
Largest Willow Wren	-	End of April.
Fern Owl	- - - - -	May 20.
Flycatcher	- - - - -	May 3.

Other birds, Water Wagtails for instance, who only make partial migrations, are more uncertain in their times of appearance.

Vapour.—A remarkable Vapour is recorded as having been seen ascending from an elm tree one evening in 1805, at Clapton. We subjoin the following account of it:—"On Sunday evening, August 11, 1805, I observed a very unusual exhalation from an elm tree at Clapton, in the parish of Hackney, the particulars of which are as follow. Between six and seven o'clock in the afternoon, while sitting at tea, the sky being clear, and the weather warm and dry, and wind south-east, we observed a column of darkish vapour which appeared to arise from the top of an elm tree at some distance: it looked about two or three feet high. After it had continued a few seconds it disap-

peared; and, after a few seconds more, re-appeared; and continued in this manner, on and off, for nearly half an hour, when it became too dark to distinguish it any longer. More particulars may be found in the *Gent. Mag.* for 1805, p. 816."—*Atmosph. Phenom.* p. 123.

The vapour, or daily evaporation, should be daily measured with a vapour gauge; as in dry weather it is prodigiously great, as also in the intervals of showers. A great and sudden evaporation often precedes rain, as does also a sudden suspension of it, when the whole air becomes moist.

Vincent's Day is esteemed ominous by the vulgar. There is a proverb,

Vincenti festo si sol radiet memor esto.

And it is thus rendered in English,

Remember on St. Vincent's day,
If that the sun his beams display.

Violins do not sound so well just before and during damp rainy weather as at other times, which seems to be owing to an effect produced by the air damp on their strings, as well as on the wood itself. The same applies to many other musical instruments.

Virgilian Prognostics are the indications of the weather which, collected from Aratus, Theophrastus, and Aristotle, Virgil so elegantly expressed in his *Georgics*; for example,

—Numquam imprudentibus imber
Obfuit, aut illum surgentem vallibus imis
Aeriae fugere grues, aut bucula coelum
Suspiciens patulis captavit naribus auras,
Aut arguta lacus circumvolitavit hirundo,
Et veterem in limo ranae cecinere querelam.

Saepius et tectis penetralibus extulit ova
 Angustum formica terens iter, et bibit ingens
 Arcus, et è pastu decedens agmine magno
 Corvorum increpuit densis exercitus alis.
 Jam varias pelagi volucres, et quae Asia circum
 Dulcibus in stagnis rimantur prata Caystri,
 Certatim largos humeris infundere rores ;
 Nunc caput objectare fretis, nunc currere in undas,
 Et studio incassum videas gestire lavandi ;
 Tum cornix plenâ pluviam vocat improba voce,
 Et sola in siccâ secum spatiatur arenâ.
 Nec nocturna quidem carpentes pensa puellae
 Nescivere hyemem ; testâ quum ardente viderent
 Scintillare oleum, et putres concreescere fungos.

VIRG. *Geor.* lib. i. 392.

Vultures are considered as evil omens in consequence probably of their following armies for the sake of the carcasses of the slain whereon they feed.* When they scent carrion at a great distance they indicate that state of the atmosphere which is favourable to the perception of smells, which often forebodes rain.

Waterspouts at sea indicate the concurrence of different currents of air, and generally portend unsettled weather. They are produced at sea by the same apparent causes which on land cause *whirlwinds*.

*Water Waggon*s, according to popular phraseology, are a sort of roundish little compact clouds, which fly along in the lower current of wind, and which seem to replenish and feed the rainclouds ; their previous appearance forbodes rain. They are of the modification called *cumulus*.

* *Research. Atm. Phen.* third edit. p. 261.

Water Fowls, and particularly those tribes which inhabit the seashores, are known of old to afford more useful and numerous prognostics of weather than any other indications which sailors can avail themselves of. Aelian, Aratus, Theophrastus, and others, have mentioned nearly all of them. Virgil observes,

Jam sibi tum curvis mare temperat unda carinis,
Quum medio celeres revolant ex aequore mergi,
Clamoremque ferunt ad littora.—*Geor.* i. 364.

The return of seagulls to the shore, the high flight of the heron, the crane, and some other birds of this kind, are well known.

Varro observes, before rain,

Tum liceat pelagi volucres tardaeque paludis,
Cernere inexplcto studio certare lavandi.

Water fowls, particularly ducks and geese, fluttering about the water, and washing more than usual, foretel rain. In an ancient collection of prognostics we find: “The crying of fowles about waters, making a great noyse with their wynges; also the sees swellyng with uncustomed waves; if beastes eate gredely; if they lycke their hooves; if they sodaynlye move here and there, making a noyse, brethyng up to the ayre with open nostrels, rayne foloweth. Also the busy heving of moules; the appering, or coming out of wormes; hennes resorting to the perche, or reste, covered with dust, declare rayne. The ample working of the spinnar in the ayre; the ant busied with her egges.” See our articles *Swan*, *Duck*, &c.

Wasps.—Abundance of wasps are said to denote a good fruit year. We have remarked also the converse of this, for in the present season, 1824, perhaps the worst for apples and stone fruit that we remember, there is scarcely a wasp to be seen.

In general towards the close of summer they are very numerous, particularly in the month of September. In 1821 they were prodigiously plentiful, and in 1822 there were a great many of them, while 1824 scarcely presented a solitary wasp even where they usually abound.

Willow Wrens, a small genus of warblers called *Ficedulae* in modern books, are more frequently seen in mild still rainy weather, flitting about the willows, pines, and other trees, in quest of insects. These birds become numerous towards the middle of the summer, like the swallows, and other small birds, from the accession of broods of young.

Weathercocks do not always shew the real direction of a very gentle wind. The strange figures of them, usually the productions of capricious fancy, is one cause of their imperfection as vanes to indicate the wind. Griffins, half moons, foxes, or figures of Saint Margaret and the dragon, are not good shapes for weathercocks, which ought to be plain fans, the large surface of one side being counterbalanced against the weight of the other. See *Vanes*.

Whirlwinds forebode rain very often, and generally some change of weather. See *Waterspout*.

Wind, as well as rain, may generally be foretold by certain prognostics. The sudden depression of the mercury in the barometer almost certainly foretells wind, and in summer frequently is an indication of storms. So certain, indeed, is the fall of the quicksilver a sign of bad weather, that Captains of ships would do well to prepare against a gale whenever they observe it. See *Barometer*.

The red appearance of the clouds, particularly in the morning, likewise is accounted an indication of wind. The prevalence of those cirri, or wind

clouds, which are called Mare's tails, are also signs of wind.

From the wind itself too, may be drawn inferences as to its greater or less prevalence, and as to the kind of wind which we are to expect. By observing the motions of a paper kite flying in the air, we shall often be able to predict a gale with considerable certainty. When the kite flies steadily, and shews only one steady current of air, fair weather usually follows, or at least a steady breeze; but when the kite varies its direction as it gets higher, when it oscillates much, varying several points in the compass backwards and forwards continually; when it changes its direction as it gets higher, or bobs forwards and backwards with a kind of jerking motion, bad weather usually follows. Finally, as wind usually, more or less, accompanies rain, the indication of the latter phenomenon may in general be also said to forebode the former. See *Rain, Clouds, &c. &c.* East winds are often presaged by headaches and other symptoms of disorder in nervous persons, as also by bad dreams and imperfect sleep.

Windvanes are described under the words weathercock and vane. An anemometer to measure the strength of the wind is also an useful instrument; the particular nature, fluctuation, and extent or rage of gales and breezes of wind ought to be minutely observed with reference to their indicative import.

The prognostics of windy weather are the fiery look of the clouds at sunset, mare's tail clouds, the coloured cirrostratus, the snapping of the flame of candles, and numerous signs from animals, described in their proper place. To these we may add one very important remark, that when the quicksilver in the barometer descends much and

suddenly, we may always be sure of wind with the rain which is to follow, and should be guarded about putting to sea in small or unsteady vessels.

Woodcocks appear in autumn earlier, and in greater numbers previous to severe winters, as do snipes and other winter birds.

Woodlice.—The Woodlouse *Oniscus cinereus*, as well as the spiders, creep about on the walls of the house, particularly the damp walls of old houses and cellars, and this habit is most conspicuous before rain. We are not certain whether the same does not apply to the Sowbug *Oniscus armadillo*. It seems to be a habit common to many insects.

Worms come forth more abundantly against rain, as do snails, slugs, and almost all our limacious reptiles.

Xeranthemum.—The flowers of this plant afford an example in exception to the general rule, being open all the time of rain as well as fair weather; before rain, however, the plant will sometimes droop.

Xerxes was a great lover of prognostics and predictions, and during his reign gave rise to many superstitions.

Yarn, particularly hemp yarn, is a good Hygrometer, and foreshews rain by getting shorter, and dry weather by lengthening again; because it is affected by that dampness in the air which so often forbodes rain, and which occasions in our bodies a sense of coldness and chilliness which the actual state of the thermometer would not induce us to expect, and which in reality depends on our perspiration being carried off by the dampness of the surrounding air.

Zanto or *corpo zanto* is an Italian name for a

kind of ignis fatuus of which some account is given under that head. See *Ignis Fatuus*.

In Brand's *Popular Antiquities* we find: To an inquiry after the occasion of a vapour which by mariners is called a *corpo zanto*, usually accompanying a storm, in the *British Apollo*, vol. III. fol. London 1710, No. 94, there is the following answer:—"Whenever this meteor is seen, it is an argument that the tempest which it accompanied was caused by a sulphureous spirit, rarifying and violently moving the clouds. For the cause of the fire is a sulphureous and bituminous matter, driven downwards by the impetuous motion of air and kindled by much agitation. Sometimes there are several of these seen in the same tempest, wandering about in various motions, as other ignes fatui do, though sometimes they appear to rest upon the sails or masts of the ship: but for the most part they leap upwards and downwards without any intermission, making a flame like the faint burning of a candle. If five of them are seen near together, they are called by the Portuguese *Cora de nostra Senhora*, and are looked upon as a sure sign that the storm is almost over."

Zodiacal Light is a pyramidal cloud of light apparently emanating vertically from the setting or rising sun at the time of the equinoxes, which has been described by Mairan in his treatise on the *Aurora Borealis*. It seems to be some peculiar effect of refraction.

PART THE SECOND.

INDICATIONS OF THE SEASONS:

CONTAINING AN

ALPHABETICAL REFERENCE

TO THE

FLOWERING OF PLANTS, MIGRATION OF BIRDS,
REPTILES,

AND OTHER PERIODICAL PHENOMENA,

ACCORDING TO THEIR COMMON ENGLISH NAMES.

N. B. This Part also serves as an index of reference to the Calendar at the end, which will be found to be a substantial arrangement of Plants according to Linnæus's system, with the periods of their full flowering indicated in the last column. In Part V. will be found a Callendarean arrangement of the same, according to their periods in the due order of their blowing.

INDICATIONS
OF
THE SEASONS, &c. *



ACONITE. See WOLFSBANE.

ADDER'S TONGUE *Ophioglossum vulgatum*, vern.
fl. May and June.

AGRIMONY *Agrimonia Eupatoria*, late sols. This
plant, which continues flowering to the end of sum-
mer, first shews its long yellow spike in the meadows
during the last days of June, or about the first of
July.

ALLSPICE *Myrtus Pimenta*, aest. fl. July and

* ABBREVIATIONS.

- fl. flowers, or time of first flowering.
fl. max. full flowers, or most abundant flowering.
fl. vulg. flowers vulgarly, applied chiefly to numerous
British wild plants and others that are very common.
fr. frondescence, or young leaf.
fol. foliage, or full leaf.
prim. primaeval, or belonging to the early spring.
vern. vernal, belonging to the later spring.
solst. solstitial, belonging to midsummer.
aest. aestival, or belonging to the aestas or late sum-
mer.
aut. autumnal, belonging to autumn.
hyber. hybernal, or belonging to creation.
brum. brumal, belonging to the dark season of early
winter, that is, November and December.

August, native of New Spain; beautifully fragrant when in blossom.

ALETTRIS.—The genus *Aletris* derived from *Aloe*, and comprehends several species, which, for the most part, flower in winter, and many of them blow from Michaelmas to Ladytide.

ALKANET.—The officinal, or Diers Alkanet *Anchusa tinctoria*, aest. fl. June to Oct. 2. Ever green Alkanet, *Anchusa sempervirens*, fl. April and all the year almost.

AESTIVAL SEASON, or that of the late summer, begins about St. Swithin, July 15th, at which time the character of the season is also foreseen by the showery or fair weather of this critical period. The approach of this season may, like all others, be foreseen by several peculiar phenomena; the Flora is gradually changed, and the Roses, Pinks, Sweettraisium, Poppies, and other solstitial flowers, by degrees give place to China asters, African marigold, amaranths, and other aestival plants. The birds have ceased to sing, the heat is increasing, and we are often refreshed by rapid showers; but the most delightful circumstance is the ripening of the summer fruit, the early Peaches, Apricots, Plums, Pears, and Nectarines, and the approach of the corn harvest.

ALEHOOF or Ground Ivy *Glechoma hederacea*, vern. fl. in abundance in the middle of April and the early summer; this plant gradually expels other herbage near to it, and for this reason may impoverish pastures and gardens.

AFRICAN MARIGOLD *Tagetes erecta*, aest. a syngeneious Mexican plant, of which we have several varieties in our gardens; fl. end of July to end of October. See **FRENCH MARIGOLD**.

AFRICAN LILY *Agapanthus umbellatus*, aest. flowers in the open air, if sheltered in winter, about the beginning of July.

ANEMONE. See WINDFLOWER.

ALMOND TREE, prim. blows with a beautiful pink blossom in March and the beginning of April.

AMARANTH. See PRINCE'S FEATHER, and LOVE LIES BLEEDING.

APRICOT *Prunus Armeniaca*, fl. in March and April, from July 22d to September.

APPLE TREE *Pyrus malus sativus*, vern. There are several sorts of apples that bear both flowers and fruit at somewhat different times, in general: yet we may say that all the apples blossom later than the pear, being usually in flower about the last week in April, and in full bloom all May; different sorts bear fruit from July to the end of October.

ASPHODEL.—There are two sorts commonly known in our gardens.

1. Yellow Asphodel, *Asphodelus luteus*, vern. begins to blow about the 9th of May, and continues through June.

2. White Asphodel or King's Spear; *A racemosus*, vern. fl. also May 9th.

ASPARAGUS, *Asparagus officinalis*, aest. fl. in July, but comes into season in our gardens for the use of the table about May 24th, and all the early summer.

ASTERS, of which there are many species, usually blow about Michaelmas; hence called Michaelmas Daisies.

AUTUMNAL DANDELION *Apargia autumnalis*, aest. fl. from the end of July to the end of

October. This plant gives the meads a second vernal appearance, being very numerous from middle of August to middle of September; it opens at seven A. M. and shuts its flowers at three P. M.

AUTUMNAL SEASON begins about Michaelmas and continues to the feast of St. Catharine, November 25th, and is marked by the decay and fall of the leaf. There are but few flowers which belong to this season, in comparison with those of the three preceding seasons; some of the aster, and other syngenesious plants flower at the beginning, and toward the close of it we have the sweet coltsfoot, *Tussilago fragrans*. The fungi which began to appear at the end of the last season cut a conspicuous figure throughout this.

AZALEA *A. Pontica*, vern. a beautiful shrub, shewing its yellow or buff flowers before the leaf, about the 16th May, and continuing a month.

2. Scarlet Azalea, *Azalea nudiflora*, vern. fl. May 16th to Midsummer.

BACHELORS' BUTTONS.—A name of several very double plants; as for instance, the double dioicus Lychnis *Lychnis dioica plena* is called Red Bachelor's Buttons, the double Buttercup *Ranunculus acris* is called Yellow Bachelors' Buttons, and so on.

BARNABAS (ST.), St. Barnaby's Day, June 11th, has been called, as it was in the old style, "the longest day and the shortest night." It is now at the beginning of the solstitial season, and consequently marked by many distinguishing phenomena. The various Poppies, the Roses, the Pinks, and other solstitial plants, begin to flower plentifully. We have a long twilight instead of night,

and the leaf is fully expanded, the vernal Flora begins to go off, and the heat of Midsummer to succeed.

BALM *Melissa officinalis*, fl. from Midsummer to Michaelmas.

BALM OF GILEAD *Melissa fruticosa*, fl. from July to September, with the Lemon Verbena.

BASTARD PIMPERNEL *Centunculus minimus*, solst. is called Chaffweed.

BARRENWORT *Epimedium alpinum*, vern. fl. May.

BARLEY *Hordeum distichon* fl. July, is reaped in August; there are several other species. Barley is a native of Syria, it is specified as being gleaned by Ruth 3000 years ago.

BAUM, so called from baum, a tree. 1. Lesser Calamint, *Thymus nepeta*, aest. fl. August. 2. Calamint Baum, *Thymus calamentha*, aest. fl. Midsummer to end August. See THYME.

BEARSFOOT *Heleborus foetidus*, vern. fl. April. See HELLEBORE.

BELLBINDER Bellwinder or Bindweed, *Convolvulus sepium*, aest. fl. July 2d to end Sept.

BELLFLOWER or Campanula, of which are many varieties and species. See CAMPANULA, also CANTERBURY BELLS, BLUE BELLS, &c. &c.

BLEAK are caught in the streams of the Medway, in Kent, from July to end of August, and rarely later.

BLUE BELLS Harebells or Field Hyacinths *Scilla nutans*, or *Hyacinthus non scriptus* of old writers, vern. fl. about the middle of April; about

St. George's day is very common, and continues through May to render the shady slopes and upland lawns quite blue with its pendent bells, forming an agreeable contrast to the yellow fields of crowfoot which the vernal season affords.

BLACKBERRIES or the fruit of *Rubus fruticosus*, ripen at the end of August and all September. The Dewberry, *Rubus caecius*, observes nearly the same period.

BLUE BOTTLE *Centaurea montanus*, shews its blue flowers about the 20th of May in plenty, and continues all the summer. The Cornflower, *Centaurea Cyanus* is solstitial.

BLUE ROCKET or Wolfsbane *Aconitum pyramidale*, solst. fl. June and July, and sometimes till end of September. This perennial is the full blue flower so common in cottage gardens, called Blue Rocket; it possesses poisonous qualities, and would produce often very bad consequences from its great frequency, did not its acrid taste absolutely forbid the possibility of swallowing its juices. There are other species of Aconite, so called. See WOLFSBANE. Many of the Larkspurs are also called Rockets.

BINDWEED *Convolvus arvensis*, aest. fl. June 25th and all July; its appearance by the roadsides and ways indicates the sun's having passed the tropic of Cancer.

2. Hedge Bindweed *Convolvulus sepium*, aest. begins to shew its white hanging funnelshaped flowers in the hedges early in July, and they continue all the rest of the summer and autumn.

BIRTHWORT *Aristolochia Clematitis*, aest. fl. July, Aug. and Sept.

BLACKTHORN or Sloe *Prunus spinosa* vern. The Blackthorn usually blooms about the middle of April; it is in full bloom at the end of that month, and the early part of May; rare blossoms here and there open earlier by three weeks.

BLACKBERRY ripens its fruit at the very end of August; and during September it is abundant.

BOMBILATION or Buzzing of Beetles flying in the evening in the spring and early summer, is exactly coincident with the time when Partridges begin to call; it is soon after sunset.

BORAGE *Borago officinalis* vern. fl. May and all summer and autumn.

BRUMAL SEASON begins about St. Catherine's, November 25th, and continues to Christmas, December 25th.

BUGLE *Ajuga reptans* vern. fl. max. May 17th.

BUTTERBUR *Tussilago petasites* vern. fl. April; the head of the flower coming before the leaf, and appearing out of the ground at the end of March.

2. Hybrid Butterbur *T. hybrida* idem.

3. White Butterbur *T. alba* prim. fl. Jan. and Feb. commonly appears in flower about St. Paul's day, or between that and Candlemas.

4. Sweet Butterbur *T. fragrans* brum. fl. early in November, and flowers all the winter more or less, according to the mildness of the weather, defl. in March, when the new leaves appear.

BUTTERFLY.—The early Sulphur or March Butterfly *Papilio rhamni*, formerly *P. præcox sulphurea*, is seen in the first warm days of the end of March, and thence in clear warm days till the end of April. Early in May come the red Butterflies,

and the *Papilio Io* and others; and in the middle of May the white cabbage Butterfly, *P. brassicæ*, &c. become numerous. Numerous other sorts, of all sizes, accompany those butterflies and are seen till the end of summer.

CANDY TUFT *Iberis amara*, fl. all June and July.

CANTERBURY BELLS, *Campanula medium*, solst. fl. about June 16th to middle of July, and ripe in August.

CARP *Cyprinus carpio*, sports on the surface of the water in June, July, and August.

CAT'S EAR *Hypochaeris radicata*, late vern. fl. about May 16th to Midsummer, and before and afterwards sparingly.

CANDLEMAS DAY, or the Purification of Our Lady, Feb. 2d, is usually ushered in by the flowering of the Snowdrop, whose pure white flowers just appear above ground, and in warm situations in full blow. The yellow spring Crocus also blows here and there, though the blue and party coloured sorts do not flower before St. Valentine. With February comes a longer day, but often not a warmer air; a temporary return of winter frequently following a bright Candlemas day, making good the old proverb,

If Candlemas day be fair and bright,
Winter will have another flight.

Or as the Latin proverb has it,

Si sol splendescat Maria purificante,
Major erit glacies post festum quam fuit ante.

Mrs. Barbauld fancifully observes of the Snowdrop, that "Winter still lingers on its icy veins."

CATHERINE'S DAY (St.), Nov. 25, has usually been fair open winter weather, the leaves mostly fallen, and the boughs bare.

CHERRY *Prunus cerasus*, a summer fruit. The early madock Cherry blossoms in March, the other sorts in April and May; the madock is ripe, on a warm wall, by the middle of June; the black heart, white heart, and Kentish Cherry early in July; the morella in August; the small black Cherry in July and August.

CHRISTMAS DAY, 25th Dec. Many persons keep a list of plants remaining in flower on this day, and in this mild part of England they are very numerous: we have, on an average, three open to one frostbound Christmas day.

CHRISTMAS ROSE or Black Helebore, *Helleborus niger*, hyb. blows with a white flower in the middle of winter, if the weather be mild, it continues from Christmas to Candlemas, when it declines by degrees, and before March is gone.

CHINA ASTER *Aster Chinensis*, aest. This beautiful plant is one of the greatest ornaments of our aestival Flora from the great variety and richness of its colours. If sown early, and in good seasons, it will flower early in July; in general its time is towards the end of that month, and it abounds in August and September, lasting till cut off by the frost.

CHOLERA MORBUS, an affection of the stomach and bowels, producing purging and sometimes vomiting; occurs in many persons every September, frequently about September 20th, being an autumnal epidemic.

CISTUS *Cistus helianthemum* solst. fl. from June 20th to end of July.

CLOVER flowers all the summer, particularly from Midsummer to the end of July.

COCKS crow most in still weather and before rain; crow much about Christmas. They crow generally at certain periods called ΑΛΕΚΤΡΟΦΩΝΕΣ or nightwatches, about midnight, three or four in the morning, and daybreak.

COCKCHAFFER *Scarabæus melolontha* comes rather late in the vernal season, about May 20th. They abound, says White, only once in three years. See also **FERNCHAFER**.

COCKLE *Agrostemma githago* solst. fl. June and July, in the corn, &c.

COLTSFOOT *Tussilago farfara* prim. fl. March. For the other sorts see our article **BUTTERBUR**.

COLUMBINE *Aquilia vulgaris*, late vern. fl. from middle of May to Midsummer, and ripens its seed in July. Being a late vernal plant its abundant flowering indicates the approach of the solstice. We have seen this plant wild and abundantly in flower, on Ditchling Common, May 20th.

2. The *Aquilegia hybrida* blows at the same time, and is suspected to be our garden Columbine.

CORNCRAKE or Landrail *Rallus crex*, begins to be heard uttering its peculiar craking noise by night as it sits on its nest in the middle of May.

CORNFLAG or Sword Lily, a name of the genus *Gladiolus*, of which most of the species are late vernal plants, fl. from June 9th to Midsummer.

COWSLIP, *Primula veris*, vern. is much later than the Primrose; it flowers early in April, but is not

numerous in the meadows and fields till about the 26th, and from thence to the middle of May.

COLOURS and Colours of Flowers.—A correct nomenclature of colours, such a one as shall be able to express all the compound tints and shades of colours, has been long wanted, but as almost all natural substances have a tendency to vary in colour, so as yet the thing has never been achieved for want of some regular standard. The late Mr. James Sowerby, of Lambeth, proposed to ground a nomenclature on the colours of minerals, which change less than many other substances do. Professor Willdenow has had recourse to the method of giving painted specimens of the different colours in his botanical work, to be used for reference. In describing the colours of flowers I find myself little disposed to differ much from him, and I shall cite a few examples of colours from the most common and familiar plants; by recollecting which the the reader will know the colours I intend by their respective terms, when applied to other and less familiar flowers; for there are so many different tints of red, blue, brown, and so on, that without such reference the description of a flower could never be very correct.

The reader is aware that the primary colours are red, blue, and yellow; and that green, purple, brown, and such like, are called compounds, because, according to the old hypothesis, they were thought to be compounded of the three primitive rays. I differ, however, from the common explanation; for example, blue and yellow may, by mixture, make green; but there may, and I think experiment shews, that there are also green primitive rays.

I shall begin with the red colours.

Scarlet or a brilliant light red, almost resembling vermilion, and being the nearest of all to the primitive tint. An example may be taken from the scarlet Lychnis, *Lychnis chalcedonica*, from the corn Poppy, *Papaver Rhæae*, and from some varieties of the garden Poppy.

Vermilion is another name therefore for the same colour, only it is sometimes used to express the red in its greatest purity, as in the instance of the plant first quoted above.

Red may be light or dark from its intensity of colour alone, as the Pimpernel *Anagallis arvensis*, and the doubtful Poppy *Papaver dubium*, are light red by dilution or stinting of the colouring matter; while other flowers are darker than the real vermilion by intensity of colouring. But red varies again both light and dark, by approaching to the other colours, and these tints may be artificially imitated by mixtures. Thus we have a dark purplish red in the flowers of the *Pæonia tenuifolia*, which we call a reddish lake. The mixture with blue is still stronger in the common Piony *Pæonia officinalis*, and we call it deep lake colour, while in one variety of this plant, by dilation, it approaches to pink, or light diluted lake. The greater mixture of blue produces purple, as in the purple spring Crocus, *Crocus vernus*. Red is again lightened in its approach to orange, by the various degrees in which it partakes of the mixtures of yellow; the slightest degree of which occurs in the beautiful bright red of the monkey Poppy *Papaver orientale*. The various sorts of blue may be in the same manner traced to slight mixtures with red or with yellow, or with both; in which case purplish blue, greenish blue, or brownish blue, is the result. The reader will better

comprehend my meaning by the following catalogue of the various gradations of colour as the primitive tints approach each other in kind by degrees, in consequence of the gradual proportions of their intermediate compounds.

1. Transitions from red to blue through all the varieties of lake and purple:—Scarlet Lychnis; Slenderleaved Piony; Official Piony; Damask Rose; Peregrine Piony; Purple Hepatica; Foxglove; Purple Spring Crocus; Jacob's Ladder; Harebells; Evergreen Alkanet; Blue Hound's Tongue or Navelwort, and so on.

2. Transitions from red to yellow through all the orange compounds:—Red Corn Poppy; Reddest Garden Poppy; Monkey Poppy; Marigold; Lesser Marigold; Orange coloured African Marigold; Buttercups; Cat's ear; Mouse ear (becoming paler again); Evening Primrose, and so on.

CROCUS,* *Croeus vernus*, prim. We believe

* This plant, which is called Saffron in English, was well known to the Greeks, and Ovid, in his *Metamorphosis*, relates the fable of the boy Crocus turned into a flower. The word Crocus was formerly applied to the yellow stamina of flowers, and to Crocuses only when they were yellow; at present, however, the term is used for every sort of saffron, of which we have now almost innumerable varieties, of which botanists have hitherto made many species. We believe, however, that they are all varieties of one plant, and have become more or less permanent in their characters owing to a vast variety of causes which have led to such apparently permanent differences that they have been looked upon as distinct species. One general division of Croci may, however, be made into the vernal which blow in spring, and the autumnal which blow in autumn.

four or five Croci distinguished by botanists are really only permanent varieties of one species, and we call it vernal, to divide it from the autumnal Crocus or SAFFRON, which see. The varieties of the spring Crocus, however, flower at somewhat different times; the yellow Crocus is the first, and ripens about the 5th Feb. being abundant about St. Valentine's day; the striped, and also the blue and white, are somewhat later, and the blue latest of all. They will all be found in the calendar according to the names of the botanists, the yellow being called *C. maesiacus*, &c. &c. All the Croci continue blowing throughout March. Lindsay, in the new edit. of Hort. Cantab. makes the following distinct species, 1. *C. officinalis*, 2. *C. serotinus*, and 3. *C. nudiflorus*, autum. fl. Sept. 4. *C. sulphureus*, 5. *C. versicolor*, 6. *C. mæsiacus*, 7. *C. vernus*, 8. *C. biflorus*, 9. *C. susianus*, 10. *C. lanæsiifolius*, and 11. *C. stellaris*, prim. fl. Feb. and March.

CROWFOOT or Ranunculus, of which there are many species or permanent varieties, which bespangle our fields and meadows with yellow in spring, and decline after the solstice.

1. Bulbous Crowfoot *Ranunculus bulbosus*, vern. fl. April 19th, and fl. max. the first half of May.

2. Buttercups, *R. acris*, fl. May; fl. max. end of May and June.

3. Creeping Crowfoot, *R. repens*, fl. max. May and beginning of June. The other sorts, being less abundantly conspicuous, need not be noted down among indicatorial flowers of the seasons. For double sort see BACHELORS' BUTTONS.

CROWN IMPERIAL *Fritillaria imperialis*, prim. fl. end of March and beginning of April. There are three varieties; 1. the red flowered; 2. the red

striped flowered, with striped leaves; and 3. the yellow flowered. See also CHEQUERED DAFFODIL and FRITILLARY.

CUCKOO *Cuculus canorus*, usually first heard about April 20th, though sometimes a full week sooner. He is common all May, and till about St. Barnabas' day, when his note gets hoarse, and it is a rare thing to hear him after the commencement of the aestival period; indeed he is not very often heard after the summer solstice.

CURRENT.—The Red Currant *Ribes rutilus*, fl. April and May, ripens its berries, or red Currants, very early in July, in which month the Currant Jelly should be made. 2. The white Currant, *Ribes alba*, ripens at the same time as the last. 3. The pale Currant is a variety between the red and white. 4. The black Currant, *ribes nigra*, ripens about the 6th or 7th July. All the Currants may, by being matted, be preserved till the middle of winter, and on north walls and shaded situations, sometimes hang and are good till the end of November. Black, white, and red Currant Jelly are made, of all which the white is the best.

DAFFODIL *Narcissus pseudonarcissus*, prim. fl. about the 9th March and through April. See NARCISSUS.

DAISY *Bellis perennis*, fl. all the year, principally dotting the meadows early in May; in March they begin to be common, and after Midsummer to be less numerous. See also MIDSUMMER DAISY.

DANDELION or Piss a Bed *Taraxacum Dens Leonis*, vern. a well known weed, fl. sparingly in March and abundantly in April and May; the max. fl. being about April 11th and till May, early

in which month the fields lately spangled with its yellow now afford a crop of its pappi or seed balls, which have a curious effect, like a field of flowers. Some writers call this *Leontodon taraxacum*.

2. The rough Dandelion, *Apargia hispida*, late vern. fl. June 1st to the end of July.

3. The hairy Dandelion, *Trinchia hirta*, solst. fl. June and July.

4. The autumnal Dandelion, *Apargia autumnalis*, aest. first flowers about the 1st August, is abundant by the 25th, and continues till the end of September.

DEAD NETTLE *Lamium purpureum*, fl. all the year, but most in the early spring. There are many others of this genus which ornament our waste grounds, as *Lamium album*, *Lamium Garganicum*, *Lamium amplexicale*, and all of them flower most part of the year. See also HEDGE NETTLE.

DIURNAL PERIODS illustrate the effect of particular times of day on the vegetable kingdom; the syngeneceous plants exhibit the most regular diurnal periods; the *Apargia autumnalis*, for example, opens its flowers at seven, and shuts them at three; the *Apargia hispida* opens at four, and shuts at three; the *Hippochaeris radicata* also closes at three; the *Hieracium pilosella* at half past two; the *Tragopogon porriplius*, and *Tragopogon pratensis* close exactly at noon.

DOG'S TOOTH VIOLET *Erythronium Dens Canis*, prim. An early plant, flowering so soon as March 14th in warm situations; it is always abundant by April 5th; its purple flowers are very ornamental.

DUCKWEED, and some other pond weeds, appear soon after Midsummer, so that stagnant waters are seldom clean during the aestival season. In Aug.

and Sept. many ponds and ditches are quite green, like a carpet, with it.

DWALE a name of the Deadly Nightshade, *Atropa belladonna*.

EGLANTINE, a name sometimes given to the wild Honeysuckle *Lonicera periclymenum*, about the solstice and through July; it is thus used by Milton in Allegro, otherwise applied to the Sweet Briar, *Rosa suavifolia*.

ELICAMPANE *Inula Helenium*, solst. fl. about Midsummer and through July.

EVENING PRIMROSE *Oenothera biennis*, sols. This plant begins to open its pale yellow flowers of an evening about the last two or three days of June; flowers abundantly through July, and declines in August, and goes to seed. Its seeds, which stand till late in autumn, are much fed on by various small birds, particularly goldfinches.

EVERLASTING *Xeranthemum annuum*, aut. so called from the great durability of its flowers, which, being syngeneceous and easily dried, remain in *statu quo* for several years when stuck up on a dry shelf. This plant flowers in September, belonging to the autumnal flora.

FALL OF THE LEAF.—The decay and fall of the foliage is a phenomenon which takes place during the autumnal season, beginning with the early trees, as limes, elms, and others about Michaelmas, and continuing till the feast of St. Catherine, Nov. 25th, after which few leaves are left except on the oaks, and some trees which scarcely shed them at all till spring.

FALLING STARS or small Meteors, are seen all the year, but are most common in August, as are all

meteors. See our articles *Falling Stars* and *Meteors*, in Part I.

FERNCHAFER *Scarabæus solstitialis*, comes with in the solstitial season, about June 26th; they are, like the Cockchaffer, erroneously called Maybugs and Maychaffers, but are distinguished from them by their green bronzed backs, the Cockchaffer being brown.

FENNEL FLOWER, a name of the genus *nigella*.

FIELDFARE *Turdus pilaris*. These birds begin to arrive early in November, or sometimes at the end of October, and continue to come till December; they are more numerous in hard winters.

FIELDMOUSE, found in great numbers dead on the paths and highways in August. We noticed great numbers of these animals running by the roadsides in the plains of Alsace, in August, 1822.

FIRES in our apartments in the district of France and England, to which this work relates, are on an average found necessary from Michaelmas to about St. Mark's day, April 25th.

FLEABANE *Inula dysenterica*, aest. begins to flower by our roadsides August 18th, or sometimes before, and is abundant through September. For great Fleabane see ELICAMPANE.

FLOCKY AGARICK *Agaricus floccosus*, found at the base of trees, in orchards, &c. &c. begins to grow in the middle of October, towards the end is in perfection, decays in November. For many years we have noticed this fungus at the base of the apple tree, in an orchard in Sussex, on St. Luke's day, and from that time till after the feast of Allhallows.

FLOWERING RUSH *Butomus umbellatus*, aest. found flowering by ponds, ditches, and rivers in

July and August; very abundant in Holland. Both this and the *Hottonia palustris* grow in the Medway below Tunbridge.

FLOWERING ASH *Fraxinus ornus*, vern. May and June.

FLOWER DE LUCE, a name of the genus *Iris*, of which fifty-one species are already known and described; most of them are either vernal or solstitial.

FRAXINELLA *Dictamnus albus*, solst. fl. June and July.

FRENCH MARIGOLD *Tagetes patula*, aest. curt. mag. 150. A Mexican plant, nearly related to the *Tagetes erecta*. It flowers in our gardens, with several varieties, from the beginning of Aug. to the end of Oct. and later if not cut off by the frosty nights of autumn. On an average the plant will be first found in flower by August the 7th and till the 27th of October.

FRITILLARY *Fritillaria*, a genus of which there are many species. The Crown Imperial, *F. imperialis*, prim. fl. March and April; the chequered Daffodil, *F. Meleagris*, also vern. fl. April.

FUNGI, comprehending the various Agarics, Boleti, Toadstools, &c. are phenomenon of the late aestival and autumnal seasons; though rare, instances of them occur all the year; the autumnal is, however, the only abundant season of them.

GENTIAN.—1. The marsh Gentian, or Calathian Violet *Gentiana pneumonanthe*, aest. fl. August. 2. Gentianella *Gentiana acaulis*, vern. fl. end of April and May, generally being in plentiful flower by St. George's day.

GERMANDER, the genus *Teucrium*, of which *Teucrium chamaedrys* is aest. fl. July.

GERMANDER SPEEDWELL *Veronica chamaedris*, vern. fl. in greatest abundance in May.

GILLYFLOWER. See STOCK; and for Clove Gillyflower see CARNATION.

GLOBEFLOWER, so called from the form of its flower. 1. The European, or yellow Globeflower, *Trollius Europaeus*, vern. fl. May 6th to Midsummer. 2. Asiatic, or orange Globeflower, *Trollius Asiaticus*, vern. fl. at the same time. 3. The middle Globeflower, *Trollius intermedius*, vern. also of an orange colour, fl. same time. These plants form a pretty ornament to the corners of borders; they closely resemble the Ranunculi.

GLOBE THISTLE *Echinops sphaerocephalus*, aest. fl. July and August. 2. Thorny Globe Thistle, *E. spinosus*, fl. same time. 3. Lesser Globe Thistle, *E. ritero*, aest. July, August, and Sept. There is also an annual species, the *E. strigosus*, aest. the woolly Globe Thistle, *E. lanuginosus*, aest.

GLOW WORMS *Lampyris noctiluca*, called St. John's Worms, and in German Johannis Wurmen; are so named from appearing first, as a common occurrence, about the feast of St. John the Baptist; they continue to be seen through July; a single worm or two is seen as early as 1st June.

GOATSBEARD.—The purple Goatsbeard *Tragopogon porrifolius*, late vern. and the meadow or yellow Goatsbeard *Tragopogon pratensis*, late vern. both flower about the 16th of May, become abundant 1st June, and decline in July. These plants are called *Go to bed at noon*, from closing their blossoms at midday. There is a third or spurious variety.

GOOSEBERRIES first picked for tarts about May 20th, for *Groseille foulée*, vulgarly called Gooseberry fool, June 10th; becomes ripe about 1st July. The red and the yellow varieties get ripe rather before the green. The first week of August generally finishes this fruit in dry warm seasons, unless purposely preserved under mats, a plan more commonly adopted for currants.

GORZE *Ulex Europaeus*, flowers all the spring and summer, from Feb. to Sept. but principally from the middle of April to the end of May, giving our heaths and waste places a gay rich golden appearance.

GLOSSAMER begins to be seen early in September, and is abundant before fine weather.

GREENGAGE PLUM ripens about 30th August, and during the first three weeks of September. The Orleans Plum is ripe about the same time. In France both ripen much sooner.

GELDER ROSE *Viburnum opulus*, late vern. fl. May and June; it is properly the globularheaded variety of the wild plant.

HARVEST.—The wheat harvest begins, on an average of years, about Lammas day, but later in Scotland, and somewhat earlier in France. The oat harvest is a fortnight later; we have known wheat cut in Surrey in the middle of July, and oats as late in Sussex as Michaelmas.

HAULME, often pronounced harme, the dry stalks of pease or beans, and other leguminous plants, and distinguished from Straw, the stalk of the farinaceous grasses.

HAREBELLS, see BLUE BELLS *Scilla nutans*, vern.; it is the *Hyanthus non scriptus* of the old authors, fl. April and May.

HAWTHORN (Whitethorn) or Maybush *Crategus oxyacantha*, vern. The Hawthorn blooms very sparingly about the 1st or 2d of May in early warm springs; by old May day it is plentiful, and to the end of June it continues to bloom; it is therefore a fortnight later than the Blackthorn, which flowers in April and May. The red berries of the Hawthorn ripen in August and September, and continue on the bush till winter.

HAYTIME begins in the neighbourhood of London about the 20th June, when the *Rhinanthus Crista Galli* flowers; it is later by ten days in most other parts of England.

HEADACHES in some persons are regular periodical phenomena at the periods of irritability that occur about the new and full moon. See *Atmospheric and Periodical Diseases*, by T. Forster, London, 1817.

HEARTSEASE or Pansie *Viola tricolor*, vern. fl. rarely in winter or early spring, its time being from Ladytide to the end of May, and sparingly, and in young seedling plants all the summer also.

HEATH.—The Heaths seldom blow before midsummer or the beginning of July, so that, coming much after the Gorze, the purple of July succeeds to the yellow of May, as a covering for our waste lands, heaths, and commons.

HEDGE NETTLE or Blind Nettle, *Stachys sylvatica*, aest. fl. July and August. The other species called Allheal, *Stachys palustris*, is a terrible weed in Sussex; it flowers in August.

HELLEBORE, of which we have many sorts. 1. Christmas rose, *H. niger*, hyber. fl. about Christmas and at Candlemas. 2. Winter Hellebore or Winter Aconite, *H. hyemalis*, hyber. fl. about St. Paul's day,

Jan. 25th to the end of March. 3. Green Hellebore, *H. viridis*, prim. fl. March. 4. Bearsfoot, or stinking Hellebore *Helleborus foetidus*, early vern. fl. April.

HENBANE *Hyoscyamas niger*, solst. flowers all June. 2. The Henbane of Scopoli *Hyoscyamus Scopolia*, prim. flowers about the 20th March, and thence to April.

HEPATIC OR LIVERWORT *Anemone hepatica*, prim. fl. as early sometimes in mild seasons as St. Paul's day; generally shews a few flowers by Candlemas, and always ornaments the gardens through March and part of April, fading before May. There are three varieties, all equally early; the white, the blue, and the bright lake coloured; the two latter become double.

HERB BENET *Geum Urbanum*, solst. fl. from about St. Urban's day to the end of July; from being in greatest plenty about Corpus Christi day it was called *Herba Benedicta*, now corrupted into Herb Benet.

HERB CHRISTOPHER.

HERB GERARD *Aegopodium podagraria*, vern. fl. about 23d April and through May; so called from St. Gerard, who is celebrated April 23d, and who used to be invoked against the gout; hence the several names of the plant.

HERB PARIS *Paris quadrifolia*.

HERB ROBERT, *Geranium Robertianum*, vern. and all summer; it flowers first in plenty in our hedges about St. Robert's day.

HERB MARGUERITE, a name of the daisy.

HERB SHERARD, a name given to a variety of the *Mentha piperita*.

HERB TWO PENCE.

HILBURY. See **VACCINIUM.** Hilbery jam, or the preserved fruit of the *Vaccinium vitis Idaea*, is made in Sweden, Scotland, and other northern counties in the end of August, and eaten by our northern neighbours for breakfast; it is also said to have medical virtues in cold and in irruptive fevers.

HIPS, HAWS, AND SLOWS.—Hips are the orange coloured fruit of the Dog rose and other wild roses; Haws are the red berries of the Hawthorn; Slows the wild plum of the blackthorn. They are all found from Michaelmas to Christmas, but become more conspicuous after the fall of the leaf.

HOLY CROSS DAY is May 3d, and about this time we may expect the Crossflower to blow.

HOLY ROOD DAY, Sept. 14th. About this time the Passionflower blows; and hence the origin of these names among the religious orders; who were our first European botanists.

HOLYHOCK *Alhaea rosea*, aest. fl. end of July to October.

HONESTY or Moonwort *Lunaria annua*, vern. fl. April and May.

HONEYSUCKLE, *Lonicera periclymenum*, called also Woodbine; may be called a solstitial plant if any, but it flowers all summer from May to August. The trumpet Honeysuckle, and several others, are less generally known. The *Lonicera xylosteum*, and *L. capitulum*, are smaller species, both natives of England; sometimes the *Cornus succica* is called Dwarf Honeysuckle.

HORNETS *Vespa crabo*, become common the same time as wasps; that is, in August and September, and later, then disappear when first the cool weather sets in in October.

HOUSELEEK *Sempervivum tectorum*, early aest. fl. in July, on walls, tiling of houses, barns, and sheds.

HYACINTH *Hyacinthus Orientalis*, prim. flowers as early as St. Paul's day, or even sooner in our houses; in the open ground it blows in abundance the first or second week of April, and sooner if sheltered. 2. Field Hyacinth *Hyacinthus non Scriptus*, vern. fl. in April, abundant from St. George's day, April 23, to the end of May; straggling flowers seen till July. See Harebell, its other name. Our oriental or cultivated Hyacinths, have, when wild, nearly the same blue colour as the Harebell, but in a domesticated state they have assumed various red, white, purple, and blue colours, and are more or less double. The following species are now admitted as being distinct:—1. *H. non scriptus*; 2. *H. Amethystinus*; 3. *H. Orientalis*; 4. *H. Corymbosus*; 5. *H. Romanus*; 6. *H. Muscari*; 7. *H. Comosus*; 8. *H. Monstrosus*; 9. *H. Botryoides*; 10. *H. Racemosus*; 11. *H. Ciliatus*. Many others called Hyacinths or Jacinths, are really *Scillas*.

HYBERNAL SEASON begins about 26th December, and continues till February; it is distinguished by raw, dark, and wet or frosty weather, with snow, and is the most barren and uninteresting season of the year; the Hellebore, and a few other plants only, being in blow.

JAMES'S DAY (ST.), July 25th, is proverbially said to bring the first oysters into the market.

INSECTS of many kinds, particularly those which are periodical, do not abound equally in all years; wasps only come in tremendous numbers once in three or four, or more years; cockchaffers abound in desolating quantities only once in three years on

an average; and the same observation applies to numerous others.

JOVE'S FLOWER *Agrostemma flos Jovis*, solst. fl. June and July.

IRIS or Flower de Luce *Iris Persica*, prim. fl. February and March. *Iris Germanica*, late vern. fl. May 10th to the middle of June; *Iris Florentina*, idem; *Iris Versicolor*, late vern. fl. 1st June; *Iris Pseudacorus*, solst. fl. June and July; *Iris Siberica*, *Iris Curida*, *Iris Xiphium*, *Iris Lusitana*, *Iris Xiphioides*, *Iris Halophylla*, and, indeed, most of this genus, are solstitial plants, flowering in June and July. There are fifty-one distinct species.

KING'S SPEAR *Asphodelus racemosus*, also applied to *Asphodelus luteus*, two vernal plants flowering about the beginning of May. See ASPHODEL. These plants flower much earlier in Italy, where whole fields of it are cultivated.

LADY'S SMOCK. For this and all other plants whose names begin with Lady, see OUR LADY'S SMOCK, &c. &c. all of them, being derived from the pious commemoration of some of the feasts of the blessed Virgin, were invented by the monks, friars, and vestals of the middle ages, who were the earliest European cultivators of the flower garden.

LAVATERA *Lavatera trimestris*, aest. fl. in our gardens about the end of June, and all July, and part of August.

LARKSPUR *Delphinium Ajacis*, early solst. fl. from June 1st to the middle of July; often earlier; its long spike of deep blue flowers are not uncommon in our small cottage gardens; is often confounded with the Wolfsbane. 2. Wild Larkspur,

Delphinium consolida, solst. fl. May and June. There are in all twenty-four Larkspurs.

LENT LILY or Double early Daffodil *Narcissus Pseudonarcissus plenus*, prim. fl. March 9th to the end of April.

LEOPARDSBANE *Doronicum pardalianches*, early vern. fl. end of March to the end of May, and nearly all the year. 2. The lesser Leopardsbane, *Doronicum plantagineum*, vern.

LILY, a large and beautiful genus of summer plants, viz.

1. White Lily *Lilium candidum*, solst. fl. July 2d to the end of July.

2. Orange Lily *L. bulbiferum*, solst. fl. June 10th to the end of July.

3. Yellow Pompoon *L. pomponicum*, late vern. fl. May 31st to the end of June.

4. Tiger Lily *L. tigrinum*, aest. fl. July 30th to the end of August.

5. Purple Martagon Lily *L. Martagon*, aest. fl. June 24th to the middle of August.

6. Scarlet Martagon Lily *L. chalcedonicum*, aest. fl. end of June to the end of July; all which names see.

Various other plants obtain the name of Lily, as Lent Lily, May Lily, and others.

LILY OF THE VALLEY *Convallaria majalis*, vern. fl. May; the 8th or 9th of that month usually affords the first flowers of this as well as of the Solomon's Seal *Convallaria multiflora*.

LOVE IN A MIST or Devil in a Bush *Nigella damascena*, solst. fl. soon after St. Barnaby or earlier, and continues till August, when it sheds its seeds. There are many other Nigellas.

LOVE LIES BLEEDING *Amaranthus caudatus*,

aest. the trailing Amaranth with light green leaves, it flowers about the middle of July to the end of August, and is a native of India. See also PRINCES FEATHER. There are several other scarce species of this genus. The seeds are ripe in September.

LOVAGE *Ligusticum levisticum*, solst. fl. June and July. The leaves of this umbellifluous plant have so strong and peculiar a smell that one's clothes retain it for hours after having touched it. The stalk dies in September.

LORDS AND LADIES, a vulgar name of the *Arum maculatum*, vern. it flowers in the end of April and beginning of May; the deep coloured ones are called Lord, the pale ones Ladies, the red berries are ripe in September.

LYCHNIS or Scarlet Lightning *Lychnis chalcidonica*, solst. fl. about St. Barnabas in early years, always by St. John the Baptist, July 24th, fl. max. July 4th, and goes into seed at the end of July or beginning of August. The flowers are of the purest imaginable scarlet.

2. Meadow Lychnis *L. Flos Cuculi*, late vern. fl. May 20th to the end of June. This plant is called Ragged Robbin or Cuckoo flower, and, when doubled, Red Bachelors' Buttons.

3. Wild Lynchnis *L. dioica*, vern. fl. May 1st to midsummer and sparingly much later. There is a white variety in some countries now suspected to be a distinct species. The wild Lynchnis is also doubled, and called red Bachelor's Buttons.

LUCKEN GOWANS, a name of the Globe flower, *Trollius Europæus*.

LUKE'S (ST.) LITTLE SUMMER, is a name given

in Devonshire, and other southern provinces, to the fine calm weather which often occurs about the festival of St. Luke, Oct. 18th; we have noticed fine weather to occur about this time for many years: after it is gone we have usually nothing more like fine summer or autumn weather. Toward the end of the month cold weather begins, and gives rise to the proverb about St. Simon and Jude's day, to be found in its proper place. See this day.

MACKAREL *Scomber scomber*, appear in vast shoals on our southern coasts about midsummer. When first taken out of the water it emits a phosphoric light.

MARGARET'S DAY (ST.), July 20th. The days are perceptibly shortened, the weather usually warm, and the aestival Flora advancing. The *Dra-cocephala Virginiana* is in flower; the pears called *Jargonelle* and *Cuisse Madame*, should be ripe by to-day in favourable years, as well as some other early pears, apricots, and sometimes melting peaches, currants, raspberries, and all the summer fruit in perfection.

MARIGOLD, that is, *Aurum S. Mariæ Virginis*, a name of many sorts of brilliant and golden yellow flowers. The common Marigold *Calendula officinalis*, flowers all the year, the old plants begin to blow about Lady day, and the young seedlings about the visitation of our Lady; they flower till late in the autumn and winter. See FRENCH MARIGOLD, AFRICAN MARIGOLD, MARSH MARIGOLD, FIELD MARIGOLD, &c.

MARTIN or Martlet *Hirundo urbica*, often arrives about the 20th April, or even sooner; is common by May 10th, numerous in June, swarms in

myriads in August and September from the accession of broods, and departs by degrees between Michaelmas and Martinmas, except a few stragglers seen till near the feast of All Saints. The Martin returns to, and repairs her nest of mud early in May. Mr. White observes that this bird works at its nest only in the morning, and does not build of an afternoon. This may also be the case with other species.

MARY BUDS, the same as Marigold, which see.

MAYBUSH. See HAWTHORN.

MARVEL OF PERU, *Mirabilis jalapae*, aest. fl. from beginning of August to the end of September or longer.

MEADOW SAFFRON, *Colchicum autumnale*, autumn. fl. September.

MELONS begin to ripen in July, and continue through September or later; we saw them in abundance at Paris on St. Margaret's day, in 1822; but that was rather an early year.

MEZEREON *Daphne Mezereon*, prim. fl. end of February and through March, and part of April; the flowers come before the leaf, and have a conspicuous figure in the primaveral garden, which possesses as yet but few sorts of flowers.

MICHAELMAS DAISY *Astea Tradescanti*, autumn. flowers about Michaelmas till the end of October, it is sometimes in flower as early as 15th Sept.; nearly all the Asters in general flower about this time, and we have many species now cultivated. See ASTER, also CHINA ASTER.

MIDSUMMER DAISY *Chrysanthemum Leucanthemum*, solst. fl. as early as May 10th, but not abun-

dant till about St. Barnaby, and from thence till July; hence its name.

MILK THISTLE *Carduus Marianus*, early aest. fl. about midsummer and through July; the variety without the milky stripes is the most rare.

MIGRATORY BIRDS.—For a table of the times when our birds arrive see our First Part, taken from reputed authors. Under the several names of the birds; will be found also our own notices, deduced from a MS. journal of above fifty years standing.

MONARDA, an American genus, of which two species are commonly cultivated in our gardens.

1. The crimson Monarda *Monarda fistulosa*, aest. fl. August 15th to October.

2. The scarlet Monarda *Monarda didyma*, aest. fl. August 15th to October; both are elegant plants, and thrive in any soil, but best in a mixture of bog mould and loam.

MONKEY POPPY *Papaver Orientale*, late vern. This fine plant usually begins to open its bright red flowers about the 10th of May, and continues to produce them in succession till near midsummer; but some individual plants, whatever the reason may be, flower every year near a month later than the rest. Thus we may have these splendid flowers from the beginning of May to the end of June; those which open about May 10th deflower about St. Barnaby, while certain plants opening about that time blow, in company with the other species of Poppy, till the end of the solstitial period. The monkey Poppy is a brilliant ornament to the garden, its light red flower being pleasingly contrasted with the glowing crimson of the Piony, its cotemporary in the parterre

MONK'S HOOD. See ACONITUM in Part IV. in its systematic place.

MONKSHOOD POPPY, a name found in Bacon's *Sylva Sylvarum*; perhaps the monkey Poppy *Papaver Orientale*, above described.

MOUNTAIN ASH, *Sorbus aucuparia*, vern. Its reddish orange berries are first coloured about the 28th July, and continue conspicuous through Aug. and Sept. falling readily on the ground. See FLOWERING ASH.

MOUSE EAR, *Hieracium pilosella*, late vern. fl. about May 10th on warm banks, and abundantly from May 18th to the middle of summer every where.

MUSKFLOWER or Sweet Scabious, *Scabiosa atropurpurea*, aest. fl. July and August.

MULBERRY.—The white M. *Morus alba*, the black M. *Morus nigra*, the Tartarian M. *Morus Tartarica*, and the red M. *Morus rubra*, all fl. in June, and bear fruit in August and September.

MUSHROOM *Agaricus campestris*, aut. begins to be found early in August, or even earlier, and continues to the end of October.

MULLEIN, the English name of the genus *Verbascum*. 1. *Verbascum thapsus*. 2. *Verbascum lychnitis*. 3. *Verbascum nigrum*. 4. *Verbascum blattaria*. 5. *Verbascum pyramidale*, and several others, all aestival plants, and flower in July. The earliest is the 1st Mullein, which sometimes flowers as early as Midsummer day.

MUSK MALLOW *Malva moschata*, aest. begins to flower about July 3d, and continues through July and August.

NARCISSUS, a genus probably mistaken, and not

the Narcissus of the Romans and Greeks. The Narcissus is a primaveral plant, all usually flowering before the coming of the leaf. *Narcissus Romanus*, in our gardens, fl. as early as Feb. 1st; *Narcissus pseudonarcissus* March 7th; *N. incomparabilis* March 27th, and the rest in April; as *N. tazetta*, *N. orientalis*, and others, do in the open border; they accompany the *Hyacinthus orientalis*, the *Tulipa suaveolens*, and many of the *Scillas*; the *N. poëticus*, and *N. Biflorus*, are later, and blow about May day.

The following is a list of species at present admitted by botanists as distinct:—1. *N. poëticus*; 2. *N. poëticus* β ; 3. *N. patellaris*; 4. *N. recurvus*; 5. *N. angustifolius*; 6. *N. biflorus*; 7. *N. tenuior*; 8. *N. crenulatus*; 9. *N. trecoianus*; 10. *N. floribundus*; 11. *N. fistulosus*; 12. *N. cerinus*; 13. *N. tazetta*; 14. *N. orientalis*; 15. *N. papyraceus*; 16. *N. tereticaulis*; 17. *N. Italicus*; 18. *N. tazetta* β ; 19. *N. compressus*; 20. *N. bifrons*; 21. *N. primulinus*; 22. *N. jonquilla*; 23. *N. viridiflorus*; 24. *N. serotinus*; 25. *N. calathinus*; 26. *N. odorus*; 27. *N. nutans*; 28. *N. infundibularis*; 29. *N. pulchellus*; 30. *N. triandrus*; 31. *N. capax*; 32. *N. montanus*; 33. *N. albicans*; 34. *N. galanthifolius*; 35. *N. bulbocodium*; 36. *N. inflatus*; 37. *N. lobulatus*; 38. *N. tenuifolius*; 39. *N. incomparabilis*; 40. *N. tortuosus*; 41. *N. moschatus*; 42. *N. serratus*; 43. *N. spurius*; 44. *N. pseudonarcissus*; 45. *N. daffodilla*; 46. *N. tubiflorus*; 47. *N. bicolor*; 48. *N. obvallaris*; 49. *N. major*; 50. *N. propinquus*; 51. *N. nobilis*; 52. *N. sabini*; 53. *N. macleari*; 54. *N. Ajax*; 55. *N. pumilus*; 56. *N. minor*.

NASTURTIIUM or Great India Cress *Tropaeolum majus*, aest. a beautiful Peruvian climber, with

orange coloured flowers, begins to flower about the summer solstice, and continues through the aestival period, fading away in September; the maximum of its flowering being in July.

2. The lesser Indian Cress *Tropaeolum minus*, flowers about the same time; both are earlier in the greenhouse.

NAVELWORT or Houndstongue *Cynoglossum omphalodes*, vern. flowers sparingly from about the 3d of March to April, when it flowers abundantly till near the end of May, and may be seen till past midsummer going off. The colour of the flower is of a bright ultramarine blue.

NIDIFICATION.—The time when the various sorts of birds build and stay should be noted down in journals of natural history; it would occupy an unreasonable space in this little work. Generally speaking, pairing begins about St. Valentine, or the middle of February, nidification about March, and continues with first, second, and third broods all summer. Birds build very early, and begin to repair their old nests in the beginning of February.

NIGHTSHADE, a name given to various plants, particularly those of the natural order *Luridae*; to wit,

1. Common black Nightshade *Solanum nigrum*, aest. fl. early in July, and ripens its black berries in September and October.

2. Woody Nightshade *Solanum dulcamara*, aest. fl. July and August; its red berries ripe in September and some through the winter, enlivening our gardens and wastes in dark brumal weather.

3. Deadly Nightshade or Dwale *Atropa belladonna*, aest. fl. June, July, and August, ripens its black and poisonous berries in Sept. and Oct.

4. Enchanter's Nightshade *Circaea lutetiana*, aest. fl. July and August.

5. Mountain Enchanter's Nightshade *Circaea alpina*, aest. fl. July and August; is liable to become a troublesome weed.

OAT *Avena siberica*, is sown in March or earlier, ripens in July and August, and is repeated in Sept.

2. The black Oat *Avena nigra* observes the same periods.

OLD MAN, a vulgar name of the Southernwood; which see.

OLERA or Potherbs, also called Sweetherbs. See Thyme *Thymus*, Marjoram *Origanum*, Basil *Clinopodium*, Mint *Mentha*, Sage *Salvia*, Chervil *Scandix*, Tanzy *Tanacetum*, Balm *Melissa*, and others.

OUR LADY'S BEDSTRAW, a name of the genus *Galium*, of which we have two common species known by the names,

1. Yellow Ladies Bedstraw, *Galium verum*, aest. fl. July 2d to October.

2. White Ladies Bedstraw *Galium palustri*, aest. July 2d to end of August.

OUR LADY'S CUSHION *Saxifraga hypnoides*, fl. May, June, and July.

OUR LADY'S SEAL or Black Bryony *Tamus communis*, solst. fl. in June. This is the *Sigillum beatæ Virginis* of the old shop catalogues, and is mentioned by this name in Gerard's Herbal, and by Lord Bacon in Sylv. Sylvar.

OUR LADY'S FINGER or Kidney Vetch, *Anthyllis vulneraria*, fl. middle of May to end of Aug.

OUR LADY'S HAIR or Cowquakes *Briza minor*, aest. fl. early in July.

OUR LADY'S SLIPPER *Cypripedium calceolus*, solst. fl. June and July.

OUR LADY'S TRACES *Ophris spiralis*, autumn. fl. Aug. Sept. and Oct.

OUR LADY'S MANTLE, *Alchemilla vulgaris*, fl. June to September. This plant is called Bears-foot in some places.

OUR LADY'S SMOCK or Chemise de Notre Dame *Cardamine pretensis*, prim. a plant vulgarly called Lady Smocks, comes first into blow about old Lady Day, April 6th, whence its name; it is in full flower in the end of April and beginning of May.

OUR LADY'S BOWER. See VIRGIN'S BOWER.

OUR LADY'S THISTLE *Carduus Marianus*. See MILK THISTLE.

OUR LADY'S VIOLET *Hesperis matronalis*, vern. fl. May 16th to middle of June.

OUR LADY'S BIRD, corrupted into Ladybird or Ladycow, a name of several species of the genus *Coccinella*, which are found in our windows and in our gardens during summer. To the very ancient habit of dedication adopted afterwards by pious Christians, is to be ascribed most of the fanciful names of plants and animals taken from the holy martyrs, angels, and heroes of religious history.

PAUL'S BETONY *Veronica serpyllifolia*, fl. early in spring, and again in autumn; perhaps in fl. on St. Paul's day, 25th January.

PAUL'S DAY, (St.), or Conversion of St. Paul, January 25th. About this day, which is reckoned by the vulgar a critical one, we may expect the breaking of the severe frost of winter in snowy and cold years, and in general some change in the

weather; the days too, are now perceptibly lengthened. A proverb says,

If St. Paul's day be fair and clear,
It doth betide a happy year;
But if it should be wind and rain,
Then will be dear all kinds of grain.

The winter Hellebore, the white Butterbur, and the Snowdrop, have been sometimes found to flower as early as this day.

PERSICARY *Polygonum Persicaria*, aest. fl. August and September; most of the Polyganums belong to the same season.

PHLOMIS *Phlomis lunarifolia*, late vern. fl. May and June.

PINK *Dianthus deltoides*, solst. a well known solstitial flower of sweet fragrance, and second in estimation to the Rose; many others of the genus have also an agreeable scent, fl. from June 4th to July 31st. They are faded in general by Lammas day.

2. Indian Pink *Dianthus Chinensis*, solst. fl. May 24th to July 20th.

3. Deptford Pink, *Dianthus Deptfordensis*, solst. all summer.

4. Carnation Pink *Dianthus caryophyllus plenus*, aest. fl. later coming in July or August.

PIONY *Paeonia officinalis*, late vern. fl. from about May 16th till midsummer. One of the most glowing and rich flowers which adorn the gardens late in the spring; its crimson petals are seen shed on the ground between St. Barnabas and midsummer. The other species cultivated in our gardens are, 2. *Paeonia peregrina*, whose flowers are more of a purplish crimson, late vern. fl. May

16th to the first week in June. 3. *Paeonia tenuifolia*, vern. fl. from May 4th to May 24th. There are several other species, all late vernal plants, but less common than the above. Besides the white Piony *Paeonia alba* there is a pale variety of the common Piony first described, whose flowers turn white; it flowers a few days before the crimson sort, that is about May 12th, and its petals last longer before they fall; when the hairs of the human head turn white, they last longer than those which keep their colour. This effect of turning white to give permanency to various natural substances of a fungacious kind, is observable in many other cases.

PEACH *Amygdalus Persica*, fl. March and April, ripens July, August, September, and October.

POPPY Latin *Papaver*, of which are many species, viz.

1. Garden Poppy *P. somniferum*, solst. of which there are many varieties, flowers first about St. Barnabas, is in its greatest perfection about midsummer, and continues to flower all the rest of the summer, and even till October, or later.

1β. White Poppy *P. officinalis*, solst. end of June and all July.

2. Corn Poppy *P. Rhaeas*, solst. fl. about St. Barnabas, and by midsummer quite reddens the corn fields in some soils; it continues more or less to produce a succession of flowers all summer. But the greatest abundance of these scarlet flowers are produced about the summer solstice, and ornament the fields of corn, hence *cereale papaver*.

2. Doubtful Poppy, *P. dubium*, solst. fl. on walls and the sides of corn fields, &c. about the same time as the last.

3. Prickly Poppy *P. Argemone*, late vern. May 24th to June 10th.

4. Hybrid Poppy *P. hybridum*, solst. June and July.

5. Welch Poppy *P. Cambricum*, vern. from 16th of May to the end of summer.

6. Oriental Poppy. See MONKEY POPPY.

7. Great Levant Poppy *Papaver bracteatum*, vern. fl. May, introduced lately; the flowers are larger than those of *P. Orientale*, and are of a more deep red; the seed ripens and will grow.

All the Poppies are scarce in the neighbourhood of Tunbridge Wells, and on the clay and marle soils near East Grinstead. It is remarkable that T. F. Forster, in his useful and accurate Flora Tunbridgiensis, has omitted to notice this fact.

POLYANTHUS *Primula polyantha*, prim. These plants, justly said to be "of unnumbered dyes," flower soon after Christmas, if the weather be mild and warm, often all the winter; the general or abundant flowering is, however, from the middle of March to the end of April.

PRIMAVERAL SEASON, or early spring, begins about Candlemas, Feb. 2d, and is ushered in by the Snowdrops, Hellebores, Croci, Hepaticae, the Mezerion, and other very early flowers. The weather is variable, and liable to returns of wintry cold, of snow showers, and of warm sun; birds begin to sing, and some to build, and at length the trees begin to bud.

PRINCES FEATHER *Amaranthus hypochondriacus*, aest. This is the upright or Virginian species, with deep red leaves; it flowers in the middle of July, and continues to the end of August. See LOVE LIES BLEEDING, and AMARANTH.

PRIMROSE *Primula vulgaris*, prim. flowers early in February, scantily increases through March, and during April is abundant, ornamenting the banks and braes with a profusion of its pale flowers, and mixing agreeably with violets, and here and there with Pilewort; it fades in May, and gives place to Stichwort and other plants.

PYRACANTHUS or Mespilus *Mespilus pyracantha*, vern. fl. May; its orange berries ornament our walls and the sides of houses in autumn, and are brilliant and conspicuous till after Christmas.

RAGWORT *Senecius Jacobæa*, aest. fl. from the end of July to the end of September.

RAMPIONS *Phyteuma spicata*, aest. July. This curious plant has lately been found near Hadlow Down, at Maresfield, Sussex. See CAMPANULA.

2. Bastard Ramsons, *Campanula ranunculus*, aest. July.

RAMSONS. See *Allium ursinum* in Part IV.

REDSTART *Sylvia Phoenicurus*, according to Linnæus a motacilla. This bird visits us about the 16th of April, and becomes numerous during that month, departing in autumn. The female arrives nearly a week before the male, being often seen about April 9th, or even before. This bird, when the genus motacilla were divided, ought to have retained its first generic name, being nearly related to the Wagtails. It is the *Ruficilla muralis* of Forster's Synop. Catalogue; in some places it is called Redtail.

REDBREAST or Robbin Redbreast *Sylvia rubicola*, migrates from the groves and thickets towards the habitation of man in November, and in the frost of the hybernal season comes close to our

windows, and even our firesides, when it can find entrance, in search of food.

RED SARMULLET are caught on the Devonshire and Cornish coasts in August and September.

RHODODENDRON *R. ponticum*, late vern. fl. May 16th to midsummer, is a great ornament to our gardens in the spring, grows best in bog earth mixed with stone rubbish, or on rockwork well moulded.

ROCKET, a name given, 1st to the Larkspur, particularly the *Delphinean Ajax*, solst. fl. June to July. 2dly, To some species of the Wolfsbane. See BLUE ROCKET and WOLFSBANE.

ROSE.—This beautiful genus comprehends a vast number of species and varieties, many of which are cultivated, and many only known as wild plants; generally speaking they all belong to the solstitial flora, and blow in June and July, fading away early in August. The principal sorts grown in our gardens are, 1. The *Rosa centifolia*, which, in its numerous varieties, comprehends the cabbage Rose and all those large pink and very double Roses which are so common an ornament of our midsummer gardens. 2. The *Rosa Gallica* or red officinal Rose. 3. The *Rosa Damascena* or damask Rose, blowing somewhat later. 4. The *Rosa Provincialis* or Province Rose. The *Rosa alba* or white Rose, and the *Rosa Scottica* or Scotch Rose. The *Rosa chinensis* or scentless Rose, flowers late in May and all the summer, nor does it quite cease to bear flowers till nipped by frost. The *Rosa semperflorens* or dark red Rose, does the same.

Wild Roses in hedges and the sides of woods, of which we have many species, also belong to the solstitial flora, and blossom in June and July, very few blowing in May. The *Rosa chinensis*,

however, and the *Rosa semperflorus*, flower more or less all the summer and autumn, and even in winter, though the time when they blow in great abundance is the end of May, and thence to the end of July.

RUE *Ruta graveolens*, fl. all summer.

RYE *Secale Cereale*, fl. June and July, ripens in July and August, is sometimes carried by July 25th, but more is got in, the first week in August.

SEASONS, are the artificial divisions of the year, the old quarters of spring, summer, autumn, and winter, not strictly corresponding to the weather or to the flora; the following seasons have been adopted as marking distinct classes of phenomena.

1. The Primaveral, or equinoctial, from the Italian word *primavera* the early spring; begins with the opening year, about February 1st, and is hailed by the Snowdrops and other early flowers.
2. The Vernal, from *ver*, spring, begins with the general leafing about April 15th.
3. The Solstitial, from the stationary daylight, June 11th.
4. The Aestival, from *aestas*, hot summer, July 15th.
5. Autumnal, September 9th.
6. Brumal or hybernal, November 25th.

ST. JOHN'S WORT or *Hypericum*, of which the following are known here. 1. *Hypericum perforatum*; 2. *Hypericum hirsatum*; 3. *Hypericum pulchrum*; 4. *Hypericum Androsaemum*. They are all solstitial plants, flowering about midsummer, and continuing in flower all the summer. Coming into flower about St. John the Baptist's day they have derived the name of St. John's Wort.

SCARLET LYCHNIS, a plant whose flower indicates the presence of the summer solstice. See LYCHNIS.

SPIDERWORT the genus *Tradescantia*.

SIGILLUM BEATAE VIRGINIS. See OUR LADY'S SEAL.

SNAPDRAGON *Antirrhinum*, of which we have many sorts in our gardens. The *Antirrhinum linaria*, our wild Snapdragon, grows in hedges, and being an aestival plant, fl. in August and September. It first appears about 25th July in favourable seasons. The *Antirrhinum triphyllum*, and many others, occupy a place in our gardens during the aestival season.

SNOWDROP *Galanthus nivalis*, prim. This well known harbinger of the early spring flowers regularly about Candlemas, from whence it is frequently called *Fair Maid of February*, in honour of the Blessed Virgin Mary; it continues in full blow till March, when it begins to decline, and all are gone by the first of April. The resemblance to drops and flakes of snow probably gave rise to the name of this and of the ensuing plants.

SNOWFLAKE 1. *Leucojum Vernum*, prim. flowers soon after the Snowdrop.

2. Summer Snowflake *Leucojum Aestivum*, vern. is badly named, being a vernal plant, and flowering about the 16th of April, and continuing a month or six weeks in blow.

3. *Leucojum Pulchellum*, fl. April.

4. Autumnal Snowflake *Leucojum Autumnale*, aut. fl. September.

SOLSTITIAL SEASON begins about St. Barnabas, June 11th, and continues till about St. Swithin, July 15th, and is distinguished by several peculiar phenomena, and the flowering of many special plants.

SOLSTICE.—One may know the approach of the summer solstice by several natural indications, independent of the long day and the twilight lengthened through the night. About 10th June the sign of the Scorpion in the south, the brilliant constellations of the Eagle, the Harp, and the Swan, rising towards their culmination, the two latter not far from the zenith, as well as the light northern horizon, are indications of the approach of the sun to the sign of Cancer. By day in the gardens we may be equally certain of the time of the year which is at hand. The Columbine is in full perfection, the Piony, and the Monkey Poppy, going out of flower, the annual Poppies just opening, and the Sweet William and Scarlet Lychnis, with numerous other flowers beginning to blow, indicate the presence of the summer solstice. As this period passes over, its flowers give way to those of the aestival Flora, and Nasturtiums, Evening Primroses, the Sweet Scabions, and numerous others, announce the coming of the scorching Dog Days and the declining summer. All these indications, and many others, will best be learned by studying our calendar at the end of the volume. The solstitial fruits are Strawberries and the early Cherries.

STAR OF BETHLEHEM, a name of the genus *Ornithogalum*, of which we have several species, all of them vernal.

STAR OF JERUSALEM. See GOATSBEARD.

STARWORT. See ASTER.

SOLOMON'S SEAL *Convallaria multiflora*, vern. fl. in our gardens from about May 9th to middle of June.

2. *Convallaria polygonatum*, vern. fl. May.

SONGBIRDS begin to sing early in the primaveral season, the Blackbird often in January, and the Thrush soon follows; the vernal birds sing on their arrival. All birds are silent during the early part of the aestival season, and begin to sing again about the first of September, but not with their vernal vivacity of intonation.

STOCK *Mathiola incana*, vern. fl. principally in May and June, but also all the year under different circumstances. There are three principal varieties of single Stocks, the red, the purple, and the white Stock, and all these are sometimes double.

STONE CURLEW *Foedoa Oedicnemus*, arrives in the middle of March, when its shrill voice is heard by night while on the wing, and so continues to be heard all the spring.

SUNFLOWER *Helianthus annuus*, aest. begins to blow at the end of July, and continues till the end of September, varying its times according to the circumstances of the seasons, soil, and time of being sown. See also PERENNIAL SUNFLOWER.

SOUTHERNWOOD *Artemesia Abrotanum*, aest. fl. August and September, a shrub of a very peculiar and refreshing smell, flourishes all the summer, but does often not flower till August. The name may, perhaps, be as it is pronounced, Suddenwood, from the rapidity of its growth, and suddenness of becoming a shrub, with woody branches, from a mere slip.

SWEET WILLIAMS, a name of the Bearded Pink, the *Dianthus barbatus*. The plant is a native of parts of southern Germany; it is a favourite in our gardens, and belongs to the solstitial Flora, coming into flower in the middle of June, and continues till the end of July. It varies much in the colours

of its flowers; the variety called the Painted Lady is much esteemed; some say that this plant derives its common name from St. William de Monte Virgine, whose festival is celebrated on the 25th of June, the time when the plant is usually in full flower. See Hone's "Every Day Book," where the fanciful dedication of plants to patron Saints in old times is alluded to. It is certain, however, that most of our English names for herbs are of monkish origin, and many of them have a religious allusion. The French call this plant *Oeillet des Poëtes*, the Italians Garafano; others call this flower Sops in Wine.

The Sweet William begins to flower about the middle of June, and continues through July.

SPARROWS *Fringilla domestica*. Sparrows congregate in August and September, and it is then that they feed in flocks in the standing corn, and are mistakenly destroyed for the mischief they do. Intelligent farmers are, however, now beginning to be aware that these, as well as most birds, do more good by the vermin they destroy in spring and summer than they do mischief by the grain and fruit they eat in autumn.

STARLINGS *Sturni vulgares*, congregate in great flocks about August 1st, and they increase in size through that month, and are seen all the autumn.

SWALLOW *Hirundo rustica*, first appears about April 5th, or from that to the 15th, becomes common early in May, numerous in June, and abundant in July, August, and September, when they congregate, the great body of them leaving us about Michaelmas, while stragglers are seen till near St. Simon and St. Jude, Oct. 28th, though seldom or never later. See *Brumal Retreat of the*

Swallow, third edit. London, 1813, &c.; also *Gent. Magazine*, alibi.

SWIFT or black Martin *Hirundo apus*, arrives about May 9th, and is seen in numbers about its haunts May 15th; it sometimes appears as a straggler the last week of April. Swifts disappear about the middle of August, except perhaps here and there one left behind.

SWITHIN'S DAY (St.)—A critical time of the year, as to the character of the aestival season which begins at this time, and which being often marked by the commencement of showery weather, has given rise to the proverb, "That if it rain on St. Swithin it will rain for forty days;" we have known this exactly verified, as was the case in 1823. The solstitial flowers now give place gradually to the aestival, and the summer fruits ripen in rapid succession. The day begins sensibly to shorten, and we perceive that there is some actual night.

TANSY *Tanacetum vulgare*, aest. fl. August.

TENCH *Cyprinus Tinca*, makes a loud snapping noise with the lips as it rises to the water's surface from June to the end of August in warm weather at night.

THYME. 1. Wild Thyme *Thymus Serpyllum*, aest. fl. July and August. There are many varieties of the above; it is sometimes called Mother of Thyme. 2. Basil Thyme *Th. Acinos*, aest. fl. July and August. The *Phalaena Papilionaria* lives on wild Thyme, and Bees are so fond of these and other aromatic plants, that it might be worth while for the farmer to cultivate them on purpose for

them. Virgil praises this sweet herb in his *Bucolics*.

Allia Serpyllumque herbas contundit olentes.

TIGER LILY *Lilium tigrinum*, aest. A large reflex salmon coloured Lily with black spots, fl. end of July and all August; it bears bulbs like the Orange Lily.

TREES.—Under this article we purpose to give a list of the principal timber and forest trees growing either wild or planted; the first date marked fr. being that of their first frondescence, or being in young leaf; the second fol. that of their perfect foliage, or full leaf; fl. flower; fal. leaf falling.

1. Oak *Quercus pedunculata*, fl. April, May, fr. May 10th, fol. June 1st.

2. Setfruited Oak *Quercus sessiliflora*, fl. April, May, fr. May 7th, fol. May 29th. The leaves of both the above are retained all winter; they turn yellow in September, and a red brown in October.

3. Durmast Oak *Quercus pubescens*, idem.

4. Turkey Oak *Quercus Cerris*, native of south of Europe, fl. May, fr. idem.

5. Walnut *Juglans regia*, native of Persia, fl. April, May, fr. May; it casts its leaves in October. There are several other species.

6. Beech *Fagus Sylvatica*, fl. April, May, fr. end of April, fol. May.

7. Purple Beech *Fagus purpurea*, idem, found wild in Germany.

8. Chesnut *Castanea vesca*, fl. May and June, fr. April, fol. May.

9. Birch *Betula alba*, fl. April to June.

10. Weeping Birch *Betula pendula*, idem.

11. Hornbeam *Carpinus Betulus*, fl. March to May.
12. Hazel *Corylus Avellana*, fl. February to April, of which Cobnuts, Filberts, and others, are mere varieties.
13. Oriental Plane, *Platanus Orientalis*, fl. April and May.
14. American Plane *Platanus Occidentalis*, fl. April and May.
15. Spanish Plane *Platanus acerifolia*, idem.
16. Wavy Plane *Platanus Cuneata*, idem.
17. Scotch Fir *Pinus Sylvestris*, fl. May, ever-green.
18. Pinaster *Pinus Pinaster*, fl. April and May.
19. Stone Pinea *Pinus Pinea*, fl. May.
20. Weymouth Pine *Pinus strober*, fl. April.
21. Norway Spruce Fir, *Pinus Abies* fl. April.
22. White Spruce Fir *Pinus alba*, fl. May and June.
23. Sylver Fir *Pinus Picea*, fl. May.
24. Balm Pine *Pinus Balsamea*, fl. May.
25. Larch *Pinus Larix*, fl. March and April.
26. Black Larch *Pinus pendula*, fl. May.
27. Cedar of Lebanon *Pinus Cedrus*, fl. May.
28. Dammar Pine *Pinus Dammara*.
29. Cypress *Cupressus sempervirens*, fl. May.
30. Spreading Cyprus *Cupressus horizontalis*, β . idem.
31. Deciduous Cypress *Cupressus disticha*, fl. May, α and β .
32. White Poplar *Populus alba*, fl. March and April.
33. Gray Poplar *Populus canescens*.
34. Trembling Poplar *Populus trepida*.
35. Tremulous Poplar *Populus tremula*, fl. March and April.

36. Black Poplar *Populus nigra*, idem.
37. Po or Lombardy Poplar *Populus dilatata*, idem.
38. Athenian Poplar *Populus Graeca*, idem.
39. Smooth Poplar *Populus laevigata*, idem.
40. Tacumchore Poplar *Populus balsamifera*, idem.
41. Carolina Poplar *Populus quadrangula*, fl. March.
42. Sycamore *Acer Pseudoplatanus*, fl. April and May.
43. Norway Maple *Acer Platanoides*.
44. Virginia Maple *Acer dasycarpum*, fl. April and May.
45. Maple *Acer campestris*, fl. May and June.
46. Broadleaved Elm *Ulmus campestris*, fl. March and April.
47. Dutch Elm *Ulmus suberosa*, idem, α and β .
48. American Elm *Ulmus Americana*, α and β & γ .
49. Hornbeanleaved Elm *Ulmus nemoralis*.
50. Lime *Tilia Europaea*, fl. June, July, and August, α and β .
51. Pubescent Lime *Tilia pubescens*, fl. July and August.
52. Ash *Fraxinus excelsior*, fl. April, May.
53. Weeping Willow *Salix Babylonica*.
54. Box *Buxus sempervivens*.
55. Willows of innumerable sorts, of which the *Salix cinerea*, *Salix alba*, *Salix fargilis*, are the largest, and the *Salix aquatica* grows near water. Besides these Willows there are various Osiers and Sallows. They all flower early in March and April.
56. Tulip Tree *Liliodendron Tulipefera*, fl. July.
- The various characters of Trees are well described by Gilpin, in Forest Scenery; they have attracted the notice of poets as well as natural his-

torians of almost every age; Homer, Virgil, Lucan, Ovid, Tasso, Spenser, and Milton, not to mention innumerable modern poets, have all of them very fine passages in which the special character of trees are described; we might add the *Acasia* and many others.

TUBEROSE *Polyanthes Tuberosa*, aest. fl. August, should be struck in a stove at first.

2. Brasil *T. Polyanthes gracilis*.

TULIPS.—As most of the Tulips display a great variety of colours and forms, so has it become extremely difficult in this, as in many other tribes, to distinguish such permanent varieties as may be called species, from others of a more transitory nature. 1. The Standard Tulip, *Tulipi Gesneri*, vern. This is the most common and most universally cultivated; its varied hues are without number, and the History of the renowned Tulippomania demonstrates how much value is set on the choice roots. This plant, in our climate, flowers the last days of April, and continues through May.

2. The Sweet or Van Thol Tulip *Tulipa suaveolens*, early vern. fl. early in April.

3. The Clarimond Tulip *Tulipa praecox*, vern. fl. about the middle of April. There are several other exotic species, and one which is a native of England, viz. the wild yellow Tulip *Tulipa sylvestris*, which flowers about the 16th April, and continues till the beginning of May. Tulips are ornaments of the garden, and as they increase very fast by roots, have become almost universal. For particulars refer to Perennial Calendar for April 24th, and to Beckmann's *Geschichte der Erfindungen*, article Tulips. Tulip roots may be taken up in September every third year, and

planted afresh in order to increase them by separating the young bulbs from the parent root; the same observation applies to nearly all bulbous roots. According to our opinion the following are the species of Tulips already made out as distinct, besides many varieties:—1. Wild Yellow *T. Sylvestris*; 2. Van Thol *T. suaveolens*; 3. Clusius *T. Clusiana*; 4. Standard *T. Gesneriana*; 5. Clarimond *T. praecox*; 6. Cape *T. Bregniana*; 7. Wavy *T. Turcica*; 8. Twoflowered *T. biflora*; 9. Solar *T. Oculis Solis*; 10. Cels' *T. Celsiana*; 11. Horned *T. Cornuta*.

For some curious particulars relative to Tulips see Beckmann, *supra cit.**

VACCINIUM.—A genus of octandrous bacciferae, the Red Whortle or Hill Berry *Vaccinium Vitis*

* I may add the following note on this plant from an unpublished MS.

Tulip or Turk's Cap, a name given to the genus *Tulipa* of Linnæus, signifying a Turban, and so named first in the Levant, where this plant is a native, and from whence it was spread over Europe during the great passion for gardens and flowers which took place about the time of Clusius the florist.

Botanists now divide this genus into several distinct species, and these into many varieties, but I question whether this genus will not serve to illustrate the doctrine formerly held, that *species*, like *genus*, was a name only for an artificial distinction of plants, that there were, in fact, no distinct boundaries between species, every form of nature being more or less allied to every other, and all liable more or less to mixture and infinite variety, by which new sorts are produced, and some become permanent as species, while others are more fugitive.

Ideae, fl. June, bears berries in August. The Black Whortle Berries *Vaccinium nigrum*, idem.

VERNAL SEASON or late Spring, is, perhaps, the most delightful of the year in temperate climes; it begins about the middle of April, and continues to the feast of St. Barnabas, June 10th. The leaves now gradually expand, the trees, and shrubs, and meadows are in blossom; birds sing, the weather is fair and seasonable, and every thing looks daily more and more beautiful. The flowers of this season, particularly towards the close of it, are the most brilliant, perhaps, of any all the year round.

VIOLET.—The Sweet Violet *Viola odorata*, prim. fl. in February, and through March and April. The Dog Violet *Viola canina*, March 20th, abundant in hedges, together with Primroses, to end of April. White Violet *Viola albiflora*, the same time as the Sweet Violet. The Tunbridge Violet *Viola Tunbrigiensis*, discovered by Mr. T. F. Forster, also fl. at the same time.

For Dames Violet, and others not properly violets, see their proper names *in loco*.

VINE *Vitis vinifera*. The various sorts of Vines bear at somewhat different times, and climate and soil still further vary them in this as in other respects; generally speaking, however, grapes are produced from the middle of July to Michaelmas, and they continue in season to the end of November, and are preserved through the whole year.

VIRGIN'S BOWER *Clematis vitalba*, aest. a beautiful climber, flowering first about the Visitation of Our Lady, and arriving at the maximum of its flowering about the time of the Assumption; hence its name, which, like many others of the same sort,

was given it by the monks and religious orders of the middle ages. These several species of Clematis are all aestival flowers. The Purple Virgin's Bower *Clematis integrifolia*, and many others fl. at the same time.

VIRGIN'S SEAL, a kind of Bryony. See OUR LADY'S SEAL.

WASPS *Vespa vulgaris*, begin to be seen early in August, and during the latter part of that month, and in September they are frequently extremely numerous and troublesome, but this is not equally the case in every season. See article WASPS in our First Part.

WATER BENET. See HERB BENET.

WATER BETONY. See WATER FIGWORT, *infra*.

WATER PLANTAIN or Thrumwort, in Latin *Alisma*, a genus of which three species are found in our ditches and wet places.

1. Great Water Plantain *Alisma Plantago*, aest. fl. July and Aug.

2. Starheaded Water Plantain *Alisma Dumasonium*, fl. June to August.

3. Creeping Water Plantain *Alisma natans*.

4. Lesser Water Plantain *Alisma ranunculoides*, fl. June to September.

This plant, particularly the first mentioned species, is said to be a specific against hydrophobia, of which Mr. Whitlaw has published a long account.

WATER FIGWORT *Scrophularia aquatica*, aest. fl. July, seeds ripe end of August; useful in scrophula, scurvy, and some other diseases. It is wrongly called by some Water Betony.

WATER LILY. 1. The white one *Nymphaea*

alba, aest. fl. July and August in ponds and rivers, moats round castles, monasteries, &c.

2. The yellow sort *Nuphar luteum*, aest. fl. July and August.

3. *Nuphar minimum*, a smaller, perhaps only variety of the above, flowers at the same time.

WATER VIOLET, Water Yarrow, or Featherfoil *Hottonia palustris*, early solst. fl. June; a beautiful ornament to the sides of rivers, ponds, and ditches.

WHEAT *Triticum aestivum*, is sown in November, flowers in July, and soon turns brown, and is reaped from July 20th to the end of August, or even later, according to the season.

WILLOW, the genus *Salix*, of which there are too many species to enumerate here. Willows flower before the leaf, in March and April. Branches of them in blossom are carried into churches and chapels on Palm Sunday; the leaves are then scarcely budded.

WILLOW HERB *Epilobium*, of which we have many sorts; they are early aestival plants, blowing early in July, and lasting till the end of August.

WILLOW WREN, a small genus of summer Birds of passage, enlivening our gardens and orchards, willow plantations, osier beds, and other places; but one species, inhabiting principally willows, has given the name to the genus. They are very small warblers, and arrive in the following succession:

1. Smallest Willow Wren or Lesser Pettychaps *Sylvia Hippolais*, is of a greenish mouse colour, with a whitish belly; it arrives late in March, about Ladytide, and is seen till November; is found running or flitting about the boughs of the Pine or Larch, and like others of this genus is more fre-

quently seen in still rainy days. This is the *Ficedula Pinetorum* of the new arrangement.

2. Yellow Willow Wren *Sylvia Trochilus*, has more of a yellowish cast than the other, and found oftener about Willows; arrives the first week of April, and stays till after Michaelmas. The *Ficedula Salicum* of the new arrangement.

3. Largest Willow Wren or Green Wren *Sylvia Sylvicola*, arrives about the middle of April, and stays till St. Simon and St. Jude's day; it inhabits the largest trees. The *Ficedula Sylvicola* of the new Synop. arrangement.

For particulars of these Birds see *Montagu Ornith. Dict.* article *Wren*, and *Phil. Magazine* for 1819.

WINCOPIPE or Pimpernel *Anagalis arvensis*, solst. fl. June, July, and August; closes its flowers against rain. See Part the First.

WIND changing about storms. Wind often changes rapidly before and during storms, as if by some sudden electrical changes. Thunderstorms which happen at a distance may generally be ascertained to have occurred by a certain clearness, but at the same time a disagreeable chilliness in the air, very different from that freshness which follows them at the place where they happen. The said chilliness seems, by some experiments, to be an electrical effect, but whether from a positive, a negative, or a non electric, state I do not know; it is something in the electric state of the air surrounding the storm, and as the storm-cloud itself is strongly electrified, it seems reasonable to suppose that there may be a surrounding countercharge, and that between the two spheres of opposite electricities there may be a non-electric atmosphere. Now experiment is as yet wanting to determine

whether the effects I allude to take place in the electrified or in the non-electric atmosphere; but they often produce temporary headache, and some other nervous affections, accompanied by a slight febricula.

WINDFLOWER or Star Anemone *Anemone hortensis*, vern. fl. abundantly in April and early in May; it also blows sparingly late in November, in January, and indeed at almost any time of year except the aestival season.

WINTER ACONITE, a name of the Winter Helibore, *Helleborus hyemalis*.

WINTER BERRIES.—The principal Berries which ornament our country on the naked boughs during the winter months are as follows:

The Holy *Ilex aquifolium*, whose berries are scarlet.

Ivy *Hedera Helix*, berries green.

Pyracantha *Mespilus Pyracantha*, berries bright orange.

White Thorn *Crategus Oxycantha*, berries red.

Wild Roses; *Rosa Canina*, &c. berries light red.

Black Thorn *Prunus Spinosa*, berries bluish grey.

Bittersweet Nightshade *Solanum dulcamara*, red.

Missletoe *Viscum Album*, berries green.

Yew *Taxus baccata*, berries red.

These, and several other shrubs bearing ornamental berries, should be sought for in laying out a garden; they ornament nature when all but the evergreens are leafless, and serve to decorate our windows and churches at Christmas. See what Addison, in his Spectator, says of a winter garden.

WOLFSBANE or Aconite, a genus of Polyandrum plants, closely allied to the Larkspurs. The com-

monest is, 1. the *Aconitum pyramidale*, called Blue Rocket, which see.

2. The Monkshood *Aconitum Napellus*, solst. fl. June and July.

3. Yellow Wolfsbane *Aconitum Lycoctonum*, aest. fl. July and August. There are nineteen species in all of this genus, nearly all of which are in flower at the summer solstice, and through July and part of August.

The Monkshood is the most common in all our cottage gardens about Midsummer.

WOODBINE, a name of the Honeysuckle, *Lonicera Periclymenum*.

WOODPECKER, particularly the green Woodpecker or Yattle, is more clamorous before rain, and its repeated shriek is regarded by the peasantry as a certain prognostic of it.

WOODROOF or Wooderowffe *Asperula odorata*, vern. fl. May.

2. Squinancy Woodroof *Asperula Cynanchica*, solst. fl. June and July. Both are Tetrandous plants, wild in England; the latter called Squinancywort, from its supposed effect on Cynanche.

WOOD SORREL *Oxalis Acetosella*, vern. fl. April and May. There are near sixty-seven other species already known.

WOODY NIGHTSHADE *Solanum Dulcamara*. See NIGHTSHADE.

WRYNECK or Cuckoo's Mate *Jynx Torquilla*, first heard in middle of April and through May.

XERANTHEMUM *Xeranthemum Sessamoides*, flowers all the summer, and decorates the house in winter.

2. Everlasting *Xeranthemum Annuum*, aut. fl. September.

YARROW *Achillæa Millifolium*, aest. fl. July and August.

2. *Achillæa Ptarmica*, aest. fl. July and all the summer afterwards.

YELLOW RATTLE *Rhinanthus Crista Galli*, solst. fl. in our pastures early in haytime, being in full blow about St. Peter's day, June 29th. It is sometimes confounded with *Galeopsis Galeobdolon*, a plant which flowers a month sooner.

ZINNIA *Zinnia multiflora*, aest. fl. end of July to end of September.

PART THE THIRD.

SIGNS OF THE SEASONS,

OR

TIMES OF YEAR;

DEDUCED FROM THE HEAVENLY BODIES AND THE
APPEARANCE OF THE SKY.

Nec frustra Signorum obitus speculamur et ortus.

VIRG.

BOOK OF THE REASON

PART THE THIRD

SHINE OF THE REASON

N. B. In this Part we have been careful to introduce a great body of antient authorities, as constituting a very interesting subject for the antiquarian.

SIGNS OF THE SEASONS, &c.



ANDROMEDA in the northern sky extends from 340° W. to 40° E. on the equator, and between 20° and 50° on the meridian, and has sixty three visible stars; the principal being, 1. *Almaach* under her left heel, 2. *Miraach* on her right thigh, and the star *a* on her forehead. The head of the most northern of the Fishes extends to Andromeda's girdle; declinat. 35° N. rit. 15° ; *Miraach* rises in N. E. by N. This constellation is seen rising in the evening during the aestival and autumnal periods, and setting during the hybernal and primaveral. According to fable, Andromeda was daughter of Cepheus and Cassiopea, and was condemned to be devoured by a sea monster, to appease angry Neptune, but Perseus rescued her, and made her his wife. She was translated to the heavens by Minerva. Some have supposed this fable to have been taken from the story of Jonah; but we believe the history of Perseus and Andromeda to be much older than that of Jonah.

APIS or Musca Borealis, the Fly. A small asterism north of Aries, extending from 35° to 45° of the equator, and consisting of only six easily visible stars.

AQUARIUS or the Waterbearer ♒ , the eleventh sign of the Zodiac, and into which the sun nominally enters the 20th January. The constellation extends from about 5° N. to 25° S. on the meridian,

R. S. 3.29° it rises nearly in the East, and may be seen of an evening from August to December.

Jam puer Idaeus media tenuis eminent aluo :

Et liquidas mixto nectare fundit aquas.

OVID, Fasti. Feb. 9th.

Aquarius, according to ancient fable, was the same as Ganymede, cup bearer to Jove; he was the son of Tros, the founder of Troy. The character ☾ represents the undulation of waves.

AQUILA the Eagle, a constellation a little north of the equator, whose largest star is *Atair*, or the bright star in the Eagle; the next in size is *Deneb el Okab* in the Eagle's tail. It is bounded on the east by the Dolphin, by the Sagitta on the north.

Aquila rises heliacally at London in the end of December; it is visible of an evening from June to November. The opposition of the bright star *Atair* takes place on the 16th July, and it is one of the three principal bright stars which ornament the lofty sky during the evenings of the aestival period. Antinous borders closely on this constellation.

Aratus describes the rising heliacally of Aquila as a sign of tempestuous weather, Dios. v. 315.

— χαλεπος γεμην εξ αλος ελθειν

Νυκτος απερχομενος και μιν καλεουσιν 'Αητον.

Some confound the mythology of Aquila with that of Merops changed into an Eagle, but I suspect it is founded on the story of Ganymede, whom Jupiter carried off from mount Ida, when he assumed the form of this bird.

ARIES or the Ram γ, is a northern sign between 10° and 30° N. Lat. and extending between 20° and 50° on the equator. The principal star in the northern horn, *Arietes*, called by the Arabs

Elnath, of the second magnitude, rises heliacally at London about St. Peter's day, June 29th, in N. E. See Table. This constellation may be seen of an evening from the end of August to the beginning of February. The nominal point, called the 1° of Aries, into which the sun enters on the 20th March, is not really the 1° of the stellification of Aries; as, in consequence of the procession of the equinoctial points, the real and the nominal signs have changed places nearly a whole sign, or 30°; so that now at the vernal equinox the sun, in fact, enters into Pisces. The sign γ for this constellation is formed on the ram's horns, and is a very ancient mark for this sign of the Zodiac.

According to ancient fable Aries was the ram which carried Phryxus and Helle to Colchis. Jason, to recover his Golden Fleece, made the renowned Argonautic expedition. The common sign of the Golden Fleece, and in France the *Toisson d'Or*, takes from hence its origin. This constellation is variously named, *Vervex*, *Ovis Aurea*, *Chrysomallus*, *Dux Gregis*, and is usually regarded as being anciently placed as the vernal equinox, though some authors, who give the Zodiac a much higher origin, make Libra to have been originally the vernal, and Aries the autumnal sign. Of this more by and bye. It is evident that at the time of Julius Cæsar, and consequently at that of Ovid, the early astronomers, Aries was the sign of the vernal equinox. Ovid, in the 7th Calends Maiæ, *Fasti*, iv. 903, speaks of this sign by the name of the sheep of Helle. See JUBILEE:

Et frustra pecudem quæras Atamantidos Helles,
Signaque dant imbres, exoriturque Canis. *

* See also Ovid's *Epist. Medea Jasoni*..

APHES, a name of MARS, which see.

ARIADNE. See CORONA SEPTEMTRIONALIS. Ariadne was fabled the daughter of Minos King of Crete, whom Bacchus crowned. The Jews are said to call this constellation *Ataroth*.

ALDEBARAN, a large star of a reddish colour in the constellation of the Bull, and formerly regarded as one of the Hyades, hence called *Fulgens Succularum*; the name of Aldebaran signifies, He goeth before, and probably alludes to some period when the equinoctial point coincided with this part of Taurus; at the time of Julius Cæsar it was in Aries, and now, by the continued precession of the equinox, it is in Pisces. See TAURUS, and also HYADES. For a tabular view of the relative colours of this and of other principal stars, see Phil. Mag. for April, 1824. Aldebaran begins to be conspicuous as an evening constellation in the east early in autumn. See article HYADES.

ALCOR, the name of the little star just over the star Mizar in the Great Bear. It is sometimes fancifully called *Jack on the body Horse*, from its situation in the Septemtriones or Charles' Wain. See POLESTAR, URSA MAJOR, and URSA MINOR.

ALGOL, a changeable star in the head of Medusa. See MEDUSA.

ALPLIARD is the name of a red star of the second magnitude on the body of Hydra, whose declination is $20^{\circ} 7' 28''$ South.

ALMAACH, a star of the second magnitude, under the right heel of Andromeda.

ARCTURUS, a star of the first magnitude in the constellation Boötes. His colour is of a reddish orange, and when his light is dispersed by the

prism, it shows much of the red and yellow. Arcturus is seen during all the aestival period in the western hemisphere of an evening, and makes a conspicuous figure, being the first star seen at eventide owing to his brightness.

Arcturus rises heliacally at London about the 15th of October, and sets about the 12th November. It is a star well known to the antients, and is mentioned in the book of Job. "Who made Arcturus, and Orion, and the Pleiades, and the chambers of the south," ix. 9.

The ancient poets have spoken of both the rising and setting of Arcturus as ominous of bad weather.* Thus Virgil in *Geor.*

Præterea tum sunt Arcturi sidera nobis,
 Hoedorumque dies servandi, et lucidus anguis;
 Quam quibus in patriam ventosa per aequora vectis
 Pontus et ostriferi fauces tentantur Abydi.

We now come to consider the time when Arcturus rose at Rome at the time of Julius Cæsar. This rising (evidently the acronical) is set down in the Julian Calendar for Feb. 25th. Now this, allowing about twenty days for the precession of the equinoxial points, would correspond with the 17th of March, the time when it will be found by the following Table that he rises now. But we must subtract something more for precession than twenty days, indeed nearly thirty days, a circumstance which shews how carelessly the notations were antiently put down.

* Dr. Oaks, of Woodford, Essex, has recently published some very curious observations on the ancient rising of stars, and has constructed a very ingenious globe to exhibit them.

TABLE I.		TABLE II.	
Longitude	M. 20° 53' 12"	Heliacal Rising	Rome, Oct. 14th.
Latitude	N. 30° 54' 10"	Heliacal Setting	Rome, Nov. 20th.
Right Ascension	211° 10' 53"	Cosmical Rising	Rome, Sept. 20th.
R. S. in Time	14° 7' 36"	Cosmical Setting	Rome, June 15th.
Declination	N. 20° 7' 25"	Acronycaal Rising	Rome, March 27th.
Opposition	April 22d.	Acronycaal Setting	Rome, Dec. 20th.

Consequently we get
the following

From the above data we must subtract about a month for precession.

OF THE RISING AND SETTING OF ARCTURUS.

It need hardly be mentioned that the rising and setting of this star was, by most antient writers on agriculture, and by the poets, regarded as an ominous prognostic, and generally of bad weather, as wind, rain, and stormy weather in general.

Now, in order to determine at what particular time of year the aforesaid aerial phenomena an-

tiently took place, considered as being pointed out by the rising of Arcturus and of the other stars, there is one preliminary question to be settled, of great importance to our enquiry, namely, what particular rising or setting they alluded to, in each instance; for it will appear by the above Tables, calculated for the latitude of Rome, that there is a considerable difference between them. These different risings and settings called poetical, from the frequent use the poets made of them, may be thus described.

The Heliacal rising *Ortus Heliacus*, signifies the time when the star said to rise is first seen in the morning emerging from the sun's light. For owing to the sun's apparent motion in the ecliptic eastward, the fixed stars are continually westering at the rate of about $59' 29''$ per day, consequently they rise earlier every day about $3' 52''$ of time. Now it is necessary that the sun should be 12° below the horizon, in order that a star may be seen at the time of its exhorizontal rising, and the star is therefore said to rise heliacally when first it rises morningly at the same time that the sun is about 12° below the eastern horizon.

The Heliacal setting *Occasus Heliacus*, signifies the point of time when the star said to set first emerges into the vespertine sunlight, and therefore sets nightly when \odot is 12° below the western horizon. See Table.

The Cosmical rising *Ortus Cosmicus*, is the rising of any star at the same time as the sun, consequently stars situated in, or very near to the ecliptic, when they rise cosmically, do by virtue of their position, rise, culminate, and set with the sun, and consequently cannot be seen, being all day in the sun's light.

The Cosmical setting *Occasus Cosmicus*, of any given star is its setting below the western horizon at the time of sunrise.

The Acronycal setting *Occasus Acronychus*, is the setting of any star at the time the sun sets; consequently when stars in or near to the ecliptic set acronycally, they are with the sun all day, and cannot be seen: thus the acronycal setting so far corresponds with the cosmical rising, that stars in or very near to the equator rise cosmically, and set acronycally at nearly the same time.

All the above three risings and settings represent the apparent places of stars with respect to the sun, and are regulated by the earth's annual motion in her orbit, and the consequent apparent motion of the sun in the ecliptic.

The horizontal rising *Ortus Horizontalis*, is the daily rising of any star above the eastern horizon in consequence of the earth's rotatory motion on its axis.

The horizontal setting *Occasus Horizontalis*, is the dipping of any star beneath the western horizon in its daily course.

Thus then we may vary our expression of the same thing by saying the cosmical rising of a star is its arising, by means of the earth's annual motion, at such an apparent place in the heavens as that it shall rise morningly, by means of the earth's daily motion, at the same point of time as the sun does.

We shall now examine what the antients have said of the rising and setting of this star.

Arcturus has been in all ages a star much noticed, and its risings and settings have been recorded by the earliest historians with whom we are acquainted.

Aratus reminds us of the propriety of knowing

the periods when certain stars and constellations rise or set, and principally Arcturus, to whom he affixes the epithet of direful, from the blustering weather that was supposed to accompany certain periods in his apparent annual motion. In the following passage, however, the poet seems to refer also to the evening rising, or exhorizontal emersion, of the stars, whereby to persons at sea they would appear to arise out of the bed of the ocean.

Καὶ μὲν τις καὶ νηϊ πολυκλύστου χειμῶνος
 Ἐφράσατ', ἢ δεινοῦ μεμνημένος Ἀρκτούροιο,
 Ἡὲ τέων ἄλλων οἳ τ' ὠκεανοῦ ἀρύονται
 Ἀστέρες ἀμφιλύκης, οἳ τε πρώτης ἔτι νυκτός.

Virgil, who imitated Aratus and the Greek writers, reminds us of the use of attending to the rising and setting of certain constellations.

*Nec frustra signorum obitus speculamur et ortus,
 Temporibusque parem diversis quatuor annum.*

The celebrated poem of the Georgics begins by an allusion to the signification of rustic operations by the periods of the stars :

*Quid faciat laetas segetes, quo sidere terram
 Vertere, Maecenas, ulmisque adjungere vites.*

In another place in the poem we find the poet alluding to the same :

*Hinc tempestates dubio praediscere coelo
 Possumus, hinc messisque diem, tempusque serendi,
 Et quando infidum remis impellere marmor
 Conveniat, quando armatas deducere classes,
 Aut tempestivam silvis evertere pinum.*

See also Hesiod *Op. et Dies*, v. 368, a verse which fixes the time of the swallow's appearance, and shows the early time of its arrival in Greece, being at the end of February.

Horace, in Carm. iii. Od. 1. observes,

Desiderantem quod satis est, neque
Tumultuosum sollicitat mare,
Nec saevus Arcturi cadentis
Impetus, aut orientis Hoedi.

Arcturus, as well as Orion, and the Pleiades, is mentioned in the book of Job. See **PLEIADES**: see also more under the the word **BOÖTES**.

AURIGA the Charioteer, a northern constellation, reaching from 25° to 55° N. and is within 65° and 110° of the equator. In this sign is **CAPELLA**, a brilliant star of bright yellow light. The two *Haeds* are also in this constellation. Auriga is supposed to represent Phaëton by mythologists.

BOÖTES or the Herdsman, a well known northern constellation, that reaches from about 200° to 230° of the equator, and 5° to 55° on the meridian. It is in the milky way, and is distinguished by the splendor of its principal star **ARCTURUS**, which see. Boötes is bounded on the E. by Corona Borealis, on the N. by Draco, on the W. by Corona Beroni and Serpent, and S. by Virgo. For his heliacal rising see Tables under our word **RISING OF STARS**.

Mythologists have much puzzled themselves in enquiries who was Boötes; some say he was Arcus son of Jupiter and Calisto, some say he was Icarus the father of Erigone, others Lycaon, others Erychthonius. The fact is, the origin of this fable is lost in the night of history. This fable is, however, undoubtedly of great antiquity. Ovid, in Met. lib. x. has the following very curious passage:

Tempus erat quo cuncta silent; intérque Triones
Flexerat obliquo plaustrum temone Boötes.

Ad facinus venit illa suum ; fugit aurea coelo
 Luna : tegunt nigrae latitantia sidera nubes ;
 Nox caret igne suo ; primos tegis, Icare, vultus ;
 Erigonéque pio sacrata parentis amore.

And in the 8th Book, in the command given to Icarus by Dedalus, we find,

Instruit et natum : Medioque ut limite curras,
 Icare, ait, moneo ; ne, si demissior ibis,
 Unda gravet pennas ; si celsior, ignis adurat. -
 Inter utrumque vola ; nec te spectare Boöten,
 Aut Helicen jubeo, strictúmque Orionis ensem.

Virgil recommends the sowing of the Pelusian lentil about the setting of Boötes, that is, late in autumn, about October 29th, when

Haud obscura cadens mittet tibi signa Boötes.
 GEOR. i. 229.

Aratus mentions this constellation under the name of Arctophylax, and by this name it is also put down in the Julian Calendar. Thus Aratus :

Ἐξύπιθεν δ' ἐλίκης φέρεται ἐλάοντί ἐοικῶς
 Ἄρκτοφύλαξ, τὸν ῥ' ἄνδρες ἐπικλείουσι Βοώτην,
 Ὅυνεχ' ἀμαξαίης ἐπαφώμενος εἶδεται ἄρκτον,
 Καὶ μάλα πᾶς ἀρίδηλος ὑπὸ ζώνῃ δὲ οἱ αὐτός
 Ἐξ ἄλλων Ἄρκτοῦρος ἐλίσσεται ἀμφαδὸν ἀστήρ.

Martin, in his Transl. Georg. has the following passage on the risings and settings of this sign, which we will quote, and for further particulars refer to our article ARCTURUS.—The time of the setting of Arcturus, according to Columella, is on the 29th of October: “Quarto calendas Novembris Arcturus vespere occidit.” Let us see now how far the other ancient writers agree with our poet. As for vetches or tares, Columella mentions two times of sowing them; the first for fodder,

about the time of the autumnal equinox. Palladius follows Columella; for he mentions September as the first time of sowing: "Nunc viciae prima satio est et foeni Graeci cum pabuli causâ seruntur;" and January, as the other time: "Hoc mense ultimo, colligendi seminis causa, non pabuli secandi, vicia seritur." As for kidney beans, Palladius alone has mentioned the time of sowing them, which he settles to be from the beginning to the middle of October, which is about a fortnight sooner than the time prescribed by Virgil: "Sere-mus sisamum usque ad Idus Octobres, et fase-lum." For lentils they all agree that November is the time; only Columella adds, that there is a second season in February: "Stationes ejus duas servamus, alteram maturam per mediam sementim, ferio-rem alteram mense Februario." Pliny's words are: "Ex leguminibus autem Novembri seruntur lens, et in Graeciâ pisum." Palladius, under the month of November, says: "Nunc seritur prima lenticula."

The name of Arcturus is derived from *ἄρκτος*, a bear, and *ὄυρα*, a tail. The weather is said to be tempestuous about the time of its rising: "Vehe-mentissimo significatu," says Pliny; "terra mari-que per dies quinque:" and in another place; "Arcturi verò sidus non fermè sine procellosâ grandine emergit."

The rising of Arctophylax is recorded in the Roman Calendar, Feb. 11th. Thus Ovid:

Tertia nox veniet : custodem protinus Ursae
Adspicies geminos exseruisse pedes.
Inter Hamadryadas, jaculatricémque Dianam
Calisto sacri pars fuit una chori.

The rising of Arcturus was regarded by the ancients as a tempestuous period, to which the

poets make many allusions. Thus Aratus in *Diosemea* :

Καὶ μὲν τις καὶ νηὶ πολυκλύστου χειμῶνος
'Ἐφράσατ', ἧ δεινοῦ μεμνημένος Ἀρκτούροιο.

The principal star in this constellation, namely, Arcturus, is mentioned by the earliest writers, see our quotations from the book of Job under this word, also under the words ORION and PLEIADES. Virgil also describes part of the Song of Iopas as relating to "Arcturum pluviasque Hyadae, geminosque triones." See *Æneid*, b. i. 744.

The achronycal rising of Arcturus is mentioned by Hesiod as taking place, in his time, about sixty days after the winter solstice; and the swallow is said then to arrive :

Εὐτ' ἂν' ἐξήχοντα μετὰ τροπὰς Ἡελίοιο
Χειμερὶ ἐκ τελευσέ Ζεὺς ἡμάτα δὴ ρα τοὶ ἀστήρ.
Ἀρκτουρὸς πολεπῶν ἱερον ροὸν Ὠκεάνοιο,
Πρῶτον παμφαίνων ἐπιτέχλεται ἀκρονεφαῖος.
Τὸνδε μετ' ὀρθρογῶη Πανδίονος ὤρτο, χελείδων.

Op. et Dies, ii. 185.

The setting of Boötes, described by Ovid on the 26th of May, seems hardly to coincide with the heliacal setting, yet it can be no other :

Auferat ex oculis veniens Aurora Boöten,
Continuâque die sidus Hyantis erit.

By the term *veniens Aurora*, the cosmical setting would seem intended; but this would not correspond to the time of year.

For further particulars see our *Tables of Risings*.

CANES VENATICI or *Asterion* and *Chara*, a small constellation of Helvelius, between Boötes and the tail of the Great Bear. The absurd name of *Cor Caroli* is given to its largest star.

CANIS MAJOR the Great Dog, of which the bright star *Sirius* is every where well known, and makes a conspicuous figure in the end of the hybernal and through the primeveral season. It is called the Dog Star. Declin. $16^{\circ} 28' S$. The Dog Days were reckoned from the heliacal rising of this star, about the beginning of July. Various have been the fables respecting the origin of this asterism's name. Volney's is the best, who, with Jamblicus and Dupuis, regard it as being so called from being, as it were, a barker watchdog or announcer of the coming of the waters of the Nile. It is the same as Anubis. The Romans expressed great heat of summer by *Sirius ardor*. This star may be found by a line drawn through the three stars of Orion's Girdle to *Markab* in *Argo Navis*.

It seems that *Canis Major* was an asterism formed at an epoch when *Sirius* rose achronycally just before the flood of the Nile, of which his brilliant appearance of an evening was the monitor "coelum stellis ornasse unamque ante alias tanquam custodem et quasi speculatorem constituisse Sirium."

CANIS MINOR the Little Dog, of which the brightest star is Procyon, so called from rising before the Great Dog; it was, according to fable, the curious dog Moera of Boötes, who pointed out to Erigone the place of her murdered father. Procyon is confounded with Sirius in the poetical description of the Dog Days. Homer, in his ode to the Bandusian Fountain, says,

Te flagrantis atrox hora Caniculæ,
Nescit tangere.

Vide PROCYON and SIRIUS.

CANCER the Crab ♋, a zodiacal sign, into which the sun nominally enters about the 21st June, and

really about the same time in July. Cancer extends from 115° to 140° of the equator, and lies between 10° and 15° of the meridian. It contains many small stars, though but one great one, and that is only of the third magnitude. In this constellation with two *Aselli*, and between them the *Presepe*, which is a cluster of very small stars forming a beautiful object in a telescope, but appearing to the naked eyes like a lucid spot or nebula. Arutus, in his *Diosemea*, writes much and vaguely of the prognostics to be deduced from these *Aselli* and *Presepe*. See Part I. article *Aselli*.

Cancer rises in E. N. E., and may be viewed in the evening from January to May; it is situated below the *Lynx*, and west of the *Lion*. See *Manlius*, lib. iii. 625.

CAPRICORNUS the Sea Goat ♄ , the nominal sign of the winter solstice. Rises in E. S. E., and is about 13° S. declination. The principal stars are α , β *Dschabeh*, γ *Sadnaschirah*, and δ *Deneb el Dscheddi*. This sign may be seen from July to December.

CAPELLA, a bright star in the Little Goat crawling up the shoulders of *Auriga*. This is a star of the first magnitude, and of a bright yellow color. Its rising was reckoned a rainy sign, whence *Ovid* says of it,

Nascitur Oleniae signum pluviale Capellae.

The *Hoedi* too, placed near to the star, were also considered as stormy omens, so that there seems some natural connection between the time of rising of this constellation *Auriga* and tempestuous weather.

CASSIOPEIA, in the northern hemisphere, a well known asterism. The stars which form Cassio-

peia's chair remind us, when rising in the N. E. during the aestival season, of the letter W ; when setting, and consequently diversified, they have less of this resemblance. This constellation never quite sets at London, it is in the galaxy, and the principal stars are *Shedir*, *Chaph*, and *Ruchbah*.

Cassiopeia was mother of Andromeda and wife to Cepheus; she incurred the vengeance of the Nereides by boasting of her beauty. She is represented as sitting in a chair and drawing her robe over her shoulders.

CERES.—The planet Ceres is of a ruddy colour, and with a proper telescope it appears about the size of a star of the eighth magnitude. It seems to be surrounded with a large dense atmosphere, and plainly exhibits a disk when examined with a magnifying power of about 200. This planet is situated between the orbits of Mars and Jupiter. She performs her revolution round the sun in four years, seven months, and ten days, and her mean distance from that body is nearly 260 millions of miles. The excentricity of her orbit is not very great, but its inclination to the ecliptic exceeds that of all the old planets. The length of its diameter was thought by Dr. Herschel not to exceed 160 miles, but, according to Schroeter, it is more than ten times that length.

CETUS the Whale, of which the principal stars are *Menkar* on the lip, and the *Stella Mira* on the neck. See our article on this latter star under the word *Mira*. The Whale was famed to be a sea monster, who so offended Neptune that Laomedon was going to make a sacrifice of his daughter to appease him, when Hercules delivered him from his danger, and changed the sea monster into this constellation.

COMA BERENICES or Berenice's Hair, a northern asterism which rises with Boötes; and is bounded by the *Canes Venatici* on the north, and *Leo* on the south. The forty-three stars in this asterism are none of greater than the fourth magnitude.

Conon appears to have formed this constellation of the hair of Queen Berenice, wife to Ptolemy Evergetes, who hung it up in the temple and dedicated it to Venus. Thus Catullus in his poem on the hair of Berenice :

Omnia qui magni dispexit lumina mundi,
 Qui stellarum ortus comperit atque obitus :
 Flammeus ut rapidi solis nitor obscuretur,
 Ut cedant certis sidera temporibus,
 Ut Triviam furtim sub Latmia saxa relegans,
 Dulcis amor gyro devocet aërio :
 Idem me ille Conon coelesti munere vidit
 E Bereniceo vertice caesariem.

CERBERUS, a small asterism by the left hand of Hercules, feigned in fable to be the dog with a hundred heads, as Hesiod relates, though some give him only three. Hercules dragged him from hell when he went to redeem Alceste. The whole, however, is an astronomical fable.

CEPHUS the Indian King, situated at about 61° N. declin.; it passes vertically over Scotland: the principal stars are *Aldaramin* and *En Rai*.

CANOPUS, a very bright star in the paddle of the ship Argo.

CORONA BOREALIS the northern Crown or Crown of Ariadne, is a northern constellation conspicuous all the summer and autumn, descending in the N. W. and rising in the N. E. early in spring. It is a marked and splendid constellation from the almost circuitous disposition of its stars, of which

one called *Gemma* or *Lucida Coronae*, is the brightest. Declin. $27^{\circ} 20' N.$; it rises in N. E. and sets in N. W.

According to fabulous history, the Crown is the one given by Bacchus to Ariadne the daughter of Minos. Among the Jews, and still in the East, this asterism is called Ataroth.

Virgil, in a line quoted under our article *Pleiades*, calls the Crown by the epithet of Gnosian, on which Martin much comments: the line in Virgil is,

Gnossiague ardentis decedat stella Coronae.

Gnosus is a city of Crete, where Minos reigned, the father of Ariadne, who was carried away by Theseus, and afterwards deserted by him in the island of Naxos, where Bacchus fell in love with her and married her. At the celebration of their nuptials all the Gods made presents to the bride; and Venus gave her a crown, which Bacchus translated into the heavens and made a constellation. One of the stars of this constellation is brighter than the rest, and rises before the whole constellation appears. Thus Columella reckons the bright star in the northern Crown to rise on the 8th of October, and the whole constellation on the 13th or 14th: "Octavo Idus Octobris coronae clara stella exoritur. Tertio et pridie Idus Octobris Corona tota mane exoritur." Pliny tells us, that, according to Caesar, the bright star rises on the 8th of October, and the whole constellation on the 15th: "Octavo Idus Octobris Caesari fulgens in Corona stella oritur.—Idibus Corona tota." Aratus mentions the crown of Ariadne being placed in the heavens by Bacchus:

Αὐτοῦ κάκεϊνος στέφανος, τὸν ἀγανὸς ἔθηκε
Σῆμ' ἀμεναι Δίονυσσος, ἀποιχομένης Ἀριάδνης,

Νῶτῳ ὑποσρέφεται κεκμηκότος εἰδώλοιο
 Νῶτῳ μὲν στέφονος πελάει.

Manlius has mentioned the superior brightness of one of these stars :

At parte ex aliâ claro volat orbe Corona
 Luce micans variâ, nam stellâ vincitur unâ
 Circulus in medio radians, quae proxima fronte,
 Candidaque ardenti distinguit lumina flammâ,
 Gnosia desertae fulgent monumenta puellae."

Ovid mentions the rising of the Crown of Ariadne under the 8th March, in *Fasti*, lib. iii.

Protinus aspicias venienti nocte Corona
 Gnosida : Theseo crimine facta dea.

On the metamorphosis of Ariadne, sister of the antient Proserpine, Ovid has also, in *Fasti*, iii. these curious lines, in which Bacchus calls her by the name of *Libera* :

Dixerat, audierat jamdudum verba querentis
 Liber ; ut à tergo fortè secutus erat.
 Occupat amplexu ; lacrimasque per oscula siccant.
 Et, pariter coeli summa petamus ait.
 Tu mihi juncta toro, mihi juncta vocabula sumes ;
 Nam tibi mutatae Libera nomen erit.
 Sintque tuae tecum faciam monumenta coronae ;
 Vulcanus Veneri quam dedit : illa tibi.
 Dicta facit : gemmasque novem transformat in ignes :
 Aurea per stellas nunc micat illa novem.

But in *Metamorphos.* viii. 177, Ovid more distinctly describes the change of the crown of Ariadne into a constellation :

————— desertae et multa querenti,
 Amplexus et opem Liber tulit. Utque perenni
 Sidere clara foret, sumtam de fronte Coronam
 Immisit coelo. Tenuis volat illa per auras ;

Dumque volat, gemmae subitos vertuntur in ignes,
 Consistuntque loco, specie remanente Coronae,
 Qui medius nixique genu est, anguemque tenentis.

And in *Fasti* v. :

Bacchus amat flores ; Baccho placuisse Coronam
 Et Ariadneo sidere nosse potes.

CORONA AUSTRALIS the Southern Crown, the feigned Crown of Corinna of Thebes, is a southern constellation. Others pretend that Bacchus placed this Crown in heaven, in honour of Semele his mother. So in *Anthol. Bor. et Aust.* :—

Bacchus et in coelo geminas fixisse Coronas
 Dicitur ; haec Semeles, illa Ariadnes erat.
 Illa solet Boreâ novem lucescere gemmis,
 Hæc solet ignoto lumina ferre polo.
 Nam Deus hæc coelo regalia signa volebat
 Fingere, regnandi norma ut amica micet,
 Qui velit has nitidas Coronae laedere gemmas
 Hunc pedibus calcet pulchra Ariadne suis.

The star *Alphecea* or *Lucida Coronae*, is in conjunction Nov. 16th, in opposition May 15th ; rises achronycally March 29th.

COLOURS OF STARLIGHT.—Enough attention has never been paid to the prevailing colours of different stars, a circumstance of some practical importance to astronomical observations. See *Suppl. Tables*, also our article *REFRACTION*.

According to our opinion and observations, the stars should be classed according to their colours into the red, the yellow, the brilliant white, the dull white, and the anomalous. For though each star may differ somewhat from every other, yet we shall be assisted by this general classification.

When observed with a prismatic glass, *Sirius* shows a large brush of extremely beautiful violet

colour, and generally speaking, the most refrangible rays in great quantity. The same applies more or less to all the bright white stars.

Procyon is far less beautiful than *Sirius*, and shows rather more of the yellow colour.

Aldebaran, together with many of the other red stars, exhibits only a very small proportion of the more refrangible colours, and has much of the red light.

Arcturus much resembles *Aldebaran*, but differs in the lesser proportion of the red to the yellow rays.

Betalgeus is a very red star, little inferior in magnitude to the two above. This star shows also but little of the more refrangible rays; but the spectrum is always a bad one, and for some unknown cause more liable to fluctuation than the above two.

Lyra and *Spica Virginis*, show much blue light, *Capella* is yellowish, *Alpliard* reddish, *Markab*, *Menkar*, and *Deneb* of the ordinary colour.

Antares, the most extraordinary star of all, contains, like *Aldebaran* and *Arcturus*, much red light; but owing to its greater southern declination as well as to something very peculiar in the composition of its light, we cannot get so perfect a spectrum as might be desirable. This star, too, exhibits in the greatest degree a peculiar and hitherto unexplained phaenomenon which will always interfere with our observations on its permanent spectrum. We allude to the rapid permutations of the colour of its light; every alternate twinkling, if we may so express ourselves, being of an intense reddish crimson colour, and the alternate one of a brilliant white. As we have before described and speculated on this phaenomenon, common, though in a less degree, to other stars

when near to the horizon, we shall not farther dwell on it here, but observe that *Antares*, considered with reference to its light, must be put among anomalous stars.

Atair, in the EAGLE, and the dull white stars, exhibit a vast quantity of intense green light. This is very conspicuous in many stars of the second and third magnitudes.

The planets likewise present spectra very considerably differing from each other. *Jupiter* possesses all the colours; but from something in their respective proportions, or from some unknown cause, this planet is liable to produce even in good and almost achromatic glasses so bad and so coloured a spectrum, that we have always found him a disagreeable star to observe. As a prismatic spectrum, however, he is beautiful. The green colour seems somewhat deficient in his spectrum, nevertheless *Jupiter* appears green in comparison with *Sirius*, when an opportunity offers of viewing both at one time.* *Venus* appears less green than *Jupiter*, but still she is not of so bright and blueish a white as *Sirius*. Her spectrum in the prismatic glass shows most of the rays, but the green colour is very pale.

Saturn seems composed chiefly of the mean rays, and has a very small quantity of the extreme colours. Mr. Lee, who also notices this, subjoins the following judicious question—Whether this

* We may imitate the different colours of the spectra of the several stars and planets, by burning antimony, steel, and other metallic filings, in pyrotechnical jerbs, and viewing them through a prism. Compare the prismatic spectrum of ignited steel with that of *Jupiter*, of burning antimony with *Sirius*, of copper filings with the spectrum of *Mars*, and so on.

may not explain why *Saturn* bears magnifying better than *Jupiter* or *Venus*?

Mars, who shines with a red light, appears as a spectral image on the prism to possess less of the middle and most refrangible colours. The red is very conspicuous in the prismatic spectrum.

Mercury is said to show a similar spectrum: we confess we have not made observations on *Mercury* ourselves.

COLUMBA the Dove or Pidgeon, also called Noah's Dove, and feigned to be the one that Noah sent out of the ark to find a sounding. It is therefore placed west of the ship *Argo*, supposed by some to be Noah's Ark.

CENTAURUS the Centaur also called Semivir and Chiron. Ovid notes its rising May 3d, which would make it now rise at the end of May.

Nocte minus quartâ promet sua sidera Chiron,
Semidei et flavi corpora mistus equi.

CORVUS the Crow, a southern constellation, situated E. S. E. of Crater; rises achronycally in April, and heliacally at the end of October. See our article HYDRA.

CUSTOS MESSIUM, a new constellation of M. de la Lande, an allusion made in honour of Messier. It is west of *Apheus*, and never sets to us, being circumpolus.

COMETS present some of the most interesting phenomena in astronomy: they are a class of celestial bodies which appear at very irregular times. They exhibit no visible or well defined disk, but shine with a pale and cloudy light, accompanied with a tail or train turned from the Sun. They are found in every part of the heavens, moving in

all directions. When examined through a good telescope, a comet may be said to resemble a mass of aqueaeous vapours, encircling an opaque nucleus of different degrees of darkness in different comets, though sometimes no nucleus can be seen. As the comet advances towards the Sun, its faint and nebulous light becomes more brilliant, and its luminous train gradually increases in length. When it reaches its perihelion the intensity of its light, and the length of its tail, reach their maximum, and sometimes it shines with all the splendour of the planet Venus. During its passage from the perihelion it is shorn of its splendour, it gradually resumes its nebulous appearance, and its tail decreases in magnitude, till it reaches such a distance from the earth that the attenuated light of the Sun, which it reflects, ceases to reach the eye. Traversing, unseen by man, the remote portion of its orbit, the Comet wheels its ethereal course far beyond the limits of the solar system. What region it there visits, or upon what destination it is sent, we are wholly ignorant. After a lapse of years, we perceive it again returning to our system, and tracing a portion of the same orbit round the Sun which it had formerly described.

The best catalogues of Comets are Mr. Stephen Lee's, in Rees' Cyclopaedia, and Professor Schumacker's.

The ancients regarded Comets like northern lights; meteors, and other unusual phenomena, as portentous of pestilence, wars, or the deaths of great persons. Thus Virgil bespoke the death of Cæsar :

Non alias coelo ceciderunt plura sereno
Fulgura, nec diri toties arsere Cometae.

And again our poet in Calpurnius's address to Cæsar :

When beggars die there are no Comets seen.

CONSTELLATIONS. See ZODIAC.

CLOUDY STARS Nebulae, Lucid Spots, Clusters, and Groupes, form another very interesting consideration in astronomy, and this has been rendered more so of late by the researches of the late Herschell. We shall now consider these, together with the changes in the stars, and other miscellaneous phenomena of the heavens.

There is a remarkable track round the heavens called the *Milky Way*, from its peculiar whiteness, which was formerly thought to be owing to a vast number of very small stars therein: but the telescope shews it to be quite otherwise; and therefore its whiteness must be owing to some other cause. This track appears single in some parts, in others double.

There are several little whitish spots in the heavens, which appear magnified, and more luminous when seen through telescopes, yet without any stars in them. One of these is in *Andromeda's Girdle*, and was first observed A. D. 1612, by Simon Marius: it has some whitish rays near its middle, is liable to several changes, and is sometimes invisible. Another is near the ecliptic, between the head and bow of *Sagittarius*: it is small, but very luminous. A third is on the back of the *Centaur*, which is too far south to be seen in Britain. A fourth, of a smaller size, is before *Antinous's* right foot, having a star in it, which makes it appear more bright. A fifth is in the constellation of *Hercules*, between the stars ζ and η , which spot, though but small, is visible to the bare eye, if the sky be clear and the Moon absent.

Cloudy Stars are so called from their misty appearance. They look like dim stars to the naked eye, but through a telescope they appear broad illuminated parts of the sky; in some of which is one star, in others more. Five of these are mentioned by Ptolemy. 1. One at the extremity of the right hand of *Perseus*; 2. one in the middle of the *Crab*; 3. one unformed, near the sting of the *Scorpion*; 4. the eye of *Sagittarius*; 5. one in the head of *Orion*. In the first of these appear more stars through the telescope than in any of the rest, although 21 have been counted in the head of *Orion*, and above 40 in that of the *Crab*. Two are visible in the eye of *Sagittarius* without a telescope, and several more with it. Flamsteed observed a cloudy star in the bow of *Sagittarius*, containing many small stars: and the star *d*, above *Sagittarius's* right shoulder, is encompassed with several more. Both Cassini and Flamsteed discovered one between the *Great Dog* and *Little Dog*, which is very full of stars visible only by the telescope. The two whitish spots near the south pole, called the *Magellanic Clouds* by sailors, which to the bare eye resemble part of the Milky Way, appear through telescopes to be a mixture of small clouds and stars. But the most remarkable of all the cloudy stars is that in the middle of *Orion's Sword*, where seven stars, of which three are very close together, seem to shine through a cloud, very lucid near the middle, but faint and ill defined about the edges. It looks like a gap in the sky, through which one may see, as it were, part of a much brighter region. Although most of these spaces are but a few minutes of a degree in breadth, yet, since they are among the fixed stars, they must be spaces larger than what is occupied by our solar system; and in which there seems to be a

perpetual uninterrupted day among numberless worlds, which no human art ever can discover.

Several stars are mentioned by antient astronomers, which are not now to be found; and others are now visible to the bare eye which are not recorded in the antient catalogues. Hipparchus observed a new star about 120 years before Jesus Christ; but he has not mentioned in what part of the heaven it was seen, although it occasioned his making a catalogue of the stars, which is the most antient we have.

The first new star that we have any good account of, was discovered by Cornelius Gemma on the 8th of November, 1572, in the chair of *Cassiopeia*. It surpassed *Sirius* in brightness and magnitude; and was seen for sixteen months successively. At first it appeared bigger than *Jupiter* to some eyes, by which it was seen at mid-day: afterwards it decayed gradually both in magnitude and lustre until March, 1573, when it became invisible.

On the 13th of August, 1596, Fabricius observed the *Stella Mira*, or wonderful star, in the neck of the *Whale*; which has been since found to appear and disappear periodically, seven times in six years, continuing in the greatest lustre for fifteen days together; and is never quite extinguished.

In the year 1600, Jansenius discovered a changeable star in the neck of the *Swan*; which, in time, became so small as to be thought to disappear entirely, till the years 1657, 1658, and 1659, when it recovered its former lustre and magnitude; but soon decayed, and is now of the smallest size.

In the year 1604, Kepler and several of his friends saw a new star near the heel of the right foot of *Serpentarius*, so bright and sparkling that it exceeded any thing they had ever seen before;

and took notice that it was every moment changing into some of the colours of the rainbow, except when it was near the horizon, at which time it was generally white. It surpassed *Jupiter* in magnitude, which was near it all the month of October, but easily distinguished from *Jupiter*, by the steady light of that planet. It disappeared between October 1605, and the February following, and has not been seen since that time.

In the year 1670, July 15th, Hevelius discovered a new star, which in October was so decayed as to be scarcely perceptible. In April following it regained its lustre, but wholly disappeared in August. In March, 1672, it was seen again, but very small; and has not been visible since.

In the year 1686 a new star was discovered by Kirch, which returns periodically in 404 days.

In the year 1672 Cassini saw a star in the neck of the *Bull*, which he thought was not visible in Tycho Brahe's time, nor when Bayer made his figures.

Many stars, besides those above mentioned, have been observed to change their magnitudes: and as none of them could ever be perceived to have tails, it is plain they could not be Comets; especially as they had no parallax, even when largest and brightest. It would seem that the periodical stars have vast clusters of dark spots, and very slow rotations on their axes; by which means they must disappear when the side covered with spots is turned towards us.

Maupertius thought that some stars, by their prodigious quickness of rotation round their axis, may not only assume the figures of oblate spheroids, but that by the great centrifugal force, arising from such rotations, they may become of the figures of millstones; or be reduced to flat circular planes,

so thin as to be quite invisible when their edges are turned towards us; as Saturn's Ring is in such positions. But when very excentric planets or comets go round any flat star, in orbits much inclined to its equator, the attraction of the planets or comets in their perihelions must alter the inclination of the axis of that star; on which account it will appear more or less large and luminous, as its broad side is more or less turned towards us. And thus he imagines we may account for the apparent changes of magnitude and lustre in those stars, and likewise for their appearing and disappearing.

The lucid spots above noticed should be well distinguished from clusters of small stars like the Presepe in Cancer, the Pleiades, the cluster in Orion, and others; properly speaking the Pleiades are a group. In some very interesting particulars respecting all these and similar appearances, the reader may consult Herschell's very curious papers in the *Phil. Trans. Royal Society of London*. There is a very remarkable nubacula near to the south pole, which Herschell has had no opportunity to examine. In the course of the Milky Way, besides the general whiteness or illumination, said itself to be caused by minute stars, there are likewise several distinct clusters of telescopic stars not specified above, and which merit the particular attention of those who study the high astronomy.

CRUX AUSTRALIS the Southern Cross, a southern constellation, whose four principal stars joined would make a cross, of which religious emblem this asterism reminds every traveller. Humboldt has well described its appearance, and Madame Hemans has written some beautiful lines on it. See *Perennial Calendar*, under the 3d May.

CRUX BOREALIS, a small asterism, near to AQUILA.

CYCLE.—A *Cycle* is a perpetual round, or circulation, of the same parts of time of any sort. The *Cycle of the Sun* is a revolution of twenty-eight years, in which time the days of the months return again to the same days of the week; the Sun's place to the same signs and degrees of the ecliptic on the same months and days, so as not to differ one degree in a hundred years; and the leap-years begin the same course over again with respect to the days of the week on which the days of the months fall. The *Cycle of the Moon*, commonly called the *Golden Number*, is a revolution of nineteen years; in which time the conjunctions, oppositions, and other aspects of the Moon, are within an hour and a half of being the same as they were on the same days of the months nineteen years before. The *Indiction* is a revolution of fifteen years, used only by the Romans for indicating the times of certain payments made by the subjects to the republic: it was established by Constantine, 312.

The word *Cycle* is the Greek κύκλος, and only means externally a *circle*; an artificial distinction being now made for useful purposes between a *circle* or round of space, and a *cycle* or round of time.

CYGNUS the Swan, a constellation in the galaxy, otherwise called *Olor*, *Ales*, *Jovis*, &c.; the fabled Swan into which Jupiter changed himself to effect the seduction of Leda. This constellation is known by four remarkable stars, three appear as a distinct row, and one opposite the middle one, and equidistant from it, as the middle one is from each of the other two. This star is the brightest, and is

called *Arided*. Ovid, in *Met.* vi. 115, among other changes, alluded to Jupiter's assumption of the Swan's form to betray Leda :

Fecit et Asterien aquilâ luctante teneri ;
Fecit olorinis Ledam recubare sub alis :
Addidit, ut Satyri celatus imagine pulchram
Jupiter implêrit gemino Nycteïda foetu.

The principal stars of Cygnus are *Arided* in his body, *Albireo* near his bill.

DIFFERENTIAL REFRACTION, is the difference between the refractions of different stars produced by the respective differences in their light. See *Phil. Mag.* for April, 1824, and *Perennial Calendar*. For example, the red stars are less refrangible than the white, or even those which have much blue light; as Aldebaran, Betalgeus, and Arcturus, for instance, are less refrangible than Sirius, Lyra, or Aquila.

DELPHINUS the Dolphin, situated near to Aquila, is well known by its four principal stars of the third magnitude, placed, as it were, in the corners of a lozenge. Ovid makes the Dolphin rise heliacally Jan. 9th, which would make it rise now at the end of that month; in fact, it does now rise about the 24th of January. Ovid's words, in *Fasti*, lib. i. are,

Interea Delphin clarum super aequora sidus
Tollitur, et patriis éxerit ora vadis.

On the 10th June, that is in *Fasti*, vi. he describes its acronycal rising, which now takes place in July. See Account of Risings, under ARCTURUS :

Navita puppe sedens Delphina videbimus, inquit,
Humida cum pulso nox erit orta die.

Again, of the heliacal setting in autumn :

Quem modo coelatum stellis Delphina videbas,
Is fugiet oculis nocte sequente tuis.

DOUBLE STARS.—Of these Herschel has found about 700, of these about 40 had been observed before. The following will serve as a specimen, and afford the observer a few objects for his attention.

α *Herculis*, is a beautiful double star; the two bodies are apparently unequal; the largest is red, and the smallest of a bluish colour inclining to green.

γ *Andromedae*, double, very unequal; the larger of a reddish white colour; the smaller a fine bright sky blue, inclining to green.

β *Lyræ*, quadruple, unequal white, but three out of the four inclined to red.

ϵ *Boötis*, double, very unequal, larger, of a reddish colour; the smaller is blue, or of a faint lilac colour.

α *Lyræ*, double, very unequal; the larger is a fine brilliant white, the smaller dusky.

Polaris, *Castor*, and many others, might be enumerated; two stars that are only very close, particularly when of different magnitudes, are not considered as double stars; as, for instance, *Little Alcor* and *Great Mizar*, in the Great Bear.

DRACO the Dragon, a constellation lying round the pole of the ecliptic, may always be seen on a clear night. This Dragon, in fable, is the hundred headed Dragon which guarded the golden apples in the garden of the Hesperides, and which was slain by Hercules: it is a fable confounded with the apple offered to Eve by the serpent.

This constellation seems to be the one alluded to by Virgil in the well known lines, *Geor.* i. 244 :

Maximus hinc flexu sinuoso elabitur Anguis,
Circum, perque duos in morem fluminis Arctos.

There are two other serpent constellations. See HYDRA and SERPENT.

It is probably this constellation to which Ovid alludes in the directions which he has made Phoebus give to Phaeton; he here calls it by the name of *Anguis*:

Altius egressus, coelestia tecta cremabis;
Inferius, terras: medio tutissimus ibis.
Neu te dexterior tortum declinet in Anguem,
Neve sinisterior pressam rota ducat ad Aram.
Inter utrumque tene. Fortunae caetera mando.

In another passage, however, the Dragon is called *Serpens*, and so described as to fix it on the polar Draco; so that there is a doubt cast thereby, whether, in the above lines, SERPENS, and not DRACO, may be alluded to:

Tum primum radiis gelidi caluere Triones,
Et vetito frustra tentarunt aequore tingi.
Quaque polo posita est glacialis proxima Serpens,
Frigore pigra prius, nec formidabilis ulli;
Incaluit: sumsitque novas fervoribus iras.

EARTH \oplus .—The Earth is the next planet above Venus in the system. It is eighty two millions of miles from the Sun, and goes round him in 365 days 5 hours and 49 minutes, from any equinox or solstice to the same again; but from any fixed star to the same again, as seen from the Sun, in 365 days 6 hours and 9 minutes; the former being the length of the tropical year, and the latter the length of the sidereal. It travels at the rate of fifty-eight thousand miles every hour; which motion, though 120 times swifter than that of a cannon ball, is little more than half as swift as Mer-

cury's motion in his orbit. The Earth's diameter is 7970 miles; and by turning round^l its axis every 24 hours from west to east, it causes an apparent diurnal motion of all the heavenly bodies from east to west. By this rapid motion of the Earth on its axis, the inhabitants about the equator are carried 1042 miles every hour, whilst those on the parallel of London are carried only about 580, besides the fifty eight thousand miles by the annual motion above mentioned, which is common to all places whatever.

The Earth is round like a globe; as appears, 1. By its shadow in eclipses of the Moon; which shadow is always bounded by a circular line. 2. By our seeing the masts of a ship whilst the hull is hid by the convexity of the water. 3. By its having been sailed round by many navigators. The hills take off no more from the roundness of the Earth, in comparison, than grains of dust do from the roundness of a common globe.

The seas and unknown parts of the Earth contain 160,522,026 square miles; the inhabited parts 38,990,569; Europe 4,456,065; Asia 10,768,823; Africa 9,654,807; America 14,110,874. In all 199,512,595; which is the number of square miles on the whole surface of our globe.

EQUATION OF TIME.—The annexed Table shews how much the Sun is faster or slower than the clock ought to be, so far as the difference depends upon the obliquity of the ecliptic; of which the signs of the first and third quadrants are at the head of the Table, and their degrees at the left hand; and in these the Sun is faster than the clock; the signs of the second and fourth quadrants are at the foot of the Table, and their degrees at the right hand; in all which the Sun is slower than

the clock: so that entering the Table with the given sign of the Sun's place at the head of the Table, and the degree of his place in that sign at the left hand; or with the given sign at the foot of the table, and degree at the right hand; in the angle of meeting, is the number of minutes and seconds that the Sun is faster or slower than the clock: or in other words, the quantity of time in which the real Sun, when in that part of the ecliptic, comes sooner or later to the meridian than the fictitious Sun in the equator. Thus, when the Sun's place is τ Taurus 12 degrees, he is 9 minutes 49 seconds faster than the clock; and when his place is σ Cancer, 18 degrees, he is 6 minutes 2 seconds slower.

This part of the Equation of Time may, perhaps, be somewhat difficult to understand by a figure, because both halves of the ecliptic seem to be on the same side of the globe; but it may be made very easy to any person who has a real globe before him, by putting small patches on every tenth or fifteenth degree both of the equator and ecliptic, beginning at Aries γ ; and then, turning the ball slowly round westward, he will see all the patches from Aries to Cancer come to the brazen meridian sooner than the corresponding patches on the equator; all those from Cancer to Libra will come later to the meridian than their corresponding patches on the equator; those from Libra to Capricorn sooner, and those from Capricorn to Aries later: and the patches at the beginnings of Aries, Cancer, Libra, and Capricorn, being either on, or even with those on the equator, shew that the two Suns either meet there, or are even with one another, and so come to the meridian at the same moment.

Sun faster than the Clock in							
Degrees.	♈		♉		♊		1st Q. 3d Q.
	'	"	'	"	'	"	Deg
0	0	0	8	24	8	46	30
1	0	20	3	35	8	36	29
2	0	40	8	45	8	25	28
3	1	0	8	54	8	14	27
4	1	19	9	3	8	1	26
5	1	39	9	11	7	49	25
6	1	59	9	18	7	35	24
7	2	18	9	24	7	21	23
8	2	37	9	31	7	6	22
9	2	56	9	36	6	51	21
10	3	16	9	41	6	35	20
11	3	34	9	45	6	19	19
12	3	53	9	49	6	2	18
13	4	11	9	51	5	45	17
14	4	29	9	53	5	27	16
15	4	47	9	54	5	9	15
16	5	4	9	55	4	50	14
17	5	21	9	55	4	31	13
18	5	38	9	54	4	12	12
19	5	54	9	52	3	52	11
20	6	10	9	50	3	52	10
21	6	26	9	47	3	12	9
22	6	41	9	43	2	51	8
23	6	55	9	38	2	30	7
24	7	9	9	33	2	9	6
25	7	23	9	27	1	48	5
26	7	36	9	20	1	27	4
27	7	49	9	13	1	5	3
28	8	1	9	5	0	43	2
29	8	13	8	56	0	22	1
30	3	24	8	46	0	0	0
2d Q. 4th Q.	♋		♌		♍		Deg.

Sun slower than the Clock in

See *Ferguson's Astr.* p. 102.

ERIDANUS, a constellation formed on its imagined resemblance to the river Po.

EQUULEUS the Horse's head, otherwise represented as a small horse, viz. Celeris, given by Mercury to Castor.

FOMALHAUT, a large star in the *Piscis Notius*, not long seen in our climate from its very southern declination; it is to be seen towards the close of the æstival season at about 10° of altitude. The following are the only Latin lines in which we ever remember to have seen Fomalhaut mentioned.

De Stellis primæ magnitudinis:

Albâ luce in atro præfulgit Sirius austro ;
 Procyon in claro, torrentia sidera, Euro ;
 Betalgeus humeri, Rigel pedis Orionis,
 Haec rubet, illa tibi jam candida lumine fundit.
 Aldebaran Hyadas ornat, lucetque Capellæ
 Stella polo; Arcturus dum flectit in æquora cursum,
 Lyraque, coeruleo jam lumine, vertice coeli,
 Et Cygnum et Aquilam comitat, dum Virginis
 Astrum,
 Messorum in rutilos segetum nunc evocat agros ;
 Non ego præteream Markab, nec Menkar ; at illa
 Quæ mutat species et nomine Mira vocatur,
 Carmine dicetur merito mirabile Signum.
 Antares rutilum ad austrum rubescit, at illi
 Mutatæ facies commutant lumina nigro ;
 Et subitò rapidis fulgetque coloribus impar.
 Auferit Cor Hydrae, Regulus, et Cauda Leonis ;
 Ast infra *Fomahaud* lucet, Canopus, Acarnar.

Again, of the planets, we have the following Epigram :

Sol centro inhaerens septem sua corpora librat ;
 Proxima Mercurius jam loca parva tenet.
 Tum Venus, et Tellus quæ librat pondera Lunæ ;
 Mars sequitur rutilo qui micat igne polo.

Juppiter et quatuor jam sustinet aethere lunas ;
 Septem Saturno, circulus atque micans.
 Uranus, in liquido quae longè in coerulea gyrat,
 Sex habet ; huic parco frigida terra foco.
 Neve planetarum haec nomina praetereantur,
 Pallas, et Juno, Vestaque, flava Ceres.

GALAXIA via lactea or the Milky Way, a luminous and irregular tract in the heavens, which, when viewed with a good telescope, seems composed of innumerable small stars ; besides which some of the most brilliant clusters of stars of a rather larger size are discerned with a telescope in the Galaxy, perhaps more than in any other part of the sky.

According to Ovid, *Met.* i. 170, the Milky Way is that which conducts to the heaven or palace of Jove :

Est via sublimis, coelo manifesta sereno,
 Lactea nomen habet, candore notabilis ipso.
 Hac iter est Superis ad magni tecta Tonantis
 Regalemque domum.

Manlius, in *Ast.* i. 753, with more propriety speaks of the probable cause of this remarkable appearance :

Anne magis densâ stellarum turba coronâ
 Contextit flammâs, et crasso lumine candet,
 Et fulgore nitet collato clarior orbis.

La Lande observes of this supposition: " Si cela est probable, il faut convenir au moins que cela n'est point démontré."—*Ast.* i. 327.

The discoveries of Herschel have, since the time of La Lande, placed this supposition on a more than probable basis. See *MILKY WAY*.

GEMINI the Twins Π , a northern sign, whose two principal stars, Castor and Pollux, are first seen

rising of an evening in N. N. E. early in January. See our Tables.

Castor is said to be Apollo, and Pollux to be Hercules; others, more justly, make them the twin sons of Leda and Jove; others say they were only half brothers. As many constellations are said, when rising or setting, to portend storms and tempests, so Castor and Pollux are said to be lucky signs of fair weather, and hence they have been confounded with, or rather their names applied to certain electric meteors which alight on ships, and are described in our First Part, as being lucky signs when two appear. The poets have many allusions to the favourable omens of this constellation. Catullus, in his ode to his little ship, thus invokes their protection by sea:

Gemelle CASTOR et Gemelle CASTORIS.—Of Castor and Pollux, or the Twin stars, the former is almost of the first magnitude, and is in the head of Castor, in the mean longitude 3 S. $17^{\circ} 44' 10''$, and latitude $10^{\circ} 4' 20''$ N. It is also called Apollo. The latter in the head of Pollux is between the first and second magnitude, in longitude 3 S. $20^{\circ} 44' 55''$, and latitude $6^{\circ} 39' 69''$ N. But on account of the precession of the equinox we must subtract nearly a whole sign, or $30''$, to bring our calculation to apply to the period in which Catullus wrote. See Supplement to Part III.

The mythological history of Castor and Pollux informs us that they were originally two heroes in the Argonautic expedition, on whose heads lambent fires were observed playing during a storm, which afterwards subsided. When they died, and were translated into heaven, their appearance was esteemed a propitious prognostic to mariners. To this Horace alludes:

Clarum Tyndaridae sidus ab infimis
Quassas eripiunt aequoribus rates.

And in Carm. iii. of the first book, on the ship carrying Virgil to Athens:

Sic te Diva potens Cypri,
Sic fratres Helenae, lucida sidera,
Ventorumque regat pater.

On the mythological history of Castor and Pollux we may consult Apollonius Rhodius, Ovid, and various others.

GLORIA FREDRICI, decl. 45° N. right asc. 352. This Asterism was so named by Prof. Bode.

HERCULES, a northern constellation containing more stars than any other, but none of any great magnitude; decl. 15° N. It lies south of Draco and north of Serpentarius; his head is towards the south.

HIRUNDO the Swallow, an Arabic constellation placed instead of the Piscis Australis, because the swallow arrives in Arabia about the time of the heliacal rising of the Fishes.

HOEDI the Kids, are two small stars on the arm of Auriga, frequently mentioned, like the *Aselli*, as prognosticating storms. Thus Aratus:

Εἰ δὲ τοὶ ἠνιόχον τὲ καὶ ἀστέρας ἠνιόχοιο,
Σκέπτεσθαι δοκέοι καίτοι φάτις ἤλυθεν αἰγὸς,
'Αυτῆς ἢ δ' ἐρίφων, οἷτ' εἰν ἄλι πορφυρεύουση,
Πολλάκις ἐσκέψαντο κεδαιομένους ἀνθρώπους.

And Pliny: Ante omnia autem duo genera esse coelestis injuriae meminisse debemus: unum quod tempestates vocamus, in quibus grandines, procellae, caeteraque similia intelliguntur: quae cum acciderint vis major appellatur. Haec ab hor-

ridis sideribus exeunt, ut saepius diximus, veluti Arcturo, Orione, Hoedis.”

Ovid, in *Met.* iii. 595, alludes to the rainy asterism of the Goat :

Mox ego, ne scopulis haererem semper in isdem,
Addidici regimen, dextrâ moderante, carinae
Flectere : et Oleniae sidus pulviale Capellae,
Taygetenque, Hyadasque, oculis Arctonque notavi,
Ventorumque domos, et portus puppibus aptos.

And again in *Fasti* :

Nascitur Oleniae signum pluviale Capellae.

Virgil mentions the *Hoedorum dies servandi*, &c. See our article *BOÖTES*, and our account of *Arcturus*. See also our article *CAPELLA*. The lines of Virgil are these :

Preterea tam sunt Arcturi sidera nobis,
Hoedorumque dies servandi, et lucidus Anguis;
Quam quibus in patriam ventosa per aequora vectis,
Pontus et ostriferi fauces tentantur Abydi.

GEOR. i. 287.

Thus Horace too, in the first Ode of the third book :

Desiderantem quod satis est, neque
Tumultuosum sollicitat mare,
Nec saevus Arcturi cadentis
Impetus, aut orientis Hoedi :
Non verberatae grandine vineae,
Fundusque mendax : arbore nunc aquas
Culpante, nunc torrentia agros
Sidera, nunc hyemes iniquas.

The setting of *Arcturus* and of *Orion* is sometimes coupled with the rising of *Hoedi*, as a stormy sign. In the 27th Ode of lib. iii., however, Ho-

race alludes to the daily setting, or horizontal immersion of Orion, as a stormy indication :

Sed vides quanto trepidet tumultu,
Pronus Orion.—See our article ORION.

Some read the 21st and 22d lines of the same Ode thus :

Hostium uxores puerique coecos,
Sentiunt motus orientis Hoedi.

But I believe *Austri* is the better reading. Virgil says :

Quantus ab occasu veniens pluvialibus Hoedis
Verberat imber humum.—VIRG. ix. 668.

Another line reminds,

Non ulli tutum est Hoedis surgentibus aequor.

HYADES, a very ancient constellation, rising heliacally at London about July 20th, ENE. the name comes from the Greek *ὑεῖν*, *pluere*, to rain, because the antients noticed the setting in of the aestival rains about their heliacal rising. The moderns have made a corresponding remark, and have ascribed the rainy period to St. Swithin, whose festival, July 15th, would agree with the rising of the Hyades at that period in the middle ages, when we find this superstition first originated. See *St. Swithin's Day* in Part I. The Hyades become conspicuous later than the Pleiades and all other stars of Taurus, which rise in the evening soon after the autumnal equinox. They rise heliacally at London about the 20th July, when Aldebaran, in the midst of them, being much the largest, is first seen before the Sun in the morning.

According to antient fable the Hyades were five daughters of Atlas, King of Mauritania, who

were so disconsolate at the death of their brother Hyas, who had been killed by a wild boar, that they pined away and died. They became stars after death, and were placed near Taurus, one of the twelve signs of the Zodiac. They received the name of Hyades from their brother Hyas. Their names are Phaola, Ambrosia, Eudora, Coronis, and Polyxo. To these some have added Thione and Prodice, and they maintained that they were daughters of Hyas and Aethra, one of the Oceanides. Euripides calls them daughters of Erectheus. The ancients supposed that the rising and setting of the Hyades were always attended with much rain, whence the name.—See Ovid. *FAST.* v. 165. Hygin. *FAB.* 182. Eurip. in *IRON.*

Virgil alludes to the early denomination of this constellation among several others of equal notoriety, in *Geor.* lib. i.

Navita tum stellis numeros et nomina fecit,
Pleiadas, Hyadas, clarumque Lycaonis Arcton.

Virgil couples Arcturus with the rainy Hyades and with Orion, as signs of bad weather. See article *ORION*

Ovid notices the blowing of the cold Argestes, the termination of the Floralia, and the rising of the Hyades on the 2d of May:

Postera cùm roseam, pulsus Hyperionis astris,
In matutinis lampada tollet equis;
Frigidus Argestes summas mulcebit aristas:
Candidaque a Calabris vela dabuntur aquis.
At simul inducent obscura crepuscula noctem;
Pars Hyadum toto de grege nulla latet.
Ora micant tauri septem radiantia flammis:
Navita quas Hyadas Graius ab imbre vocat.

Other risings of the Hyades are also mentioned,

on the 2d of June, where the Roman Calendar says,
 “Hyades oriuntur heliacè.”

Ovid seems to hint at this rising of the Hyades as being the period of rain; whence they took their name:

Postera lux Hyadas Taurinae cornua frontis
 Evocat, et multâ terra madescit aquâ.

And again, on the 15th of June, it is alluded to. Ovid writes:

Tertia nox veniet quâ tu Dodona Thyene
 Stabis Agenoreae fronte videnda bovis.
 Haec est illa dies, quâ tu purgamina Vestae
 Tibri per Etruscas in mare mittis aquas.

Although the Hyades and the Pleiades are sometimes represented as distinct constellations, and, indeed, very properly so, being distinct clusters of stars, they are, nevertheless, only component parts of that of Taurus. The Hyades are the feigned daughters of Atlas and Pleione. They are composed of numerous small stars surrounding Aldebaran, which forms the right eye of the Bull, and is a star of the first magnitude, whose latitude is $5^{\circ} 29' 40''$ S. and longitude $6^{\circ} 32' 9''$ of Gemini. The Arabians call it Anialtor the Bull's Eye; but Aldebaran, signifying “he that goeth before,” points to a period in the history of astronomy when this star was the foremost, or most illustrious, among the celestial host, Taurus being then the first of the signs. The Hyades, it is also said, were antiently called Deborah, of which the most brilliant was named Aldebaran; but *al* or *el* was the name of Sol, and Deborah or Debaran has been translated *order*, *march*, *series*; the march of the celestial hosts would then be typified by the asterism Aldebaran. The declination of Aldebaran,

in 1820, was $16^{\circ} 8' 24''$ N. and its right ascension $66^{\circ} 23' 52''$. It rises at London nearly N. E. by E. Its meridian altitude is $54^{\circ} 37' 24''$, and the time of its rising and culminating, or passing the meridian, is given in the following Table for the 1st of each month :

	Rising.	Culminating.		Rising	Culminating.
	H. M.	H. M.		H. M.	H. M.
January	2 15 Af.	9 37 Af.	July	2 10 M.	9 42
February	0 2 ..	7 25 ..	August..	0 15 ..	7 34
March..	10 10 M.	5 37 ..	September	10 10 Af.	5 42
April ..	8 6 ..	3 43 ..	October	8 30 ..	3 54
May ..	6 15 ..	1 53 ..	November	6 35 ..	1 58
June ..	4 15 ..	11 46 M.	December	4 30 ..	11 55

HYDRA the Water Snake, is for the most part in the southern half of the sky ; it extends from 340° W. to 70° E. The principal star is Alpliard.

The word Anguis is applied to this as well as to Draco and Serpens. Thus Ovid, in *Fasti*, lib. ii.

Dixit et antiqui monumenta perennia facti ;
Anguis, Avis, Crater, sidera juncta micant.

The old story of these asterisms is this. Apollo sent a crow with a cup to bear water to Jupiter ; but the crow lodged on a fig tree, and awaited the ripening of the fruit ; for which the angry God changed his feathers from white to black, and placing him by the cup, set also an Hydra by him to prevent his drinking it. See Ovid.

HYDRUS the Southern Water Snake, being near the south pole, is invisible to us in Europe.

JUNO is the third of the newly found out planets, and was first observed by Prof. Harding, at Liebensthal, near to Bremen, Sept. 1, 1804, while forming his celebrated *Atlas des Gestirnten Him-*

mels, he saw a star in Pisces not put down in any catalogue, which turned out to be Juno.

JUPITER ♃, the largest of all the planets, is still higher in the system, being about 426,000,000 miles from the Sun; and going at the rate of 25,000 miles every hour in his orbit, finishes his annual period in eleven of our years 314 days and 12 hours. He is above 1000 times as big as the Earth; for his diameter is 81,000 miles; which is more than ten times the diameter of the Earth.

Jupiter turns round his axis in 9 hours 56 minutes; so that his year contains 10,470 days; and the diurnal velocity of his equatorial parts is greater than the swiftness with which he moves in his annual orbit; a singular circumstance, as far as we know. By this prodigious quick rotation his equatorial inhabitants are carried 25,920 miles every hour (which is 920 miles an hour more than an inhabitant of our Earth's equator moves in 24 hours), besides the 25,000 above mentioned, which is common to all parts of his surface by his annual motion.

Jupiter is surrounded by faint substances called belts, in which so many changes appear that they are generally thought to be clouds; for some of them have been first interrupted and broken, and then have vanished entirely. They have sometimes been observed of different breadths, and afterwards have all become nearly of the same breadth. Large spots have been seen in these belts; and when a belt vanishes the contiguous spots disappear with it. The broken ends of some belts have been generally observed to revolve in the same time with the spots; only those nearer the equator in somewhat less time than those near the poles; perhaps on account of the Sun's greater

heat near the equator, which is parallel to the belts and course of the spots. Several large spots, which appear round at one time, grow oblong by degrees, and then divide into two or three round spots. The periodical time of the spots near the equator is 9 hours 50 minutes. To those near the poles 9 hours 56 minutes. See Dr. Smith's *Optics* and Ferguson's *Astron.*

The four satellites of Jupiter, which were discovered by Galileo, may frequently be well seen with a telescope that magnifies 30 or 40 times. The third and fourth have occasionally been seen with the naked eye.

A remarkable provision is made in the system to secure to the planet the benefit of his satellites. When Jupiter is deprived, at the same instant, of the light of the first and second satellites, or of the first and third, the remaining one of the three first cannot possibly be eclipsed at the same time; but is in such a point of its orbit as to give considerable light to the planet.

By means of the eclipses of Jupiter's satellites a method has been obtained for demonstrating that the motion of light is progressive, and not instantaneous, as was formerly supposed: it is found to travel from the Sun to the Earth, that is, ninety-five millions of miles in about eight minutes.—*Evid. La Place, Sys. du Monde.*

JUBILEE.—This word indicates the commencement of a certain period, and is thus described by Mr. Jamieson.—These are astronomical truths; but in nature the sign Aries has no part therein, its place being occupied by Pisces. More than two thousand years have passed away since the sign Aries, owing to the precession of the equinoxes, has ceased to open the astronomical year, as “Prin-

ceps signorum et Ductor exercitûs Zodiaci." In more remote times the vernal equinox took place, and the year opened, when the Sun was in Taurus. But when astronomers and legislators agreed to reform the Calendar according to the new style, the Ram, with which the year commenced, was called *Jubel*; the Jubilee was proclaimed and the new year adopted. Herodotus tells us that once a year, on a certain day, at the festival of Jupiter Ammon, or the Sun in Aries, the people of Thebes, in Egypt, slew a ram. The Sun came into Aries on the 10th of the Jewish month Nisan. An annual feast was then celebrated, and a male ram was slain, to commemorate the deliverance from Egypt. At the period of the flight from Egypt the vernal equinox took place, when the Sun was in Aries.

~~Some~~ ^{Some} connection has been supposed between the Pascal Lamb, or Easter offering, and the entrance of the Sun into the sign of the Ram. In p. 368 of *Oedipus Judaicus*, Sir William Drummond endeavours to prove that the feast of the Passover was instituted to celebrate the transit of the equinox from Taurus to Aries, which would happen in the lapse of time by the precession of the equinoctial points; just as now the equinox has really got into Pisces, though it is called the first point of Aries. That at a period not very remote from the institution of the Passover, Taurus was the sign of the vernal equinox, there can be no doubt. See TAURUS; also HYADES.

LATITUDE and LONGITUDE or distance in degrees and minutes from the equator, and from Greenwich Observatory.

TABLE OF TERRESTRIAL LATITUDES & LONGITUDES.

Name of the Place.	Latitude.	Longitude from Greenwich.
Aberdeen	57° 9' 0" N	2° 9' 0" W
Ajaccio	41 55 1 N	8 43 49 E
Aleppo	36 11 25 N	37 20 0 E
Alexandria	31 13 5 N	30 16 30 E
Algiers	36 48 36 N	2 12 45 E
Amiens	49 53 41 N	2 17 56 E
Amsterdam	52 22 17 N	4 45 30 E
Antongil	15 27 23 S	50 23 15 E
Aurillac	44 55 41 N	2 27 0 W
Antwerp	51 13 16 N	4 22 45 E
Archangel	64 63 36 N	38 55 0 E
Astrakan	46 21 12 N	48 2 30 E
Athens	37 58 1 N	23 52 30 E
Auch	43 38 46 N	0 34 36 E
Auxerre	47 47 64 N	3 34 20 E
Avignon	43 57 8 N	4 48 33 E
Bagdad	33 19 40 N	43 46 30 E
Barcelona	41 21 45 N	2 13 0 E
Batavia	6 12 0 S	106 51 15 E
Beauvais	49 26 2 N	2 4 42 E
Berlin	52 31 17 N	13 22 0 E
Bombay	18 56 40 N	72 38 0 E
Bordeaux	44 50 14 N	0 34 49 W
Bremen	53 4 32 N	8 47 15 E
Breslaw	51 6 30 N	17 8 45 E
Brussels	50 50 59 N	4 21 45 E
Buenos Ayres	34 35 26 S	58 31 15 W
Cadiz	36 32 0 N	6 11 50 W
Caen	49 11 10 N	0 21 47 W
Cambridge	52 12 36 N	0 4 15 E
Canton	23 8 9 N	113 2 15 E
Cape of Good Hope ..	33 55 15 S	18 23 45 E
Carcassonne	43 12 51 N	2 19 11 E
Carthage	10 25 18 N	75 26 45 W
Calcutta	22 34 45 N	88 29 30 E
Cayenne	4 56 15 N	52 15 0 W
Chandernagor	22 51 26 N	88 29 15 E
Constantinople	41 1 27 N	28 53 49 E
Copenhagen	55 51 4 N	12 35 15 E
Cracow	50 3 5 N	19 55 45 E
Dantzic	54 20 48 N	18 33 37 E
Dresden	51 2 50 N	13 42 46 E

Name of the Place.	Latitude.	Longitude from Greenwich.
Dover	51° 7' 47" N	1° 18' 30" E
Draguignan	43 32 18 N	6 28 18 E
Dublin	53 21 11 N	6 6 30 W
Edinburgh	55 57 57 N	3 12 15 W
Falmouth	50 8 0 N	5 2 30 W
Florence	43 46 30 N	11 2 0 E
Frankfort on the Maine	50 7 29 N	18 35 45 E
Geneva	46 12 0 N	6 0 0 E
Gibraltar	36 6 30 N	5 22 0 W
Grenoble	45 11 49 N	5 43 40 E
Greenwich	51 28 43 N	0 0 0
Hamburgh	53 34 30 N	9 50 0 E
Havannah	23 9 27 N	82 18 30 W
Horn, Cape	55 58 30 S	67 26 0 W
Jerusalem	31 46 34 N	35 20 0 E
Lille	50 37 50 N	3 4 16 E
Lima	12 2 45 S	76 49 30 W
Lisbon	38 42 18 N	9 9 59 W
London	51 30 49 N	0 5 37 W
Lyons	45 45 52 N	4 49 43 E
Madras	13 4 54 N	80 28 45 E
Madrid	40 24 57 N	3 25 45 W
Malacca	2 12 0 N	102 5 0 E
Manilla	14 36 8 N	120 53 24 E
Marseilles	43 17 49 N	5 22 8 E
Mecca	21 28 9 N	40 14 25 E
Melun	48 32 23 N	2 39 23 E
Mexico	19 25 57 N	100 5 45 W
Mezières	49 45 47 N	4 43 16 E
Milan	45 27 59 N	9 10 0 E
Montpellier	43 36 33 N	3 52 44 E
Moscow	55 45 45 N	37 45 45 E
Munich	48 8 50 N	11 30 0 E
Nancy	48 41 28 N	6 11 33 E
Nankin	32 4 40 N	118 47 0 E
Naples	40 50 15 N	14 13 45 E
Nismes	43 50 35 N	4 21 11 E
Odessa	46 29 30 N	30 37 35 E
Oxford	51 45 40 N	1 15 30 W
Owyhee	20 17 0 N	155 59 0 W
Palermo	38 6 45 N	13 21 45 E
Paris	48 50 14 N	2 20 0 E
Pekin	39 34 4 N	116 24 15 E
Petersburgh	59 56 23 N	30 19 15 E

Name of the Place.	Latitude.	Longitude from Greenwich.
Philadelphia	39° 56' 55" N	75° 13' 30" W
Portsmouth	50 47 5 N	1 6 15 W
Plymouth	50 22 24 N	4 15 38 W
Prague	50 5 19 N	14 45 0 E
Quebec.....	46 47 30 N	69 53 0 W
Quito	0 13 17 S	77 55 0 W
Riga.....	56 57 0 N	24 5 0 E
Rio Janeiro	22 54 2 S	42 43 45 W
Rome	41 53 54 N	12 28 0 E
Rouen	49 26 27 N	1 5 20 W
St. Helena	15 55 0 S	5 48 0 W
Siam	14 20 40 N	100 50 0 E
Stockholm	59 20 31 N	18 3 55 E
Strasbourg	48 34 56 M	7 46 18 E
Teneriffe, Peak of.....	28 17 0 N	16 29 24 W
Thebes.....	25 43 0 N	32 39 6 E
Tripoli.....	36 47 59 N	13 5 15 E
Tunis	32 53 40 N	5 31 0 W
Turin	45 4 14 N	7 40 0 E
Venice	45 25 32 N	12 4 30 E
Vienna.....	48 12 40 N	16 22 30 E
Warsaw	52 14 0 N	21 0 30 E
Washington.....	38 53 0 N	16 22 30 E

LACERTA the Lizard, a small asterism between the forefeet of Pegasus and the head of Cephus.

LEO the Lion Ω , a Zodiacal sign between 115° and 140° of the equator, and 10° and 35° on the meridian. The principal stars are *Regulus* in the heart, *Deneb* in the tail, and γ , δ , and ϵ . This sign is said to be the Nemaean Lion slain by Hercules, and the character Ω is said to represent the tail of an angry lion. The whole is an astronomical fable. The Lion rises in ENE. and may be seen of an evening from January to the end of May.

LEO MINOR the Lesser Lion, is just above the Zodiacal Leo, and is about 34° N. declination. The

constellation has been formed out of the unformed stars north of Leo.

The following is a Table of *Regulus* in the Greater or Zodiacal Lion, which rises achronyally Feb. 17th.

	Rising.		Culminating			Rising.		Culminating.					
	H	M.	H.	M.		H.	M.	H.	M.				
January	10	15	Af.	3	10	M.	July ..	8	12	M.	3	19	Af.
February	6	0	..	1	0	..	August..	6	0	..	1	14	..
March ..	4	10	..	10	9	Af.	September	4	0	..	11	15	M.
April ..	2	15	..	9	16	..	October	2	15	..	9	27	..
May ..	0	20	..	7	25	..	November	0	22	..	7	30	..
June ..	10	8	M.	5	23	..	December	10	22	Af.	5	27	..

LEPUS the Hare, a small constellation southward of Orion and before Sirius, of whom Germanicus, ex Aratro, says,

Auritur Leporem sequitur Canis, et fugit ille.

LIBRA or the Balance ♎ , the seventh sign of the Zodiac, into which the Sun nominally enters on the 23d of September. This sign has its origin in the natural circumstance that the Sun at the equinox rising and setting at six o'clock the day and night were equally balanced. But learned astronomers, and among others M. Dupuis, have supposed that Libra was formerly the sign of the vernal equinox at a very remote period in Egypt, and that it became the autumnal sign by a long precession of the equinox; so that at Rome, in Virgil's time, and also in Greece, the real stellification of Libra was with the Sun about the 23d of September. Thus Virgil says, in Geor. i. 208.:

Libra die Somnique pares ubi fecerit horas,
Et medium luci atque umbris jam dividet orbem:
Exercete, viri, tauros; serite hordea campis.

At present, owing to the continuation of the same said precession of the equinoctial points, the Sun enters only the nominal Libra on the 23d September, and that point coincides with the stars of Virgo. See a *Memoire sur l'Origine des Constellations*, at p. 351 of the fourth volume of La Lande's *Astronomie*. We are inclined to think this explanation doubtful, as it places the origin of the signs at too remote a period, nor can we incline to the opinion of others, who think that Libra might once signify the solstitial balance of the two halves of the year, and once corresponded to the summer solstice. The reader may consult Dupuis above cited, and also Sir William Drummond's learned *Oedipus Judaicus*, *Iamblicus de Symbolis*, and other works on the history of astronomy. The sign \simeq for this constellation represents a balance.

Libra is a southern sign between 220° and 240° of the equator, and 0° and 30° on the meridian. The principal stars, *Zuben, el Genubi* and *Zuben el Chamali*, are of the second, and *Zuben el Akrab* of the third magnitude. The ancients have sometimes represented the Balance as being held in hand by *Astraea* when she left the earth; and to represent the balance of equal justice. Libra rises in ESE. and sets WSW. It may be seen of an evening from April to November. Libra is in opposition in the end of April.

Virgil pretended that the Balance was placed instead of the *Chelae Scorpionis* in heaven, as a sign of the justice of Cæsar :

Ipse tibi jam brachia contrahit ardens
Scorpius, et coeli justâ plus parte reliquit.

I quote here the subjoined MS. note on Julius

Cæsar's star.* In a curious passage in Manlius, Astr. ii. 218, *Libra* is alluded to as indicating the coming of a season under the influence of darkness :

Quin etiam sex continuis dixere diurnas
Castris esse vices quae sunt a principe signo
Lanigeri ; sex a *Librâ* nocturna videri.

The explication of this allusion will be found in Lalande's Astr. vol. iv. 465.

Manlius observes, alluding to this sign :

Haec erit in *Librâ*, cum lucem vincere noctes
Incipiunt.—Lib. iii. 252.

Ovid, in *Fasti*, under 8th April, speaks of the achronycal rising of *Libra*, and the setting heliacally of Orion :

* "Julius Cæsar's Star. The star of Cæsar mentioned by the poets was probably the Comet seen at the time of his death, of which an account may be found in Mr. Lee's Catalogue of Comets in Rees's Encyclopædia. The sudden appearance of it is contrasted therefore by antients with the antient and well known constellations. Virgil, in the 9th Eclogue, observes :

Daphni, quid antiquos signorum suspicis ortus !
Ecce Dionaei processit Cæsaris astrum ;
Astrum, quo segetes gauderent frugibus, et quo
Duceret apricis in collibus uva colorem.

The latter part of this description does not seem to apply to a Comet whose period can never indicate any particular season, and it is probable the poet has confounded it with some other star ; perhaps with the *Notum pro Cæsare* contained in the *Georgics*. See Virg. Geor. lib. i. 35 ; see also Ovid. Met. ii. 195."

The above descriptions, however, apply to the sign *Libra*.

Plura locuturi subitò subducimur imbre,
 Pendula coelestes Libra movebat aquas,
 Ante tamen quàm summa dies spectacula distat,
 Ensifer Orion aequore mersus erit.

LUNA the Moon, in Greek *Σεληνή*. The satellite which attends our planet, which lights our nights half of every month, and which, by her revolutions, has ever had an important influence on our divisions of time. As the year is dependent on the Sun, so the months and weeks seem to have been divisions following lunar periods. The superstitions relating to the Moon are innumerable, and to be found in every country and clime.

The Moon is not a planet, but only a satellite attendant of the Earth; going round the Earth from change to change in 29 days 12 hours and 44 minutes; and round the Sun with it every year. The Moon's diameter is 2180 miles; and her distance from the Earth's center 240,000. She goes round her orbit in 27 days 7 hours and 43 minutes, moving about 2290 miles every hour; and turns round her axis exactly in the time that she goes round the Earth, which is the reason of her keeping always the same side towards us, and that her day and night taken together is as long as our lunar month.

Effect of the Moon on human health.—An extremely curious circumstance about the effect of the place of the Moon is well known to physicians: there are periods of greater and lesser irritability in the human body; at the irritable periods, many diseases occur to which the patient may be predisposed: now it seems, by the result of long continued observation, that these periods of irritability oftener occur about the new and full of the Moon than about the quarters. Every

body almost must know, from their own experience, that they get up in the morning on particular days less disposed to be pleased, and with more general irritability than usual; these days also happen nearer to the times of the full Moon, or of the new Moon, than to that of either quadrature.

To bring this observation into a smaller compass, and to confirm it by future remarks, I have proposed to meteorologists to divide the lunar revolution into four equal parts or weeks, in the middle of each of which weeks one of the changes of the Moon shall take place. By doing this we shall find the greater proportion of headaches and nervous diseases of many kinds to occur in those weeks in the middle of which the new and the full Moon shall take place. Moreover, the sudden occurrence of east winds, so obnoxious to nervous persons, seems to produce more violent effects about the time of the new or full Moon.—See *Obs. on Atmosph. Diseases*, 1817.

The effect of the Moon's place on lunatics, and on other disordered persons, has been observed by Sydenham, Meade, and others.* The author of the following Table of the Moon's influence on the weather is unknown:

* See *Observations on the Periodical and Atmospheric Diseases*, London, 1817. See also *Observations in the Lancet*, a medical weekly publication.

NEW OR FULL MOON.	SUMMER.	WINTER.
If it be new or full Moon, or the Moon enters into the first or last quarters at the hour of 12 ..	Very Rainy	Snow and rain.
Or between the hours of		
2 and 4.....	Changeable	Fair and mild.
4....6.....	Fair	Fair.
6....8.....	{ Fair, if wind N.W. } { Rainy, if S. or S.W. }	{ Fair and frosty, if N. or N. E. } { Rainy, if S. or S.W. }
8 .. 10.....	Ditto	Ditto
10.... Midnight	Fair	Fair and frosty.
Midnight 2.....	Ditto	{ Hard frost unless wind S. or S. W. }
2....4.....	{ Cold with frequent showers..... }	Snow and stormy.
4....6.....	Rain	Ditto.
6....8.....	Wind and rain	Stormy.
8 .. 10.....	Changeable	{ Cold, rain, if W. } { snow if E. }
10.... Noon....	Frequent showers ..	Cold, with high wind.

LYRA the Harp, of which the bright star is called also Lyra and sometimes Vega, is one of the chief ornaments of our zenith in summer. The antients sometimes represented this constellation as a Vulture and sometimes a Harp; more modernly it is drawn as a Vulture holding a Lyre. Ovid makes its heliacal rising in his time on the 5th January:

Institerint Nonae; missi tibi nubibus atris
Signa dabunt imbres ex oriente Lyrâ.

This, however, is one of the inexactitudes of the antients; Father Petau has shown that the heliacal rising of Lyra took place in November at the Julian period.

LYNX, a northern constellation, south of Camelopardalis and the nose of the Great Bear, and north of Gemini. The stars in this constellation are of small magnitude.

LUPUS the Wolf, is in the southern hemisphere, between 90° and 140° , near to Scorpio and Centaurus.

MARKS and signs of Hieroglyphic origin have been used in astronomy from the earliest period of history. These antient characters had all some particular original meaning, viz. \odot represents the encircled Sun; ☿ for Mercury, is the Caduceus; ♀ for Venus, represents her mirror and its handle; ♂ for Mars, his arrow and buckler, ♃ is originally his Greek initial, Z for Zeus, with an intersection; ♄ Saturn is represented by a sickle. The rest are newly invented, and have not much meaning, except that of Ceres and Vesta. See article SIGNS. As for the Zodiacal signs, ♈ imitates the horns of the Ram; ♉ those of the Bull with his head; ♊ the Twins, are at once seen to be designated by two lines joined; ♋ the Crab; ♌ the Lion; ♍ Virgin, have been changed by the Arabs in the lapse of time; ♎ represents the Scales; ♏ the tail of the Scorpion; ♐ Sagittarius, is evidently an arrow; ♑ Capricornus, has a sort of resemblance to a Goat's horns and his tail; ♒ Aquarius, is waves of water; ♓ the Fishes, are two of them joined by a band. See *Spect. de la Nature*, Vol. IV. p. 305.

MARS.—The planet Mars ♂ , is the first above the Earth's orbit. His distance from the Sun is computed to be 125,000,000 of miles; and by travelling at the rate of 47,000 miles every hour he goes round the Sun in 686 of our days and 23 hours; which is the length of his year, and contains $667\frac{3}{4}$ of his days; every day and night together being 40 minutes longer than with us. His diameter is 4189 miles, and by his diurnal rotation the inhabitants about his equator are carried 556 miles every hour. His quantity of light and heat is equal but to one half of ours; and the Sun appears but half as big to him as to us.

This planet being but a fifth part so big as the Earth, if any Moon attends him she must be very small, and has not yet been discovered by our best telescopes. He is of a fiery red colour, and by his appulses to some of the fixed stars, seems to be encompassed by a very gross atmosphere. He appears sometimes gibbous, but never horned; which both shews that his orbit includes the Earth's within it, and that he shines not by his own light.

To Mars our Earth and Moon appear like two Moons, a bigger and a less; changing places with one another, and appearing sometimes horned, sometimes half or three quarters illuminated, but never full.

The Greeks call this planet *'Αρης*; and it takes its name from the fabled God of war, or perhaps the God of war from the planet, as all antient mythology is but an astronomical fable at best. Dupuis has well explained a great deal of it in his *Memoire sur l'Origine des Constellations*.

MARKAB. See PEGASUS, in whose shoulder it is a bright star.

MENKAR. See CETUS, in which it is a distinguished star.

MERCURY ☿, the nearest planet to the Sun, goes round him in 87 days 23 hours of our time nearly, which is the length of his year. But being seldom seen, and no spots appearing on his surface or disk, the time of his rotation on his axis, or the length of his days and nights, is as yet unknown. His distance from the Sun is computed to be 32,000,000 of miles, and his diameter 2,600. In his course round the Sun, he moves at the rate of 95,000 miles every hour. His light and heat from the Sun are almost seven times as great as ours; and the Sun appears to him almost seven times as

large as to us. The great heat on this planet is no argument against its being inhabited.

MIRA or Stella Mira, the wonderful star in the neck of the Whale, which undergoes perpetual changes. It may be seen on the meridian in December about eight in the evening.

MONOCEROS the Unicorn, stretches between the Great Dog and the Little Dog, with his head to the westward.

MILKY WAY or Galaxy, is an irregular shaped bright band or zone of light, so called from its luminous appearance. By means of the telescope it is found to be composed of millions of small stars. See our article NEBULAE :

Myriads beyond with blended rays inflame
 The Milky Way, whose stream of vivid light,
 Poured from innumerable fountains round,
 Flows trembling, wave on wave, from sun to sun,
 And whitens the long path to heaven's extreme :
 Distinguished tract! But as with upward flight
 Soaring I gain the immeasurable steep,
 Contiguous stars, in bright profusion sown
 Through these wide fields, all broader into suns,
 Amazing, severed each by gulphs of air
 In circuit ample as the solar heavens.

See our article GALAXIA.

MEDUSAE CAPUT the Head of Medusa, which, together with PERSEUS, forms a large northern constellation. The principal stars are *Algenib* in Perseus, and *Algol* in Medusa's Head. The latter is a changing star, gradually decreasing from a star of the 2d to one of the 4th magnitude in the space of two days, and occupies two more in recovering its greatest magnitude, when it remains 41 hours stationary at its fullest brightness, and then diminishes again.

MONOCEROS the Unicorn, formed on a once supposed fabulous animal: reasons, however, have occurred for supposing that it still inhabits the Crimean mountains: it is between the Great Dog and the Little Dog.

MOON. See LUNA. The Harvest Moon is a phenomenon which we may perhaps advert to with propriety in this place.

On the Harvest Moon and the Hunter's Moon.—The nearest Moon to the autumnal equinox is called the Harvest Moon: it rises nearer to the same each succeeding night at this time of year than it does at any other: it has received its cognomen in autumn only, on account probably of its use to the farmers, when pressed for time with the ingathering of the harvest. The cause of this phenomenon is the Moon's being in the signs κ and γ at the time of the full, in which she is during this and the succeeding month. The October Moon is called the Hunter's Moon. It is well known that the signs κ and γ rise making the smallest, and ϵ and η rise making the greatest angle with the horizon; and *vice versa* with respect to setting. Now the Moon, whose orbit is nearly parallel to the ecliptic, is the full in κ and γ in September and October, consequently, rising in those months, she makes the least angle with the horizon, and therefore rises nearer to the same time every evening.

MERIDIAN PASSAGE.—The following Table of the Meridian Passage will be found very useful in finding the times of culminating of the principal stars. Moreover, the time of the Meridian Passage of any star may be found by adding its R. A. in time to the time of the Meridian Passage of the equinoctial point given in the last column.

TABLE

Shewing the time when certain principal fixed Stars pass the Meridian, with their respective Altitude, calculated for the first day of every month of the year, together with the Meridian Passage of the Equinoctial points, adapted to Lat. 50° Long. 5° W.

Month.	Aldebaran 57° 12'	Capella. 86° 54'	Orionis. 39° 44'	Sirius. 24° 45'	Procyon. 47° 3'	Regulus. 54° 15'
January	9 ^h 32'	10 ^h 9'	10 ^h 34'	11 ^h 44'	12 ^h 36'	15 ^h 4'
February	7 20	7 57	8 52	9 32	10 25	12 53
March	5 32	6 9	6 34	7 44	8 26	11 4
April	3 39	4 16	4 41	5 51	6 43	9 11
May	1 48	2 25	2 50	4 0	4 52	7 20
June	23 41	0 22	0 47	1 57	2 50	5 18
July	21 37	22 14	22 39	23 49	0 46	3 14
August	19 33	20 10	20 35	21 45	22 37	1 10
Sept.	17 37	18 15	18 39	19 50	20 43	23 10
October	15 50	16 27	16 51	18 2	18 54	21 22
Nov.	13 54	14 30	14 55	16 5	16 58	19 26
Dec.	11 50	12 27	12 51	14 2	14 54	17 22

In the following the Altitude has been omitted.

Month.	Spica.	Arcturus.	Antares.	Lyra.	Fomalhat.	Eq. Point.
January	18 21	19 13	21 23	23 36	3 55	5 11
February	16 9	17 1	19 11	21 24	1 43	2 59
March	14 21	15 13	17 23	19 36	23 51	1 10
April	12 28	13 20	15 30	17 43	21 58	23 17
May	10 37	11 29	13 39	15 52	20 7	21 23
June	8 34	9 26	11 36	13 50	18 5	19 23
July	6 30	7 22	9 32	11 46	16 1	17 18
August	4 26	5 18	7 28	9 41	13 56	15 14
Sept.	2 30	3 22	5 32	7 46	12 1	13 18
October	0 42	1 34	3 44	5 58	10 13	11 30
Nov.	22 43	23 34	1 48	4 2	8 17	9 23
Dec.	20 38	20 30	23 30	1 58	6 13	7 29

Having given the Meridian Passage of the vernal equinox, called Aries 1, we shall subjoin the Meridian Passage of the star Aries, the difference being the quantum of precession since the sign was established as vernal. See article RIGHT ASCENSION.

	Rises.	Mer. Pass.		Rises.	Mer. Pass.
	H. M.	H. M.		H. M.	H. M.
January	11 0 M.	7 15 Af.	July ..	10 50 Af.	7 5 M.
February	8 37 ..	5 0 ..	August..	9 0 ..	5 5 ..
March ..	6 45 ..	3 15 Af.	September	7 0 ..	3 8 ..
April ..	4 56 ..	1 15 ..	October	5 15 ..	1 18 ..
May ..	3 0 ..	11 30 M.	November	3 20 ..	1 30 Af.
June ..	1 0 M.	9 30 ..	December	1 15 ..	9 30 ..

NAVIS or *Argo Navis*, the Bark of Jason, or Noah's Ark, formed on the astronomical fable of the Argonautic expedition. It extends from 5° N. to 80° S. Latitude, and 95° to 170° Longitude. The principal star *Canopus*, is of the first magnitude.

NEBULAE are certain luminous spots in the sky, some of which consist of clusters of telescopic stars; others appear as luminous spots of different forms. The most considerable is one in the midway between the two stars on the blade of Orion's sword, marked θ by Bayer; discovered in the year 1656, by the celebrated Huygens: it contains only seven stars, and the centre part is a bright spot upon a dark ground, and appears like an opening into brighter regions beyond. Dr. Halley, and others, have discovered Nebulae in different parts of the heavens. In the *Connoissances de Temps* for 1783 and 1784, there is a catalogue of 103 Nebulae observed by Messier and Mechain. But to Herschel we are indebted for catalogues of 2000 Nebulae and clusters of stars which he himself discovered. Some of them form a round compact system; others are more irregular, of various forms;

and some are long and narrow. The globular systems of stars appear thicker in the middle than they would do if the stars were all at equal distances from each other; they are, therefore, condensed towards the centre. That the stars should be thus accidentally disposed is too improbable a supposition to be admitted; he supposes, therefore, that they are brought together by their mutual attractions, and that the gradual condensation towards the centre is a proof of a central power of such a kind.

Herschel thinks that all the stars we can see are in the plain of the *Milky Way*; according to him the whole of eternal space is filled with Nebulae or collections of countless stars, each of which is a Sun to moving and inhabitable planets. See his curious observations in *Phil. Tran. Royal Society of London*.

ORPHINCHUS. See SERPENTARIUS.

ORION, one of the most beautiful of our winter constellations, ornamenting the sky of an evening from November to February. It reaches from about 70° to 90° of the equator, and between 20° N. and 10° S. on the meridian. The principal stars are *Rigel*, *Betalgeus*, and *Bellatrix*; of these three *Rigel* is the brightest in this constellation, and *Betalgeus* is the reddest star in the heavens.* For the astronomical particulars of this constellation see our article RISING OF STARS.

Orion is a very old and well known constellation, and we suspect, therefore, that it is not founded, as is said, on the fable of the huntsman shot to death by Diana. Some confound this hero with

* See Observations and Tables of the color and composition of Starlight, by T. Forster, and in *Phil. Mag.* for March and April, 1824

Nimrod; this is also doubtful, and it is still more so that *Canis Major* was Orion's dog, as Sirius is an old Egyptian sign. Orion is mentioned in the book of Job, together with Arcturus and the Pleiades. In another passage in this same book we find, "Canst thou bind the sweet influence of the Pleiades, or loose the bands of Orion?" were these bands what is now called *Orion's Girdle*? well known by three remarkable stars nearly in a straight row.

Ovid makes the heliacal rising of Orion's Shoulders to be June 17th, and his Girdle July 26th, in the following lines: of June 17th he says,

Tollit enim validos proles Hyrcea lacertos.
Fasti, lib. vi.

And again of June 26th :

Ecce suburbanâ rediens malè sobrius aede,
Ad stellas aliquis talia verba jacet :
Zona latet tua nunc : et cras fortasse latebit ;
Dehinc erit, Orion, adspicienda mihi,
At si non esset potus : dixisset eadem
Venturum tempus solstitiale die.

The setting of Orion was regarded by the ancients as a period of tempestuous weather; but sometimes the daily setting seems intended and not the heliacal. See our observations under our article HOEDI. Thus in Hor. Carm. lib. iii. Od. 27.

Non vides quanto trepidet tumultu
Pronus Orion?—

Ovid, in 8th April, alludes to the heliacal setting of Orion :

Ensifer Orion aequore mersus erit,

The same confusion arises with respect to the remarks on the setting of Arcturus. See Carm. iii. Od. 1. Whether the writers in the following passages alluded to the heliacal, cosmical, acrony-

cal, or nightly rising of this constellation, must be left to the reader to judge from the passages themselves. The same may be said of the other stars held as ominous by the Greeks and Romans of old. Horace observes :

Dum pecori Lupus, et nautis infestus Orion
Turbaret hibernum mare.

And again, in invoking all the evil omens against the bark of Maevius :

Nec sidus atrâ nocte amicum appareat,
Quâ tristis Orion cadit.

And in lib. i. 21.

Me quoque devexi rapidus comes Orionis
Illyricis Notus obruit undis.

Virgil, Aen. i. 539, describes the violence of a tempest at sea as taking place :

Cum subito adsurgit fluctu nimbosus Orion.

Again in Aen. iv. 52 :

Dum Pelago desaevit hyems et aquosus Orion.

And in lib. iii. 517, where Palinurus is looking round for signs of weather from the ship :

Sidera cuncta notat tacito labentia coelo,
Arcturum, pluviasque Hyadas, geminosque Triones,
Armatumque auro circumspicit Oriona.

The commentator of the Delphin editions regard these allusions to Orion as belonging to his acronycal rising, when wintry winds begin to trouble the ocean in December : this explanation also suits the passage of Horace, who says, that Orion troubles the hybernal ocean, as above quoted.

Propertius, in Eleg. ii. 16. v. 6, has also an allusion to the popular notion of the stormy Orion :

Vidistin' toto sonitus percurrere coelo?
 Fulminaque aethereâ desiluisse domo?
 Non haec Pleiâdes faciunt, neque aquosus Orion:
 Nec sic de nihilo fulminis ira cadit.

In Carm. xviii. v. 56, the same poet notices the clear look of the rainy signs as a good omen:

Ipsaque sidera erunt nullis obscura tenebris,
 Purus et Orion, purus et Hoedus erit.

Catullus, after the Greek manner, spells this sign *Oarion*, in the last line of his poem on the *Coma Berenices*; and Ovid says it was formerly spelled *Urion*, and gives a very ridiculous fable of the origin of the name. Catullus's line is,

Sidera cur iterent; utinam Coma regia fiam,
 Proximus Hydrochoo fulgeret Oarion.

And Ovid, in his *Fasti*, May 11th, says:

Hunc Hyrcus quia sic genitus vocat Uriona,
 Perdidit antiquum littera prima sonum.

Aratus, in *Phoenomena*, accurately describes the stars in Orion's Shoulders, Belt, &c.:

'Αλλ' εὖ μὲν Ζωνή, εὖ δὲ ἀμφοτέροισι φαεινὸς,
 Ὠμοῖς Ωρίων, ξέφεος γένεν ἴφι πεποιθὼς.

In several other parts of the poem too, he describes this grand asterism. See also Hesiod, Manlius, and others.

In Orion are the three small stars called *Nut* or *Juglans*, and *Stella Jugula*.

In the Anthol. Bor. et Austr. we find:

On the Setting of Orion's Belt.

See now Orion's Girdle in south west,
 Three brighter stars that seem arranged abreast;
 He whylome was by chaste Diana slaine,
 And setting now is deemed a signe of raine.

PLANETS.—The following are the elements of the planets, and the marks used to denote them.

They may all be at once distinguished from the fixed stars by not twinkling, and by their steady light, which is not divided into colours by the vibration of the telescope through which we view them as that of the stars is. Venus is the brightest, and resembles the Moon in the purity of her colours. Jupiter is bright, but his light has more of a greenish cast than Venus, and to perceive this distinctly we need only compare him with Sirius, Lyra, or any of the blue stars. Mars and Mercury are reddish, and resemble Aldebaran in colour, while Saturn resembles Capella; Uranus has a white light; and Vesta, when seen, is very white.

ELEMENTS OF THE SOLAR SYSTEM.

Names of the Planets.	Time of the Sideral Revolutions.	Mean distance from the Sun.
Mercury ☿	87.969	0.387
Venus ♀	224.701	0.723
The Earth ⊕	365.256	1.000
Mars ♂	686.980	1.524
Ceres ♃	1681.539	2.707
Pallas ♃	1681.709	2.768
Juno ♃	1590.998	2.667
Vesta ♃	1335.205	2.373
Jupiter ♃	4332.596	5.203
Saturn ♄	10758.970	9.539
Uranus ♃	30088.713	19.183

Diameters, that of the Earth being 1.	Volume, that of the Earth being 1.	Diameters in Miles.
The Sun 109.93	1328460	88324
Mercury 0.39	0.1	3224
Venus 0.97	0.9	7687
The Earth 1.00	1.0	7911
Mars 0.56	0.2	4189
Jupiter 11.56	1470.2	8917
Saturn 9.61	887.3	79042
Uranus 4.26	77.5	35112
The Moon 0.27	$\frac{1}{25}$	2180

Mrs. Barbauld thus fancifully writes of the planets :

————— Seized in thought,
 On fancy's wild and roving wing I sail,
 From the green borders of the peopled earth,
 And the pale Moon, her duteous fair attendant;
 From solitary Mars ; from the vast orb
 Of Jupiter whose huge gigantic bulk
 Dances in ether like the lightest leaf
 To the dim verge the suburbs of the system,
 Where cheerless Saturn, 'midst his wat'ry Moons,
 Girt with a lucid zone, majestic sits
 In gloomy grandeur, like an exiled queen
 Amongst her weeping handmaids : fearless thence
 I launch into the trackless deeps of space,
 Where, burning round, ten thousand suns appear
 Of elder beam, which ask no leave to shine
 Of our terrestrial star, nor borrow light
 From the proud regent of our scanty day ;
 Sons of the morning, first born of creation,
 And only less than God who marks their track,
 And guides their fiery wheels.

PEGASUS the Flying Horse, in which the principal stars are *Markab* and *Sheat Alparas*.

Ovid, in allusion to the winged gallop of genius, which Lucian makes to be the origin of the Flying Horse, observes, that it shines with fifteen stars :

Nunc fruitur coelo quod pennis ante petebat,
 Et nitidis stellis quinque decemque micat.

FASTI, iii. 457.

PALLAS.—This newly discovered planet was first seen at Bremen, in Lower Saxony, on the 28th of March 1802 by Dr. Olbers, the same active astronomer who re-discovered Ceres, after it had been lost to M. Piazzi and others. Pallas is situated between the orbits of Mars and Jupiter, and is nearly of the same magnitude with Ceres,

but in colour it is less ruddy: it is surrounded with a nebulosity of almost the same extent, and performs its annual revolution in about the same period. The planet Pallas, however, is distinguished in a remarkable manner from Ceres, and all the other primary planets, by the immense inclination of its orbit. While these bodies are revolving round the Sun in almost circular paths, rising only a few degrees above the plane of the ecliptic, Pallas ascends above this plane at an angle of about thirty-five degrees. From the eccentricity of Pallas being greater than that of Ceres, while their mean distances are nearly equal, the orbits of these two planets mutually intersect each other,—a phenomenon which is altogether without a parallel in the solar system. The diameter of Pallas has not been determined with accuracy: there is, indeed, a great discordancy in the opinions of the English and German astronomers. Herschel considers it only 80 miles in diameter, while Schroter makes it 2099.

The fabulous history of Pallas, otherwise called Minerva, is already universally known, and needs no comment.

PISCES the Fishes ♋ , the Zodiacal sign of February, also called Venus and Cupid in Lyric, from the fable of her transformation, rises in the E. The principal stars are *El Pischa*, and six more of the third magnitude.

Fable represents the Fishes as the same into which Venus and Cupid transformed themselves to escape Typhon. The whole is, however, a very curious astronomical fable, and the reader may consult Dupuis, Drummond, &c. The Sun enters into the nominal sign ♋ , on the 19th Feb. in the real stellification of Aquarius. In some of

the antient Arabian Zodiacs a Swallow is substituted for one of the Fishes, evidently signifying that that bird arrived about the heliacal rising of this constellation; now the Swallow arrives at the end of February and beginning of March in warm countries, and even in Italy, it will be seen by our Tables, that it arrives in March. Ovid reminds us, about this time,

Fallimur an veris prænuncia venit hirundo.

On this sign see Dupuis's learned dissertation in his *Origine des Constellations*, and La Lande's *Astr.* Vol. iv. p. 382.

The Calendar of Ptolemy fixes the 28th February as the period of the Swallow's return. But this change of one of the Fishes for a Swallow is of comparatively recent invention; it seems that at the remote period in which the Zodiac was formed the sign *Libra* corresponded to the vernal equinox, and *Aries* to the autumnal, while *Cancer* comes at the winter, and *Capricorn* at the summer solstice. See Dupuis, *supra cit.*

Ovid describes the setting of the Pisces, one of which begins to set March 3d:

Tertia nox demissa suos ubi moverit ortus,

Conditus è geminis piscibus alter erit.

Nam duo sunt: Austris hic est; Aquilonibus ille

Proximus: à vento nomen uterque tenet.

The present Pisces sets early in April at latest.

PISCIS NOTIUS the Southern Fish, of which the principal star is *Fomalhaut*. This Fish receives into his mouth the water poured out of the urn of Aquarius. Has this emblem given rise to the proverb "You drink like a fish?" for generally fishes do not drink at all. Ovid thus alludes to this asterism in *Fasti*, ii. 472:

Inde nefas ducunt genus hoc imponere mensis,
Ne violant timidi Piscibus ora Syri.

PLEIADES vulgarly called the Seven Stars, and in German *Die Siebensterne* and best known of all the groupes of Stars, are situated in the neck of the Bull. They rise heliacally about July 16th, and set about April 26th. They become an evening constellation after the autumnal equinox, and rise from the horizon nearly in the point NE. by E. They are called Pleiades from Πλεῖν, to sail, because at their vernal rising the seas become safe. The earliest mention we find of this cluster is in the book of Job, where, speaking of God, he says, "who maketh Arcturus, and Orion, and the Pleiades, and the chambers of the south," Job. ix. 9. And again, "Canst thou bind the sweet influence of the Pleiades, or loose the bands of Orion," Job, xxxviii. 31. See *Orion* and *Arcturus*.

This remarkable constellation had been noticed in the earliest ages to consist of seven stars which can be viewed with the naked eyes, though telescopes have since furnished us with the knowledge of seven times that number. That six of the seven which can be viewed without a telescope were brighter than the other is now matter of observation, one having been either lost or changed in size and brightness, or else our European atmosphere is not clear enough to see it. Ovid notices that six only are seen while the asterism bears the name of seven :

Pleiades incipiunt humeros relevare paternos,
Septem quae dici. Sex tamen esse solent.*

CAL. Apr. 2.

* Ovid. Fasti,

When the ancients spoke of the sweet influence of the Pleiades they probably alluded to the spring, and ascribed the vernal phenomena to their influence, because they were with the Sun in May; in allusion to which month a modern poet says:

Early the Sun his radiant axle guides,
Sloping his steep course with the Pleiades.

The seven stars mentioned in the book of Revelations of St. John, are supposed to be the Pleiades.*

We find also that the constellation Taurus, of which the Pleiades form a part, were worshipped by the early Persians, and recorded in the Zendavesta.

The Pleiades rise heliacally at London soon after the feast of St. Swithin, July 15th; about the 17th they begin to be seen before the Sun in the morning, and in August about midnight. They set heliacally about the 26th April. In Virgil's time they set, however, much earlier, their times altering with the precession. Their achronical setting is alluded to in the following passage of Virgil's *Georgics*:

At si triticeam in messem robustaque farra
Exercebis humum, solisque instabis aristas:
Antè tibi Eoae Atlantides abscondantur,
Gnosiaque ardentis decedat stella coronae;
Debita quàm sulcis committas semina, quamque
Invitae properes anni spem credere terrae.
Multi ante occasum Maiæ coepere; sed illos
Expectata seges vanis elusit aristas. †

* See Drummond's *Oedipus Judaicus*, and Dupuis' *Origine des Constellations*, and *Orig. de tous les Cultes*

† Virg. *Geor.* i. 226, Martyn's *Virg. Geor.*, and Heyne *Virg.* sub loco.

This occurred consequently after the autumnal equinox. And Martyn, in his edition of the *Georgics*, gives various reasons why we should so interpret the passage. See also Heyne's *Virgil*, *in loco*. In the following passage the heliacal rising, and afterwards the achronical setting are expressed. Speaking of Bees, Virgil says:*

Bis gravidos cogunt foetus, duo tempora messis;
 Taygete simul os terris ostendit honestum
 Pleiás, et Oceani spretos pede reppulit amnes:
 Aut eadem sidus fugiens ubi Piscis aquosi,
 Tristior hybernas coelo descendit in undas.

It may be here as well to advise the reader that the antient Greeks divided the year first into two parts by the rising and the setting of the Pleiades. See Theophrastus, *περὶ σημάτων ὑέτων*. Now, though the periods of this setting and rising will constantly vary with respect to other annual phenomena, from the constant precession of the equinoxes, yet with respect to each other they will always remain the same.

The heliacal rising and cosmical setting of the Pleiades are mentioned by Hesiod in *Opera et Dies*, v. 383:

Πληιάδων Ατλαγενέων ἐπιτελλομενάων,
 Ἄρχεσθ' ἀμητοῦ; ἀρότιοιο δὲ δυσσομενάων.

See also v. 572, 615, 619.

Plutarch mentions that the sowing of wheat began about the (cosmical) setting of the Pleiades.

On the line of Virgil, lib. iv. 235, many different opinions have been entertained by authors; Martin has the following note on it:—"It has been

* *Geor.* iv. 235. See likewise Martyn's, and also Heyne's notes.

already observed, in the note on book i. 221, that the morning setting of the Pleiades is about the latter end of October, or beginning of November. The commentators are divided about the constellation which the Pleiades are here said to avoid. Servius affirms it to be the southern Fish, that receives the water Aquarius in his mouth, in which he is followed by May :

Again when she the southern Fish doth fly,
To winter seas descending heavily.

Catrou says, it is the constellation *Piscis*: “fuyant la présence du signe des Poissons.” He observes, in his note, that the Pleiades set before the Fishes arise: “Les Pléiades se couchent avant que le signe des Poissons se leve.” La Cerda was of the same opinion, but he says he will not dispute with any one, who shall suppose it to be the Dolphin; Ruæus contends that the *Hydra* is meant, which seems to follow the Pleiades, and hang over them. Dryden says it is the Scorpion :

Again when their affrighted quire surveys
The wat'ry Scorpion mend his pace behind,
With a black train of storms and winter wind,
They plunge into the deep, and safe protection find.

The setting of the Pleiades is confessed to mean the cosmical setting at the latter end of October or beginning of November, perhaps the 8th; for on that day Columella says they set in the morning, and according to the same author, winter begins the next. This agrees very well with their descending into the wintry waters. Now we may reasonably suppose, that the constellation which they avoid, is one that rises in the morning about the same time, or soon after they set. The Scorpion, according to Columella, rises on the 13th of December:

“*Idibus Decembris Scorpio totus mane exoritur.*” This is in favour of Dryden, only we can see no reason for calling the Scorpion by the name of *Piscis aquosus*. The Scorpion is no fish, nor is its usual habitation in the water. The Dolphin rises on the 27th of December: “*Sexto calendas Januarias Delphinus incipit oriri mane.*” The Sun does not enter Aquarius till the middle of January, nor Pisces till the middle of February. The Dolphin therefore seems to be the constellation meant, as it rises sooner after the setting of the Pleiades than any other fish delineated on the sphere.”

In the first book of the Georgics Virgil ascribes the name of the Pleiades to the mariners :

Navita tum stellas numeros et nomina fecit,
Pleiades, Hyades, clarumque Lycaonis Arcton.

On which Martin has the ensuing note: “This line seems to be in imitation of Hesiod:

Πληιάδες θ' Υάδες τε, τὸ τε σθένος Ὠρίωνος.

Or of Homer:

Πληιάδας θ' ὑάδας τε, τὸ τε σθένος Ὠρίωνος.
* Ἀρκτον θ', ἣν καὶ ἄμαξαν ἐπὶ κλησιν καλέουσιν.

The Pleiades are seven stars in the neck of the Bull, not in the tail, as we find in Pliny, lib. ii. cap. 41. “*In cauda tauri septem, quas appellavere vergilias.*” They are fabled to have been the seven daughters of Atlas, king of Mauritania, whence they are also called by Virgil *Atlantides*. The Latin writers generally call them *Vergiliae*, from their rising about the vernal equinox. Pleiades is generally thought to be derived from πλέω, to sail, because their rising pointed out the time in those days proper to adventure to sea. Others derive this name from πλείονες, many, because they appear

in a cluster; thus we find Manilius call them *sidus glomerabile*. The Hyades are seven stars in the head of the Bull. This name is derived from $\nu\epsilon\tilde{\iota}\nu$, to rain, because they are thought to bring rain, at their rising and setting. The old Romans, thinking *hyades* to be derived from $\tilde{v}s$, a sow, called these stars *suculae*; as we are informed by Cicero: "Ejus (Tauri) caput stellis conspersum est frequentibus:

Has Graeci stellas Hyadas vocitare suerunt.

A pluendo: $\nu\epsilon\tilde{\iota}\nu$ enim est pluere. Nostri imperite *suculas*; quasi a suibus essent non ab imbris nominatae." Pliny makes the same observation: "Quod nostri a similitudine cognominis Graeci propter sues impositum arbitantes, imperitia appellavere *suculas*." Servius mentions another etymology, that these stars represent the form of the Greek letter Υ , and are therefore called $\Upsilon\acute{\alpha}\delta\epsilon\varsigma$. It is certain that the five principal stand in the shape of that letter. Calisto, the daughter of Lycaon, was violated by Jupiter, and turned into a bear by Juno. Jupiter afterwards translated her into the constellation called by the Greeks Ἄρκτος , by the Romans *Ursa Major*, and by us the *Great Bear*. See the whole fable in the second Book of Ovid's *Metamorphosis*. See URSA MAJOR.

According to the fable the Pleiades were the daughters of Atlas and Pleone; hence some derive the names of Pleiades and Atlantides; other fables make them offsprings of Hesperis and Atlas, and hence may have been called Hesperides. Sir William Drummond has given us a very antient symbol of the Pleiades represented by a Hen and Chickens. See *Oedipus Judaicus*.

Atlas, who is fabulously represented as bearing

the whole group of these seven damsels on his shoulders, is now said by the poet to disburden himself of his load.

On the heliacal Setting of the Pleiades, now about the 26th of April.

Soon as the night is past, and reddening skies
Appear, to sing the feathered songsters rise.
The labouring hind his daily work pursues,
And cattle grazing smack the early dews.
A lighter weight has Atlas to sustain,
For now the Pleiades sink beneath the main.

The fabulous history of *Sterope*, *Calaeno*, *Halcyone*, *Electra*, *Maïa*, *Taygete*, and *Merope*, may be found in the writings of Ovid. They were called *Virgiliae*, because they rose heliacally in spring.

Another account thus describes them:—The heliacal setting of the Pleiades, now about April 26th, signifies their first immersion into the Sun's light; they are accordingly no longer seen in the evening after sunset, and they continue, like other stars, to rise diurnally or exhorizontally earlier every day; so that about July 15th they emerge again in the morning, and by the end of autumn they may be seen rising up from the eastern horizon in the evening. During this period it must happen, some time in the course of the autumn, that they rise as the sun sets; and this period is called their achronycal rising, which must happen about the 11th of November; soon after which they pass the meridian at midnight. This constellation, usually called the Seven Stars, from there having formerly been seven brighter than the rest, consists, when viewed with a telescope, of thirty or more.

According to mythology, Pleiades and Vergiliae,

were names given to seven of the daughters of Atlas by Pleione or Aethra, one of the Oceanides. They were placed in the heavens after death, where they formed a constellation called Pleiades, near the back of the Bull in the Zodiac. Their names were Alcyone, Merope, Maia, Electra, Taygeta, Sterope, and Celeno. They all, except Merope, who married Sisyphus, king of Corinth, had some of the immortal Gods for their suitors. On that account, therefore, Merope's star is dim and obscure among the rest of her sisters, because she married a mortal. The name of the Pleiades is derived from the Greek word *πλέειν*, to sail, because that constellation shows the time most favourable to navigators, which is the spring. The name of Vergiliae they derive from *Ver*, the spring. They are sometimes called Atlantides from their father, or Hesperides from the gardens of that name, which belonged to Atlas. Hygin. fab. 192. P. A. ii. c. 21. Ovid. Met. xiii. v. 293. Fast. 106 and 170. Hesiod. Oper. et Dies. Homer, Od. 5. Horat. iv. Od. 11. Virg. G. i. 138, and iv. 253.

Ovid relates the heliacal rising of the Pleiades as happening in his time the 13th May. Le Pere Péttau thinks it was on the 21st; at the present day they rise about July 2d, but are rarely seen before St. Swithin's day. Ovid says of May 13th:

Pleiades adspicies omnes totumque sororum
 Agmen, ubi ante Idus nox erit una super.
 Jam mihi non dubiis auctoribus incipit aestas:
 Et tepidi finem tempora veris habent.

See our Supplementary Tables.

TABLE

Of the Rising, Southing, and Setting of the Pleiades or Seven Stars, for every Fifth Day in the Year, being used for finding the Hour of the Night.

Months & Days.	Rise h m	South h m	Sets h m	Months & Days.	Rise h m	South h m	Sets h m	
January	1	0 a 33	8 a 50	July	1	0m 42	8m 59	
	6	0 10	8 28		6	0 22	8 39	4 56
	11	11m 49	8 6		11	0 11	8 18	4 35
	16	11 28	7 45		16	11 a 41	7 58	4 15
	21	11 7	7 24		21	11 21	7 38	3 55
26	10 45	7 2	26	11 15	7 18	3 35		
February	1	10 21	6 38	August	1	10 36	6 53	
	6	10 1	6 18		6	10 17	6 34	2 51
	11	9 41	5 58		11	9 58	6 15	2 32
	16	9 22	5 39		16	9 39	5 56	2 13
	21	9 3	5 20		21	9 20	5 37	1 54
26	8 46	5 3	26	9 1	5 18	1 35		
March	1	8 31	4 48	September	1	8 83	4 55	
	6	8 13	4 30		6	8 56	4 37	0 54
	11	7 55	4 12		11	8 20	4 19	0 36
	16	7 36	3 53		16	7 44	4 1	0 18
	21	7 18	3 35		21	7 27	3 44	0 1
26	7 30	3 17	26	7 9	3 26	11m 43		
April	1	6 38	2 55	October	1	6 51	3 8	
	6	6 20	2 37		6	6 33	2 50	11 7
	11	6 1	2 18		11	6 14	2 31	10 48
	16	5 43	2 0		16	5 55	2 12	10 29
	21	5 24	1 41		21	5 37	1 54	10 11
26	5 5	1 22	26	5 16	1 33	9 50		
May	1	4 47	1 4	November	1	4 55	1 12	
	6	4 28	0 45		6	4 35	0 52	9 9
	11	4 8	0 25		11	4 15	0 32	8 49
	16	3 48	0 5		16	3 55	0 12	8 29
	21	3 28	11m 45		21	3 31	11 a 48	8 5
26	3 9	11 26	26	3 10	11 27	7 44		
June	1	2 44	11 1	December	1	2 47	11 4	
	6	2 24	10 41		6	2 25	10 42	6 59
	11	2 4	10 21		11	2 3	10 20	6 37
	16	1 45	10 2		16	1 42	9 59	6 16
	21	1 22	9 39		21	1 20	9 37	5 54
26	1 2	9 19	26	0 58	9 15	5 32		

This beautiful group of stars passes vertically over China and Bengal, and part of Arabia and California.

Ovid, in one instance, designates this group by the name of Taygete, in *Met.* iii. 595 :

Taygetemque, Hyadasque oculis Arctonque notavi.

In our latitude the following Table applies to the Pleiades.

PLEIADES AT LONDON 1826.

Rise cosmically May 7.	Set acronically May 14.
.... heliacally July 2.	In conjunction May 16.
.... acronically Nov. 7.	.. opposition Nov. 15.
Set cosmically Nov. 21.	Point of exhorizontal ris-
.... heliacally April 26.	ing N. E. by E.

POLARIS the Pole Star, or, as Spencer calls him, the stedfast star, called in Arabic *Aruccabah*, is as near as may be to that point in the heavens to which the pole of the earth points, consequently this star appears to have no diurnal motion. From the change in the obliquity of the ecliptic, however, this star is getting away from the pole at the rate of near 51 seconds in a hundred years. See URSA MINOR.

Ovid, in *Met.* ii. 517, seems to allude to Polaris not being quite in the pole, but turning with the smallest circle :

————— illic ubi circulus axem,
Ultimus extremum spatioque brevissimus ambit.†

PROCYON the bright star in the *Lesser Dog*. The name of Procyon also signifies the first Dog, or the one who rises first. Horace, in a line quoted under *Canis Minor*, expresses the great heat of the

aestival period by reference to *Canicula*, and Manlius observes :

—— latratque Canicula flammas,
Et rapit igne suo, geminatque incendia solis.

MANL. v. 205.

But it has been doubted whether *Canicula* may not be a licence poetique for *Canis* or *Sirius*, or the star whose cosmical rising takes place in the hot weather. The following passage of Ovid, however, evidently alludes to *Procyon* :

Est Canis Icarium dicunt, quo sidere moto
Tota sitit tellus, praeciditurque seges.

OVID. Fasti. iv.

Ovid makes him rise April 25th, but at present we find him to rise cosmically full three months later. *Procyon* is the *Algomeysa* of the Arabians, and is also called *Fovea*, *Morus*, and *Maera*.

PRESEPE the Manger, a small but beautiful cluster of stars nearly between the two *Aselli* in *Cancer*. To the unassisted eyes it has the appearance of a lucid nebula. The antients remarked the clearer or duller appearance of this cluster as indicative of fine or of bad weather, and some curious observations on it were made by *Aratus* and *Theophrastus*. The latter thus describes it :—“ ἐν τῷ Καρκίνῳ δύο ἀστέρες εἰσὶν, οἱ καλούμενοι ὄνοι, ὧν τὸ μέταξυ τὸ νεφέλιον ἢ φάτνη καλουμένη· τοῦτο δὲ ἂν ζοφῶδες γένηται, ὑδατικόν.” And afterwards in his *Tempestatis signa*, “ ἢ τοῦ ὄνου φάτνη εἰ συνσταται καὶ ξοφερά γίνεται χεῖμωνα σημαίνει.”

Aratus repeats the description, and adds :

Καὶ τοὶ μὲν καλέονται ὄνοι· μέσση δέ τε φάτνη,
“ Ἦτε καὶ ἐξαπίνης πάντη Διὸς εὐδιάοντος
Γίνετ’ ἄφαντος ὄλη· τοὶ δὲ ἀμφοτέρωθεν ἰόντες
Ἀστέρες ἀλλήλων αὐτοσχεδὸν ἰνδάλλονται”

Οὐκ ὀλίγη χειμῶνι τότε κλύζονται ἄρουραι.
 Εἰ δὲ μελαίνηται, τοὶ δ' ἀντίκ' ἐοικότες ὦσιν
 Ἄστéρες ἀμφότεροι περὶ χ' ὕδατι σημαίνοιν.

ARAT. Dios, 176.

This cluster rises achronically about the 25th of January at London, and consequently may be viewed all the winter and early spring.

QUADRANS MURALIS the Mural Quadrant, never sets to Britain, and rises with Boötes.

REFRACTION.—The power of the atmosphere to disperse the rays of light in their passage, and the effects of this dispersion on astronomical observations, though long known, are circumstances which are as yet but imperfectly understood. Tables of Refraction, calculated for application to the catalogues of stars, have been founded on this general fallacy, that they have been made general tables, and have been composed on the false presumption that they would apply universally; whereas, in fact, there ought to be a separate Table of Mean Refraction for each Observatory. The dispersive power of the atmosphere varies in different places, as well as at different times. And the partial or otherwise erroneous application of the general Tables of Mean Refraction has led to many anomalous and absurd results in astronomy. Moreover, the light of certain stars being differently composed from that of others, their apparent place in the heavens requires a different correction, in order to determine their real place. Some stars are composed of a large proportion of the more refrangible colours than others: thus Aldebaran, Arcturus, and Betelgeus, have more of the red rays; Sirius, Procyon, and Lucida Lyra, more of the blue; and the prismatic spectra, which these said several stars present in a dispersive lens, will

be found to accord with their ordinary appearance in this respect. Antares, again, has more red rays than many stars have, and also exhibits in a more prominent degree that extraordinary alternation of colour in the alternate twinkling, than other stars. Some stars, again, have more of the yellow rays. And this diversity in the composition of the light of the stars, causes them not only to appear of a different colour to the naked eye, but to produce severally in the prismatic lens a prodigiously different sort of spectrum: for the apparent colour of the star must depend on the proportion in which the primitive coloured rays are compounded.

A similar observation may be made with regard to the planets which shine by the reflected light of the Sun; for different planets seem to be of different colours, both when seen with the naked eyes and when viewed in the prism: thus Jupiter appears to be of a somewhat greener light when viewed at the same time with Sirius. And Jupiter presents a most remarkable prismatic spectrum in the lens, as was first observed by Mr. Stephen Lee in a paper read at the Royal Society. Mars is much redder, and Venus whiter in colour. Now as planets have no light of their own, we must suppose the difference in their apparent colour to arise from their different powers to absorb and reflect the rays of the Sun. They may be regarded as imperfectly dispersive mirrors: and whether this property results from their dense bodies themselves, or from the dispersive power of their several atmospheres, cannot be easily determined. Again, certain stars have more intensity of light in proportion to their apparent size than others. Some stars are brilliant and white, others dull white, others red, others yellow, and so on.

It will be found that when the bright white stars

are viewed in the prismatic lens, they exhibit much of the beautiful violet, and other more refrangible colours, of which Sirius furnishes the most brilliant instance. The dull white stars exhibit a great deal of green light; the red stars shew only a very small proportion of the most refrangible rays, and present a red spectrum.

Jupiter shews but little green in the spectrum, though he appears greenish when compared, as viewed with the naked eyes, with Sirius. Jupiter, Venus, and also the Moon, exhibit nearly all the colours of the spectrum, as seen in a prismatic lens. Mars has but few of the most refrangible rays. We have not observed Mercury; but Mr. Lee, in a paper lately read at the Royal Society, states that he is found very deficient in the more refrangible rays, and that Saturn has most of the mean rays.

When viewed near the horizon, stars as well as planets present, in a certain degree, all the above phenomena in ordinary telescopes; and, even without any glasses, at all times, great differences may be found. All the above circumstances must cause a difference in the corrections to be made to each star, or planet, by means of the application of Refraction Tables.

Another very remarkable phenomenon is the permutation of colour of certain stars when near the horizon, which appears in their alternate twinklings.

Till all the above circumstances are duly considered, and till Tables of Mean Refraction are made out, conformed to each longitude and latitude, altitude and climate, the results will never be correct. The great diversity in the power of the atmosphere to refract certain light at different times, is observable in the various colours exhibited by clouds on different occasions; sometimes by the

colouring power of the clouds themselves, but oftener from the Sun's light, simply reflected by the clouds, being discoloured by the dispersive power of the atmosphere through which it passes. A sudden change, for example, from golden yellow to crimson or red, often suddenly takes place on the first falling of dew about sunset. See *Phil. Mag.* for 1824.

It seems, owing to some stars being duller in light than others, that they become the soonest obscured, by the condensing of the sky into cloud before rain; as, for instance, the two small stars of the Aselli in the constellation of the Crab, of whose peculiar prognostic so much is said by Aratus. The Pleiades are remarkably brilliant for their size. One should expect that the light of different stars would produce differences in the coloured halos seen sometimes to surround them.

We have noticed already the double spectrum of the Moon in laminated states of the atmosphere, like the double refraction in the spar. See our Part I. p. 42.

The following are Professor Ferguson's observations and Table of Refractions for general use: The Sun is about $32\frac{1}{4}^{\circ}$ at his mean distance from the Earth; and the horizontal refraction of his rays is $33\frac{3}{4}'$, which being more than his whole diameter, brings all his disc in view, when his uppermost edge rises in the horizon. At 10° height the refraction is not quite $5'$; at 20° only $2' 26''$; at 30° but $1' 32''$; between which and the zenith it is scarce sensible: the quantity throughout is shewn by the annexed Table, calculated by Sir Isaac Newton.

In all observations, to have the true altitude of the Sun, Moon, or stars, the refraction must be subtracted from the observed altitude. But the

quantity of refraction is not always the same at the same altitude; because heat diminishes the air's refractive power, and density and cold increases both; therefore no one table can serve precisely for the same place at all seasons, nor even at all times of the same day; much less for different climates: it having been observed that the horizontal refractions are near a third part less at the equator than at Paris.

TABLE

Shewing the mean Refractions of the Sun, Moon, and Stars, adapted to their apparent Altitude.

Appar. Alt.	Refraction.	Appar. Alt.	Refraction.	Appar. Alt.	Refraction.
0° 0'	33' 45"	12° 0'	4' 5"	38° 0'	1' 2"
0 15	30 24	13 0	3 47	39 0	1 6
0 30	27 35	14 0	3 51	40 0	1 4
0 45	25 11	15 0	3 17	41 0	1 2
1 0	23 7	16 0	3 4	42 0	1 0
1 15	21 20	17 0	2 53	43 0	0 58
1 30	19 36	18 0	2 43	44 0	0 56
1 45	18 22	19 0	2 34	45 0	0 54
2 0	17 8	20 0	2 26	46 0	0 52
2 30	15 2	21 0	2 18	47 0	0 50
3 0	13 20	22 0	2 11	48 0	0 48
3 30	11 57	23 0	2 5	49 0	0 47
4 0	10 48	24 0	1 59	50 0	0 45
4 30	9 50	25 0	1 54	51 0	0 44
5 0	9 2	26 0	1 49	52 0	0 42
5 30	8 21	27 0	1 44	53 0	0 40
6 0	7 45	28 0	1 40	54 0	0 39
6 30	7 14	29 0	1 36	55 0	0 38
7 0	6 47	30 0	1 32	56 0	0 36
7 30	6 22	31 0	1 28	57 0	0 35
8 0	6 0	32 0	1 25	58 0	0 34
8 30	5 40	33 0	1 22	59 0	0 32
9 0	5 22	34 0	1 19	60 0	0 31
9 30	5 6	35 0	1 16	61 0	0 30
10 0	4 52	36 0	1 13	62 0	0 28
11 0	4 27	37 0	1 11	63 0	0 27

Appar. Alt.	Refrac- tion.	Appar. Alt.	Refrac- tion.	Appar. Alt.	Refrac- tion.
64° 0'	0 26	73° 0'	0, 17'	82° 0'	0 8
65 0	0 25	74 0	0 16	83 0	0 7
66 0	0 24	75 0	0 15	84 0	0 6
67 0	0 23	76 0	0 14	85 0	0 5
68 0	9 22	77 0	0 13	86 0	0 4
69 0	0 21	78 0	0 12	87 0	0 3
70 0	0 20	79 0	0 11	88 0	0 2
71 0	0 19	80 0	0 10	89 0	0 1
72 0	0 18	81 0	0 9	90 0	0 0

But to be very accurate we must apply to this Table another Table of Differential Refraction. See a paper on DIFFERENTIAL REFRACTIONS in the Phil. Mag. for June, and also for May 1824.

RIGHT ASCENSION of any star is the distance between its Meridian Passage and that of the equinoctial point; the Right Ascension is therefore more commonly computed in time. The Right Ascension may be called the Equatorial Longitude, while the Declination is the Equatorial Latitude. We have, in the following Table, the Right Ascension and North Polar Distance of the most remarkable stars, and the Table is one of great practical utility. By subtracting the Meridian Passage of the equinoctial point from the Right Ascension of any star, we shall get its time of culminating. See MERIDIAN PASSAGE. See also a method constructed by Mr. Stephen Lee, in *Perennial Calendar*, p. 376, July 31st.

CATALOGUE OF FORTY SIX REMARKABLE STARS.

Names of Stars.	R. A.			N. P. D.		
	H.	M.	S.	°	'	"
Algenib	0	3	58	75	49	0
α Cassiop	0	30	20	34	27	4
Polaris.....	0	57	1	1	39	5
α Arietis.....	1	57	3	67	23	34
Menkar	2	52	52	86	37	18
α Persei	3	11	31	40	47	17
Aldebaran	4	25	36	73	51	39
Capella	5	3	24	44	11	48
Rigel	5	5	53	98	24	59
β Tauri	5	14	55	61	33	16
Betalgeus	5	45	25	82	38	6
Sirius	6	37	12	106	28	30
Castor	7	23	6	57	43	36
Procyon	7	29	52	84	19	15
Pollux	7	34	17	61	32	52
Alpliard	9	18	44	97	52	57
Regulus	9	58	46	77	9	23
α Ursa Major.....	10	52	31	27	16	46
Daneb	11	39	52	74	25	17
β Virginis	11	41	19	87	13	14
γ Ursa Major.....	11	44	19	35	18	15
Spica Virginis....	13	15	43	100	13	3
η Ursa Major.....	13	40	26	39	47	5
Arcturus	14	7	27	69	52	31
Zuben el Chamali	14	40	56	105	17	9
β Ursa Minor.....	14	51	20	15	6	31
Alphecca.....	15	27	4	62	40	22
α Serpentis.....	15	35	24	83	0	1
Antares	16	18	23	116	1	16
α Herculis	17	6	26	75	23	45
α Ophiuchi.....	17	26	35	77	18	0
γ Draconis.....	17	52	25	38	29	8
Lyra.....	18	30	50	51	22	39
Aquila.....	19	42	0	81	35	55
1 } α Capricorni	20	7	39	103	3	20
2 } α Capricorni	20	8	3	103	5	37
α Cygni	20	35	18	45	21	28
Alderamin	21	14	16	28	10	28
α Aquarii.....	21	56	32	91	11	20
Fomalhaut	22	47	40	120	34	25
Markab	22	55	48	75	45	36
α Andromedae.....	23	59	6	61	54	10

RISINGS OF STARS.—The different sorts of poetical risings, as they are called, are described under our article ARCTURUS. The following Table contains examples taken from the principal stars and constellations noted by the antients, and now adapted to our own times and climate.

TABLE

Shewing the Heliacal, Cosmical, and Achronical Risings and Settings of fifteen principal fixed Stars, calculated for London in 1826.

Constellation. Star.	Helic. Rising and Setting.	Cosm. Rising and Setting.	Achr. Rising and Setting.	Place of Ris- ing & Setting.
Arcturus in <i>Boötes</i>	{ Oct. 15 Nov. 12	Sept. 24 Dec. 28	March 24 June 22	} NE by E.
Aldebaran	{ July 20 April 27	June 10 Nov. 21	Dec. 16 May 20		} ENE.
Aquila	{ Dec. 30 Jan. 21	Dec. 3 Aug. 13	June 5 Feb. 12	} E by N.
Antares in <i>Scorpio</i>	{ Jan. 13 Sept 8	Nov. 5 March 7	June 7 Nov. 16		} SE by S.
Alphecca in <i>Corona Ariadnes</i>	{ Oct. 20 Dec. 28	Sept. 28 July 20	March 29 Jan. 30	} NE by E.
Pleiades	{ July 2 April 26	May 4 Nov. 21	Nov. 10 May 20		} NE by E.
Hyades	{ July 15 April 20	June 9 Nov. 20	Dec. 15 May 19	} ENE.
Corvus	{ Oct. 31 May 23	Sept. 10 Jan. 20	April 10 Aug. 2		} SE by E.
Lyra	{ Oct. 20 March 3	Sept. 30 Sept. 20	March 30 March 21	} N by E.
Cygnus	{ Dec. 2 March 5	Nov. 9 Sept. 26	May 11 March 25		} N. not setting.
Orion's Girdle ..	{ Aug. 9 April 23	July 15 Nov. 13	Jan. 15 May 15	} E by S.
Betalgeus in <i>Orion</i>	{ Aug. 8 May 1	July 10 Nov. 26	Jan. 10 May 28		} E by N.
Rigel in <i>Orion</i> ..	{ Aug. 12 April 12	July 18 Nov. 3.	Jan. 18 May 4	} E by S.
Sirius	{ Sept. 11 April 19	Aug. 12 Oct. 10	Feb. 11 May 12		} SE by E.
Procyon	{ Aug. 22 May 12	July 31 Dec. 12	Jan. 29 June 16	} E.

TABLE

Shewing the Achronical Rising, Point of Horizontal Rising, the Magnitude, and Colour of several remarkable Stars and Asterisms, calculated for Latitude 50° N. in 1826.

Name of Star.	When it rises Achronically.	Point of Rising.	Magnitude and Brightness.	Colour.
Bellatrix	Jan. 6	E.	2 bright	whitish
Betalgeus	Jan. 10	E by N.	1 bright	very red
Pollux	Jan. 4	NE.	2 yellow	ordinary
Rigel	Jan. 13	ESE.	1 bright	yel. white
Procyon	Jan. 29	E.	1 bright	white
Sirius	Feb. 11	SE by S.	1 brilliant	very white
Regulus	Feb. 18	E by N.	2 ordinary	yellow
Alpiard	March 1	ESE.	2 ordinary	red
Deneb	March 4	ENE.	2 ordinary	yellow
Arcturus	March 24	ENE.	1 bright	orange
Lyra	March 30	N by E.	brilliant	blue
Vindimiatrix	March 21	E by N.	2 ordinary	bluish
Spica	April 16	ESE.	1 bright	blue
Ra Alhagas	May 3	E by N.	2 ordinary	yellowish
Aquila	June 5	E by N.	1 bright	white
Markab	July 20	ENN.	2 ordinary	yellowish
Areus	Sept. 29	NE by E.	2 ordinary	yellowish
Mira	Dec. 1	E by S.	various	—
Aldebaran	Dec. 16	ENE.	1 bright	red

Capella of 1st magnitude of yellow colour never sets; *Ariede* likewise never sets.

See our articles **CONSTELLATIONS** and **MERIDIAN PASSAGE**.

SAGITTARIUS or the Centaur ♐, the ninth sign of the Zodiac, and into which the Sun nominally enters on the 22d November; it contains no stars larger than the third magnitude, and these being in a form disposed like a bow, has perhaps suggested the figure which mythology has given to this constellation, formed on the metaphorical history of Chiron the Centaur. The principal stars

are *Elwaridah* in his hand, *Variabilis* the changeable star in the shoulder, and *Zudsch el Nuschaba* in the head of the arrow; also ϵ , α , δ , γ , and ζ . The declination is about 29° S.

Manlius thus alludes to Sagittarius :

Nec non Arcitenens primâ cum veste resurgit,
Pectora clara dabit bello magnisque triumphis,
Conspicuum patrias victorem ducit ad artes.

MANL. Ast. lib. iv. 559.

Synonim. CENTAURUS.

SAGITTA the Arrow of Hercules, south of *Vulpecula* and west of *Delphinus*.

SEXTANS, a constellation between Leo and Hydra.

SERPENS the Snake, is on the equator, extending from 220° to 286° ; the principal star is *Unuk*. It has the *Northern Crown* to the north, and *Sagittarius* to the south.

SERPENTARIUS or Ophinchus. To this asterism belong these lines of Ovid in *Fasti*, vi. 735.

Surgit humo juvenis telis afflatus avitis,
Et gemino nexas porrigit angue manus.

The principal star is in his head, and is called *Ra Alpagas*.

SATURN η , the remotest but one of all the planets, is about 780,000,000 miles from the Sun; and, travelling at the rate of 18,000 miles every hour, performs its annual circuit in 29 years 167 days and 5 hours of our time; which makes only one year to that planet. Its diameter is 67,000 miles; and therefore it is near 600 times as big the Earth.

This planet is surrounded by a thin broad ring, as an artificial globe is by an horizon. The ring appears double when seen through a good tele-

scope, and is represented by the figure in such an oblique view as it is generally seen. It is inclined 30° to the ecliptic, and is about 21,000 miles in breadth; which is equal to its distance from Saturn on all sides. There is reason to believe that the ring turns round its axis, because, when it is almost edgewise to us, it appears somewhat thicker on one side of the Planet than the other; and the thickest edge has been seen on different sides at different times. But Saturn having no visible spots on his body, whereby to determine the time of his turning round his axis, the length of his days and nights, and the position of his axis are unknown to us.

To Saturn the Sun appears only $\frac{1}{10}$ part so big as to us; and the light and heat he receives from the Sun are in the same proportion to ours. But to compensate for the small quantity of sunlight, he has seven Moons, all going round him on the outside of his ring, and nearly in the same plane with it. The first, or nearest Moon to Saturn goes round him in 1 day 21 hours 19 minutes, and is 140,000 miles from his center; the second in 2 days 17 hours 40 minutes, at the distance of 187,000 miles; the third in 4 days 12 hours 25 minutes, at 263,000 miles distance; the fourth in 15 days 22 hours 41 minutes, at the distance of 600,000 miles; and the fifth at 1,800,000 miles from Saturn's center, goes round him in 79 days 7 hours 48 minutes; the other two are of recent discovery, and less easily visible.

The Sun shines almost fifteen of our years together on one side of Saturn's ring without setting, and as long on the other in its turn. So that the ring is visible to the inhabitants of that planet for almost fifteen of our years, and as long invisible by turns, if its axis has no inclination to its ring.

All the satellites of Saturn being at so great a distance from the Earth, cannot be seen but by means of an excellent telescope. The sixth and seventh are the smallest of the whole; the first and second are the next smallest; the third is larger than the first and second; and the fourth is the largest of them all. It is a curious fact, that the fifth satellite surpasses all of them, except the fourth, in brightness, when it is at its western elongation from Saturn; but at other times it is extremely small, and entirely disappears at its eastern elongation. This phenomenon is thought to arise from one part of the satellite being composed of matter less capable of reflecting the light than the rest.

SOL the Sun, is called the centre of the solar system, or assemblage of revolving worlds. See PLANETS.

The Sun with the planets, primary and secondary, and Comets, which revolve about and depend upon him for motion, light, and heat, is called the solar system. It is known from observation that those planets which are the nearest to the Sun, not only finish their circuits soonest, but likewise move faster in their respective orbits, than those which are more remote from him. The motions of all the primary Planets, and Comets, are performed in elliptical orbits, of which the Sun is in one of the foci; and the secondary planets revolve about their primaries, likewise in elliptical orbits, in one of the foci of which is each primary planet. Thus the Moon revolves about the Earth in an ellipse, the Earth being in one of the foci: the same may be said of Jupiter, Saturn, and Uranus, and their Moons.

The double motion of the Earth gives the Sun two apparent motions, viz. the annual and the

diurnal, hence years and days, while he subdivides years into months and weeks, the latter consisting of seven days.

SCORPIO ♏, the Scorpion, a southern sign of the Zodiac, whose principal star is *Antares*, in the heart.

The Scorpion makes a conspicuous figure in the summer sky, being visible of an evening in June, July, and August.

Ovid observes of the 16th March, in his *Fasti* :
 Postera cum teneras rores Aurora remittit,
 Scorpius a primâ parte videndus erit.

Again, of his setting cosmically in April, he says :

Dum loquor elatae metuendus acumine caudae
 Scorpius, in virides praecipitatur aquas.
 FASTI, iv. 163.

Both Virgil and Ovid allude to the Scorpion's occupation of a disproportionate space in the sky. Virgil, in allusion to the space left for the star of Cæsar, says, in *Geor.* i. :

———— ipse tibi jam brachia contrahit ardens
 Scorpius, et coeli justâ plus parte reliquit.

And Ovid, in *Met.* ii. 195 :

Est locus, in geminos ubi brachia concavat arcus
 Scorpius ; et cauda, flexisque utrinque lacertis,
 Porrigit in spatium signorum membra duorum.

SIGNS or marks for the heavenly bodies, &c. are of very old invention, and are as follows :

THE PLANETS.

☉ The Sun.	⊕ The Earth.
☾ The Moon.	♂ Mars.
☿ Mercury.	♃ Jupiter.
♀ Venus.	♄ Saturn.

NEWLY DISCOVERED PLANETS SINCE 1780.

♃ Uranus. ♃ Ceres. ♃ Pallas. ♃ Juno. ♃ Vesta.

THE CHARACTERS OF THE ASPECTS.

- ♃ The Moon's, or any other Planet's Ascending Node.
 ♃ The Descending Node.
 ☉ Conjunction, or Planets situated in the same Longitude.
 ☐ Quadrature, or Planets situate in Longitudes differing 3 Signs from each other.
 △ Trine.
 ⚡ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.
 * Sextile.

SIGNS OF THE ZODIAC.

s.	s.
0 ♈ Aries.	6 ♎ Libra.
1 ♉ Taurus.	7 ♏ Scorpio.
2 ♊ Gemini.	8 ♐ Sagittarius.
3 ♋ Cancer.	9 ♑ Capricornus.
4 ♌ Leo.	10 ♒ Aquarius.
5 ♍ Virgo.	11 ♓ Pisces.

PHASES OF THE MOON.

☾ First Quarter.	☾ Last Quarter.
☉ Full Moon.	☉ New Moon.

All the above are still in common use in the Almanacks, Ephemerides, and Calendars of Europe. For an explanation of many of these see article MARKS.

SHEAT ALPERAS, a star in the right leg of Pegasus: it passes the meridian at the same time as *Markeb*, a star of nearly the same magnitude in the front of the right wing. Again, *Algerib*, in the gilt feathers of his right wing, passes the meridian with the star in Andromeda's forehead; and these four stars form the corner of a square whose sides are nearly fourteen degrees long, consequently the

four stars are nearly fourteen degrees apart, and pass the meridian soon after dark in the month of January. See our CALENDAR at the end of the work.

SIRIUS, the brightest of all the stars, is in the snout of the *Great Dog*. When the Sun rose with Sirius the greatest heat began, and thus the Dog Days, or *Dies Canini*, still represent the hot time of July. Virgil observes of the aestival season,

Jam rapidus torrens sitientes Sirius Indos
Ardebat coelo, et medium sol igneus orbem
Hauserat : ardebant herbae.—GEOR. iv. 425.

Sirius is the same as the *Anubis* of the Egyptians, represented with a dog's head; whence Lucian speaks of *Semideosque Canes*, and Virgil alludes to the *Latrator Anubis*. See a curious passage in Volney's Ruins on this star.

Germanicus, in his translation of Aratus, says :

Sirius hunc Graii proprio sub nomine dicunt.

The antient cynique year of the Egyptians began with the rising heliacally of Sirius—an event which foreboded the overflowing of the Nile; for at a period more than 2000 years ago Sirius rose heliacally about the 12th of July. At the commencement of the Julian period, that is 44 years before the beginning of our era, Sirius rose heliacally when the Sun was in 8° of Leo, that is, about the 30th of July. Polybius ascribes the loss of the Roman flotilla, in the first Punic war, to their putting to sea in the stormy period which elapses between the heliacal rising of Orion and that of Sirius; consequently this must have happened between the 26th of June and the 30th of July. See also La Lande, Astr. vol. ii. p. 335.

TARANDUS the Reindeer, near the Arctic Circle; in many globes it is not marked.

TAURUS PONIATOUSKI, the small Bull of Poniatouski, west of the Eagle, by the tail of the Serpent.

TAURUS the Bull ♂, a northern sign, stretching from 50° to 85° of the equator, and from 0° to 30° on the meridian; it contains above 140 stars. The principal are Aldebaran and the Hyades, in the southern of the Bull's eyes; the Pleiades or Seven Stars, in the tropic of Cancer near to *Aries*, in the Bull's shoulder; and the star in the horns. Taurus rises in N.E. He may be seen of an evening from September to January. See our article PLEIADES, also RISINGS OF STARS.

The fables respecting this asterism are numerous: some say it was the form of the bull assumed by Jupiter when he carried off Europa from Tyre over the ocean to Crete; but learned mythologists have disputed so much on this constellation that we shall say the less about it; like most of the others its origin is lost in the night of time. One we cannot help noticing, namely, that this Bull is the one into which Io was changed, who taught agriculture to the Egyptians.

The rising heliacally of Taurus was described by the Roman poet as significant of spring. Thus Virgil on the opening year:

Candidus auratis aperit cùm cornibus annum
Taurus, et averso cedens canis occidit astro.

GEOR. i.

By the Bull's opening the year Virgil means the Sun's entering into Taurus; which, according to Columella, is on the 17th of April: "Decimo quinto calendas Maias sol in Taurum transitum facit." April is said to have its name *ab aperiendo*, whence the poet uses the expression *aperire annum*. Servius thinks this passage is not to be rendered "the Bull opens the year with his golden horns,"

but "the Bull with golden horns opens the year;" because the Bull does not rise with his horns, but with his back. La Cerda adheres to the former interpretation, and supports it with the authority of Manilius, who uses an expression something like it, of the Bull's bearing the Sun upon his horns. This poet speaks also of that sign's beginning the labour of the ploughman: this seems to have some relation to what Virgil has said:

Taurus simplicibus donavit rura colonis;
 Pacatisque labor veniet, patientia laudis,
 Sed terrae tribuet partus: summittit aratri
 Colla, jugumque suis poscit cervicibus ipse.
 Ille suis Phoebi portat cum cornibus orbem,
 Militiam indicit terris et segnia rura.
 In veteres revocat cultus dux ipse laboris,
 Nec jacet in sulcis solvitque in pulvere pectus.
 Seranos Curiosque tulit, facilesque per arva
 Tradidit, eque suo dictator venit aratro.
 Laudis amor, tacitae mentes, et corpora tarda
 Mole valent, habitatque puer sub fronte cupido.

With the physical history of this sign has been intermingled much fable, which has had an important influence on the religion and religious emblems of many powerful nations. The Egyptians worshipped the Bull, and from them the Jews seem to have derived some of the images of their occasional idolatry, such, for example, was the *Golden Calf set up by Jeroboam*.

As the sign Aries gave rise to the popular tradesman's sign of the *Golden Fleece*, so Taurus has been the origin of the *Golden Bull*, of the *Bull and Seven Stars*, and some others.

TIDES are produced by an attractive influence of the Moon. The following is an old and approved Table of the Tides for common use.

TABLE

Shewing the Time of High Water.

D's A	h m		h m		h m		h m		h m		h m		h m				
0	15	11	38	1	30	2	48	5	30	6	8	7	33	10	48	9	3
1	16	12	26	2	18	3	36	6	18	6	56	8	21	11	56	9	51
2	17	1	14	3	6	4	24	7	6	7	44	9	9	12	24	10	39
3	18	2	2	3	54	5	12	7	54	8	32	9	57	1	12	11	27
4	19	2	50	4	42	6	0	8	42	9	20	10	45	2	0	12	15
5	20	3	38	5	30	6	48	9	30	10	8	11	33	2	48	1	3
6	21	4	26	6	18	7	36	10	18	10	56	12	21	3	36	2	21
7	22	5	14	7	6	8	24	11	6	11	44	1	9	4	24	3	9
8	23	6	2	7	54	9	12	11	54	12	32	1	57	5	12	3	57
9	24	6	50	8	42	10	0	12	42	1	20	2	45	6	0	4	45
10	25	7	38	9	30	10	48	1	30	2	8	3	33	6	48	5	33
11	26	8	26	10	18	11	36	2	18	2	56	4	21	7	36	6	21
12	27	9	14	11	6	12	24	3	6	3	44	5	9	8	24	7	9
13	28	10	2	11	54	1	12	3	54	4	32	5	57	9	12	7	57
14	29	10	50	12	42	2	0	4	42	5	20	6	45	10	0	8	45

NOTE — That the Moon's Age being observed in the first Column, you find the time of HIGH WATER at all the Places above mentioned, in the respective Column of Numbers immediately below them. Thus, when the Moon is *One*, or *Sixteen*, Days old, it is HIGH WATER at Candado, Dunkirk, Leith, &c. at 26 Minutes past 12 o'Clock.

TERMS IN ASTRONOMY.—Some of the peculiar terms used by astronomers have undergone improvements that may be briefly noticed here, viz. Right Ascension is by some called *Equatorial Longitude*, and is thus contrasted to Longitude or *Ecliptical Longitude*; Declination is called *Equatorial Latitude*, and is thus distinguished from Latitude or *Ecliptical Latitude*, both are measured from the point of the vernal equinox; the Azimuth, or an Arc suspended between the meridian and a vertical circle passing through any star, has been called *Meridian Longitude*; the elevation or altitude of any star, when south, is called the *Meridian Latitude*.

TWINKLING or Fluctuation of Starlight, a phenomenon of the fixed stars only, on which, as we have already made some observations, we shall only quote the following from the periodical Journals:

“Some years ago, on looking towards the constellation of the Scorpion, I observed a remarkable changing of colour in Antares: for a second or two of time it appeared of a deep crimson colour, then of a whitish colour, then the crimson was resumed, and so on at alternating periods. Sometimes every other twinkle showed the red colour, while the alternating twinkle appeared of the ordinary colour of starlight.

“What is commonly called the twinkling of a star seems to be an apparent fit of dilatation and increased brilliancy, rapidly succeeded by the opposite state of apparent contraction of surface and dulness. I have observed, also, that the twinkles are of longer or shorter duration at different times: now, in general, the crimson light I allude to occurs in every alternate dilatation, but sometimes only in every third, and at other times quite irre-

gularly: moreover, it lasts longer sometimes than at others, and scarcely ever exceeds two seconds of time at once.

“ I have formerly published accounts of this phenomenon in the Journals, and have ascribed it to some sort of change in the star itself, or to a revolution round its axis, whereby different coloured portions of the sphere are presented to us: but this explanation vanishes on a moment's reflection; and I am inclined to ascribe it to some atmospheric cause. I have sometimes thought that the upper portions of the atmosphere might have some undulatory motion, and that the alternating colour might be produced by its refractive powers: for the atmosphere, in this case, acting as an imperfect prism, might present different colours, according to the varying inclinations of its wavy surface. I have thought, too, that portions of the aqueous atmosphere, possessing different refractive powers, might be transmitted downwards in dew, or that there might be some other unknown motion in the real air, which might cause the appearance. Antares, Betalgeus, Aldebaran, and other red stars, show this change of colours very strongly, particularly the former; while Sirius, and the white stars, scarcely present any alternation of colour. This may in either case be owing to the different composition of their light, which would materially influence the refracted spectrum. Collateral experiments, and the mere appearance of stars in chromatic telescopes, tend to prove that the light of different celestial bodies is differently composed.

“ Some interesting observations on the dispersive power of the atmosphere, published a few years ago by Mr. Stephen Lee, contain an account of the composition of the light of some of the principal stars.” T. F.—*Monthly Mag.*

VIA LACTEA. See the MILKY WAY and GALAXIA.

VENUS ♀, the second planet from the Sun, in Greek *Αφροδιτης*, so called after the celebrated Goddess of Beauty, being the evening star that called forth the lover to meet his mistress, and therefore the planet,

Quam Venus ante alios astorum diligit ignes.

For the various fables about Venus see Dupuis and others.

This planet is also called Vesper and Hesperus when an evening star, and Phosphorus when a morning star; and it was accounted as ill omened for lovers to tarry abroad till caught by the light of the latter, as it was propitious to come forth at the evening light of the former, to which Catullus alludes:

*Vesper adest, Juvenes, consurgite: vesper Olympo
Expectata diu vix tandem lumina tollit.*

*Surgere jam tempus, jam pingues linquere mensas:
Jam veniet virgo, jam dicetur Hymenaeus.*

Hymen o Hymenae, Hymen ades o Hymenae.

And again:

*Namque tuo adventu vigilat custodia semper.
Nocte latent fures, quos idem saepe revertens
Hespere, mutato comprehendis nomine eosdem.*

The diameter of Venus is 7906 miles; and by her diurnal motion the inhabitants about her equator are carried 43 miles every hour, besides the 69,000 above mentioned.

Her orbit includes that of Mercury within it; for at her greatest elongation, or apparent distance from the Sun, she is 96 times his breadth from his

centre, which is almost double of Mercury's. Her orbit is included by the Earth's; for if it were not she might be seen as often in opposition to the Sun as she is in conjunction with him; but she was never seen 90° , or a fourth part of a circle, from the Sun.

When Venus appears west of the Sun she rises before him in the morning, and is called the morning star; when she appears east of the Sun she shines in the evening after he sets, and is then called the evening star, being each in its turn for 290 days. It may, perhaps, be surprising at first, that Venus should keep longer on the east or west of the Sun than the whole time of her period round him. But the difficulty vanishes when we consider that the Earth is all the while going round the Sun the same way, though not so quick, as Venus; and therefore her relative motion to the Earth must in every period be as much slower than her absolute motion in her orbit, as the Earth during that time advances forward in the ecliptic, which is 220° . To us she appears through a telescope in all the various shapes of the Moon.

The axis of Venus is inclined 75° to the axis of her orbit, which is $51\frac{1}{2}^\circ$ more than our Earth's axis is inclined to the axis of the ecliptic; and therefore her seasons vary much more than ours do. The north pole of her axis inclines towards the 20th degree of Aquarius, our Earth's to the beginning of Cancer; consequently the northern parts of Venus have summer in the signs where those of our earth have winter, and *vice versa*.

The artificial day at each pole of Venus is as long as 112 natural days on our Earth.

Venus being 8648 miles in diameter, is very nearly of the same size as the Earth; she is 68,000,000 of miles from the Sun.

We shall enter into no particulars of the fable of Venus, it being well known already.

VESTA.—The planet ♃ is of the fifth apparent magnitude, and of an intense pure white colour, and surrounded by no visible atmosphere. The period of its revolution is one year and sixty-six days. It may be seen in clear nights with the naked eye. The history of its discovery is worthy of notice.

It was a century and half ago conjectured that there must be a planet between the orbits of Jupiter and Mars, on account of the distance subsisting between those two planets. The discovery of Ceres, ♁, confirmed this happy conjecture; but the opinion which it seemed to establish respecting the harmony of the solar system, appeared to be completely overturned by the discovery of Pallas ♀ and Juno ♃. Dr. Olbers, willing to find a theory that should account for the facts newly ascertained, imagined that these small celestial bodies were merely the fragment of a larger planet, which had been burst asunder by some internal convulsion, and that several more might be yet discovered between the orbits of Mars ♂ and Jupiter ♃. He therefore concluded, that though the orbits of all these fragments might be differently inclined to the ecliptic, yet, as they must have all diverged from the same point, they ought to have two common points of reunion, or two nodes in opposite regions of the heavens, through which all the planetary fragments must sooner or later pass. One of these nodes Dr. Olbers found to be in Virgo ♍, and the other in the Whale; and it was actually in the latter of these regions, that Mr. Harding discovered the planet Juno. With the intention, therefore, of detecting other fragments of the supposed planet,

Dr. Olbers examined, thrice every year, all the little stars in the opposite constellations of Virgo and the Whale, till his labours were crowned with success on the 29th of March 1807, by the discovery of a new planet in the constellation of Virgo, to which he gave the name of Vesta.

The antient symbolical fables about Vesta relate to fire; and the poet tells us,

Nec tu aliud Vestam quam vivam intellige flammam.

VIRGO the Virgin ♍, a Zodial sign into which the Sun nominally enters in August. The principal star, *Spica Virginis*, is of the first magnitude, and is a bright bluish star. The next of note is *Vindemiatrix*: both names are expressive of the phenomenon of autumn, viz. corn and wine, and were probably imposed when these stars rose heliacally early in the autumnal season.

This Virgin is probably *Astraea* Justicia or Erigone, who left the Earth after the introduction of vice and crime. Speaking of the innocence of country peasants, Virgil says,

Sacra boum sanctique patres, extrema per illos,
Justicia excedens terris vestigia fecit.

Manlius calls her by the name of Erigone:

Erigone surgens quae rexit saecula prisca
Justiciâ, rursusque eadem labentia fugit.

Lucan says,

Aut Astraea jubet lentos discedere Pisces.

And Ovid, in *Met.* i. vi. 26,

Ultima celestium terras Astraea reliquit.

URANUS *Herschell* or *Georgium Sidus*, a new planet, the outermost of the whole system discovered

by Dr. Herschell, together with its satellites. It is curious that this planet had been seen and mistaken for a fixed star by Flamsteed, Bayer, and others, and put down for such in their catalogues. It is 1,800,000,000 miles from the common centre of the system, and though at this distance it can be seen from our earth without a glass on clear nights, and looks like a small star of the fifth magnitude, of a blueish white colour, and considerably brilliant. To get a good view of its disk a telescopic power of near 200 is requisite.

URSA MAJOR the Great Bear, a well known constellation, sufficiently marked by the seven stars called Charles's Wain, over the third of which γ *Ursae Majoris* or *Mizar*, is situated little *Alcor*, called Jack on the Body Horse. A line drawn through the two last stars of the Bear's tail, almost cutting the pole star, they have been called the Pointers; their Arabic names are *Dubhe* and *Alicoth*; Ursa in Greek is called *Arctos*, and hence the origin of Arctic Circle, Arctic Seas, &c.; even the Romans used *Arctor* instead of *Ursa*, as Virgil, in his suspected line, describes:

Arctos oceani metuentes aequore tingi.

Ovid has the same sort of allusion, where Juno begs the Gods to prevent this asterism from touching the sea:

*Gurgite caeruleo septem prohibete Triones;
Sideraque in coelo stupri mercede recepta
Pellite: ne puro tingatur in aequore pellex.*

Anacreon, in his celebrated Ode on Cupid, describes the time of night by reference to the turning round of the Great Bear:

Μεσονυκτίοις ποθ' ὥραις,
 Στρέφεται ὄτ' ἄρκτος ἤδη
 Κατὰ χεῖρα τὴν Βοώτου.

The Charles Wain, as it is called, otherwise *Septentriones*, was once denominated the Chariot of Icarus, which explains the line of Propertius:

Flectant Icarii sidera tarda boves.

When the constellation is considered under the idea of Charles's Wain, the four bright stars α , β , γ , and δ , are the wheels, and the other three represent the shaft and horses; but, as the Great Bear, its tail is marked out by these three, the back and body by the other four, there are also others of the third and fourth magnitude that mark the outlines of the figure with much precision. The upper pointer is of the second magnitude, and, like those of the tail, has its particular name; it is called *Dubhe*. The middle one in the tail is called *Mizar*, and appears double, having the little star *Alcor* close to it. As the southern extremity of this sign approaches within 32° of the equator, and the northern to 72° of north declination, it therefore becomes vertical to Europe, most of Asia, and North America, during each diurnal revolution of the earth, and no part of the animal sinks below the horizon except his right hind leg.

In 1820, *Dubhe* had $62^\circ 43' 17''$ of north declination, and $163^\circ 7' 6''$ of right ascension. It culminated, or came to the meridian above the pole, at London, for the first day of each month in that year, as in the following table, with a meridian altitude of $78^\circ 47' 43''$:

	H. M.		H. M.
January	4 0 M.	July	4 15 Af.
February	1 45 ..	August	2 15 ..
March	0 2 ..	September..	0 10 ..
April..	10 10 N.	October....	10 20 M.
May	8 25 ..	November ..	8 20 ..
June	6 17 Ev.	December ..	6 51 ..

By adding 12 hours to the times given in the preceding list, we shall have the moments when the same star was on the meridian below the pole.

URSA MINOR the Little Bear. Ursa Minor extends her tail to the pole, where Polaris, a double star, is called Cynosura; hence Milton, in *Comus*:

And thou shalt be my star of Arcady,
Or Tyrian Cynosure.

This is one of the most ancient of the constellations, and has been well known to mariners from the earliest ages of navigation and commerce, as affording an easy method of determining a ship's course, and the latitude of a place in the northern hemisphere. This star, however, is not exactly in the pole, for its declination is, at present, about $88^{\circ} 21' 47''.5$; and, consequently, the complement of this, or its polar distance, is $1^{\circ} 38' 12''.5$. Hence, if the altitude of this star be found when it is on the meridian above the pole, and this polar distance be subtracted from it, the remainder will be the latitude of the place of observation; or if the polar distance be added to the altitude of the star when on the meridian below the pole, the result will be the same.

According to fable Ursa Minor represents Callisto, whom Jupiter placed in the heavens in a Bear's form. It embraces the pole, and may be known by seven stars disposed something like those of the Great Bear, but inverse as to the position.

The pole star has been as long known as any thing in astronomy, and by it the Tyrian mariners used principally to steer their vessels. Spencer alludes to it in the *Fairie Queen* :

By this the northern waggoner had set
His sevenfold team behind the stedfast star.

We have related, under the account of the Great Bear above, that the Romans distinguished them as constellations which never set. Lucan has, however, alluded to the setting to certain countries conquered by the Romans, and laying nearer to the tropics. The passage, however, as it relates to Boötes, is not easily explained, as Boötes, even in those countries, is a long while visible :

Carmanosque duces quorum jam flexus in Austrum
Aether non totum mergi tamen aspicit Arcton,
Lucet et exigua velox ubi nocte Boötes.

PHARS. iii. 250.

VULPECULA ET ANSER the Fox and Goose, a small asterism between the Swan and the Eagle, consisting of smallish stars; a row of stars of the fourth magnitude, called *Sagita*, lie just below it. The head of the Swan, of the Fox, and of the Eagle are almost in one meridian line.

ZODIAC.—To give an idea of the Zodiac we may observe that there is a division of the heavens into three parts. 1. The *Zodiac* from $\zeta\omega\delta\iota\omicron\nu$, an animal, because most of the constellations in it, which are twelve in number, are the figures of animals: as *Aries* the Ram, *Taurus* the Bull, *Gemini* the Twins, *Cancer* the Crab, *Leo* the Lion, *Virgo* the Virgin, *Libra* the Balance, *Scorpio* the Scorpion, *Sagittarius* the Archer, *Capricornus* the Goat, *Aquarius* the Waterbearer, and *Pisces* the Fishes.

The Zodiac goes quite round the heavens; it is about 16° broad, so that it takes in the orbits of all the planets, and likewise the orbit of the Moon. Along the middle of this zone or belt is the ecliptic, or circle which the Earth describes annually as seen from the Sun; and which the Sun appears to describe as seen from the Earth. 2. All that region of the heavens which is on the north side of the Zodiac, containing twenty-one constellations. 3. That on the south side, containing fifteen.

Behold our orbit as thro' twice six signs
 Our central Sun apparently inclines;
 The Golden Fleece his pale ray first adorns,
 Then towards the Bull he wends and gilds his horns;
 Castor and Pollux then receive his ray,
 On burning Cancer then he seems to stay.
 On flaming Leo pours the liquid shower,
 Then faints beneath the Virgin's conquering power.
 Now the just Scales weigh well both day and night,
 The Scorpion then receives the solar light;
 Then quivered Chiron clouds his wintry face,
 And the tempestuous Sea Goat mends his pace.
 Now in the water Sol's warm beams are quenched.
 Till with the Fishes he is fairly drenched;
 These twice six signs successively appear,
 And mark the twelve months of the circling year.

The following lines are written by Caesius on the constellations:

In Boreamque tria et viginti sidera cernes.
 Est Minor Ursa, Draco, Cepheus, et Cassiopeja,
 Andromede, Perseus, Auriga, Trigonus, et Ursa
 Major, Pegasides, et Equi Praesection, Delphin,
 Aquila, et Antinous, Vultur, Telum, Coma, Cygnus,
 Hercules, Arguitenens, Serpensque, Corona, Boötes,
 Vigintique novem vergentia sidera ad Austrum.
 Sunt Lepus et Cetus cum Nilo saevus Orion,
 Sirius et Procyon, Argo ratis, Hydra, Craterque

Corvus, Cetaurus, Lupus, Ara, Corollaque, Piscis,
Austrinus, Piscisque Volans, Dorado, Columba,
Deltodon, Pavo, Crux, Musca, Chamaelion, Hydrus,
Picaque, Grus, Phoenix, Indus, Paradiseus Ales.

In se perpetuo gyro tum stellifer axis,
Vertitur, et rapidis revocat jam noctibus astra.

ZUBEN EL CHAMALI, the southernmost of the
two large stars of *Libra*. See RIGHT ASCENSION.

ZUBEN EL GENUBI, the more northern of the
above two stars.

SUPPLEMENTARY ADDITIONS

TO

PART III.

WE have thought proper, with the permission of the author, to subjoin the following observations on the antient astronomy, and on the alterations which have taken place in the heavens, by Dr. Oaks, of Woodford Academy, in Essex, to whose ingenious Equinoctial Globe we have before alluded in a former part of this work :

“ The poem of Aratus, which describes the phenomena of the heavens, is formed from the description given by Eudoxus of the sphere of the antients, which appears to have been constructed for the latitude of 41° , in which latitude is Thessaly, the country of Chiron; the poet stating the length of the longest day to the length of the shortest night, to be five to three. It will also appear to have been made in the age of Chiron, B. C. 940: for if the equinoctial globe is rectified for this period, the position which is given by Aratus of the equator and tropics among the fixed stars, will be found, except in a few particulars, remarkably correct. The variations which occur may be justly attributed to the changes made by succeeding astronomers in the configuration of the constellations. Those stars, for example, which form at present the zone of Orion, are represented both by Aratus and Hipparchus as being in the equator; yet in

the time of the latter they were several degrees below it, a circumstance which could not have escaped the notice of so accurate an observer. They were still lower in the time of Aratus and Eudoxus. It is probable, therefore, that those stars which now form the zone of Orion antiently composed the Sword.

“ Aratus represents the Equator as passing through part of Aries, the knees of Taurus, the belt of Orion, the flexure of Hydra (Cor. Hydræ), Crater, Corvus, &c. He describes the heads of the Gemini as coinciding with the Summer Tropic: in the same curve he places the knees of Auriga, and the right arm of Andromeda above the elbow, the palm of the hand rising above the tropic, &c. He represents the Winter Tropic as passing through the middle of Capricornus, the feet of Aquarius, the sting of Scorpio, &c.

“ Aratus has given no description of the Colures, but this deficiency is supplied by Hipparchus, who has preserved the account given by Eudoxus, according to which astronomer the Equinoctial Colure passed through the left hand of Boötes, the right hand and fore knees of Centaurus, the head and right hand of Perseus. This description will be found correct by rectifying the globe, as before, for the time of Chiron.

“ That frequent alterations were made in the constellations is confirmed by Ptolemy, who pleads the example of antient astronomers for those made by himself. The same liberty has been taken by modern astronomers. Thus the constellation Hercules was antiently a suppliant figure, without a name, but called by the Greeks, from his position, *Ἐνγόνασιν*, the man on his knees, having his hands extended and empty. In the time of Manilius

this figure had not experienced any change. He thus describes it :

Proxima fulgentes Arctos, Boreamque rigentem
Nixa venit species genibus, sibi conscia causæ.

Lib. i. v. 321.

The greater Bear formerly consisted only of seven stars, the fish near Andromeda had a hawk's head, the cross formed the hinder legs of the Centaur, and Arcturus was one of the unformed stars.

“The two stars which now form the heads of Castor and Pollux, were, in the time of Chiron, considerably above the summer tropic, yet they are described by Aratus as lying in it :

Ἐν δὲ οἱ ἀμφότεραι κεφαλαὶ Διδύμων φορέονται.

It is possible that antiently the heads of these sons of Leda were represented lower, and that the two stars were placed above them, as they frequently appear on antient coins, or, which is more probable, the poet might consider them sufficiently near to be introduced as a guide to find the tropic. So also the sting of Scorpio was 4° to the north of the winter tropic, but the poet considered it sufficiently near to form a part of his description.

“The Arctic and antarctic circles among the antients were determined by the latitude of the place, and constituted those circles which are called by modern astronomers circles of perpetual apparition and occultation.

“Geminus thus defines the arctic circle:—
Ἀρκτικός μὲν οὖν ἐστὶ κύκλος ὁ μέγιστος τῶν ἀεὶ θεωρουμένων κύκλων, ὁ ἐφαπτόμενος τοῦ ὀρίζοντος καθ' ἑν, σημεῖον, καὶ ὅλος ὑπὲρ γῆν ἀπολαμβάνόμενος.

“Eudoxus observes that the star Canopus, which was visible at Alexandria, was not visible above

the horizon where he wrote,—*ἐν αὐτῷ τῷ ἀφανεῖ κύκλῳ φέρεσθαι.*

“ Hipparchus censures Eudoxus for this assertion, and mentions that Canopus was sometimes visible at Athens, the latitude of this city being 37° , and the distance of Canopus from the south pole $38\frac{1}{2}^{\circ}$. This was true at the time of Hipparchus and Eudoxus, but the globe being rectified for the ærea of Chiron, Canopus will be found to be only 36° from the south pole; it was, therefore, at that time invisible at Athens, much less was it visible in the latitude of Thessaly.

“ The rising and setting of the constellations, according to Aratus, will receive considerable illustration, whether the globe be rectified for the period of Eudoxus or Chiron, the difference of a few degrees not being sufficient, in this particular, materially to affect the description of the poet.

“ Achilles Tatius, when describing the course of the sun in the heavens, says, that the first point of Cancer is the highest to which it ascends, but that this solstitial point was differently placed by astronomers, some placing it in the beginning, others in the 8th, 12th, 15th degree of Cancer, *βούλονται δὲ τροπὴν αὐτὸν (i. e. ἡλίον) ποιῆσθαι οἱ μὲν, περὶ τὰς ἀρχάς· οἱ δὲ περὶ ὀγδόην μοῖραν· οἱ δὲ περὶ ιβ'· οἱ δὲ περὶ τέ τοῦ καρκίνου.* This variation doubtless originated from the observations of the summer solstice being made at different periods, and the place being in the constellation to which they were referred. Eudoxus placed the solstitial points in the middle, Aratus in the beginning of the sign.*

“ When astronomy was first introduced at Rome, it is probable the solstice was in 8° of the constel-

* See Sir I. Newton's Chronology, p. 82.—Hipparchus, lib. ii. 111.

lation Cancer; hence, notwithstanding the change which necessarily took place, in consequence of the precession, the notion prevailed, even in the time of Pliny, when the equinoctial point was in the constellation Pisces, that it was still in the 8th degree of Cancer: thus Pliny says, ‘Solstitium peragi in VIII. parte Cancri.’ Lib. xviii. cap. 28. It was, as Patavius observes, in compliance with the prejudices of the people, that in the Roman calendar the solstitial point was referred to the 8th degree of Cancer: this author remarks the same compliance in the principal Roman writers in this respect. ‘Columella, Plinius, Ovidius, aliique complures in octavis partibus asserunt aequinoctia et solstitia confici. Sed neque id omnem retro vetustatem instituisse dicunt; neque illos, quos percent astronomos ex animi sui sententiâ ita praescripsisse; sed rusticorum, ac vulgi gratiâ, significant.’*

“By the assistance of the equinoctial globe, † the true times of the rising and setting of the stars may be easily found for any period and for any latitude; hence it may be ascertained, whether the observations in ancient writers agree with the time and latitude in which they lived. Pliny has collected a variety of observations respecting the rising and setting of the stars, but as he has not always mentioned the age of the astronomer from whom they were borrowed, nor the latitude of the place where they were made, much assistance cannot be derived from them, and his accounts appear occasionally contradictory. ‡

* Ad Auct. lib. iii. cap. 11.

† The author alludes to a very curious globe of his own invention, now sold in London.

‡ Pliny notices this difference in the authors to

LUCIDA PLEIADUM.

	At Ascra, B. C. 940.		At Rome, B. C. 45.		
	The age of Hesiod.		The age of Virgil.		
Rose	γ	12° 30'	. . . .	γ	22° 51' } <i>Cosmi-</i>
Set	♁	20 30	. . . .	♆	3 12 } <i>ally.</i>
Set	γ	4 8	. . . .	γ	18 3 } <i>ally.</i>
Rose	♃	11 4	. . . .	♃	28 3 } <i>Helia-</i>

From the heliacal setting to the heliacal rising of the Pleiades, there were, according to Hesiod, forty days:

Αἱ δὴ τοι νύκτας τε καὶ ἡμέρας τεσσαράκοντα
 Κεκρύφαται· αὐτὶς δὲ περιπλομένου ἐνιαυτοῦ
 Φαίνονται, τὰ πρῶτα χαρασσομένοιο σιδήρου.

Op. et Dies, v. 385.

γ 4° 8' corresponds nearly with March 23d; and ♃ 11° 4' with May 2d, a period of forty days. At the setting, ploughing commenced; and mowing at the rising.

“Virgil mentions two seasons of making honey; the one at the rising, the other at the setting of the Pleiades:

Taygete simul os terris ostendit honestum
 Pleias, et oceani spretos pede repulit amnes,
 Aut eadem, sidus fugiens ubi Piscis aquosi
 Tristior, hyernas coelo descendit in undas.

Georg. iv. 232.

whom he refers.—Autores prodidere ea, quos prae-
 texuimus volumini huic, raro ullius sententia cum alio
 congruente. Occasum matutinum Vergiliarum He-
 siodus tradidit fieri, cum aequinoctium autumni con-
 ficeretur: Thales xxv. die ab aequinoctio: Anaximan-
 der xxix. Euctemon xlvi. (xxviii. forsan.)—Lib. xviii.
 cap. xxv.

“Petavius calls this passage inexplicable, and with justice, for it certainly cannot be reconciled to the constellations. Heyne says, ‘Is situs est in coelo, ut alter piscium eas a tergo urgere et insequi videri possit.’ The slightest inspection of the globe will shew the incorrectness of this assertion.

“Arcturus, in the time of Sophocles, B. C. 450, rose cosmically at Athens, August 31st, and heliacally September 12th. It was probably to the latter rising that the shepherd alludes :

Ἐπλησίαζον τῶδε τ' ἀνδρὶ τρεῖς ὄλους

Ἐξ ἡρος εἰς Ἀρκτουῶρον ἐμμήνους χρόνους.

Œd. Tyr. v. 1157.

By which the shepherd states that he fed the flocks on Mount Citheron, from the termination of spring until the rising of Arcturus, a period of three months. Elmsley, instead of ἐμμήνους, adopts the conjectural reading of Schaefer ἐκμήνους, but it is difficult to imagine what τρεῖς ἐκμήνους can mean.

“The changes which take place in consequence of the precession of the equinoctial points are exceedingly slow, and for a long time scarcely perceptible; yet the results, after a series of ages, are very important with respect to the rising and setting of the stars. The following instances may serve as examples:

“The circle of perpetual occultation is continually varying: many of those stars therefore which, some ages ago, rose above the horizon, are no longer visible at the same latitude; while others, on the contrary, which were invisible, come under observation.

“Aratus has given a very poetical description of the signs attending the rising of the Altar. This constellation is, at present, only partially visible at

Athens, the stars β and γ not rising above the horizon; but at the time of Chiron they rose several degrees above it at Athens, and were visible at the latitude of 40° . In latitude 27° , Crux, at the present period, just appears above the circle of occultation: after the lapse, however, of about 14,380 years, it will become visible in the latitude of London.

“Homer describes the Greater Bear as unwashed by the ocean: * in his time η in the tail approached in lat. 37° , only within 21° of the horizon; at present this star dips below it at the same latitude: and in about 2000 years hence, the whole of the seven stars, which originally constituted the Bear, will rise and set in the horizon, together with a considerable part of that space which is now included in the configuration.

“Virgil, Boethius, and other poets, have imitated the language of Homer, but their works will live when their allusion will be unintelligible, without a reference to the precession of the equinoctial points.

“Sirius rose heliacally at Rome, B. C. 940, when the sun was in ϖ 270 : in the time of Virgil, when the sun was in Ω $7^\circ 43'$: at present when the sun is in Ω $22^\circ 30'$. This rising of Sirius is frequently noticed in classical writers, from the influence which this constellation was supposed to possess in augmenting the heat, the period from its heliacal rising to its heliacal setting was called the dog days. Sirius rises, at present, in the latitude of London, when the sun is in \mathfrak{m} 3° —in about 7,560 years it will be no longer visible.”

* And Virgil calls the Bears,

Arctos oceani metuentes aequore tingi.

TABLE

*Of the Rising and Setting of Stars, at Rome, B. C. 45.
From Petavius.*

Names of Stars.	Rising and Setting.		
	Cosmical.	Heliac.	Acron.
Antares.....	♄ 13° 42'	♄ 27° 17'	♄ 13° 42'
	♄ 2 0	♄ 3 11	♄ 2 0
Arcturus.....	♄ 13 32	♄ 26 16	♄ 13 32
	♄ 3 16	♄ 10 48	♄ 3 16
Capella.....	♄ 16 50	♄ 16 48	♄ 16 50
	♄ 13 52	♄ 28 12	♄ 13 52
ε Delphini.....	♄ 17 0	♄ 5 37	♄ 17 0
	♄ 5 0	♄ 14 15	♄ 5 0
α Andromeda	♄ 27 48	♄ 22 10	♄ 27 48
	♄ 25 7	♄ 11 24	♄ 25 7
α Gemin.	♄ 13 33	♄ 0 25	♄ 13 33
	♄ 27 32	♄ 12 56	♄ 27 22
ζ Haedorum ...	♄ 3 25	♄ 12 29	♄ 3 25
	♄ 3 31	♄ 15 5	♄ 3 31
Aldebaran.....	♄ 20 39	♄ 11 1	♄ 20 39
	♄ 8 53	♄ 25 43	♄ 8 53
Cor Leonis	♄ 0 58	♄ 17 44	♄ 0 58
	♄ 2 33	♄ 26 58	♄ 2 33
α Lyrae.....	♄ 28 32	♄ 11 28	♄ 28 32
	♄ 19 9	♄ 5 49	♄ 19 9
ε Orionis.....	♄ 26 24	♄ 16 29	♄ 26 24
	♄ 11 55	♄ 27 22	♄ 11 55
Procyon.....	♄ 11 0	♄ 27 54	♄ 11 0
	♄ 13 24	♄ 29 2	♄ 13 24
Sirius.....	♄ 22 48	♄ 7 43	♄ 22 48
	♄ 19 14	♄ 5 31	♄ 19 14
Vergil. lucid.	♄ 22 51	♄ 28 3	♄ 22 51
	♄ 3 12	♄ 18 3	♄ 3 12
Vindemeator...	♄ 5 3	♄ 20 5	♄ 5 3
	♄ 20 0	♄ 25 47	♄ 20 0
Virginis Spica	♄ 26 0	♄ 8 31	♄ 26 0
	♄ 21 5	♄ 20 38	♄ 21 5

PART THE FOURTH.

THE RUSTIC CALENDAR,

DEDUCED FROM REPUTED AUTHORITIES ;

AND WITH THE AVERAGE TIMES

OF THE

ARRIVAL AND DEPARTURE OF BIRDS,

THE

FLOWERING OF PLANTS,

AND OTHER NATURAL PHENOMENA,

TAKEN FROM A MS. JOURNAL INCLUDING A TERM
OF FIFTY YEARS.

CALENDAR.



January 1. NEW YEAR'S DAY; Circumcision of our Lord; St. Faine; ☉ rises viii. 5. sets iii. 35.; Janus, Juno, Jupiter, and Esculapius, (old Rom. Cal.)—Black Hellebore *Helleborus niger*, fl.; Sweet Coltsfoot *Tussilago fragrans*, still in fl. Both the above plants are often in full flower to-day, if the weather be open; if very mild there are here and there solitary flowers on stocks. Marygolds and others remain of last year's productions.

2. St. Macarius, Anchoret; Gemini rise achronically.

3. St. Genevieve, patroness of Paris.—Persian Fleur de Luce *Iris Persica*, fl. in the house; Laurestine *Viburnum Tinus*, flowers when mild.

4. St. Titus discip. St. Pauli.—Screw Moss in fructification.

5. St. Simeon, stylites; St. Syncletica.—Bearsfoot *Helleborus foetidus*, fl.

6. TWELFTH DAY; Epiphany of our Lord; three Kings.—Weather generally either very cold or very wet.

7. St. Lucian; Distaff Day.—Groundsel *Senecio vulgaris*, fl. and all the year.

8. St. Gudula, patroness of Brussels; St. Lucian, St. Pega.—Yellow Tremella *Tremella diliquescens*, found on old palings.

9. St. Macrina, V.; St. Peter of Sebaste.—Redbreast *Sylvia rubecola*, sings.

10. St. William, St. Agatho.—Linnets *Fringillae Linotae*, congregate.

11. St. Theodosius the Cenobiarch.—Young Lambs dropped.

12. St. Arcadius.—Blackbird *Turdus Merula*, sings.

13. St. Veronica, Virgin.—Wall Speedwell *Veronica arvensis*, fl., Thristle *Turdus musicus*, sings.

14. St. Hilary, Bp.—Fieldfares *Turdi pilares*, still very numerous. This is the average coldest day of the year; in 1820, on the night following this day, the thermometer fell to -10° , that is 10° below zero of Fahrenheit's scale. This cold was partial, and happened in Sussex.

15. St. Mida, V. St. Paul, first hermit.—Birds seek the shelter, food, and protection of the house; weather usually very hard.

16. St. Marcellus.—Dead Nettle or Red Archangel *Lumium purpureum* may now be seen in flower, should the weather be mild; indeed it flowers nearly all the year, like the Groundsel.

17. St. Anthony, Patriarch of Monks; St. Milgirthe, V.—The Garden Anemone or Windflower *Anemone hortensis*, is in flower as early as to-day; but we have observed that it is the red variety which thus early blows; the general season is April and May.

18. St. Peter's Chair at Rome; St. Prisca.

19. St. Martha, &c. Martyrs.—Goldcrest sings.

20. St. Fabian, St. Sebastian.—Mistle Thrush or Mavis, *Turdus viscivorus*, sings.

21. St. Agnes, Virgin, Martyr.—Black Hellebore in full flower, and thence has been dedicated to St. Agnes.

22. St. Vincent, Martyr.

Remember on St. Vincent's day,
If that the sun his beam display.

Vincenti festo si sol radiet memor esto.—*Proverb.*

23. St. Emerentia, V. St. Raymond.—Wren *Motacilla troglodytes*, sings.

24. St. Timothy, St. Cadoc.—Blue Titmouse¹ or Tomtit, *Parus corullus*, sings; Green Titmouse, or Oxeye, *Parus major*, sings.

25. CONVERSION OF ST. PAUL. See our articles St. Paul's Day, in Parts I. and II.—Yellow Hellebore or Winter Aconite, *Helleborus hyemalis*, flowers in mild weather, and shows its bright yellow flowers in our borders even before the Snowdrop :

Clara dies Pauli bona tempora denotat anni.
Si nix vel pluvia, designant tempora cara.
Si fiant nebulae, morientur bestia quaeque.
Si fiant venti, proeliabunt proelia genti.

If St. Paul's day be fair and cleare,
It doth betide a happy yeare ;
But if by chance it then should raine,
It will make deare all kinds of graine ;
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 strow 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 debase thy mind,
Nor Paul, nor Swithin, rule the clouds and wind.

26. St. Paula, W., St. Polycarp.—White Butterbur *Tussilago alba*, flowers, if mild weather, but, if cold, is often a fortnight later in coming into flower.

27. St. John Chrysostom.—White Archangel *Larnium album* sometimes flowers.

28. Commemoration of St. Agnes, St. Margaret of Hungary.—Hedge Sparrow, *Sylvia modularis*, sings.

29. St. Francis of Sales.—The temperature perceptibly increased on an average of years.

30. St. Martina, St. Bathildes.—The *Veltheimia Capensis*, flowers if not destroyed by frost.

31. St. Marcella, W., St. Peter Nolasco.—The days very perceptibly lengthened.

February 1. St. Bridget, St. Ignatius; Candlemas Eve.—Snowdrop *Galanthus nivalis*, just appears, and hence called Our Lady of February, and Fair Maid of February, in honour of the blessed Virgin Mary, of whose vigil it is often an harbinger.

2. CANDLEMAS DAY, Purification of Our Lady. ☉ rises at vii. 28. sets at iv. 32.—Proverbial adages assign a prognosticative import to the weather of this day, as well as that of St. Paul, St. Swithin, and others :

Si sol splendescat Maria purificante
Major erit glacies post festum quam fuit ante.

If Candlemas day be fair and bright,
Winter will have another flight,
But if Candlemas day be clouds and rain,
Winter is gone and will not come again.

Already now the Snowdrop dares appear,
The first pale blossom of the unripened year :
As Flora's breath by some transforming power
Had changed an icicle into a flower :
Its name and hue the scentless plant retains,
And Winter lingers in its icy veins.

3. St. Blaise; Woolcombers' Festival.—In addition to the Hyacinths, Narcissi, and Van Thol Tulips, some of the early Croci, viz. the Scotch,

the common Yellow, the Cloth of Gold Crocuses flower in the house.

4. St. Andrew Corsini, St. Jean de Valois.—Now and then the great Jonquil and the Daffodil will blow in the house in a pot; Narcissi and Hyacinth are common in glasses of water.

5. St. Agatha V.M. St. Adelaide V.M.; Aquarius oritur, R. Cal.; Miraach in Andromeda rises heliacally.—A few Crocusses are generally in flower here and there on warm banks and in sheltered situations.

6. St. Dorothy, V., St. Amand, St. Vedast.—Butcher's Broom *Ruscus aculeatus*, fl.

7. St. Romauld.—White Alysson flowers.

8. St. John of Malta, founder of the Trinitarians.—Owl *Strix Ulula*, hoots. The long flowers of the hazels begin to be seen hanging in the hedges by the sides of the roads.

9. St. Apollonia, V. M., St. Attracta, V.—Ravens *Corvi coraces*, build.

10. St. Scholastica, V., St. Soteris, V. M.—Andromeda's Head rises heliacally. Frogs *Ranae temporariae*, breed and croak.

11. St. Theodora, St. Saturnia, &c.—Rooks *Corvi frugelegi*, build.

12. St. Eulatea, V. of Barcelona.—Toad *Bufo squalidus*, makes a noise.

13. St. Catherine de Rici, St. Polyeuctus, Idus, *Fauni et Jovi*, &c.—Scotch Crocus *Crocus biflorus*, flowers.—This species has pale whitish petals striped with purple; the bulb is large and of a deep brown colour. Polyanthus *Primula Polyantha*, flowers if mild: this plant, of which many hundred varieties are common, is supposed to come from the common Primrose, or from that and the Cowslip.

14. St. Valentine, St. Maro.—Noble Liverwort

Anemone Hepatica, flowers; of this plant there are three varieties, the blue, the purple, and the white. Common Yellow Crocus *Crocus moesiacus*, flowers abundantly: this well known plant is of an orange yellow colour, and needs no description to distinguish it, being common in every garden; the bulb of this species is large, and of a light brown colour.

15. St. Faustina, V., St. Jovita, V.—Cloth of Gold Crocus *Crocus Susianus*, fl. This species has petals of a deep orange yellow in the inside, and striped with a deep shining reddish brown on the out; the bulb is very large, and of a light brown colour, covered with a strongly marked network. Snowdrops, and Crocuses of the above sorts are by this time abundant, and with the Hellebores, Hepaticus, and Polyanthuses, contribute much to enliven the garden.

16. St. Juliana, V. M.; *Sol in Piscibus*, Rom. Cal.—Bee *Apis mellifera*, begins to be seen abroad when mild. The leaves of Daffodils, Narcissi, and others destined to blow next month, now appear above ground.

17. St. Flavian.—It is often at this time that the proverb is fulfilled, "February fill dyke," for the weather is frequently showery, and then the ditches are full and streaming.

18. St. Simeon of Jerusalem; *Ferialia*, Rom. Cal.—European Sowbread *Cyclamen Europaeum*, fl. Primroses and Polyanthuses were abundant in gardens in 1825, and this year, 1826, there are scarcely any out.

19. St. Barbas of Benvenuto.—Field Speedwell *Veronica agrestis*, fl.; Snowdrops and Crocuses abundant.

20. St. Mildred, V. A.; *Charistia*, Rom. Cal.—Blue Navelwort or Houndstongue *Cynoglossum*

Omphalodes, begins to flower; the Noble Liverwort or Hepatica, is now in full blow, and the Mezereon Tree beginning to bloom.

21. St. Verda, V. M., and others.—The Scotch Crocus, the common yellow Crocus, and the Cloth of Gold, are all three now common, and much contribute to the ornament of our borders, mixed with Snowdrops, Hellebores, and Hepaticas.

22. St. Margaret of Cortona; Chair of St. Peter at Antioch.—Daisy *Bellis perennis*, begins to flower, and to dot the greens and warm sloping fields here and there; hence, we believe, this plant has been called Herb Margaret, and in France La Belle Marguerite.

23. St. Milburge, V.—Apricot, *Prunus Armeniaca*, now shows a few blossoms; the white Butterbur often in full flower, but there is a month's difference in the period of this plant according to the season.

24. St. Ethelbert.—White Willow *Salix alba*, flowers; Particolored Crocus, *Crocus versicolor*, fl.

25. St. Walburge.—Brittle Willow *Salix fragilis*, flowers; most of this genus shortly follow, and their branches are often used as palms in churches and chapels on Palm Sunday.

26. St. Victor.—☉ rises at vi. 41. sets v. 19. Early Whitlow Grass *Draba verna*, full fl.

27. St. Leander, Bp. of Seville.—Mezereon in flower.

28. St. Proterius.—Stone Curlew, *Foedoa Oediconemus*, arrives, and its peculiar cry is heard by night, while the bird flies about over our heads unseen; this name has been suggested by the resemblance of the sound to the grating together of stones: it is also called Night Plover; it begins to be heard towards seven o'clock.

29. St. Oswald.

March 1. St. David, Patron of Wales; *Matronalia, Marti Lucinae et Ancyliæ*, Rom. Cal.—The pale purple and white Crocus, *Crocus versicolor*, flowers; this resembles the Scotch Crocus in its markings, only it is more inclined to blue and its flower larger, equalling in size the common yellow Crocus.

2. St. Chad.—Mezereon *Daphne Mezereon*, often in full flower; and its flowering and leafless bush makes a conspicuous figure in the primaveral garden.

3. St. Cunegundes, St. Chelidonus.—Purple spring Crocus *Crocus vernus*, fl.; early Sulphur, Butterfly, *Papilio Rhemni* appears.

4. St. Casimir, St. Adrian.—Grape Hyacinth *Hyacinthus botryoides*, in early years begins to fl.; Sweet Violets are generally in flower now. See March 17th.

5. St. Adrian, St. Eubulus, M. M.—Primroses *Primulae verna*, yet common in our gardens.

6. St. Colette, V.; *Vestae fest. Cathedra Julii*, R. Cal.—Early Daffodil, or Lent Lily, *Narcissus Pseudonarcissus*, blows in the garden, but it is not till March 20th that this plant almost covers certain fields with its pale yellow; it blows in the fields till the end of the month, and lasts then nearly all April.

7. St. Perpetua.—Daffodilly or Double Lent Lily *Narcissus Pseudonarcissus plenus*, begins to blow. In the course of the month these flowers make a fine show in the gardens; their paler yellow is well contrasted with the deep yellow of the Crocus.

8. St. Rosa of Viterbo, V.—Peach *Amygdalus Persica* in bloom; the Apricot is by this time full out; *Narcissus orientalis*, fl.

9. St. Frances, foundress of the Collectines, St.

Catherine of Bologna, V. A.—Great scented Jonquil *Narcissus laetus*, flowers; this is twice the size of the common Jonquil, it blows with the early Daffodil, before the other species near a fortnight: of this species, however, there seem to be several permanent varieties that have received specific names.

10. Forty Martyrs of Sebaste.—Wallflower *Cheiranthus Cheiri*, sometimes flowers here and there on old last year's plants. Frogs are now heard croaking from the ponds and ditches, where they assemble in great numbers and breed.

11. St. Sophronius.—Cowslip of Jerusalem or Lungwort *Pulmonaria officinalis*, fl.

12. St. Gregory the Great.

13. St. Euphrasia, V., St. Kennocha.—Heartsease or Pansie, *Viola tricolor*, fl. This plant is called Herb Trinity, Come and kiss me, Three faces under a hood, and other curious names.

14. St. Maud, Queen of Germany.—Dog's Tooth Violet *Erythronium Dens Canis*, flowers in warm situations, and in pots in the green-house. See April 5th.

15. St. Zachary, St. Abraham.—Least Willow Wren *Ficedella pinetorum*, arrives; indeed this bird is seen in the south of England all the winter.

16. St. Julian of Cilicia.—Coltsfoot *Tussilago Tarfara*, fl. by roadsides, &c.; Snowdrops begin to decline; White and Orange Narcissus *N. floribundus*, flowers.

17. St. Gertrude, V., St. Patrick of Ireland.—Sweet Violet *Viola odorata*, flowers most abundantly, and its sweet fragrance wafted on the gales of March produce a delightful effect on the senses as we pass them in the garden, blowing under some wall, building, or bank, and we recognize this odorous plant before it is actually seen by its known

smell. The early Sulphur Butterfly *Papilio Rhamni*, appears in warm days.

18. St. Cyril of Jerusalem.—Oxelip *Primula elatior*, fl; now and then, in mild years, the Great Leopardsbane flowers in our gardens.

19. St. Joseph.—Red Butterfly *Papilio Io*, seen; the white Violet *Viola lactea*, full fl.

20. St. Cuthbert, St. Wolfran.—Dog Violet *Viola Canina*, fl. It is of this species surely that Milton has spoken in his “Violet embroidered vales;” next month every bank is covered with it, mixed with Primroses and Pileworts.

21. St. Benedict, Abbot, founder of the Benedictines.—Lesser Pettychaps *Ficedula pinetorum*, sings; blue Houndstongue in full fl.

22. St. Catherine of Sweden, St. Lea, St. Basil.—Crown Imperial *Fritillaria Imperialis*, fl.; Marsh Marigold *Caltha palustris*, fl.; the Pilewort is by this time abundant, and continues to the middle of next month to bespangle every sloping glade, shady bank, or field with its stars of bright golden yellow.

23. St. Alphonsus, St. Edelwald.—Yellow Star of Bethlem *Ornithogalum luteum*, flowers.

24. St. Irenaceus, Bp. of Sironium; Arcturus in Böotes rises achr.—The red Deadnettle, *Lamium purpureum*, is now in full flower in every field, and on old walls, on rubbish, and in gardens, and so continues all next month.

25. LADY DAY, Annunciation of our Lady; ☉ rises v. 49. sets vi. 11.; *Aequinoctium vernum Hilaria, Martis fest.* R. Cal.—Marigold *Calendula officinalis*, here and there fl. on old plants of last year; *Adoxa moschatellina*, fl.

26. St. Ludger, St. Braulio.—Scopoli's Henbane *Hyocyamus Scopolia*, flowers; we saw this plant flowering to-day in the garden of T. F. Forster, Esq. of Clapton, in 1820.

27. St. John of Egypt.—Butter and Eggs Flower *Narcissus incomparabilis*, fl.; the Garden *Chrysosplenium oppositifolium*, fl.

28. St. Priscus Malachai, St. Alexander.—Yellow Polyanthus Narcissus, *N. Tazetta*, flowers in gardens; Cornish Heath *Erica vagans*, fl.

29. St. Jonas, M. M., St. Mark, Bp.—Stone Curlew *Foedoa Oedicephalus*, heard by night uttering its shrill and often repeated cry on the wing, while the bird is unseen.

30. St. Zozimus, St. John Climacus, St. Regulus; Spring Squill *Scilla verna*, flowers.

31. St. Benjamin, St. Guy, St. Acacius.—Van Thol Tulip *Tulipa suaveolens*, fl. in gardens.

April 1. St. Hugh; All Fools' Day; *Veneris et Fortunae Virilis fest.* R. Cal.—Ash *Traxinus excelsior*, flowers; Field Rush *Juncus Campestris*, fl.; Primroses now cover the banks.

2. St. Theodosia, St. Ebba, St. Bronchia.—White Oxalis *Oxalis alba*, fl.; yellow Oriental Narcissus *N. Orientalis flavus*, fl.; white Polianthus Narcissus *Italicus*, fl.; bulbous Crowfoot *Ranunculus bulbosus*, flowers here and there; a straggling Swallow or two sometimes seen.

3. St. Agape, &c. M. M.; Wallflower Day.—Wallflower *Cheiranthus Cheiri*, flowers generally, though often flowers are out on old plants much earlier; blue Houndstongue *Cynoglossum Panchilodes*, fl. abundantly; Oriental Hyacinth *Hyacinthus Orientalis*, fl. in gardens; Clarimond Tulip *Tulipa præcox*, begins to blow; Pilewort now bespangles every shady bank and sloping grove with its golden stars, which remain till May.

4. St. Ambrose.—Evergreen Alkanet *Anchusa Sempervirens*, fl.; Starch Hyacinth *Hyacinthus racemosus*, fl.; Crown Imperial *Fritellaria Impe-*

rials, in full blow; Great Saxifrage *Saxifraga Crassifolia*, begins to flower.

5. St. Vincent Ferrer, St. Gerald; Blackcap Day; Megalesia, Rom. Cal.—Blackcap *Curruca atricapilla*, arrives; the Dog's Tooth Violet is now in full blow in the gardens; Primroses and Dogs' Violets adorn every bank and brae and every rustic place by the roadsides.

6. St. Sextus, St. Celestine; Old Ladytide.—Lady's Smock *Cardamine pratensis*, fl. here and there in most meadows, hence its name, this being old Ladymas day in the old style; Grape Hyacinth *Hyacinthus botryoides*, blows in our gardens; most of the Narcissi and Hyacinths are full blown in the gardens; *Narcissus Primulinus*, fl.

7. St. Aphrastes.—Wood Anemon *Anemone nemorose*, full fl.; large Daffodil *Narcissus bicolor* coming into flower; this is larger than the common early Daffodil, and the nectary is much longer than the petals; it seems there are of this two varieties; it is figured in Curtis, vol. 29.; Rams-horns or Male Orchis, *Orchis mascula*, fl.

8. St. Dionysius of Corinth.—Clarimond Tulip *Tulipa praecox*, begins to blow; the Van Thol Tulip, already noticed, is in full flower, while the standard Tulips are not yet unfolded.

9. St. Mary of Egypt, St. Walfrude, St. Zoimus.—Moonwort *Lunaria annua*, fl.; Primroses and Dog Violets flower plentifully together on every bank and brae.

10. St. Mechtildes—Stock Gilliflower *Mathiola incana*, begins to flower in our gardens; the white, the purple, and the red are the most common varieties; their sweet scent is agreeably compared with that of the Wallflowers; the Sycamore *Acer Pseudoplatanus*, in young leaf.

11. St. Leo; Alcor and Mizar in opp.—The

Wryneck *Jynx Torquilla*, sometimes first heard to-day; Dandelion *Taraxacum dens Leonis*, now becomes numerous, and its general flowering taking place it covers the meadows with yellow before the Crowfoots appear. See May 10th.

12. St. Sebas, St. Zeno, St. Julius.—The Heartsease or Pansie, *Viola tricolor*, in full flower; the earlier Cherry trees in bloom; Peach, Nectarine, and Apricot trees in full bloom.

13. St. Hermenegild.—The Pear *Pyrus communis*, in blossom, though some of the later sorts of Pears blossom later; Crown Imperials are now in full blow, there are a yellow and also red varieties, and one with striped leaves and red flower; broods of young Geese begin to appear on commons and wastes.

14. St. Lidwina, V.; Cuckoo Day.—The Cuckoo *Cuculus canorus*, being sometimes heard to-day has caused this to be called Cuckoo day in Sussex; Nightingale *Sylvia Luscinia*, sings; Blackthorn *Prunus spinosa*, begins to blossom; Wood Sorrel *Oxalis ascetosilla*, flowers in greatest plenty.

15. St. Bassilisa, St. Anastasia, St. Peter Gonzales.—Swallow *Hirundo rustica*, arrives, and begins to be seen here and there in few numbers about ponds or on their accustomed chimnies; it is not common before May; yellow Willow Wren *Fecidula Salicum*, arrives; Yellow Alysson flowers.

16. St. Joachim of Sienna, Martyrs of Saragossa.—Redstart *Sylvia Phoenicurus*, appears; the female is generally a few days earlier than the male! bulbous Crowfoot *Ranunculus bulbosus*, here and there in flower; wild yellow Tulip *Tulipa Sylvestris*, flowers; Water Avens or Water Benet, *Geum rivale*, fl. the Barbery tree in leaf; late Daffodil *Narcissus bicolor*, flowers.

17. St. Anicetus.—Gentianella *Gentiana acaulis*, begins to blow; Star Anemone *Anemone hortensis*,

in the most abundant flower; tubeflowered Daffodil *Narcissus bicolor*, fl., the leaves of this species are very broad; Yellow Alysson flowers.

18. St. Apollonius.—Ground Ivy or Alehoof, *Glechoma hederacea*, flowers in plenty; the Trillium *Trillium sesile*, fl.

19. St. Leo; Sirius sets heliacally.—Snake *Coleber verus*, appears; *Genista Anglica*, fl.; narrow-leaved Narcissus, *Narcissus angustifolius*, fl.

20. St. Agnes of Monte Pulciano, V.: Hyades set hel.—*Orobus tuberosus*, fl.; British Snowflake *Leucojum aestivum*, flowers; Martin *Hirundo urtica*, arrives, though this bird is not common till the second week in May.

21. St. Anselm, St. Anastasius of Antioch; Cuckoo *Cuculus canorus*, commonly heard; Wry-neck or Cuckoo's mate, *Jynx Torquilla*, daily heard; Narrowwaved Narcissus *Narcissus angustifolius*, fl.; this is mistaken sometimes for the poetic Narcissus; Blue Bottle sometimes fl.

22. St. Opportuna, V.—Marsh Marigold *Caltha palustris*, fl. plentifully; Bitter Lady's Smock *Cardamine amara*, fl; intermediate water Aveus *Geum intermedium*, fl.; the flower of this species differ from those of *G. rivale*, in being more upright, and in colour yellowish.

23. St. George, Patron of England.—Blue Harebell *Hyacinthus non scriptus*, fl. abundantly, and begins to cover the fields and sloping shady glades with its fine blue, that during May is so finely contrasted to the meadows bespangled with the yellow of the Crowfoot and the silvery white of the Daisy.

24. St. Bona, St. Doda.—Buttercups *Ranunculus acris* flowers here and there; Moonwort or *Lunaria annua*, flowers in plenty; this plant is also called Irish Honesty.

25. St. Mark, evan.—Standard Tulip, *Tulipa Gesneri*, begins to blow, the Clarimond is still in full flower, and the Van Thol declining.

26. St. Cletus, St. Marcellinus; Cowslip Day; Pleiades set heliacally.—Cowslip or Pagel *Primula Veris*, an abundant flower in the meadows and fields, is gathered by village girls for garlands; chequered Daffodil *Fritellaria Melleagris*, fl.

27. St. Zeta, V. St. Anthimus, &c.—Bellshaped Squib *Scilla Campanulata*, fl.; Gentianella *Gentiana acaulis*, most abundantly fl.; the yellow Gorze *Ulex Europaeus*, in full fl; *Ajuga reptans*, fl.

28. St. Theodora, St. Didymus, St. Vitalis.—Creeping Crowfoot, *Ranunculus repens*, fl. here and there; Hedge Mustard *Erisemum Alliaria*, fl.; Apple Tree *Pyrus malus sativus*, in blossom; Pear Tree *Pyrus communis*, in full bloom; Elm in leaf.

29. St. Peter, St. Robert, founder of the Cisterians.—Herb Robert *Geranium Robertianum*, flowers; soft Cranesbill *Geranium molle*, fl.; Dalibarda *Dalibarda fragaroides*, flowers.

30. St. Catherine of Sienna, V., St. Sophia, V.—Toothwort *Dentaria bulbifera*, fl.; Primrose Peerless *Narcissus biflorus*, flowers.

May 1. St. Philip, St. James; May Day; Betalgeus in Orion sets heliacally; ☉ rises at iv. 37. sets vii. 23.—Bulbous Crowsfoot *Ranunculus bulbosus*, flowers beautifully in those meadows where it abounds; the other sorts are not yet out in flower: Lords and Ladies, or the flowers of the *Arum maculatum*, found under hedges and in shady places; Red Campion *Lychnis dioica*, flowers in plenty; Bugle *Ajuga reptans*. fl.; Yellow Rattle *Galeobdolon luteum*, fl.; Male Orchis *Orchis mascula*, full fl.; Female Orchis *Orchis morio*, fl.; May or white Thorn *Crategus oxycantha*, flowers sparingly. The birds now sing delightfully, the Nightingale

and Thrush by night delight the ear, and the Cuckoo night and day; the Swallows and Martins are arrived, the trees in young green leaf, and the gardens, fields, and meadows beginning to put forth their richest flowers; here spangled with the golden yellow of the Crowsfoot, and there blue with Harebells, or dotted with the silvery Daisy, while the air is calm and temperate, and every hedge and every bush seems in flower; the orchards, too, have a peculiarly pleasing effect when in full blossom at this time.

2. St. Athanasius.—Morella Cherry Tree *Prunus Cerasus*, in blossom; Pike Geranium *Geranium sanguineum*, flowers scantily; Wall Speedwell *Veronica arvensis*, fl. in fields and on walls; Marigold *Calendula officinalis*, flowers common, though it is only the last year's plants, the seedlings of the year flower in July, and through the aestival season.

3. HOLY CROSS DAY; Invention of the Cross.—Crossflower *Galium cruciatum*, fl.; Poetic Narcissi *Narcissus poeticus*, flowers; Germander Speedwell *Veronica chamaedris*, fl. abundantly; Stock Gilliflower *Mathiola incana*, flowers abundantly; common Wallflower *Cheiranthus cheiri*, most numerous in fl; *Narcissus Bulbocodium*, fl.

4. St. Monica, St. Goddard.—Early Piony, *Paeonia tenuifolia*, flowers; Pasque Flower *Anemone Pulsatilla*, fl.; slender Narcisse *Narcissus tenuior*, fl. The Cuckoo sings night and day.

5. St. Pius, V., St. Angelus; Zuben el Chamali in Libra rises achr. in SE. by S.—Female Orchis *Orchis morio*, common; Oaks in young leaf, early Cherry trees go out of blossom, Elms have their leaves nearly expanded.

6. St. John before Latin Gate; St. John Damascus.—Lesser Stitchwort *Stellaria graminea*, fl.;

Rough Crowfoot *Ranunculus hirsutus*, fl.; Lilac *Syringa vulgaris*, fl.; of this there are three common varieties, the deep lilac, the pale lilac, and the white; European Globeflower *Trollius Europaeus*, fl. though in some situations it blows a fortnight later, or else such later blowing is inherent in certain individual plants of it, as is the case with the Oriental Poppy; the flowers of this species are pale yellow. Field Sherrardia *Sherrardia arvensis*, common.

7. St. Benedict VII., St. Stanislas; Pleiades rise cosmically.—Columbine *Aquilegia vulgaris*, sometimes fl.; yellow Asphodel *Asphodelus luteus*, fl.; Asiatic Globeflower *Trollius Asiaticus*, fl., the flowers are orange coloured; Herb Benet *Geum urbanum*; Horse Chesnut *Aeschylus Hippocastanum*, fl.; Water Avens flower most numerously.

8. Apparition of St. Michael; St. Selina.—Welch Poppy *Papaver Cumbrium*, fl.; Celandine *Chelidonium majus*, eff.; Bulbous Crowfoot *Ranunculus bulbosus*, is now common in dry meadows and upland pastures, and gilds them with its deep yellow gold; King's Spear *Asphodelus racemosus*, fl.

9. St. Gregory Nazaanzen.—Lily of the Valley *Convallaria majalis*, fl.; Solomon's Seal *Convallaria polygonatum*, fl.; Rough Comfrey *Symptetum asperrimum*, fl.; Forster's Comfrey *Symptetum Forsteri*, fl.; Scotch Comfrey *Symptetum tuberosum*, fl.; common Comfrey *Symptetum officinale*, fl. The Swift sometimes is first seen to-day, though the general arrival is near a week later. See 14th.

10. St. Antoninus, St. Isidore, patron of Madrid.—Blue Bottle *Centaurea montana*, fl.; Monkey Poppy *Papaver Orientale*, sometimes fl.; Mousear *Hieracium pilosella*, fl. on warm banks, its general flowering beginning a week later; Dandelions now cover the fields when they have

flowered with a crop of large round poppy, which the children call Blowers.

11. St. Mummertus, St. Maceul.—Apple Tree *Pyrus malus*, in full blossom; Whitethorn *Crategus oxycantha*, every where in flower; Dragon Flies *Libelulæ Puella*, &c. appear near water; Primroses and Polyanthuses now begin to go out of flower.

12. St. Flavia Domitilla, St. Pancras, &c.; Procyon sets heliacally.—German Flower de Luce *Iris Germanica*, fl.; pale Piony *Paeonia officinalis*, flore pallido, fl., this variety flowers a few days before the common crimson sort, and retains its petals longer before they fall; Scentless Hesperis *Hesperis inodora*, fl.; Motherwort *Hesperis matronalis*, fl.; the latter has paler and more scented blossoms than the former species, and the plant less straggling and shorter.

13. St. John the Silent.—The Corncrake or Landrail *Rallus Crex* heard by night when sitting on its nest among the long grass or clover; its harsh note, frequently repeated, resembles the grating of a key against a piece of notched wood, and may be thus so clearly imitated that the bird itself will mistake it for the cries of another Landrail.

14. St. Pontius.—The Black Martin or Swift *Hirundo apus* now arrives abundantly, and resorts to its old haunts about steeples and towers. In warm summer mornings these birds fly about in small companies uttering a loud squeaking, and they then fly close to our houses and gardens; early in July they fly very high in lofty gyrations.

15. St. Genebern, St. Dymrna.—Great Star of Bethlehem *Ornithogalum umbellatum*, flowers; Cockchaffers *Scarabæi melolonthæ*, appear.

16. St. Brendan.—Yellow Star of Jerusalem *Tragopogon pratensis*, begins to fl.; Purple Star of

Jerusalem or Goatsbeard *Tragopogon porrifolius*, also flowers in our gardens, but the general flowering of both these species is in June; Piony *Paeonia officinalis* begins to flower in early years.

17. St. Pascal Baylon.—Columbine *Aquilegia vulgaris*, now flowers in every garden; there are also some other species which also flower. The true wild Columbine has blue flowers, and occasionally varies with white, but the garden sorts are dark puce, or purple, or lilac, and indeed shew many varieties. The *Aquilegia atropurpurea* is a distinct species, and so is *Aquilegia hybrida*.

18. St. Theodotus, and others.—Goatsucker *Caprimulgus European*, arrives, and its jarring noise heard by night. The Corncrake *Rallus crex*, is still clamorous; Wall Hawkweed *Hieracium murorum*, fl.; Catsear *Hypochaeris radicata*, fl.; Mousear Hawkweed *Hieracium Pilosella*, becomes common; Common Bugle *Ajuga reptans*, still in full flower. The meadows begin to be yellow with Crowfoots, and the sloping banks and shady fields still blue with Harebells.

19. St. Prudentiana, St. Celestine.—Purple Rhododendron *Rhododendron ponticum*, is now in flower, and continues till the beginning of the summer solstice, when it gradually casts its purple blossoms on the ground withered; Florentine Iris *Iris Florentina*, flowers.

20. St. Bernardin of Sienna.—Yellow Azalea *Azalea pontica*, fl.; Red Azalea *Azalea nudiflora*, fl.; Yellow Star of Jerusalem *Tragopogon pratensis*, fl.; Purple Star of Jerusalem *Tragopogon porrifolius*, fl.; both the above plants close their flowers at noon; White Lychnis, *Lychnis alba*, fl.; Flower of Adonis, *Adonis autumnalis*, fl.

21. St. Goderic, St. Felix.—Buttercups *Ranunculus aeris*, flowers in most meadows and fields; the Yellow Bachellor's Buttons, a double variety of

this plant, flowers in our gardens somewhat earlier; Horse Chesnut trees still in full flower.

22. St. Mary of Pazzi, V.—Ragged Robbin *Lychnis Flos Cuculi* flowers, and continues till mowed down in the meadow hay. Both this and the *Lychnis dioica*, will flower through the solstitial season if left undisturbed; Yellow Day Lily *Hemerocallis flava*, fl.

23. St. Julia, V. M.—Broom *Spartium Scoparium*, flowers; the Broom is celebrated by Burns in his "Broom of Cowdenows;" this plant and the Gorse give the commons and waste places that beautiful golden yellow in May, which in July is succeeded by the purple heath.

24. St. Vincent, St. John of Prado; Flora's Day or Festival; Linnaeus born.—Creeping Crowfoot *Ranunculus repens*, flowers abundantly, and bespangles fields and upland pastures, while the upright Crowfoot or Buttercups, *Ranunculus acris*, flourishes in low meadows and more moist places. The brebon Crowfoot is already going off by degrees, and all the kinds are flourishing, and most of them so continue till cut down with Meadow Lychnis and other meadow plants in the hay at midsummer; Yellow Water Avens *Geum intermedium*, in full fl.; Brachteate Poppy *Papaver brachteatum*, fl.

25. St. Urban, P. M.—Scarlet Azalea *Azalea nudiflora*, full fl.; Yellow *Azalea pontica*, full fl.; Columbine *Aquilegia vulgaris*, full fl.; Dark Columbine *Aquilegia atropurpurea*, begins to flower; Herb Benet or Common Avens *Geum urbanum*, fl.; India Pink *Dianthus Chinensis*, fl. The Pionies are all in full blow, and also Columbines and Oriental Poppies.

26. St. Augustine, Apostle of England.—Daisies are still numerous and dot the fields where the

Crowfoots do not hide them; Dandelions are nearly gone out as to any quantity of them; some of their crop of Blowers remain; Crowfoots of all sorts numerous.

27. St. Bede, St. Julius.—Monkshood *Aconitum Napellus*, flowers; the Monkshood is one of the commonest of the Wolfsbanes in our cottage gardens, and its full spike of blue flowers is conspicuous all the summer; Yellow Bachellor's Buttons *Ranunculus acris plenus*, in fullest flower in our gardens; red Bachellor's Buttons *Lychnis dioica plena*, also in full fl.

28. St. Germanus.—Longspiked Wolfsbane *Aconitum pyramidale* flowers, and like Monkshood continues through June, July, and part of August; Midsummer Daisy *Chrysanthemum leucanthemum*, fl., but is not in full luxuriance in the meadows till next month; the Bugle is now beginning to decline.

29. St. Cyril; Antares in Scorpio in opp.; Oak Apple Day. The Oak Apple is the nest of an insect, and being found about this time of year is worn to commemorate the concealment of King Charles in the oak tree; Perennial Flax *Linum perenne*, flowers.

30. St. Maguil.—The meadows are now quite yellow with Crowfoots and Buttercups, the foliage fully expanded and coloured, and the shady slopes are still blue with Harebells.

31. St. Petronilla, V.—Yellow Lily *Lilium pomponium flavum*, fl.; the last days of May produce this plant in flower, which decays before the end of June, being just in time to flower a few days with the Orange Lily. There is a red variety of the *Lilium pomponium*.

June 1. St. Justin the Philosopher, St. Nicomede.—Blue Bottle *Centaurea montana*, full fl.;

Buff Bottle *Centaurea ochroleuca*, fl.; variegated Flower de luce, *Iris variegata*, fl.; Yellow Flag *Iris pseudacorn*. fl. Roses now begin to blow in succession; the *Rosa Indica* is quite in flower, and the *Rosa Chinensis* full out; apple trees are quite out of blossom, and wallflowers are no longer in perfection.

2. St. Erasmus, B. M.—Sword Lily *Gladiolus communis*, fl.; Corn Flag *Gladiolus segetum*, fl.; Rough Dandelion *Apargia hispida*, fl.; Garden Pinks *Dianthus hortorum*, fl.; Garden Rose *Rosa centifolia*, fl.; Fraxinella *Dictamnus albus*, fl.; Particolored Flag *Iris versicolor*, fl.; Yellow Garlic *Allium flavum*, fl. Most of the Iris tribe now come into blow, being the very latest of the vernal plants.

3. St. Clotildis Queen, St. Cecilius; Aquila rises achr. in E. by N.—Longspiked Larkspur *Delphinium Ajacis*, flowers, and continues to the end of July; Purple Wolfsbane *Aconitum Cammarum*, flowers; Pimpernel *Anagallis arvensis*, fl. in the stubble field, it is called by country people Wincopipe, and its closing its flowers foretells rain; besides the common red Pimpernel there is a blue variety by no means so common; Red Official Rose *Rosa Gallica*, flowers; this and most of the Roses become common about St. Barnaby tide, and flourish throughout all the solstitial season, fading and falling towards the end of July.

4. St. Bracca, V., and St. Nenoc, V., St. Quirinus.—Maiden Pink *Dianthus deltoides*, fl.; Indian Pink *Dianthus Chinensis*, fl. abundantly.

5. St. Illidius, Bp.—Wild Roses *Rosae Sylvestres*, fl. Roses begin now to flower in the hedges abundantly, as for example, the Scotch Rose, white Dog Rose, common Dog Rose, apple-bearing Rose, downy leaved Rose, and many

others which during this and next month enliven the hedgerows and woodland places; now and then a red Poppy flowers in the gardens and in warm places about this time.

6. St. Nobert, St. Philip the Deacon.—Cabbage Rose *Rosa centifolia* β , fl.; Moss Rose *Rosa muscosa*, fl.; Musk Rose *Rosa moschata*, fl.; Sophora *Sophora australis*, fl.; the *Heloniac asphodeloides*, fl.; Foxglove *Digitalis purpurea*, begins to flower.

7. St. Paul Bp. M., St. Robert.—Dog Rose *Rosa canina*, fl.; Monkeyflower *Mimulus luteus*, fl.; Lanceolate Thistle *Cnicus lanceolatus*, fl.

8. St. Medard, St. Syra, V., St. William of York.—Bastard Flag *Marica striata*, fl.; Peach-leaved Bellflower *Campanula perticifolia*, fl.; Strawberries in flower numerously, sword Lilies become common.

9. St. Pelagia, V. M.—Lurid Iris *Iris lurida*, flowers; Deadly Nightshade *Atropa Belladonna*, fl.; Wolfsbane *Aconitum cammarum*, fl.

10. St. Margaret, Queen of Scotland.—Red Poppy *Papaver Rhaeas*, flowers; Doubtful Poppy *Papaver dubium*, flowers. The splendid scarlet of the red Poppy among the corn is an object of great beauty; its appearance indicates the presence of the summer solstice; the second sort enumerated to-day grows more on walls and waste places, and is of a paler red colour.

11. St. Barnabas, Apostle; Solstitial season begins; no night.—Garden Poppy *Papaver somniferum*, fl.; Midsummer Daisy *Chrysanthemum leucanthemum*, fl., in some places filling the meadows. In very early years we have known the scarlet Lychnis begin to flower to-day, the Canterbury Bells to be in full blow, and plenty of Sweet Williams to abound. The spring and summer of

1822 were among the earliest seasons we ever remember.

12. St. John of Sahagur, St. Brichdes, M. M.—Larkspur *Delphinium Consolida*, flowers; Water Hemlock *Oenanthe crocata*, begins to flower by wet ditches and in marshy grounds.

13. St. Anthony of Padua, St. Dumbada. V.—Portugal blue Squil *Scilla Peruviana*, flowers; the rough Dandelion is now every where common, and the hairy Dandelion *Trinchia hirta*, flowers in other places. Sheepshearing day *Ovis tonsura*, begins:

If verdant Elder spreads
Her silver flowers, if humble Daisies yield
To yellow Crowfoot and luxuriant Grass,
Gay shearing time approaches.—DYER.

Before shearing, the sheep undergo the operation of washing, in order to free the wool from the foulness which it has contracted. White Orchis *Orchis bifolia*, fl.; the common *Orchis maculata* is still in flower.

14. St. Basil, Abp. of Casarea.—The Meadow Thistle *Cnicus pratensis*, flowers still abundantly, and also *Cnicus heterophyllus*; Sword Lilies become common.

15. St. Vitus and others.—Vipers Buglos *Echium vulgare*, flowers, and in some rich pastures erects its tall spike to the height of above five feet; it is most common on chalky soils. The grass is now long, and almost ready to cut; fields of Saint-foin have a fine purple appearance in Hampshire and other countries where it is grown.

16. St. John Francis Regis, C.—Canterbury Bells, *Campanula Medium*, fl.; this species is called *Gants de Notre Dame* or our Lady's Gloves, and

blows all the solstitial period; Garden Rose *Rosa centifolia*, in fullest blow; Field Mallow *Malva Sylvestris*, fl. The meadows are still in full flower with the yellow Crowfoots and Buttercups, the grass being rarely cut by this time. The Midsummer Beetle or Fernchafer *Scaraboeus Solstitialis*, appears, but is not numerous till midsummer.

17. St. Nicander, St. Marcian, MM.—Field Mallow *Malva Sylvestris*, begins to flower, and gets common by July; Field Bindweed *Convolvulus arvensis*, also flowers; Yellow Flag *Iris pseudacorus*, becomes common.

18. St. Marina, V.—Purple Candytuft *Iberis umbellata*, flowers; white Candytuft *Iberis umbellata* β , flowers; these varieties continue to blow till the end of the summer; Pinks and Roses are plentiful; Sweet Williams *Dianthus barbatus* flowers. Sweet Williams continue in blow till August, they exhibit a great variety of patterns, new sorts being continually raised from seed, the one called the Painted Lady is the most esteemed. A few weeks hence this plant and the Scarlet Lychnis mix agreeably in the solstitial parterre; there is a variety called Sops in Wine, alluded to by many of our earlier poets.

19. St. Juliana Falconiere, V., St. Gervasius, St. Protasius.—Rampion *Phyteuma spicata*, fl. This plant is found between Maresfield and Mayfield, in Sussex; Love in a Mist *Nigella Damascena*, fl.

20. St. Elizabeth, St. Sylverius, St. Idaberg, V.—Scarlet Lightning *Lychnis chalconica*, fl.; the Scarlet Lychnis or Lightning, as it is called, usually now begins to flower, and continues to the end of next month or beginning of August, when it sheds its seeds and dies away; its flower is of the purest possible scarlet, and has a brilliancy almost

unequaled. Yellow Phlomis *Phlomis fructicosa*, fl.; Pinks and Roses are now in the greatest perfection; Orange Lily full fl.

21. St. Idaberga, V., St. Alorgius, C.—Foxglove *Digitalis purpurea* begins to flower under our hedges and waste places; in gardens there is sometimes a white variety. Foxgloves continue all through the aestival season, though they first blow early in the solstitial; Rose Campion *Agrostemma coronaria*, flowers; Scarlet Strawberries *Fragaria Virginica*, now abound, and the Chily Strawberry *Fragaria Chilensis*, begin to bear fruit; Madock Cherries begin to ripen on walls; Spanish Love in a Mist *Nigella Hispanica*, fl.; Sweet Pea *Lathyrus odoratus*, flowers. The Cornfields, in certain soils, are now quite scarlet, with the numerous flowers of the red Poppy; both Charlock *Rhaphanus Rhaphanistrum* and Kidlock *Sinapis arvensis*, in full bloom, become a terrible weed, and cover whole fields with their pale yellow.

22. St. Paulinus of Nola, St. Alban of Britain, M.—Blue Sawthistle *Sonchus Forsteri*, fl.; Bastard Poppy *Papaver hybridum*, fl. The cornfields and suitable soils are now red with the abundance of Poppies, and here and there the Cornflower or red Cockle begins to flower.

23. St. Etherelda, V. A., St. Mary of Oignies.—Our Lady's Seal or Black Briony *Tamus communis*, fl.; Glowworm or Johannis Würmchen *Lampyrus noctiluca*, appears and become frequent; Monkshood and several sorts of Wolfsbane, and Larkspur now are in full flower, the long blue spikes of some of these flowers in our cottage gardens are called blue rockets; they are many of them very poisonous.

24. St. John the Baptist, St. Bartholomew the Less.—St. John's Wort *Hypericum perforatum*, fl.;

the other species of St. John's Wort now begin to blow, and continue through July and August. The grass is by this time ready for cutting in most parts of England and France; and if not cut already, we advise the farmer to avail himself of the least prospect of a few fair days to do it, in case of a wet July, which sometimes happens. See July 15th. This important part of the agricultural business, the making of hay, is chiefly done about this time of year. Rain to-day is vulgarly said to forbode a wet haytime.

25. St. Prosper of Aquitena, St. William of Monte Vergine.—Corn Camomile *Authemis arvensis*, fl.; Rose of Jericho *Anastatica hierochuntica*, flowers; Sweet Williams are in their full blow just now, and seem to have been named after the Saint celebrated to-day.

26. St. John, St. Paul, MM, St. Rainguarda, W.—Bindweed *Convolvulus arvensis*, fl.; the Little Sunflower *Cistus Helianthemum* on chalky and slight soils begins to flower; in gardens the lesser or blue Bindweed *Convolvulus tricolor*, fl. and continues through July; the Field Bindweed *Convolvulus arvensis*, also begins to blow in the fields.

27. St. Ladislas.—Nasturtium *Tropaeolum majus*, fl.; this Nasturtium or Great India Cress, which now blows continues to exhibit its bright orange flowers till the middle of August, and a few flowers remain till October; Sage *Salvia officinalis*, now flowers. Sagia, called Salvia, from its saving and salubrious qualities, is antiseptic and soothing to the stomach when taken in infusion. An old proverb says :

Cur moriatur homo cui Salvia crescit in horto?
 Contra vim mortis non est medicamen in hortis!
 Salvia salvatrix, naturae conciliatrix,
 Salvia cum rutâ faciat tibi pocula tuta.

28. St. Irenaeus.—Cornflower *Centaurea cyanus* fl.; Corncockle or Rose Campion *Agrostemma githago*, also begins to blow, both are common in July; they come with the lengthened corn before it is ripe.

29. ST. PETER, ST. PAUL.—Cockscomb *Rhinanthus Christa Galli*, fl.; this Yellow Rattle or Cockscomb, is said to blow whenever the grass is fit to be mowed; Muskflower *Scabiosa atropurpurea*, fl. in our gardens, known for its musky scent.

30. St. Emma, V. Agrimony *Agrimonia Eupatoria* fl.; the long yellow spike of this plant is now seen in the fields, under hedges, &c. Gooseberries begin to be coloured. The greatest abundance and variety of Poppies now flower in our fields and gardens.

July 1. St. Rumbold, St. Cybar.—Elicampane *Inula Hellenium*, fl.; Evening Primrose *Oenothera biennis*, fl.; Copper Day Lily *Hemeroullis fulva*, fl.; Foxglove *Digitalis purpurea*, in full flower every where.

2. VISITATION DAY; Visitation of our Lady; Dog Days begin.—Our Lady's Lily *Lilium candidum*, flowers; this white Lily is one of the oldest inhabitants of our gardens, and flowers throughout July; the effect of large batches of these plants in flower during the long solstitial nights when it is too dark to see other flowers, is very pleasing; at this time of year white flowers are seen all night. Marigolds in full flower; Our Lady's Thistle *Carduus Marianus*, flowers; Our Lady's Slipper *Cypripedium calceolus*, flowers.

3. St. Edana, V., of Ireland, St. Phocas, Martyr.—Common Mullein *Verbascum thapsus*, fl.; Black Mullein *Verbascum nigrum*, fl.; White Mullein

Verbascum lychnitis, fl.; Scotch Bellflower *Campanula rapunculoides*, fl.

4. St. Bertha, St. Ulric, St. Odo.—Purple Martagon Lily *Lilium martagon*, in full fl.; Garden Convolvulus *Convolvulus tricolor*, fl.; Flowering Rush *Butomus umbellatus*, fl. at the sides of ditches and rivers.

5. St. Modwena, V., St. Peter, Bp.—Garden Hawkseye *Crepis barbata*, fl.; Musk Mallow *Malva moschata*, fl.; Red Martagon Lily *Lilium chalcedonicum*, fl.; Corn Marigold *Chrysanthemum segetum*, fl.

6. St. Moninna, V., of Ireland.—Hawkseye *Crepis barbata*, flowers plentifully; Lesser Garden Bindweed *Convolvulus tricolor*, in full flower; Nipplewort *Lapsana communis*, fl.

7. St. Edelburga, V., St. Pantaenus.—Raspberry *Rubus Idaeus*, in fruit; both red and white Raspberries begin to ripen, they are only varieties of the same species, and both flower and fruit together, they differ something in flavour. Almost all the Strawberries are now in full perfection.

8. St. Elizabeth Queen of Portugal.—White Bindweed *Convolvulus sepium*, flowers, and continues through the whole aestival season to suspend its white funnelshaped flowers from the hedges; Enchanter's Nightshade *Circaea luteotiana*, fl.; Alpine Enchanter's Nightshade *Circaea alpina*, fl.; Scarlet Lightning plentifully in flower.

9. St. Everildis, V., St. Ephrem.—Yarrow *Achillaea Ptarmica*, fl.; Milfoil *Achillaea millefolium*, fl. Starlings *Sturni valgares*, flock together, and so continue till winter.

10. St. Ruffina, St. Secunda, V. M., Seven Brothers and Mother, MM.—Deadly Nightshade *Atropa Belladonna*, full fl.; Purple Garden Bind-

weed *Convolvulus purpureus*, fl.; Nasturtiums *Tropaeolum majus*, fullest fl.; White Japan Lily *Lilium Japonicum*, fl.

11. St. Withburge, V., St. James, Bp.—Nightshade *Solanum nigrum*, fl.; Bittersweet *Solanum dulcamera*, fl.; Great Yellow Wolfsbane *Aconitum nicoctonum*, fl.; Jove's Flower *Agrostemma flos Jovis*, full fl.; Orpine *Sedum telephium*, flowers; Stalkless Thistle *Cnicus acaulis*, in full flower; Mountain Leopardsbane *Arnica montana*, fl.; Alpine Leopardsbane *Arnica Doronicum*, fl.; Great Leopardsbane *Doronicum Pardalianches*, goes out of flower.

12. St. John Gualbert.—Pyramidal Mullein *Verbascum pyramidale*, flowers; Marsh Groundsel *Senecio paludosus*, fl.; Tulip Tree *Liliodendron tulipefera*, fl.; Elicampane *Inula Helenium*, full fl.; Corn Sowthistle *Sonchus arvensis*, full fl.; Marsh Sowthistle *Sonchus palustris*, fl. Currants of all sorts, Raspberries, and Gooseberries now ripe; most Cherries are also now in full season.

13. St. Eugenius.—Herbane *Hyoscyamus niger*, fl. abundantly; young Marigolds *Calendulae officinales*, in full flower, and continues in blow all the rest of the summer and autumn; Toad flax *Antirrhinum Linaria*, begins to flower in the hedges, whence its full spike of blossoms is easily seen emerging.

14. St. Camillus de Lellis.—Field Thistle *Cnicus arvensis*, fl.; Marsh Thistle *Cnicus palustris*, full fl.; Harvest Bells, *Campanula rotundifolia*, begins to flower. Orchards of ripe Cherries have now a very pleasing effect. White Lily *Lilium candidum*, in full flower still, and in late years it sometimes does not flower in Sussex till this time; Philadelphian Lily *Lilium Philadelphium*, flowers; Water Plantain *Alisma plantago*, fl. by rivers and ditches.

15. ST. SWITHIN, Shower Day, Aestival season begins. A vulgar proverb induces us to expect forty days of rain if any should fall on this day. A poet of our country says:

If on St. Swithin's feast the welkin lowers,
And poureth down on earth some hasty showers,
Full forty days shall clouds their fleeces drain,
And drench the pavement with incessant rain.

Rain Marigold *Calandula pluvialis*, in full flower;
Atair, or the bright star in the Eagle, in opp.

16. St. Eustathius of Antioch.—White Sedum
Sedum album, fl. on old walls.

17. St. Marcellina, V.; Pleiades rise heliacally.
—Garden Convolvulus *Convolvulus nil*, fl.; Prince's
Feather *Amaranthus hypochondriacus*, fl.; Love
lies Bleeding *Amaranthus caudatus*, fl.

18. St. Symphorosa and seven Sons, M. M.—
Tiger Lily *Lilium tigrinum*, flowers, indeed is often
in full flower by this time; Garden Persicary *Poly-
gonum orientale*, fl. The cornfields now begin to
show fine brown colour.

19. St. Macrina, V., St. Vincent of Pail.—Gar-
den Levetera *Lavetera trimestris*, now in full
flower; common Persicary *Polygonum persicaria*,
flowers.

20. ST. MARGARET, V. M.—China Aster *Aster
Chinensis*, fl.; Bleeding Amaranth *Amaranthus
Languineus*, fl.; Nightflowering Catchfly *Silene
noctiflora*, fl.; Dutlias are now in their greatest
perfection.

21. St. Praxedes.—Sunflower *Helianthus an-
nuus*, fl.; the Green Aizel and some of the early
summer Pears ripen; Cherries very abundant.

22. ST. MARY MAGDALEN.—Prostrate Ama-
ranth *Amaranthus prostratus*, flowers; the berries
of the Montain Ash begin to redden.

23. St. Bridget.—African Marigold *Tagetes erecta*, fl.; Jargonell, Cuise Madame, and also Windsor Pears, begin to ripen.

24. St. Lupus, St. Francis Solano.—Melun *Crepis Crepis Meluni*, bear seeds; Strawberries begin to decline, except the Wood Strawberry which bears all the summer.

25. St. James the Great, St. Thea, St. Valentine.—Snapdragon *Antirrhinum linaria*, fl.; a curious variety of this plant, the Peloria, is found in Sussex, near Withgam: the Snapdragon or Toad-flax continues to be seen in the hedges till September. There are numerous sorts of cultivated Snapdragons in our gardens, almost all of which are aestival plants, blowing in July, August, and September.

26. St. Anne, mother of the blessed Virgin.—Perennial Sunflower *Helianthus multiflorus*, fl.; Holyhock *Althaea rosea*, flowers; Hedge Bindweed *Convolvulus sepium*, is now become numerous and ornaments the hedges from now till October. Flies of various sorts become numerous, and often very troublesome.

27. St. Pantaleon.—Purple Willowherb *Lythrum salicaria*, now flowers abundantly on the banks of rivers and by marshes and ditches; Garden Chrysanthemum *Chrysanthemum coronarium*, fl. and has two varieties, one yellow the other yellow and white; Mountain Groundsel *Senecio montanus*, in full fl.; Saracenic Groundsel *Senecio Saracenicus*, full fl.

28. St. Nazarius, St. Celsus, and St. Innocent I.—Mountain Ash *Fraxinus Ornus*, fl.; the orange berries of the Mountain Ash now become ripe and coloured, and hang in agreeable clusters on this elegant tree to the end of August, and often later. The Roman *Neptunalia* took place this day.

29. St. Martha, St. Mary, V. V., St. Beatrice, &c.—Roses and Pinks go out of flower, and cease to ornament gardens.

30. St. Julitta, V.—White Mullein *Verbascum lychnitis*, now in full flower, as indeed are most of this genus.

31. St. Ignatius of Loyala, St. Helen.—The Great Mullein *Verbascum virgatum*, full fl.; Forster's Hawkweed *Hieracium Forsteri*, fl.; Dragon Flies common about ponds and other waters.

August 1. LAMMAS DAY, St. Peter ad Vincula.—Mountain Ash *Sorbus aucuparia*, is now ornamented with its clustered orange berries full ripe: Thorn Apple, *Datura Stramonium*, in full flower; the berries of the Mountain Ash ripen, and their bright orange red colour is a great ornament to our gardens and shrubberies.

2. St. Alfrida, St. Stephen, P. M.—Tiger Lily *Lilium tigrinum*, full fl. Young Starlings now fly about in immense flocks composed of the year's brood.

3. Invention of St. Stephen's reliques.—Winter Cherry *Physalis Alkekengi*, flowers; Holyhocks, *Althea rosea*, become common.

4. St. Dominic, founder of the Black Friars.—Tansy *Tanacetum vulgare*, fl.

5. Dedication of St. Mary ad Nives.—Our Lady's Seal *Tamus communis*, now bears its berries.

6. Transfiguration of our Lord.—Marsh Groundsel *Senecio aquaticus*, fl.; Meadow Saffron *Colchicum autumnale*, sometimes begins to flower; Flowering Rush *Butomus umbellatus*, in its fullest flower; it is very common in the marsh ditches of Holland and also in England. Mint of all sorts

should now be cut and gathered; Lavender and Rosemary which were not cut in July should be now cut and laid by.

7. St. Cajetan.—Apricots ripe in abundance; early Peaches ripe; Amaranths of various sorts in flower now adorn our borders; Nasturtiums still numerous; thunderstorms still prevail much; French Marygold *Tagetes patula*, flower; Lime Trees, and some of the Elms, change the colour of their leaves and are turning yellow; the black and poisonous berries of the Deadly Nightshade appear; Rye carried.

8. St. Cyriacus and others, Martyrs.—Devil's Bit *Scabiosa succisa*, full fl.; Filberts gathered in early years.

9. St. Romanus, M.—The *Zinnia multiflora*, fl.; Lesser Persicary *Polygonum minus*, flowers.

10. St. Laurence, M.—Sunflower *Helianthus annuus*, flowers abundantly; Falling Stars and Meteors most abound about this time of year. See Calendar at the end of *Researches about Atmos. Phenom.* and *Perennial Calendar*, Aug. 10.

11. St. Susanna, V. M., St. Tibertius, St. Chromatius.—Golden Sparwort *Aster solidaginoides*, flowers; Oats generally carried in early years. Remarkable vortex seen on an Elm tree at Clapton on this day in 1805, being Sunday afternoon between six and seven P. M. See *Gent. Mag.* 1805.

12. St. Clare, V. A.

13. St. Hyppolitus, St. Radigundes, Queen.—Mountain Groundsel *Senecio Doronicum*, in full flower; Broadleaved Groundsel *Senecio Doria*, in full fl.; almost all the aestival plants are now in flower, the Persicories, the African Marigolds, Chrysanthemums, China Aster, and various other annuals, and the later of the Syngeneceous plants are beginning to blow.

14. SS. Eusebii.—Ragweed *Senecio Jacobus*, fl.; Hoary Fleabane *Inula Oculus Christi*, now in full flower.

15. ASSUMPTION DAY, Assumption of our Lady.—Virgin's Bower or Traveller's Joy *Clematis vitalba*, full fl.; Purple Virgin's Bower *Clematis integrifolia*, full fl.; Our Lady's Traces *Ophrys spiralis*, fl. Swift *Hirundo apus*, begins to migrate.; *Rudbeckia purpurea*, fl.

16. St. Roch, A. St. Hyacinth.—Elegant Zinnia *Zinnia elegans* fl.; Holyhock very numerous, of various colours, both single and double.

17. St. Mamas, six Monks Martyrs.—Square-stalked Winter Cherry *Physalis angulata*, fl.; Weeping Willow *Salix Babylonica*, begins to shed its leaves. Wasps generally begin to be common, but they do not prevail in great numbers in the same places, above one year in five or six.

18. St. Helen Empress, Anniversary of the great Meteor of 1783.—Everlasting *Xeranthemum annuum*, fl. the dried yellow flowers of this plant will keep their form and colour all winter.

19. St. Clare V. St. Timothy.—Golden Rod *Solidago Virgaurea*, full fl.; Limes and Elms begin to shed their leaves.

20. St. Bernard, A.—Roadside Fleabane *Inula dysenterica*, fl.; the red, slatecolored, and white varieties of *Agaricus integer*, all found, particularly the red variety, which is one of the handsomest funguses; Windsor Pears quite ripe and gathered; early Peaches and Nectarines in the greatest abundance.

21. St. Bernard Ptolemy, founder of the Olivetans.—Early Apples ripe, Codlings picked for puddings. Red Guernets, Red Mullets, and Red Surmulletts, caught and brought to market.

22. St. Jane Frances de Chantal, W.—Amel-lus, fl.; Green Gage Plums, and also Orleans Plums quite ripe and in perfection.

23. St. Ebba, V. A., St. Philip Benital.—Sea Starwort *Aster tripolium*, in full flower. Large Dragonflies common.

24. St. Bartholomew Apostle.—Sun Flowers very numerous; this plant is called Star of Bartholomew.

25. St. Louis King of France.

26. St. Zephrinus, P. M.

27. St. Sabina, V.

28. St. Augustine, B. C.—Blackberries *Rubus fruticosus*, ripen.

29. Decollation of St. John the Baptist.—Bundle Fungus *Agaricus fascicularis*, spring up at the base of old rotten posts, &c.

30. St. Rosa of Lima, V.—That beautiful Asa-rie, the *Agaricus integer*, begins to be formed; the red variety is the most common, and is found under large woods among the fallen bark, and other places.

31. St. Isabel, V., St. Raymond Nonatus, C.—Pheasants' Eyes *Adonis autumnalis*, flowers again in our gardens; Large Crimson Agarick *Agaricus muscarius*, found at this time, though it springs up more plentifully in the middle of October.

September 1. St. Giles.—Game first in season; first day of hunting.

2. St. Stephen, King and Confessor, B. Margaret.—Golden Rod *Solidago Virgaurea*, most abundant.

3. St. Simeon Stylites the Younger.—Yellow Fleabane *Inula dysenterica*, fl. abundantly; *Agaricus verneosus*, found.

4. St. Rosalia, V.—Chequered Meadow Saffron

Colchicum variegatum, fl. abundantly; Red Surmulletts caught on the coast.

5. St. Rosa, V., St. Bertin.—Bladder Catchfly *Silene Behen*, second flowering.

6. St. Bees, V. of Ireland.—Large Purple Starwort *Aster speciosus*, fl.; Currants almost gone, but preserved under nets or walls, or under mats on the standard trees.

7. St. Cloud, Conf. St. Reine, V.—Green Gage Plums very abundant; Peaches and Nectarines in great plenty.

8. NATIVITY OF OUR LADY.—Late flowering Crocus *Crocus serotinus*, flowers; Nakedflowered Crocus *Crocus nudiflorus*, flowers.

9. St. Omer, B. C.—The nights and mornings get very sensibly colder and often frosty, and every thing begins to have rather an autumnal aspect.

10. St. Nicholas of Folentino, St. Pulcheno.—Officinal Saffron *Crocus autumnalis*, fl.

11. St. Protus, St. Hyacinthus.—*Tremella purpurea* found.

12. St. Eanswide, V. A.—Wasps abundant.

13. St. Eulogius, B. C.—Swallows begin to congregate.

14. Holy Rood Day, Exaltation of the Holy Cross.—Crimson Rudbeckia *Rudbeckia purpurea*, flowers, and so continues in flower till the middle of October; Passionflower *Passiflora vulgaris*, full flower; it continues all the autumn.

15. St. Catherine of Genoa, St. Nicetas.—Rough Rudbeckia *Rudbeckia hirta*, fl.; *Agaricus verucosus*, appears in abundance.

16. St. Euphemia, V. M., St. Editha.—Michaelmas Daisy *Aster tradescanti*, fl. in certain warm and forward situations.

17. St. Columba, V. M., St. Lambert.—Rue-

flower *Ruta graveolens*, iterum fl.; Rueflower again now. Ancient monkish lines say of Rue,

Nobilis est Ruta quia lumina reddit acuta ;
 Auxilio Rutae vir lippè videbis acutè ;
 Cruda comesta recens oculos caligine purgat ;
 Ruta viris minuit, Venerem mulieribus addit ;
 Ruta facit castum, dat lumen, et ingerit astum ;
 Cocta facit Ruta et de pollicibus loca tuta.

18. St. Thomas of Villanuova.—Eatable Fungus *Boletus edulis*, found.

19. St. Lucy, V., St. Januarius, &c.—Martins congregate.

20. St. Eustachius, &c. M. M.—Green Gage and other Plums still in plenty.

21. St. Mathew Ap. St. Maura.

22. St. Maurice, &c. St. Emeran.—Small Bergamot Pears ripe, called Summer Bergamy.

23. St. Thecla, V. M.—Various autumn Pears ripe both in France and England.

24. St. Gerard, St. Germer.—Guernsey Lilies and other Amaryllides in blow in the Greenhouse or out of doors.

25. St. Welfrid, Ab.—Various species of Cereopsis, Helianthus, Radbukin and other late aestival syngeneceian plants abound.

26. St. Cyprian, St. Justinian, M. M.—Damsons and Bullices ripening fast.

27. St. Cosmac, St. Daonian.—Saffron *Crocus sativus*, fl.

28. St. Eustochium, V.—Autumn Crocus, *Crocus serotinus*, fl.

29. MICHAELMAS DAY, St. Michael and all Angels.—Michaelmas Daisy *Aster tradescanti*, full fl. Swallow *Hirundo rustica*, migrates, but a few remain till the middle of October.

30. St. Jerome.—All the Asters fl.

October 1. St. Remigius, B. C.; Festival of the Rosary; hunting the Hare begins.

2. Holy Guardian Angels.—Longleaved Starwort *Aster longifolius*, fl.; the pears called Summer Bergamot now ripe.

3. St. Dionysius the Areopagite.—Wall Hawkweed *Hieracium murorum*, has now its second or autumnal flowering.

4. St. Francis of Assissium, C., founder of the Franciscans, afterwards divided into Conventuals, Capucins, and Recollets or Grey Friars.

5. St. Galla, St. Placidus.

6. St. Bruno, C., founder of the Carthusians, St. Faith.—Martin *Hirundo urbica*, migrates, but a few remain till the middle of October.

7. St. Justina, V. St. Osyth, V.; Pleiades rise about half past six, P. M.—Damsons and Bullases gathered.

8. St. Bridget of Sweden, St. Thais, St. Pelagia.—African and French Marigolds begin to fade, and will be soon cut off by frosty nights.

9. St. Dionysius, Bp. of Paris.

10. St. Aurea, V., St. Francis Borgia, C.—Golden Rod *Salidago virgaurea*, goes out of blow, except here and there.

11. St. Ethelburge, V. A., St. Andronicus, &c.

12. St. Wilfred, B.—Woodcock *Scolopax rusticola*, begins to arrive.

13. St. Edward the King, seven Friars Minors, M. M.

14. St. Calixtus.

15. Teresa, V., foundress of the Reformation of the Barefooted Carmelites.—Swallows and Martins last seen, being only a few stragglers here and there.

16. St. Gall, A.—Late or October Peaches ripen.

17. St. Hedwiges, W., St. Anstru.—Foxhunting begins to take place regularly.

18. St. Luke the Evangelist.—Rough Agarick *Agaricus floccosus*, springs up at the roots of trees, orchards, &c.; the greatest number and variety of fungi of all sorts are now found, in 1818 their quantity and magnitude was prodigious. St. Luke's little Summer is the fine weather usually happening about this time.

19. St. Frideswide, V., St. Peter of Alcantari.—Beech leaves change colour and are purplish brown; Lime leaves nearly all fallen; Elm leaves yellow and fast falling.

20. St. Artemius, St. Zenobius.

21. St. Ursula and companions, M. M., hence the Ursalines.—Swan's Egg Pears gathered.

22. St. Phillip, B. M.

23. St. Theodoret, R. M.

24. St. Proclus, B. C.

25. St. Crispin, St. Crysanthus, &c. Shoemakers' festival.

26. St. Evaristus, P. M.

27. St. Frumentius, B. C.

28. ST. SIMON and ST. JUDE, Apostles, St. Neot Anchoret.—The weather now begins to be cold enough for winter clothing and great coats, as the adage in verse reminds us:

Festa dies Judae prohibet te incedere nudè,

Sed vult ut corpus vestibus omne tegas.

See Part I.

29. St. Narcissus, St. Chef.

30. St. Marcellus, M.—Oak leaves change colour apace.

31. St. Quintin, M., St. Wolfgang, B.

November. I. ALL SAINTS DAY.—Weather generally dull, moist, and cloudy; leaves begin to fall apace, and many early trees are already bare.

2. ALL SOULS DAY.—There are still some fungi, both *Aganetes* and *Boldi*; but their numbers are diminished.

3. Holy Well Day, St. Winifred, V. M., St. Malachy.—Goldfinches *Tringillae cardueles*, resort to the gardens, and feed on whatever seeds remain.

4. St. Carolo Baromeo, B. C.

5. St. Bertille, Abbess; Neptunalia in ancient Rome; Gunpowder Plot celebrated.

6. St. Leonard, hermit.—Swan's Egg Pears are now ripe.

7. St. Willebord

8. Four Crowned Brothers, M. M.

9. Dedication of St. John Lateran, St. Vanne.

10. St. Andrew Aveline, C.

11. MARTINMAS DAY, St. Martin, B. C. of Tours, St. Helena.—Fleabane *Conyza rugosa*, fl.

12. St. Martin, P. C., St. Nilus, Anchoret.

13. St. Homobonus, C., St. Didacus.

14. St. Laurence of Dublin.

15. St. Gertrude, V. A., St. Malo.—Royston Crow *Corvus cornix*, begins to be seen about London.

16. St. Edmund, B. C.

17. St. Gregory Thaumetyrsus, St. Gregory of Tours.

18. Dedication of St. Peter and St. Paul.—Fieldfares *Turdi pilares*, begin to arrive in numbers; they alight on the coast during the night.

19. St. Elizabeth, W., St. Barlaam, M.

20. St. Maxentia, V. M., St. Edmund, K. and M.—The Orange Berries of the *Pyracanthus* begin to show.

21. PRESENTATION OF OUR LADY.—Many late aestival and autumnal plants remain in flower, as Chrysanthemums, Sweet Scabions, Marigolds, and others.

22. St. Cecilia, patroness of music.
 23. St. Clement, P. M.
 24. St. Flora and St. Mary, St. John of the Cross.—Some species of the *Veilthemia* now begin to flower; the whole genus belongs to the hybernal Flora.

25. ST. CATHERINE, V. M., St. Elme.—Sweet Coltsfoot, *Tussilago fragruas*, begins to flower and continues all winter unless hurt by the hard frost. A curious painting of St. Catherine trampling the Emperor Maxentius, is still preserved in West Wickham church among other antient figures.

26. St. Peter, Bp. and M.
 27. St. Maximus, B. C., St. Virgil.
 28. St. Stephen the Younger, M.—Weather often stormy and blustering.
 29. St. Saturnini, M. M.
 30. St. Andrew, Apostle.

December 1. St. Eligius, B. C.—Pease and Beans should be sown if the weather suit.

2. St. Bibiana, V. M.
 3. St. Francis Xavier, Apostle of the Indies.
 4. St. Barbara, V., St. Peter Chrysologus.
 5. St. Labas.
 6. St. Nicholas, patron of children and sailors.
 7. St. Fara, V., St. Ambrose.
 8. CONCEPTION OF OUR LADY.—Brumal season begins.
 9. St. Leocadia, V.
 10. St. Eulalia, V. M., another St. Eulalia, V. M.
 11. St. Fuscian, M.
 12. St. Eadburge, Abbess.
 13. St. Lucy, Virgin.
 14. St. Othilia, V.—The various Berries on the shrubs and bushes become conspicuous as the leaves get cleared off the trees.

15. St. Begga, W. A.
16. St. Adelaide.
17. St. Olympias.
18. St. Winebald, A. C.
19. St. Samthana, V.
20. St. Paul of Latrus, hermit; Midwinter Day, or the shortest day.
21. St. Thomas the Apostle.
22. St. Edburge, V.
23. St. Victoria, V. M.
24. St. Emiliana and St. Thrasilla, Virgins; Christmas Eve; bells rung all night:

Galli cantus per noctem.—*Prov.*

Houses decorated with Ivy, Holly, and Missletoe.

25. CHRISTMAS DAY; Nativity of our Lord.
26. St. Stephen first Martyr; Christmas gambols, Christmas boxes, &c. An old custom prevailed of bleeding and sweating horses to-day, for good luck to them through the year.
27. St. John the Apostle and Evangelist.
28. Childermas Day or Holy Innocents.
29. St. Eugenia, V., St. Thomas-a-Becket, M.
30. St. Columba, V.
31. St. Melania, St. Sylvester.—The year usually closes with raw and cold weather, and opens with snow or hard frost.

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PART THE FIFTH.

BEING A

SYNOPTICAL CATALOGUE

OF

THE FLORA SPECTABILIS,

OR

HARDY ORNAMENTAL PLANTS;

WITH THE

TIMES OF THEIR FIRST FLOWERING, FULL BLOW,
AND GOING OUT OF BLOOM:

BY WHICH JUDGMENT MAY BE FORMED OF THE BEST
PLAN FOR MAKING BORDERS OF PLANTS SO AS
TO HAVE A SUCCESSION OF FLOWERS
ALL THE YEAR ROUND.

EXPLANATION OF ABBREVIATIONS AND MARKS.

- b. signifies beginning, as b. Aug. beginning of August, &c.
m. middle ditto, ditto.
e. end ditto, ditto.
didy. didynamia
ang. angiospermia
gymn. gymnospermia
tetr. tetradynamia
silic. siliculosa
siliq. siliquosa
syn. syngenesia
sup. superflua, &c.

Italic in the first column indicates the plant to be found in Britain; *Italic* in the last columns implies that the observation is made on plants in the Author's own garden, and not merely taken from others.

FLORA SPECTABILIS.



Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
I.	SALICORNIA	GLASSWORT.			
1.	<i>herbacea</i>	Saltwort	b. Aug.	—	Oct.
	<i>fruticosa</i>	shrubby	b. Aug.	—	Oct.
	<i>procumbens</i>	—	July	—	Sept.
	<i>radicaris</i>	—	July	—	Sept.
	HIPPURIS	MARESTAIL			
	<i>vulgaris</i>	common	May	—	July
I.	CALLITRICHE	WATER STAR-			
2.		WORT			
	<i>aquatica</i>	common	April	—	Nov.
II.	JASMINUM	JASMINE			
1.	<i>officinale</i>	officinal white	June	—	Oct.
	<i>grandiflorum</i>	large	June	—	Oct.
	<i>odoratissim.</i>	sweet	May	—	Oct.
	<i>azoricum</i>	azorian	May	—	Nov.
	<i>fruticans</i>	yellow	July	—	Sept.
	LIGUSTRUM	PRIVET			
	<i>vulgare</i>	common	June	—	July
	CHIONANTHUS	SNOWFLOWER			
	<i>Virginica</i>	Virginia	June	—	Aug.
	<i>maritima</i>	pubescent	May	—	July
	SYRINGA	LILAC			
	<i>vulgaris</i>	common	<i>e. April</i>	<i>m. May</i>	<i>b. June</i>
	<i>Chinensis</i>	Chinese	May	—	June
	<i>Persica</i>	Persian	<i>e. May</i>	—	<i>b. May</i>
	ORNUS	FLOWERING			
		ASH			
	<i>Europaea</i>	European	May	—	June
	<i>rotundifolia</i>	Manna	April	—	May

Class and Order.	Names of the Plants.		Begin- ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
II. 1.	CATALPA	CATALPA			
	<i>syringifolia</i>	common	July	—	e. Aug.
	<i>longissima</i>	longpodded	July	—	e. Aug.
	CIRCAEA	ENCHANTER'S NIGHTSHADE			
	<i>lutetiana</i>	common	e. June	—	Aug.
	<i>alpina</i>	mountain	e. June	—	Aug.
	VERONICA	SPEEDWELL, sp. 68.			
	<i>spicata</i>	spiked	b. June	July	Aug.
	<i>hybrida</i>	Welch	June	July	Aug.
	<i>officinalis</i>	officinal	Aug.	—	Sept.
	<i>fruticulosa</i>	shrubby	e. June	—	July
	<i>Serpyllifolia</i>	Paul's Betony	May	June	July
	<i>Beccabunga</i>	Brooklime	May	—	June
	<i>Anagallis</i>	Water	e. June	—	July
	<i>Chamaedrys</i>	Germander	April	b. May	July
	<i>spuria</i>	bastard	June	—	Aug.
	<i>gentianoides</i>	gentianleaved	June	—	Aug.
	<i>verna</i>	spring	April	—	June
	<i>arvensis</i>	field	Feb.	—	June
	<i>agrestis</i>	corn	Feb.	—	June
	GRATIOLA	HEDGEHYSSOP			
<i>officinalis</i>	officinal	July	—	Aug.	
CALCEOLARIA	SLIPPERWORT				
<i>pinnata</i>	winged	m. June	July	Sept.	
<i>nudicaulis</i>	naked	b. June	June	July	
PINGUICULA	BUTTERWORT				
<i>lusitanica</i>	pale	June	July	Aug.	
<i>vulgaris</i>	common	June	July	Aug.	
<i>alpina</i>	alpine	April	May		
<i>grandiflora</i>	largeflowered	May	June		
<i>lutea</i>	yellow	June	e. June		
UTRICULARIA	HOODED MIL- FOIL				
<i>vulgaris</i>	common	e. June			

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
	LYCOPUS	WATER HORE-HOUND.			
	<i>Europaeus</i>	common	July	July	Aug.
	ZIZIPHORA	ZIZIPHORA			
	<i>serpyllacea</i>	sweet	July	July	Aug.
	MONARDA	MONARDA			
	<i>fistulosa</i>	hollowstalked	e. July		
	<i>didyma</i>	Oswego Tea	e. July	—	Oct.
	<i>purpurea</i>	crimson	e. July		
	<i>Kalmiana</i>	largeflowered	e. June		June
	ROSMARINA	ROSMARY			
	<i>officinalis</i>	common	b. Feb.	—	March
	SALVIA	SAGE, sp. 87.			
	<i>pratensis</i>	meadow	July	e. July	
	<i>Verbenaca</i>	Vervain	June	e. June	Sept.
	<i>azurea</i>	blue	Aug.	e. Aug.	
	<i>officinalis</i>	common	June	e. July	Aug.
	<i>coccinea</i>	scarlet	June	e. June	Nov.
	<i>Sclarea</i>	Clary	b. July	e. July	
	<i>chamaedryoi.</i>	Germander	June	e. June	Sept.
	<i>ceratophylloi.</i>	branching	June	e. June	Aug.
II.	ANTHOXAN-	VERNAL GRASS			
2.	MUM				
	<i>odoratum</i>	sweetscented	m. May	e. May	
	CRYPISIS	CRYPISIS			
	<i>aculeata</i>	prickly	m. July	e. July	Aug.
II.	PIPER	PEPPER			
3.	<i>nigrum</i>	black	—		
III.	VALERIANA	VALERIAN			
1.	<i>rubra</i>	red	b. May	—	Aug.
	<i>dioica</i>	dioecious	b. May	—	Aug.
	<i>officinalis</i>	officinal	b. June	—	Aug.
	FEDIA	LAMB'S LET-TUCE			
	<i>dentata</i>	toothed	m. June	July	
	<i>olitoria</i>	Corn Sallad	April		

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
III.	CROCUS	CROCUS, sp. 12.			
I.	maesiacus	Great Yellow, $\beta. \gamma.$	b. Feb.	e. Feb.	e. Mar.
	biflorus	Scotch	b. Feb.	e. Feb.	e. Mar.
	Susianus	Cloth of Gold	b. Feb.	e. Feb.	e. Mar.
	lanugeflorus	small gold	m. Feb.	March	e. Mar.
	stellaris	starry	m. Feb.	March	e. Mar.
	sulphureus	pale yellow	m. Feb.	March	e. Mar.
	versicolor	particolored, $\beta. \gamma. \delta.$	e. Feb.	March	e. Mar.
	<i>vernus</i>	blue spring	b. Mar.	March	m. Apr.
	flavus	dark Scotch	m. Feb.	March	e. Mar.
	serotinus	late Saffron	m. Sept.	Sept.	Oct.
	<i>officinalis</i>	Saffron	m. Sept.	Oct.	e. Oct.
	<i>nudiflorus</i>	naked Saffron	e. Sept.	Oct.	e. Oct.
	TRICHONEMA	TRICHONEMA			
	bulbocodium	common	b. April	April	b. May
	IXIA	IXIA, sp. 22.*			
	fucata	painted	May		
	SPARAXIS	SPARAXIS			
	tricolor	threecolored	May		
	GLADIOLUS	SWORD LILY, sp. 25.			
	communis	common	m. June	e. June	e. July
	imbricatus	Cornflag	m. June	e. June	e. July
	Byzantinus	Turkish	June	June	e. July
	IRIS	FLOWER DE LUCE, sp. 51.			
	<i>Pseudacorus</i>	Waterflag	b. June	July	Aug.
	<i>Xyris</i>	Gladwyn	b. June	July	Aug.
	pumila	Little	April		
	lutescens	yellowish	e. April		
	cristata	crested	May		
	Chinensis	Chinese	May	June	

* The numbers following the English generic name indicate how many species of the genus are already known.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
III.	IRIS, <i>continued</i>	FLO. DE LUCE			
1.	Susiana	Chalcedonian	b. April	May	e. May
	Florentina	Fleur de lis	<i>m. May</i>	<i>June</i>	<i>e. June</i>
	biflora	twoflowered	e. April	May	
	aphylla	leafless	e. May	June	
	variegata	variegated	b. June	m. June	July
	squalens	brown	June	June	
	sambucina	elderscented	June	June	
	lurida	lurid	<i>b. June</i>	<i>June</i>	<i>July</i>
	Germanica	German	<i>b. May</i>	<i>May</i>	<i>b. June</i>
	subbiflora	purple Por- tugal	May	June	
	pallida	pale Levant	May	June	
	dichotoma	Dahurian	Aug.	Aug.	
	Xiphium	small bulbed	m. June	e. June	July
	Xiphioides	greatbulbed	m. June	e. June	July
	lusitanica	Portuguese	e. April	May	June
	Virginica	Virginian	June		
	versicolor	particolored	June	July	e. July
	halophita	longleaved	e. June	July	
	ochroleuca	pale yellow	e. June	July	
	cuprea	coppercolored	m. June	July	
	verna	spring Amer.	e. April	May	
	Persica	Persian	b. Feb.	e. Feb.	March
	ruthenica	pigmy	May		
	prismatica	prismatic	e. May	June	
	tenuifolia	slenderleaved	e. May	June	
	ventricosa	bellied	June	June	e. June
	graminea	grassleaved	e. May	June	
	spuria	bastard	e. May	June	
	Siberica	Siberian	e. May	June	
	arenaria	sand	June		
	flavissima	yellow Siber.	e. May	June	
	Hungarica	Hungarian	e. May		
	moraeoides	moraeaflow.	April	June	Aug.
	spatulata	spatulate	July		

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
III.	IRIS, <i>continued</i>	FLO. DE LUCE			
1.	desertorum	sweet Russian	e. June	July	
	stenogyna	creamcolored	July	July	
	orientalis	redleaved Chinese	e. May	June	
	alata	winged	e. May	June	
	tuberosa	Snakeshead	e. Mar.	April	May
	Iberica	reflexed	April	May	
	neglecta	neglected	April	May	
	Swertii	Swerts	April	May	
	reticulata	netted	April	May	
	Caucasica	Caucasian	April	May	
	triflora	threeflowered	e. May	June	
	MOREA	MOREA, sp. 24.			
	Sisyrinchium	Spanish Nut	May		
	PARDANTHUS	PARDFLOWER			
	Chinensis	Chinese	June	July	
	MARICA	BUSTARD IRIS			
	mucronata	swordshaped	June	July	
	anceps	narrowleaved	June	July	
	striata	Mexican	b. June	July	Aug.
	XYRIS	XYRIS			
	brevifolia	shortleaved	June	July	Aug.
	SCHOENUS	BOGRUSH			
	nigricians	black	June	July	
	SCRIPHUS	CLUBRUSH,			
	<i>maritimus</i>	sp. 12. sea	June	July	
	<i>lacustris</i>	Bullrush	July	Aug.	Sept.
	ERIOPHORUM	COTTONGRASS			
	<i>alpinum</i>	<i>alpine</i>	June	July	
	<i>vaginetum</i>	sheathed	e. Mar.	April	
	NARDUS	MATGRASS			
	stricta	upright	June	July	
	CENCHRUS	BUR			
	lappaceus	Indian	May	June	Aug.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.	
	GENUS & Species.	English Names.				
III. 1.	CORNUCOPIA cucullatum	HORN OF PLEN. hooded	July	Aug.		
	SPARTINA cynosuroides <i>stricta</i>	SPARTINA Dog's Tail upright	Aug. Aug.	Sept. Sept.		
III. 2.	SECALE cereate orientale	RYE common spiked	m. July m. July			
	HORDEUM vulgare	BARLEY common	b. Aug. Aug.			
	Zeocriton <i>murinum</i> <i>pratense</i> <i>maritimum</i>	battledoor wall meadow sea	May June June	June July July	Aug.	
	TRITICUM aestivum hybernum	WHEAT summer winter	June June	July July		
	III. 3.	ERIOCAULON <i>septangulare</i>	PIPEWORT jointed	e. June	July	Aug.
		MONTIA <i>fontana</i>	WATERCHICK- WEED common	June	July	
	IV. 1.	DIPSACUS <i>fullorum</i> <i>sylvestris</i> <i>pilosus</i>	TEASEL Fullers wild small	June July July	July Aug. Aug.	
SCABIOSA <i>alpina</i> <i>succisa</i> <i>arvensis</i> <i>atropurpurea</i> <i>argentea</i> <i>columbana</i> <i>Caucasea</i> <i>ochroleuca</i>		SCABIOUS, sp. 41. alpine Devil's Bit corn Muskflower silvery fineleaved largeflowered pale white	e. June e. July July e. June b. July e. June July July	July Aug. Aug. July Aug. July July Aug. Aug.	Sept. Oct. Sept. Sept. Aug. Sept. Sept.	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
IV. 1.	SPERMACOCE	BUTTONWEED, sp. 7.			
	<i>strigosa</i>	Crosswort	July	Aug.	
	SHERARDIA	FIELDMADDER			
	<i>arvensis</i>	Corn	m. May	June	Sept.
	<i>muralis</i>	Wall	e. June	July	
	ASPERULA	WOODROOF			
	<i>odorata</i>	sweetscented	May	June	
	<i>cynanchica</i>	Squinancy- wort	June	July	
	GALIUM	OUR LADY'S BEDSTRAW			
	<i>Aparine</i>	Goosegrass or Cliver	May	June	Aug.
	<i>rabioides</i>	Madder	b. July	July	Aug.
	<i>palustre</i>	fen	—	July	Aug.
	<i>erectum</i>	upright	m. July	Aug.	Aug.
	<i>Mollugo</i>	hedge	m. July	Aug.	Aug.
	<i>verum</i>	Cheese Renn.	m. July	Aug.	Aug.
	<i>Cruciatum</i>	Crossflower	b. May	May	July
	<i>Boreale</i>	crossleaved	—	July	
	CRUCIANELLA	CROSSWORT, sp. 10.			
	<i>angustifolia</i>	narrowleaved	e. June	July	
	<i>Egyptiaca</i>	Egyptian	e. June	July	
	RUBIA	MADDER, sp. 6.			
<i>tinctorum</i>	dyer's	June	July		
PLANTAGO	PLANTAIN, sp. 40.				
<i>major</i>	greater	May	June	July	
<i>lanceolata</i>	Ribwort	May	June	July	
<i>Coronopus</i>	Buckshorn	e. June	July	Aug.	
<i>Psyllium</i>	Fleawort	b. July	July	Aug.	
SANGUISORBA	MEADOW BAR- NET				
<i>officinalis</i>	officinal	June	July	Aug.	

Class and Order.	Names of the Planets.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
IV.	EPIMEDIUM	BARRENWORT			
1.	<i>Alpinum</i>	Alpine	m. May	June	
	CORNUS	DOGWOOD			
	<i>Suecica</i>	herbaceous	b. June		
	<i>Sanguinea</i>	common	m. June	July	
	<i>muscula</i>	Cornelian Cherry	m. Feb.	March	
	ALCHEMILLA	OUR LADY'S MANTLE, sp. 7.			
	<i>vulgaris</i>	common	June	July	Aug.
	<i>Aphanes</i>	Parsley Piert	e. May	June	e. June
	<i>alpina</i>	alpine	June	July	Aug.
	<i>pubescens</i>	pubescent	June	July	Aug.
IV.	CUSCUTA	DODDER			
2.	<i>Europaea</i>	common	July	July	
IV.	ILEX	HOLY, sp. 13.			
4.	<i>aquifolium</i>	common	e. May	June	
	POTAMOGE-TON	PONDWEED, sp. 12.			
	<i>natans</i>	broadleaved	July	Aug.	e. Sept.
	<i>fluitans</i>	floating	e. July	Aug.	e. Sept.
	<i>grammineum</i>	grassy	e. July	Aug.	Sept.
V.	HELIOTRO-PIUM	TURNSOLE, sp. 8.			
1.	<i>Peruvianum</i>	Peruvian, 9	May	—	Aug.
	<i>Europaeum</i>	European	m. June	July	Oct.
	<i>supinum</i>	trailing	m. June	July	Oct.!
	<i>Corymbosum</i>	Careflowered	May	June	Aug.
	MYOSOTIS	MOUSE EAR, sp. 6.			
	<i>Scorpioides</i>	Scorpion Grass	e. April	May	Aug.
	<i>arvensis</i>	Corn	e. April	May	Aug.
	<i>rupicola</i>	Scotch	b. June	July	Aug.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V. I.	LITHOSPER- MUM	GROMWELL, sp. 9.			
	<i>officinale</i>	officinal	May	June	
	ANCHUSA	BUGLOS, sp. 11.			
	<i>officinalis</i>	officinal	m. June	July	
	<i>tinctoria</i>	dyer's	June	July	Oct.
	<i>sempervirens</i>	Alkanet	April	May	Sept.
	CYNOGLOSSUM	HOUNDSTONG. sp. 12.			
	<i>officinale</i>	officinal	May	June	Sept.
	<i>Sylvaticum</i>	wood	June	July	July
	<i>Omphaloides</i>	blue Navel- wort	b. May	May	June
	PULMONARIA	LUNGWORT, sp. 12.			
	<i>maritima</i>	sea	—	July	
	<i>angustifolia</i>	narrowleaved	e. Mar.	May	
	<i>officinalis</i>	Cowslip of Jerusalem	m. Mar.	May	
	SYMPHETUM	COMFREY, sp. 7.			
	<i>officinale</i>	common	m. May	June	
	<i>tuberosum</i>	Scotch	m. May	June	July
<i>orientale</i>	Eastern	May	July		
<i>asperrimum</i>	roughest	m. May	June	July	
<i>hybridum</i>	hybrid	m. May	June	July	
<i>Bohemicum</i>	Bohemian	m. May	July		
CERINTHE	HONEYWORT, sp. 4.				
<i>major</i>	greater	July	Aug.	Oct.	
BORAGO	BORAGE				
<i>officinalis</i>	common	May	July	Sept.	
<i>orientalis</i>	perennial	March	May	June	
<i>laxiflora</i>	bellflowered				

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V.	LYCOPSIS	WILD BUGLOS			
1.	<i>arvensis</i>	small	e. May	June	July
	ECCHIUM	VIPER'S BUG- LOS, sp. 26.			
	<i>vulgare</i>	common	m. June	e. June	Aug.
	<i>grandiflorum</i>	large	June	July	
	<i>Italicum</i>	white	b. June	June	Aug.
	ANDROSACE	ANDROSACE			
	<i>villosa</i>	villous	e. June	July	
	PRIMULA	PRIMROSE, sp. 21.			
	<i>vulgaris</i>	common	b. Mar.	April	May
	β <i>rubra</i>	red, many var.	b. Mar.	April	May
	γ <i>alba</i>	white	b. Mar.	April	May
	δ <i>Polyanthus</i>	Polyanthus, many var.	e. Feb.	April	May
	ϵ <i>purpurea</i>				
	<i>multiplex</i>	double lilac	e. Feb.	March	May
	<i>elatio</i>	oxlip	b. Mar.	March	May
	<i>veris</i>	Cowslip or Paigle	e. April	e. April	May
	<i>farinosa</i>	Bird's Eye	June	July	
	<i>intermedia</i>	Siberian Bird's Eye	May		
	<i>longifolia</i>	longleaved	April	May	
	<i>Cortusoides</i>	Siberian	May	June	
	<i>dentiflora</i>	toothflowered	April	May	
	<i>nivalis</i>	Snowy	April	May	
	<i>villosa</i>	villous	April	May	
	<i>marginata</i>	marginated	April	May	
	<i>Auricula</i>	Auricula	April	May	
	<i>Helvetica</i>	Swiss	April	May	
	<i>integrifolia</i>	whiteleaved	April	May	
	<i>Finmarchica</i>	Finmark	April	May	
	<i>Vinosa</i>	clammy			
	<i>Palinuri</i>	flatflowered	April	May	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V.	PRIMULA, <i>cont.</i>	PRIMROSE			
1.	<i>decora</i>	comely	April	May	
	<i>minima</i>	least	April	May	
	<i>Sinensis</i>	Chinese	Feb.	April	May
	<i>stricta</i> *	upright	April	May	
	SOLDANELLA	SOLDANELLA			
	<i>Alpina</i>	Austrian	April		
	<i>montana</i>	Bohemian	March		
	DODECATHE- ON	AMERICAN COWSLIP			
	<i>Meadia</i>	common	<i>e. Mar.</i>	<i>April</i>	<i>May</i>
	CYCLAMEN	SOWBREAD, sp. 4.			
	<i>Comm</i>	roundleaved	Feb.	March	
	<i>Europaeum</i>	European	March	April	
	<i>Persicum</i>	Persian	Feb.	March	
	<i>hederaefolium</i>	autumnal	Aug.	Sept.	
	MENYANTHES	BUCKBEAN			
	<i>trifoliata</i>	common	May	June	
	HOTTONIA	WATERVIOLET OR FEATHER- FOIL			
	<i>palustris</i>	common	May	June	July
	LYSIMACHIA	LOOSESTRIFE, sp. 15.			
	<i>vulgaris</i>	common	b. July	Aug.	Sept.
	<i>bulbifera</i>	bulb-bearing	July	Aug.	Sept.
	<i>thersifolia</i>	thyrseflower- ed	b. July	July	Aug.
	<i>Linum stella- tum</i>	Annual	b. June	<i>e. June</i>	July
	<i>Nummularia</i>	Moneywort	<i>e. May</i>	June	Aug.
	<i>nemorum</i>	grove	<i>e. May</i>	June	Aug.

* Many of the Primroses will flower, though sparingly, nearly all the year; the Chinese Primrose requires the shelter of the greenhouse.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	End of Flower.	In full Flower.
	GENUS & Species.	English Names.			
V. 1.	ANAGALLIS	PIMPERNEL, sp. 7.			
	<i>arvensis</i>	wincopipe	b. June	July	Sept.
	<i>coerulea</i>	blue	b. June	July	Sept.
	<i>tenella</i>	creeping	b. July	Aug.	Sept.
	AZALEA	AZALEA			
	<i>Pontica</i>	yellow	m. May	b. June	e. June
	<i>nudiflora</i>	red, 11 var.	m. May	b. June	e. June
	<i>calendulacea</i>	orange	May	June	e. June
	<i>procumbens</i>	procumbent	e. June	July	Aug.
	PHLOX	LYCHNIDEA, sp. 18.			
	<i>divaricata</i>	early blue	m. Apr.	May	
	<i>ovata</i>	ovate	May	June	
	<i>suaveolens</i>	sweet white	June	July	
	<i>paniculata</i>	panniced & var. β	Aug.	Sept.	
	<i>pilosa</i>	pilose	May	June	
	<i>acuminata</i>	Lyons	May	June	
	<i>glaberrima</i>	red, also var. β .	May	June	
	<i>stolenifera</i>	Stoleniferous	May	June	
	CONVOLVULUS	BINDWEED, sp. 39.			
	<i>arvensis</i>	Corn	m. June	July	Aug.
	<i>sepium</i>	Bearbind	b. July	Aug.	Sept.
	<i>soldanella</i>	sea [den	July	July	Aug.
	<i>tricolor</i>	smaller gar-	e. June	July	Aug.
	<i>Scammonia</i>	Scammony	b. July	July	Aug.
	<i>panduratus</i>	Virginian	June	July	Sept.
	<i>althoeoides</i>	silky	June	July	Aug.
	<i>bryoniaefolius</i>	brionleaved	June	July	Aug.
	<i>Japanicus</i>	Japan	b. July	July	Aug.
	IPOMOEA	IPOMOEA, sp. 54.			
	<i>coccinia</i>	scarlet.	June	July	Sept.

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V.	IPOMOEAE, <i>cont.</i>	IPOMOEAE			
1.	<i>campanulata</i>	bellflowered	b. Aug.	Aug.	Sept.
	<i>violacea</i>	violet	July	Aug.	Sept.
	<i>purpurea</i>	Greater Convolvulus	<i>b. July</i>	<i>Aug.</i>	<i>Sept.</i>
	β <i>incarnata</i>	fleshcolored	<i>b. July</i>	<i>Aug.</i>	<i>Sept.</i>
	γ <i>varia</i>	striped	<i>b. July</i>	<i>Aug.</i>	<i>Sept.</i>
	Nil	pale	<i>b. July</i>	<i>Aug.</i>	<i>Sept.</i>
	Jalap	Jalap	b. Aug.	Sept.	Sept.
	<i>cuspidata</i>	S. American	June	July	Aug.
	POLEMONIUM	GREEK VALERIAN, sp. 4.			
	<i>Sibericum</i>	Siberian	June	July	
	<i>reptans</i>	creeping [der]	April	May	
	<i>Coeruleum</i>	Jacob's Lad-	<i>e. May</i>	<i>June</i>	<i>July</i>
	β <i>album</i>	white	<i>e. May</i>	<i>June</i>	<i>July</i>
	JASIONE	SHEEP'S SCABIOUS			
	<i>montana</i>	mountain	<i>e. June</i>	<i>July</i>	<i>Sept.</i>
	<i>perennis</i>	perennial	June	July	Aug.
	CAMPANULA	BELFLOWER, sp. 73			
	<i>rotundiflora</i>	Harvest Bells	<i>m. July</i>	<i>Aug.</i>	<i>Oct.</i>
	<i>patula</i>	spreading	July	Aug.	
	<i>Rapunculus</i>	Rampions	<i>b. July</i>	<i>Aug.</i>	
	<i>rapunculoides</i>	creeping	b. July	Aug.	Sept.
	<i>latifolia</i>	broadleaved	<i>e. July</i>	<i>Aug.</i>	
	<i>hederacea</i>	ivyleaved	<i>e. June</i>	<i>Aug.</i>	
	<i>hybrida</i>	corn	<i>e. May</i>	<i>June</i>	<i>July</i>
	<i>glomerata</i>	clustered	June	July	Aug.
	<i>Trachelium</i>	Coventry Bells	<i>e. June</i>	<i>July</i>	<i>Aug.</i>
	<i>Thyrsoidea</i>	spikeflowered	June	July	Aug.
	<i>pyramidalis</i>	pyramidal	July	Aug.	Sept.
	<i>pulla</i>	darkflowered	June	July	Sept.
	<i>grandiflora</i>	Siberian	July	Aug.	
	<i>pumila</i>	little Swiss	July	Aug.	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V.	CAMPAN. <i>cont.</i>	BELLFLOWER			
1.	<i>Persicifolia</i>	Peachleaved and β	m. July	Aug.	Sept.
	<i>azurea</i>	azure Swiss	e. June	July	Aug.
	Medium	Canterbury Bells	<i>m. June</i>	<i>b. July</i>	<i>Aug.</i>
	<i>Speculum Ven-neris</i>	Venus' Look- ing Glass	e. May	June	Aug.
	<i>spicata</i>	spiked	b. July	July	Aug.
	PHYTEUMA	RAMPION			
	<i>orbiculare</i>	roundleaved	b. July	Aug.	Aug.
	<i>spicata</i>	spiked	e. June	July	Aug.
	TRACHAELIUM	THROATWORT			
	<i>coeruleum</i>	blue	July	Aug.	Sept.
	LOBELIA	LOBELIA			
	<i>Dortmanna</i>	Water Gla- diole	July	Aug.	
	<i>urens</i>	acid	e. July	Aug.	e. Aug.
	<i>Speculum</i>	purple G	June	July	Sept.
	<i>fulgens</i>	fulgent	July	Aug.	Sept.
	<i>splendens</i>	splendent	June	July	Sept.
	<i>amoena</i>	blue	June	July	Sept.
	<i>Cardinalis</i>	Cardinal's fl.	July	Aug.	Oct.
	LONICERA	HONEYSUCKLE			
		sp. 15.			
	<i>caprifolium</i>	early red	May	June	July
	<i>sempervirens</i>	trumpet	Feb.	May	July
	<i>Periclyme- num</i>	Woodbine	June	July	Aug.
	<i>Xylosteum</i>	fly	e. June	July	Aug.
	SYMPHORIA	ST. PETER'S WORT			
	<i>glomorata</i>	common	e. July	Aug.	Sept.
	MIRABILIS	MARVEL OF PERU, sp. 3.			
	<i>Jalapa</i>	common	e. June	July	Oct.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V.	VERBASCUM	MULLEIN,			
1.		sp. 25.			
	<i>Thapsus</i>	Hightaper	e. June	July	Aug.
	<i>thapsoides</i>	bastard	b. July	July	Aug.
	<i>Lychnitis</i>	white	b. July	Aug.	Sept.
	<i>Blattaria</i>	moth	b. July	e. July	Aug.
	<i>virgatum</i>	slender	e. July	Aug.	Sept.
	<i>pulverula- tum</i>	powdered	m. July	July	Aug.
	<i>pyramidale</i>	pyramidal	b. July	July	Aug.
	<i>Mycoris</i>	borageleaved	e. May	June	
	DATURA	THORN APPLE			
	<i>arborea</i>	tree	May	June	Aug.
	<i>Stramonium</i>	Stramonium	b. July	Aug.	Sept.
	HYOSCYAMUS	HENBANE			
	<i>niger</i>	common	m. June	July	Aug.
	<i>Scopolia</i>	Scopoli's	m. Mar.	e. Mar.	May
	NICOTIANA	TOBACCO,			
		sp. 11.			
	<i>Tabacum</i>	Virginian	July	Aug.	Sept.
	<i>rustica</i>	common	July	Aug.	Sept.
	<i>macrophylla</i>	largeleaved	July	Aug.	Sept.
	ATROPA	DWALE			
	<i>Belladonna</i>	Deadly Nightshade	e. June	July	Aug.
	<i>Mandragora</i>	Mandrake	March	April	May
	PHYSALIS	WINTER CHERRY			
	<i>Alkekengi</i>	common	e. July	Aug.	Sept.
	<i>angulata</i>	angular	April	July	Aug.
	SOLANUM	NIGHTSHADE,			
		sp. 56.			
	<i>Dulcamara</i>	Bittersweet	e. June	July	Aug.
	<i>nigrum</i>	common	e. July	Aug.	Sept.
	<i>Lycopersicum</i>	Love Apple	July	Aug.	Sept.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V. 1.	CHIRONIA	CHIRONIA, sp. 11.			
	<i>centaureum pulchella</i>	Centaury dwarf	e. June e. June	July July	Aug. Aug.
	RHAMNUS	BUCKTHORN, sp. 21.			
	<i>Catharticus</i>	purging berrybearing	May	June	
	<i>Frangula</i>	Alder	April	May	
	ZIZYPHUS	ZIZYPHUS			
	<i>Paliurus</i>	Christ's Thorn	June	July	Aug.
	EUONYMUS	SPINDLE TREE			
	<i>Europæus</i>	common	May	June	
	GLAUX	BLACK SALT- WORT			
	<i>maritima</i>	sea	e. June	July	
	RIBES	CURRENT TREE			
	<i>rubrum</i>	red, β . white	April	May	
	<i>Petraeum</i>	rock	April	May	
	<i>alpinum</i>	alpine	May	May	
	<i>nigrum</i>	black	April	May	
	<i>spicatum</i>	Spiked	April	May	
	<i>Grossularia</i>	rough Goose- berry, β . γ .	March	April	
	<i>Uva Crispa</i>	smooth Goose- berry, β . γ .	March	April	
	VIOLA	VIOLA, sp. 42.			
<i>odorata</i>	sweet, β white	e. Feb.	March	May	
<i>canina</i>	Dog's Violet	m. Mar.	April	May	
<i>hirta</i>	hairy	e. Mar.	April	May	
<i>lactea</i>	creamcolored	March	April	May	
<i>palustris</i>	marsh	e. Mar.	April	May	
<i>lutea</i>	great yellow	b. April	May	Aug.	
<i>tricolor</i>	Heartsease	Feb.	May	Sept.	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V.	VIOLA, cont.	VIOLET			
1.	Rothomagensis	Rouen	April	May	Aug
	Palmata	palmated	May	June	July
	IMPATIENS	BALSAM			
	Balsamina	common	July	Aug.	Sept.
	<i>Noli me tangere</i>	Touch me not	June	July	Aug.
	CELOSEA	COCKSCOMB			
	cristata	common G.	e. July	Aug.	Oct.
	VINCA	PERRIWINKLE			
	<i>major</i>	greater	e. Feb.	April	Sept.
	<i>minor</i>	lesser	e. Jan.	April	Dec.
V.	APOCYNUM	DOGSBANE,			
2.		sp. 6.			
	androscernifolium	Herb-a-lapuce	e. June	July	Sept.
	Cannabinum	Hemp	e. June	July	Sept.
	ASCLEPIAS	SWALLOW-WORT, sp. 18.			
	Syriaca	Syrian	July	Aug.	
	STAPELIA	STAPELIA, sp. 69.			
	Asterias	Starfish stapelia	May	July	Nov.
	HERNIARIA	RUPTURWORT, sp. 3.			
	<i>glabra</i>	smooth	July	Aug.	Sept.
	CHENOPODIUM	GOOSEFOOT, sp. 24.			
	<i>Bonus Henri.</i>	Fat Hen	May	June	Aug.
	<i>polyspermum</i>	Allseed	June	July	Aug.
	SALSOLA	SALTWORT, sp. 12.			
	<i>Kali</i>	prickly	July	Aug.	
	<i>fruticosa</i>	shrubby	e. July	Aug.	Sept.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V. 2.	GOMPHRENA	GLOBOSA	July	Sept.	Oct.
	<i>globosa</i>	common			
	SWERTIA	MARSH FEL- WORT	m. July	July	Aug
	<i>perennis</i>	perennial			
	GENTIANA	GENTIAN, sp. 28.	e. June	July	Aug.
	<i>lutea</i>	yellow Alpine			
	<i>asclepiadea</i>	swallowwort	July	Aug.	Aug.
	<i>cruciata</i>	crosswort	June	July	Aug.
	<i>Saponaria</i>	soapwort	e. July	Aug.	Sept.
	<i>purpurea</i>	purple	June	July	Aug.
	Pneumonan- the	Calathian Violet	b Aug.	Aug.	Sept.
	<i>verna</i>	spring	e. Mar.	April	May
	<i>nivalis</i>	small	b. Aug.	Aug.	Sept.
	<i>amarella</i>	autumnal	Aug.	Sept.	Sept.
	<i>campestris</i>	field	e. Aug.	Sept.	Oct.
	<i>acaulis</i>	Gentianella	b. April	e. April	May
	ERYNGIUM	ERINGO, sp. 18.	July	Aug.	Sept.
	<i>maritimum</i>	Sea Holly			
	<i>campestre</i>	field	July	Aug.	Oct.
	HYDROCOTYLE	PENNYWORT	May	June	July
<i>vulgaris</i>	common				
SANICULA	SANICLE	May	June	July	
<i>Europaea</i>	European				
ASTRANTIA	BLACK MAS- TERWORT	May	June	July	
<i>minor</i>	small Alpine				
<i>major</i>	greater Swiss	May	June	July	
<i>maxima</i>	greatest car- niolan	May	June	July	
BUPLEURUM	HARE'S EAR, sp. 24.	June	July	Sept.	
<i>rotundifolium</i>	Thoroughwax				
<i>odontites</i>	narrowleaved	July	Aug.		

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V. 2.	TORDILYUM	HARTWORT			
	<i>officinale</i>	officinal	e. June	July	Aug.
	CAUCALIS	BUR PARSLEY,			
		sp. 11.			
	<i>Anthriscus</i>	hedge	b. July	Aug.	Aug.
	<i>infesta</i>	corn	h. July	Aug.	
	<i>nodosa</i>	knotted	b. July	Aug.	
	DAUCUS	CARROT, sp. 9.			
	<i>Carota</i>	common	June	July	e. July
	AMMI	BISHOP'S WEED			
	<i>glaucifolium</i>	glaucous	June	July	Aug.
	BUNIUM	EARTH NUT			
	<i>Bulbocastan.</i>	common	b. June	June	July
	<i>flexuosum</i>	flexuose	b. June	June	July
	CONIUM	HEMLOCK			
		sp. 4.			
	<i>maculatum</i>	spotted	June	July	
	SELINUM	MILK PARSLEY			
	<i>palustre</i>	marsh	July	Aug.	Sept.
	ATHAMANTA	SPIGNET			
<i>Libanotis</i>	mountain	July	Aug.		
PEUCEDANUM	SULPHUR-				
	wort, sp. 9.				
<i>officinale</i>	officinal	May	June	July	
<i>Silaus</i>	Hog's Fennel	June	July	Aug.	
HERACLEUM	COW PARSNIP				
<i>spondylium</i>	common	e. May	June	e. July	
<i>angustifolium</i>	narrowleaved	e. May	June	e. July	
LIGUSTICUM	LOVAGE				
<i>Levisticum</i>	common	m. June	July	Aug.	
<i>Cornubiense</i>	Cornish	b. July	July	Aug.	
<i>Scoticum</i>	Scotch	e. June	July	Aug.	
ANGELICA	ANGELICA,				
	sp. 6.				
<i>Archangelica</i>	garden	b. July	Aug.	Sept.	
<i>sylvestris</i>	wild	b. July	Aug.	Sept.	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V. 2.	SIUM	WATER PARS- NIP, sp. 7.			
	<i>latifolium</i> Sisarum	broadleaved Skirrit	b. July e. June	Aug. July	Sept. Aug.
	OENANTHE	WATER DROP- WORT, sp. 8.			
	<i>Crocata</i> <i>fistulosa</i>	Hemlock common	June June	July July	Aug. Aug.
	PHELLAN- DRIUM	WATER HEM- LOCK, sp. 2.			
	<i>aquaticum</i>	common	June	July	Aug.
	CICUTA	WATER COW- BANE			
	<i>virosa</i>	common	e. July	Aug.	Sept.
	AETHUSA	FOOL'S PARS- LEY, sp. 2.			
	<i>cynapium</i>	common	m. May	June	July
	CORIANDRUM	CORIANDER			
	<i>sativum</i>	officinal	e. May	June	July
	SCANDIX	CICELY, sp. 7.			
	<i>odorata</i>	sweet	May	June	July
	<i>Pecten Veneris</i>	Venus' Comb	May	June	July
	<i>Anthriscus</i> <i>cerefolium</i>	roughseeded Chervil	May	June	July
	CHAEROPHYL- LUM	COW PARS- LEY, sp. 7.			
	<i>sylvestre</i>	common	May	June	July
	PASTINACA	PARSNIP, sp. 4.			
	<i>sativa</i>	common	e. June	July	Aug.
ANETHUM	DILL				
<i>Foeniculum</i>	Fennel	July	Aug.	Sept.	
AEGOPODIUM	GOATWEED				
<i>Podagraria</i>	common	May	June	Aug.	
CARUM	CARAWAY				
<i>carui</i>	common	June			

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V. 2.	PIMPENELIA	BURNET SAXI- FRAGE, sp. 8.			
	Anisium	Anise	June	July	Aug.
3.	APIUM	PARSLEY			
	Petroselinum <i>graviolens</i>	garden Celery	June June	July July	Aug. Aug.
3.	RHUS	SUMACH, sp. 27.			
	coriaria	common	—	July	
3.	VIBURNUM	VIBURNUM, sp. 23.			
	Tinus <i>Lantana</i>	Laurestine Wayfaring tree	e. Dec. May	Feb. June	May July
3.	Opulus	Guelder Rose	m. May	June	July
	SAMBUCUS	ELDER			
3.	<i>nigra</i>	common	Mar.	June	July
	<i>Ebulus</i>	Danewort	e. June	July	Aug.
V. 4.	ALSINE	CHICKWEED			
	<i>media</i>	common	May	June	Oct.
5.	PARNASSIA	GRASS OF PAR- NASSUS			
	<i>palustris</i>	marsh	June	July	Aug.
5.	ARMERIA	THRIFT, sp. 11.			
	<i>vulgaris</i> <i>maritima</i>	common sea	e. May June	June July	Aug. Aug.
5.	STATICE	STATICE, sp. 26.			
	<i>Limonium</i>	Sea Lavender	May	June	Aug.
5.	LINUM	FLAX, sp. 29.			
	<i>perenne</i> <i>usitatissimum</i>	perenniel common	b. June b. June	July July	Aug. Aug.
5.	<i>Catharticum</i>	Cathartic	e. June	July	Aug.
	DROSERA	SUNDEW, sp. 4.			
V. Poly.	<i>Angelica</i>	great	e. June	July	Aug.
	MYOSURUS	MOUSETAIL			
Poly.	<i>minimus</i>	little	April	May	June

Class and Order.	Names of the Plants		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
V. Poly.	XANTHORHIZA Aprifolia	YELLOW ROOT common American	March	April	May
VI. 1.	TRADESCAN- TIA Virginica	SPIDERWORT, sp. 12. Virginian	e. May	June	Aug.
	HAEMANTHUS coccineus	BLOODFLOWER sp. 14. G. scarlet	June	July	Oct.
	GALANTHUS nivalis	SNOWDROP Fair Maid of February	b. Feb. e. Jan.	m. Feb. Feb.	e. Mar. March
	plicatus	plaited			
	LEUCOJUM vernum	SNOWFLAKE German	March	April	April
	aestivum	English	m. April	May	b. June
	pulchellum	doubtful	m. April	May	June
	autumnale	Portugal	b. Sept.	Sept.	Oct.
	hyemale	Barbary	Jan.	Feb.	March
	STRUMARIA gemmata	STRUMARIA, sp. 9. G. jewelled	e. July	Aug.	Sept.
	CRINUM erubescens	CRINUM, sp. 19. G. blushing	June	July	Aug.
	CYRTANTHUS obliquus	CYRTANTHUS, G. oblique	May	June	Aug.
	AMARYLLIS Atamasco	STAR LILY, sp. 32. Atamasco Lily	May	June	July
	formosissima	Jacobaea Lily	May	June	July
	reginae	Mexican Lily	May	June	July
	Belladonna	Belladon. Lily	July	Aug.	Sept.
	lutea	yellow	Sept.	Oct.	e. Oct.
	Sarniensis	Guernsey Lily	Sept.	Oct.	b. Nov.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI. 1.	PANCRATIUM	PANCRATIUM,			
		sp. 19.			
	maritimum	sea	e. May	June	July
	speciosum	showy	e. May	July	Aug.
	Canarience	Canary	June	July	Aug.
	Carolinianum	Caroline	June	July	Aug.
	NARCISSUS	NARCISSUS,			
		sp. 54.			
	<i>Pseudonarcis.</i>	Lent Lily	<i>b. Mar.</i>	<i>e. Mar.</i>	<i>April</i>
	<i>β. Daffodilla</i>	Garden Daff.	<i>b. Mar.</i>	<i>e. Mar.</i>	<i>April</i>
	<i>Spurius</i>	bastard Daff.	<i>e. Mar.</i>	<i>b. April</i>	<i>April</i>
	<i>Poëticus</i>	poetic	<i>b. May</i>	<i>m. May</i>	<i>e. May</i>
	<i>patellaris</i>	spreading	<i>b. May</i>	<i>May</i>	<i>May</i>
	<i>biflorus</i>	Primrose			
		Peerless	<i>e. April</i>	<i>b. May</i>	<i>e. May</i>
	Poëtic. verus	true Poets	<i>b. May</i>	<i>May</i>	<i>May</i>
	angustifolius	narrowleaved	<i>m. April</i>	<i>e. April</i>	<i>May</i>
	tenuior	slender	<i>b. May</i>	<i>May</i>	<i>May</i>
	recurvus	drooping	<i>b. May</i>	<i>May</i>	<i>May</i>
	crenulatus	Bazelman mi- nor	<i>March</i>	<i>April</i>	
	Trewianus	Hermione	<i>March</i>	<i>April</i>	
	floribundus	Primo Citro- nier	<i>March</i>	<i>April</i>	<i>April</i>
	Orientalis	Oriental	<i>March</i>	<i>April</i>	
	fistulosus	hollowstalked	<i>b. April</i>	<i>April</i>	
	cerinus	waxy	<i>b. April</i>	<i>April</i>	
	papyraceus	papery	<i>b. Mar.</i>	<i>April</i>	
	Italicus	Italian	<i>b. April</i>	<i>m. April</i>	<i>e. April</i>
	tereticaulis	slender stalk.	<i>March</i>	<i>April</i>	
	compressus	compressed	<i>March</i>	<i>April</i>	
	bifrons	jonquil scent.	<i>March</i>	<i>April</i>	
primulinus	Primrose	<i>March</i>	<i>April</i>		
Jonquilla	Jonquil	<i>e. Mar.</i>	<i>April</i>	<i>May</i>	
calathinus	great Jonquil	<i>m. Mar.</i>	<i>April</i>	<i>b. May</i>	
odorus	sweetscented	<i>e. Mar.</i>	<i>April</i>	<i>b. May</i>	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI.	NARCIS. <i>cont.</i>	NARCISSUS			
	nutans	nodding	March	April	May
	infundibularis	funnelflower.	March	April	May
	pulchellus	pretty	e. Mar.	April	May
	triandrus	triandrus	April	May	
	capax	wide	April	May	
	montanus	mountain	e. April	May	May
	galanthifolius	snowdrop-leaved	March	April	
	albicans	whitish	March	April	May
	Bulbocodium	Hoop Petticoat	March	April	
	inflatus	bladder	April	May	
	lobulatus	lobed	April	May	
	tenuifolius	slenderleaved	April	May	
	incomparabil.	peerless	e. Mar.	April	b. May
	moschatus	musk	March	April	
	tortuosus	twisted	e. Mar.	April	
	serratus	sawed	March	April	
	tubiflorus	tubeflowered	b. April	April	May
	bicolor	Butter and Eggs	b. April	April	May
	obvallaris	Sibthorp's	e. Mar.	April	
	major	Greater Daff.	March	April	
	propinquus	allied	March	April	
	nobilis	noble	March	April	
	Sabini	Sabines	March	April	
	M'Leaii	M'Leai's	March	April	
	Ajax	giant	April	April	May
	pumulis	small	e. Mar.	April	May
minor	lesser Daffodil	e. Mar.	April		
viridiflorus	greenflowered	Aug.	Sept.	Oct.	
serotinus	leaf	Aug.	Sept.	Oct.	
LILIUM	LILY, sp. 18.				
candidum	white	e. June	July	e. July	
bulbiferum	orange	b. June	e. June	July	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI.	LILIUM, <i>cont.</i>	LILY, sp. 18.			
1.	<i>β.umbellatum</i>	umbelflower.	b. June	e. June	July
	Pomponium	yellow Pom- poon	<i>e. May</i>	<i>June</i>	<i>e. June</i>
	<i>β. Pomponi- um rubrum</i>	red Pompoon	May	June	June
	Japonicum	white Japan	July	e. July	Aug.
	Catesbaei	Catesby's	July	July	Aug.
	monadelphum	monadelphius	June	July	e. July
	Philadelphi- cum	Philadelphian	July	July	
	Chalcedoni- cum	scarlet Mar- tagon	e. June	July	b. Aug.
	Martagon	purple Mar- tagon	<i>e. June</i>	<i>July</i>	<i>b. Aug.</i>
	Canadense	Canadian	m. July	July	Aug.
	tigrinum	tiger	<i>b. July</i>	<i>e. July</i>	<i>e. Aug.</i>
	Dahuricum	Dahurian	—	July	
	Pyreniacum	Pyraean	—	July	
	rumm	little	—	June	
	longiflorum	longflowered	May	June	
	Carolinarum	Carolina	Sept.	Oct.	
	ALLIUM	GARLICK, sp. 53.			
	<i>Ampelopratum</i>	greatheaded	July	Aug.	Nov.
	Porrum	Leek	e. Mar.	April	May
	nigrum	Homer's Moly	June	July	Aug.
	sativum	common Gar- lick	June	July	Aug.
	ascolonicum	Shallot	June	July	Aug.
	Cepa	Onion	June	July	Aug.
	Moly	great yellow	b. June	June	July
	Schoenopru- sum	Chives.	b. June	June	July
	Ursinum	Ramsons	e. June	May	June

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI. 1.	FRITILLARIA	FRITILLARY, sp. 11.			
	Imperialis	Crown Impe- rial	<i>e. Mar.</i>	<i>April</i>	<i>May</i>
	<i>Maeleagris</i>	Chequered Daffodil	<i>b. April.</i>	<i>April</i>	<i>May</i>
	Persica	Persian	<i>b. April</i>	<i>April</i>	<i>b. May</i>
	Pyrenaica	Pyrenean	<i>e. April</i>	<i>May</i>	<i>e. May</i>
	nigra	black	<i>e. April</i>	<i>May</i>	<i>e. May</i>
	lanceolata	lanceolate	<i>b. May</i>	<i>May</i>	<i>e. May</i>
	latifolia	broadleaved	<i>April</i>	<i>b. May</i>	<i>May</i>
	racemosa	branching	<i>April</i>	<i>b. May</i>	<i>May</i>
	obliqua	violetflowered	<i>April</i>	<i>b. May</i>	<i>May</i>
	lutea	yellow	<i>April</i>	<i>b. May</i>	<i>May</i>
	EUCOMIS	EUCOMIS, sp. 7.			
		G.			
	undulata	waved	<i>March</i>	<i>April</i>	<i>May</i>
	UVULARIA	UVULARIA, sp. 6.			
	grandiflora	greatflowered	<i>May</i>	<i>May</i>	<i>June</i>
	ERYTHRONIUM	DOGSTOOTH VIOLET			
	Dens Canis	common	<i>m. Mar.</i>	<i>e. Mar.</i>	<i>e. April</i>
	Americanum	golden	—	<i>April</i>	
	TULIPA	TULIP			
<i>Sylvestris</i>	wild yellow	<i>m. April</i>	<i>e. April</i>	<i>b. May</i>	
suaveolens	Van Thol	<i>e. Mar.</i>	<i>April</i>	<i>e. April</i>	
praecox	Clarimond	<i>b. April</i>	<i>m. Apr.</i>	<i>b. May</i>	
Clusiana	Clusius	—	<i>June</i>		
Gesneriana	standard, β . γ . δ . ϵ . ζ .	<i>e. April</i>	<i>m. May</i>	<i>b. June</i>	
biflora	Russian	<i>e. April</i>	<i>May</i>		
breyeniana	Melanthium or Cape	<i>e. May</i>	<i>June</i>		
turcica	wavy	<i>April</i>	<i>May</i>		
Oculus Solis	Sun's Eyes	<i>April</i>	<i>May</i>		

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI.	TULIPA, <i>cont.</i>	TULIP			
1.	Celsiana	Cels	June	July	
	cornuta	horned	—	May	
	ORNITHOGA-LUM	STAR OF BETH-LEHEM, sp. 29.			
	<i>umbellatum</i>	greater white	<i>April</i>	<i>May</i>	<i>June</i>
	<i>nutans</i>	lesser	April	May	June
	uniflorum	Siberian	e. May	June	July
	<i>Pyreniacum</i>	Pyrennean	June	July	e. July
	pyramidale	pyramidal	b. June	June	July
	fimbriatum	fringed	Feb.	March	March
	<i>luteum</i>	yellow	March	April	May
	GAGEA	GAGEA, sp. 5.			
	<i>Serotina</i>	Welch	June	July	
	HERNBERGIA	HERNBERGIA, sp. 2.			
	Colchiciflora	Hungarian	m. Sept.	e. Sept.	Oct
	SCILLA	SQUILL, sp. 17.			
	maritima	official	e. April	May	July
	Italica	Italian	m. Apr.	May	June
	Peruviana	Starry	<i>m. May</i>	<i>b. June</i>	<i>e. June</i>
	amoena	nodding	March	April	May
	praecox	early	March	April	May
	campanulata	Spanish	b. May	e. May	June
	<i>bifolia</i>	twoleaved	March	b. April	April
	<i>verna</i>	vernal	<i>e. April</i>	<i>May</i>	<i>e. May</i>
	Lusitanica	Portuguese	b. May	May	June
	Romana	Roman	e. April	May	June
	hyacinthoides	hyacinth	b. Aug.	Aug.	Sept.
	Liliohyacin- thus	lilyrooted	May	June	July
	HYACINTHUS	JACINTH			
	<i>non scriptus</i>	Harebell	<i>b. April</i>	<i>e. April</i>	<i>June</i>
	β <i>carneus</i>	pale pink	<i>b. April</i>	<i>e. April</i>	<i>June</i>
	Orientalis	common	<i>b. Mar.</i>	<i>b. April</i>	<i>May</i>

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI. 1.	HYACINTHUS,	JACINTH			
	<i>continued</i> <i>β. γ. δ.</i>	near 100 va- rieties	March	April	May
	amethystinus	amathyst	April	May	
	corymbosus	corymbore	July	Aug.	Nov.
	Romanus	Roman	—	May	
	Muscari	Musk	April	May	
	comosus	purple grape	b. April	e. April	May
	monstrosus	feathered	e. May	June	e. June
	botryoides	blue grape	m. Mar.	b. April	May
	racemosus	starch	March	April	May
	ciliatus	ciliated	March	April	May
	CYANELLA	CYANELLA,			
		sp. 2. G.			
	capensis	blue	—	July	
	lutea	yellow	—	July	
	ASPHODELUS	ASPHODEL,			
		sp. 7.			
	luteus	Jacob's staff	e. April	e. May	June
	racemosus	King's spear	b. May	e. May	June
	fistulosus	onionleaved	e. May	May	July
albus	white	m. May	June	July	
ANTHERICUM	ANTHERICUM,				
	sp. 31.				
Liliago	grassy	May	June		
Liliastrum	Savoy spider- wort	May	June		
pomeridanum	afternoon flowered	June	July		
vespertinum	evening flowered	Aug.	Sept.		
NARTHECIUM	NARTHECIUM				
<i>ossifragum</i>	Lancashire Asphodel	e. June	b. July	Aug	
Americanum	American	June	July		

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI. 1.	LEONTICE	LION'S LEAF, sp. 3.			
	<i>Leontaepe- tulum</i>	common			
	CONVALLARIA	SOLOMON'S SEAL, sp. 11.			
	<i>Majalis</i>	Lily of the Valley, β . γ .	m. May	b. June	e. June
	<i>polygonatum</i>	sweetscented	m. May	b. June	e. June
	<i>multiflora</i>	manyflowered	m. May	b. June	e. June
	POLYANTHES	TUBEROSE			
	<i>tuberosa</i>	common G.	Aug.	Sept.	
	<i>gracilis</i>	graceful S.	Aug.	Sept.	
	PHORMIUM	FLAX LILY			
	<i>tenax</i>	irisleaved G.	—	Aug.	
	LACHENALIA	LACHENALIA, sp. 28. G.			
	<i>tricolor</i>	threecolored	March	April	
	VELTHEIMIA	VELTHEIMIA			
	<i>viridifolia</i>	greenleaved	b. Jan.	April	
	<i>Uvaria</i>	orange-flower.	Aug.	Sept.	
	ALETRIS	ALETRIS			
	<i>farinosa</i>	mealy	e. May	June	
	<i>aurea</i>	golden	b. July	Aug.	
	YUCCA	ADAM'S NEEDLE sp. 11.			
<i>gloriosa</i>	broadleaved	b. July	Aug.		
ALOE	ALOE, sp. 91. S.				
<i>viscora</i>	triangula	May	June	July	
AGAVE	AGAVE, sp. 11.				
<i>Virginia</i>	Virginian	Aug.	Sept.		
HEMEROCAL- LIS	DAY LILY				
<i>flava</i>	yellow	e. May	June	e. June	
<i>graminea</i>	grassleaved	June	June	July	

Class and Order.	Names of the Planets.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI. 1.	HEMEROCAL- LIS, <i>cont.</i>	DAY LILY			
	<i>fulva</i>	Copper Lily	<i>a. June</i>	<i>b. July</i>	<i>b. Aug.</i>
	<i>alba</i>	Japanese	Aug.	Sept.	
	<i>coerulea</i>	blue	May	June	
	<i>disticha</i>	spreading	May	June	
	AGAPANTHUS	AFRICAN LILY sp. 2. G.			
	<i>umbellatus</i>	large	<i>b. July</i>	<i>m. July</i>	<i>Dec.</i>
	<i>praecox</i>	early	Aug.	Sept.	Dec.
	BULBOCODIUM	BULBOCODIUM			
	<i>vernum</i>	Spanish	m. Feb.	March	April
	ACORUS	SWEET FLAG			
	<i>calamus</i>	British	June	July	Aug.
	ORONTIUM	ORONTIUM, sp. 2.			
	<i>japonicum</i>	Japanese	March	April	June
	JUNCUS	RUSH, sp. 19. all aest.			
	<i>squarrosus</i>	goose corn	June	July	Aug.
	LUZULA	LUZULA, sp. 7.			
	<i>Forsteri</i>	Forster's	June	July	Aug.
	PRINOS	WINTER BERRY sp. 6.			
	<i>verticulatus</i>	verticillated	July	Aug.	
BERBERIS	BARBARY, sp 7.				
<i>vulgaris</i>	COMMON	m. Apr.	May	June	
FRANKENIA	SEA HEATH, sp. 4.				
<i>pulverulosa</i>	powdery	—	July		
PEPLUS	WATER PURS- LANE				
<i>portula</i>	COMMON	July	Aug.		
ASPARAGUS	SPARROW GRASS, sp. 17.				
<i>officinalis</i>	COMMON	b. June	July		

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI.	OPHIOPOGON	SNAKESBEARD			
1.		sp. 2. G.			
	<i>Japonicus</i>	Japanese	e. May	June	
	<i>spicatus</i>	blue	e. Sept.	Oct.	
VI.	ATRAPHAXIS	ATRAPHAXIS,			
2.		sp. 2.			
	<i>spinosa</i>	Levant	—	Aug.	
VI.	OXYRIA	MOUNTAIN			
3.		SORREL			
	<i>acida</i>	common	June	July	Aug.
	RUMEX, sp. 3.	DOCK, sp. 31.			
	<i>Patientia</i>	garden Pati- ence	June	July	
	<i>sanguineus</i>	bloody	June	July	Aug.
	<i>alpinus</i>	Monk's Rhu- barb	June	July	Aug.
	<i>Acetosa</i>	garden Sorrel	June	July	Aug.
	<i>Acetosella</i>	sheep's Scrael	May	June	July
	MELANTHIUM	MELANTHIUM,			
		sp. 10.			
	<i>Virginicum</i>	Virginian	June	July	
	TRILLIUM	TRILLIUM,			
		sp. 9.			
	<i>cernuum</i>	drooping	April	May	
	<i>album</i>	white	April	May	
	<i>β. purpureum</i>	purple	April	May	
	<i>sessile</i>	sessile	b. April	April	May
	COLCHICUM	MEADOW SAF- FRON, sp. 5.			
	<i>autumnal</i>	common	e. Sept.	b. Oct.	e. Oct.
	<i>variegatum</i>	variegated	e. Sept.	b. Oct.	e. Oct.
	<i>Byzantium</i>	Constanti- nople	e. April	May	
	<i>arenarium</i>	Hungarian	Sept.	Oct.	
	<i>versicolor</i>	Crimean	Sept.	Oct.	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VI. 3.	HELONIAS <i>asphodeloides</i> <i>bullata</i>	HELONIAS, sp. 9. grassy spearleaved	May April	June May	June
VI. 6.	DAMASONIUM <i>Indicum</i>	DAMASONIUM Indian	June	July	
VI. Poly	ALISMA <i>plantago</i> <i>Damasonium</i>	WATER PLAN- TAIN, sp. 7. great starry	e. June b. July	July July	Aug.
VII. 1.	AESCHYLUS <i>Hippocasta- num</i> <i>Pavia</i> <i>flava</i>	HORSE CHES- NUT, sp. 8. common redflowered yellowflower.	<i>b. May</i> m. May m. May	<i>e. May</i> June June	<i>e. June</i> <i>e. June</i> <i>e. June</i>
	TRIENTALIS <i>Europaea</i>	WINTER GREEN European	May	June	July
VII. 2.	LIMEUM <i>Africanum</i>	LIMEUM. G. African	—	July	
VII. 3.	SAURURUS <i>cernerus</i>	LIZARD'S TAIL sp. 3. drooping	—	Sept.	
VII. 4.	SEPTAS <i>globiflora</i>	SEPTAS, sp. 3. globeflowered	Aug.	Aug.	Sept.
VIII. 1.	TROPOEOLUM <i>minus</i> <i>majus</i> <i>peregrinum</i>	INDIAN CRESS, sp. 5. smaller Nasturtiums fringed	<i>b. June</i> <i>e. June</i> <i>e. June</i>	<i>Aug.</i> <i>July</i> July	<i>Oct.</i> <i>Oct.</i> Oct.
	RHEXIA <i>Mariana</i>	RHEXIA Our Lady's	June	July	Aug.
	OENOTHERA <i>biennis</i>	TREE PRIM- ROSE, sp. 24. Evening Prim.	<i>e. June</i>	Aug.	Sept.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species	English Names.			
VIII. 1.	OENOTHERA,	TREE PRIM-			
	sp. 24. <i>cont.</i>	ROSE, sp. 24.			
	<i>grandiflora</i>	greatflowered	b. July	Aug.	Sept.
	<i>parviflora</i>	smallflowered	b. July	Aug.	Sept.
	<i>nocturna</i>	nightsmelling G.	June	July	Oct.
	GAURA	GAURA, sp. 5.			
	<i>biennis</i>	biennial	b. Aug.	Sept.	Oct.
	EPILOBIUM	WILLOW HERB			
	<i>angustifolium</i>	narrowleaved	b. July	Aug.	Sept.
	<i>hirsutum</i>	Codlings and Cream	b. July	July	Aug.
	<i>parviflorum</i>	smallflowered	b. July	July	Aug.
	<i>mentanum</i>	mountain	b. July	July	Aug.
	<i>tetragonum</i>	squarestalked	b. July	July	Aug.
	<i>roseum</i>	rosecolored	b. July	July	Aug.
	<i>palustra</i>	marsh	b. July	July	Aug.
	<i>alpinum</i>	Alpine	June	July	Aug.
	<i>alpestre</i>	Heartleaved	June	July	Aug.
	<i>alsinefolium</i>	chickenweed- leaved	e. June	July	Aug.
	<i>angustissim.</i>	rosemarileav.	b. July	July	Sept.
	<i>latifolium</i>	broadleaved	e. June	July	Aug.
<i>coloratum</i>	German	b. July	July	Aug.	
OXYCOCCOS	CRANBERRY,				
<i>palustris</i>	sp. 3. English	May	June	Aug.	
VACCINIUM	WHORTLEBER.				
<i>Myrtillus</i>	sp. 35. Bleaberry	April	May	b. July	
<i>Vitis Idaea</i>	Bilberry	April	May	b. July	
<i>Uliginosum</i>	bog	April	May	b. July	
ERICA	HEATH, sp. 343				
<i>cinerea</i>	mostly G. fineleaved	June	July	Sept.	
<i>tetralix</i>	crossleaved	June	July	Aug.	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
VIII.	ERICA, <i>cont.</i>	HEATH			
1.	<i>vagans</i>	Ling	June	July	Aug.
	<i>vulgaris</i>	Cornish	e. Mar.	April	
	DAPHNE	LAUREL OF APOLLO, sp. 14.			
	<i>Mezereon</i>	Mezereon	e. Feb.	m. Mar.	April
	<i>Laureola collina</i>	Surge Laurel Italian	Jan. e. Feb.	March March	May April
	STELLORA	SPURIOUS SPARROW-WORT			
	<i>passerina</i>	common	—	July	Sept.
	PASSERINA	SPARROW-WORT. G.			
	<i>filiformis</i>	filiform	June	July	Aug.
VIII.	MOCHRINGIA	MOCHRINGIA			
2.	<i>muscosa</i>	mossy	June	July	Aug.
VIII.	POLYGONUM	PERSICARY,			
3.		sp. 31.			
	<i>orientale</i>	common	b. July	July	Oct.
	<i>Bistorta</i>	Snakeweed	e. May	June	Sept.
	<i>Hydropiper minus</i>	Water Pepper lesser	e. July Aug.	Aug. Sept.	Oct. Oct.
	<i>Persicaria</i>	Persicary	July	Aug.	Sept.
	<i>Fagopyrum convolvulus</i>	Buckwheat black bind-weed	July	Aug.	Sept.
VIII.	ELATINE	WATERWORT			
4.	<i>Hydropiper</i>	small	—	Aug.	
	PARIS	HERB PARIS			
	<i>quadrifolia</i>	True Love	May	June	July
	ADOXA	MOSCHATEL			
	<i>moschatellina</i>	tuberosa	April	May	June
IX.	LAURUS	LAUREL, sp. 19.			
1.	<i>nobilis</i>	Sweet Bay	April	May	
	<i>Diospyrus</i>	twiggy	April	May	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
IX. 2.	RHEUM	RHUBARB, sp. 9.			
	<i>rhaponticum</i> <i>palmatum</i>	common officinal	May May	June June	July July
IX. 3.	BUTOMUS	FLOWERING RUSH			
	<i>umbellatus</i>	common	e. June	July	Sept.
	RUTA	RUE, sp. 8.			
	<i>graveolens</i>	common	June	July	Sept.
	ZYGOPHYL- LUM	BEAN CAPER, sp. 7.			
	<i>Tabago</i>	common	b. Aug.	Aug.	Sept.
	MONOTROPA	BIRD'S NEST			
	<i>Hypopithys</i>	yellow	June	July	Aug.
	RHODODEN- DRON	ROSE BAY, sp. 16.			
	<i>ferrugineum</i>	Swiss	May	June	
	<i>Dauricum</i>	Dawrian			
	<i>Ponticum</i>	common	m. May	June	e. June
	ANDROMEDA	ANDROMEDA, sp. 25.			
	<i>Polyfolia</i>	wild Rose- mary	—	July	
	PYROLA	WINTER GREEN, sp. 7.			
	<i>rotundifolia</i>	roundleaved	June	July	Aug.
	ARBUTUS	STRAWBERRY TREE, sp. 5.			
	<i>Unedo</i>	common	Sept.	Oct.	Dec.
	<i>Uva ursi</i>	Bearberry	b. May	June	b. July
X. 2.	SAXIFRAGA	SAXIFRAGE, sp. 77.			
	<i>Crassifolia</i>	Siberian	e. Mar.	April	May
	<i>ambrosa</i>	London Pride	April	May	e. June
	<i>Geum</i>	kidneyleaved	b. June	July	July
	<i>Herculus</i>	yellow marsh	e. July	Aug.	Sept.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
X. 2.	SAXIFRAGA,	SAXIFRAGE,			
	<i>continued.</i>	sp. 77.			
	<i>oppositifolia</i>	early	m. Mar.	April	May
	<i>granulata</i>	grained	e. April	May	June
	SCHLERAN- THUS	KNAWEL, sp. 2.			
	<i>annuus</i>	annual	July	e. Aug.	Sept.
	<i>perennis</i>	perennial	Aug.	Sept.	Oct.
	SAPONARIA	SOAPWORT,			
		sp. 6.			
	<i>officinalis</i>	officinal	July	Aug.	Oct.
	DIANTHUS	PINK, sp. 50.			
	<i>barbatus</i>	Sweet Wil- liams	m. June	July	b. Aug.
	<i>Armeria</i>	Deptford	e. June	July	Aug.
	<i>deltoides</i>	maiden	b. July	July	Aug.
	δ . <i>imbricosa</i>	Wheatear	m. July	July	Aug.
	Carthusiano- rum	Carthusian	b. July	e. July	Aug.
	<i>atrorubens</i>	red Italian	b. July	July	Aug.
	<i>Prolifer</i>	Proliferous	b. July	July	Aug.
	<i>hortensis</i>	garden	e. June	July	Aug.
	<i>Chinensis</i>	Indian	b. June	July	e. July
	<i>superbus</i>	fringed	July	Aug.	Sept.
	<i>caesius</i>	mountain	June	July	e. July
	<i>glaucus</i>	glaucous	b. July	July	Aug.
<i>Caryophyllus</i>	wild Clove	e. June	July	b. Aug.	
β . <i>hortorum</i>	garden Pink	b. June	e. June	b. July	
γ . <i>albus</i>	Clove Gilli- flower	b. June	e. June	July	
δ . <i>grandis</i> *	Carnation	b. July	July	Aug.	
δ . <i>imbricatus</i>	wheatear	b. July	July	Aug.	
ϵ . <i>fruticosus</i>	Tree Carna.	b. July	July	Aug.	

* Our common garden Pinks flower in June with the Roses, and are a month earlier than the Carnations, which flower in July.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species	English Names.			
X. 3.	CUCUBALUS	CUMPION			
	<i>otides</i>	Spanish	m. July	b. Aug.	Aug.
	<i>baccifer</i>	berrybearing	June	July	July
	SILENE	CATCHFLY,			
		sp. 88.			
	<i>inflata</i>	Bladder Cam- pion	May	June	Sept.
	<i>noctiflora</i>	nightflower.	e. June	July	b. Aug.
	<i>nyctantha</i>	Nightflower	June	July	Aug.
	<i>nocturna</i>	nightsmelling	e. June	July	Aug.
	STELLARIA	STITCHWORT,			
		sp. 12.			
	<i>holostea</i>	greater	e. Mar.	e. April	June
	<i>graminea</i>	lesser	m. Apr.	May	July
	ARENARIA	SANDWORT,			
		sp. 30.			
	<i>peploides</i>	Sea Chick- weed	June	July	
	CHERLERIA	CHERLERIA			
	<i>sedoides</i>	stonecrop	—	July	Aug.
	COTYLEDON	NAVELWORT,			
		sp. 17.			
<i>umbellicus</i>	Wall Penny- wort	b. June	June	July	
<i>lutea</i>	yellow	b. June	June	July	
<i>orbiculata</i>	roundleaved	e. June	July	Sept.	
SEDUM	STONECROP,				
	sp. 41.				
<i>Telephium</i>	Orpine	July	Aug.	Sept.	
<i>maximum</i>	great Orpine	July	Aug.	Sept.	
Anacampseros	evergreen Or- pine	July	Aug.	Sept.	
<i>dasyphyllum</i>	roundleaved	—	June		
<i>Forsterianum</i>	Forster's	June	July	Aug.	
<i>reflexum</i>	reflex	e. June	July	Aug.	
<i>glaucum</i>	glaucous	e. June	July	Aug.	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
X. 4.	SEDUM, cont.	STONECROP			
	<i>rapestre</i>	rock	June	July	Aug.
	<i>album</i>	white	June	July	Aug.
	<i>acre</i>	Wall Pepper	June	July	Aug.
	<i>ungulatum</i>	English	e. June	July	Sept.
	<i>villosum</i>	villous	June	July	Aug.
	OXALIS	WOODSORREL, sp. 67.			
	<i>Acetosella</i>	common	e. Mar.	m. Apr.	May
X. 5.	AGROSTEMMA	ROSE CAM- PION, sp. 5.			
	<i>Githago</i>	Corn Cockle	e. June	July	b. Aug.
	<i>Coronaria</i>	garden	b. June	b. July	Sept.
	<i>Coeli Rosa</i>	Rose of Para- dise	e. June	July	Aug.
	<i>Flos Jovis</i>	Flower of Jove	e. June	July	Aug.
	LYCHNIS,	LYCHNIS, sp. 10.			
	<i>coronata</i>	Chinese	June	July	Aug.
	<i>Flos Cuculi</i>	Ragged Rob- bin	m. May	June	b. July
	β . flore pleno	Double	m. May	June	July
	<i>diurna</i>	Red Campion	b. May	June	July
	β . flore peno	Red Bache- lor's Buttons	b. May	June	July
	<i>vespertina</i>	whiteflowered	e. May	June	Aug.
	<i>viscaria</i>	viscid	May	June	June
	<i>Chalcedonica</i>	Scarlet Light- ning	e. June	b. July	Aug.
	CERASTIUM	MOUSE EAR CHICKWEED, sp. 24.			
<i>vulgatum</i>	common	April	May	June	
SPERGULA	SPARCY, sp. 5.				
<i>saginoides</i>	Pearlewort	—	June		

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
X. 10.	PHYTOLACCA decandra	PHYTOLACCA, sp. 5. Virginian Poke	July	Aug.	Sept.
XI. 1.	ASARUM Europaeum	ASARABACCA, sp. 3. European	—	May	
	HALESIA	SNOWDROP TREE, sp. 2.			
	PEGANUM Hermala	SYRIAN RAL common, aest.	July	Aug.	Sept.
	LYTHRUM <i>Salicaria</i> <i>hyssopifolium</i>	SALICARY, sp. 7. aest. com. purple hyssopleaved	e. June b. July	e. July July	e. Aug. Aug.
XI. 2.	AGRIMONIA <i>Eupatoria</i> odorata	AGRIMONY, sp. 6. aest. common sweetscented	e. June June	July July	Aug. Aug.
X. 3.	RESEDA <i>luteola</i> <i>lutea</i>	WELD, sp. 16. Dyer's Weed yellow	— b. July	July e. July	Aug.
	EUPHORBIA Caput Me- dusæ <i>Peplis</i> <i>Peplus</i> <i>Helioscopia</i> <i>Platyphyllos</i> <i>characias</i>	SPARGE, sp. 123. Medusa's Head, G. purple, aest. petty, aest. Sun Sparge Wartwort red, prim.	— b. July b. July m. July b. July March	Aug. July July July April	Sept. Sept. e. Aug. Aug. July
XI. 4.	CALLIGONUM Pallusia	CALLIGONUM Caspian	e. July	Aug.	e. Aug.
XI. 5.	GLINUS lotoides	GLINUS hairy, aest.	—	July	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XI. 6.	SEMPERVIVUM	HOUSELEAK, sp. 21.			
	<i>tectorum</i> <i>orachnoideum</i>	common roof Cobweb	July June	Aug. July	Sept. Aug.
XII. 1.	CACTUS	CACTUS, sp. 58.			
	<i>Opantia</i> <i>melveactus</i>	Indian Fig Turkscap	July July	Aug. Aug.	Sept. Sept.
Icos. 1.	PHILADEL- PHUS	MOCK ORANGE sp. 4.			
	<i>Coronarius</i> MYRTUS	com. Syringa MYRTLE, sp. 10.	May	June	b. July
	<i>Communis</i> AMYGDALUS	common ALMOND, sp. 6.	July	Aug.	Sept.
	<i>Persica</i>	Peach	m. Mar.	April	b. May
	β . <i>Nectarina</i>	Nectarine	m. Mar.	April	b. May
	γ . <i>plena</i>	doubleflower.	March	April	e. April
	<i>nana</i>	dwarf	March	April	e. April
	<i>communis</i>	com. Almond	b. Mar.	April	e. April
	CERAEUS	CHERRY			
	<i>Padus</i>	wild bird cherry			
	<i>rubra</i>	Cornish	b. April	April	b. May
	<i>avium</i>	small	e. April	May	b. June
	<i>cerasus</i>	cultivated	b. April	April	b. May
	β . <i>praecox</i>	Madock	April	April	b. May
	γ . <i>cordiformis</i>	Hart	April	April	b. May
	δ . <i>rotunda</i>	Kentish	April	April	b. May
	e . <i>serotina</i>	Morella	e. April	May	e. May
	PRUNUS	PLUM			
	<i>domestica</i>	cultivated			
	β . <i>grandis</i>	large Egg	b. April	April	b. May
	γ . <i>purpurea</i>	Orleans	m. April	April	m. May
	δ . <i>viridis</i>	Green Gage	m. Apr.	April	m. May
	e . <i>praecox</i>	red early	e. Mar.	April	e. April
	ζ . η . θ . ι . κ λ .	varieties	April	April	May

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species	English Names.			
XII.	PRUNUS, <i>cont.</i>	PLUM			
1.	<i>insitiva</i>	Green Bullace	April	April	May
Icos.	β . Damaseniam	Damson	April	April	May
1.	<i>spinosa</i>	Blackthorn	m. Apr.	e. April	b. May
	<i>Cerusifera</i>	Marobalan Plum	April	April	May
	ARMENIACA	APRICOT, sp 2.			
	<i>vulgaris</i>	com. β . γ . δ .	<i>e. Feb.</i>	<i>b. April</i>	<i>e. April</i>
	<i>Siberica</i>	Siberian	<i>b. Mar.</i>	<i>b. April</i>	<i>e. April</i>
XII.	CRATEGUS	HAWTHORN,			
2.		sp. 17.			
Icos.	<i>Oxycantha</i>	Whitethorn			
2.		or May	<i>b. May</i>	<i>m. May</i>	<i>m. June</i>
	<i>torminalis</i>	wild Service	<i>b. May</i>	<i>m. May</i>	<i>m. June</i>
	<i>coccinea</i>	scarletfruited	April	May	<i>e. May</i>
	<i>Pyracantha</i>	Evergreen Thorn	May	May	June
XII.	MESPILUS	MEDLAR			
3.	<i>Germanica</i>	common	June	June	July
Icos.	CHAENOMELES	CHAENOMELES			
3.	<i>Pyrus Japon.</i>	common	<i>e. Mar.</i>	<i>e. April</i>	June
	PYRUS	PEAR			
	<i>communis</i>	common	April	April	May
	β . <i>aestivalis</i>	Summer	<i>b. April</i>	<i>m. Apr</i>	<i>b. May</i>
	γ . δ . <i>autumn.</i>	Autumn	<i>m. Apr.</i>	<i>e. April</i>	<i>m. May</i>
	MALUS	APPLE			
	<i>communis</i>	common wild	<i>m. Apr.</i>	<i>e. April</i>	<i>e. May</i>
	β . <i>praecoses</i>	Summer	<i>m. Apr.</i>	<i>e. April</i>	<i>e. May</i>
	γ . <i>serotinae</i>	Winter	<i>e. April</i>	<i>e. May</i>	<i>b. June</i>
	<i>prunifolia</i>	Siberian Crab	<i>e. April</i>	May	<i>b. June</i>
	<i>ballata</i>	small Crab	<i>e. April</i>	May	June
	<i>praecox</i>	early flower.	<i>b. April</i>	<i>m. Apr</i>	<i>b. May</i>
	<i>Aria</i>	white Beam	<i>e. April</i>	May	<i>b. June</i>
	SORBUS	SERVICE			
	<i>domestica</i>	True Service	May	June	<i>e. June</i>
	<i>pinnetifida</i>	Bastard Serv.	May	June	<i>e. June</i>

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XII.	SORBUS, <i>cont.</i>	SERVICE			
3.	<i>Aucuparia</i>	MountainAsh	May	June	e. June
Icos.	CYDONIA	QUINCE, sp. 2.			
3.	<i>communis</i>	common	May	May	June
	TETRAGONIA	TETRAGON,			
	<i>expansa</i>	sp. 8. New Zeland Spinach	b. Aug.	Sept.	e. Sept.
XII.	MESSEMBRI-	FIG MARIGOLD			
4.	ANTHEMUM	sp. 210. aest.			
Icos.		G.			
Pent.	<i>spectabilis</i>	showy	May	June	Aug.
	<i>aureum</i>	golden	March	April	Oct.
	SPIRAEA	SPIRAEA, sp. 20.			
	<i>Salicifolia</i>	Willowleaved	b. June	e. June	e. July
	<i>Filipendula</i>	Dropwort	June	July	Aug.
	<i>Ulmaria</i>	Meadow Sweet	June	July	Aug.
Icos.	ROSA	ROSE, sp. 58.			
5.	<i>rubella</i>	longfruited Scotch	e. April	May	June
	<i>Spinossissima</i>	Scotch, $\beta.$ $\gamma.$ $\delta.$ $\epsilon.$ $\zeta.$	e. May	June	e. June
	<i>micrantha</i>	small	e. May	June	b. July
	<i>envoluta</i>	involute	b. June	June	July
	<i>tomentosa</i>	downy	e. May	June	July
	<i>Hibernica</i>	Irish	May	June	July
	<i>rubiginosa</i>	Sweetbriar	May	June	July
	<i>arvensis</i>	field	May	June	July
	<i>canina</i>	Hip or Dog Rose	May	June	b. July
	<i>systilla</i>	clustered dog			
	<i>Damascena</i>	Damask	m. June	July	e. July
	$\beta.$ $\gamma.$ $\delta.$ $\epsilon.$ $\zeta.$ $\theta.$ &c.	10 varieties			
	<i>centifolia</i>	pink garden	b. June	June	b. July

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XII.	ROSA, cont.	ROSE			
5.	$\beta. \gamma. \delta. \epsilon. \zeta. \theta. \& c.$	20 varieties			
Icos.	Provincialis	Provincial	e. May	e. June	b. July
Poly.	$\beta. \gamma. \delta. \& c.$	14 varieties			
	Callron	officinal	b. June	June	m. July
	$\beta. \gamma. \delta.$	sp. 5.			
	moschata	musk, $\beta.$	June	June	July
	alba	white, $\beta. \gamma. \delta.$	e. May	June	b. July
	semperflorous	Chinese	May	June	Nov.
	<i>villosa</i>	villous	e. May	June	b. July
	<i>muscosa</i>	moss	m. June	June	e. July
	<i>sulphurea</i>	double yellow	e. June	July	Aug.
	<i>lutea</i>	yellow	May	June	e. June
	Indica	Chinese	Jan.	June	Dec.
	Alpina	Alpine	e. April	May	b. June
	<i>lutescena</i>	yellowish	May	June	e. June
	RUBUS	BRAMBLE, sp. 33.			
	<i>Idaeus</i>	Raspberry $\beta. \gamma.$	May	June	e. June
	<i>caesius</i>	Dewberry	June	July	Aug.
	<i>fruticosus</i>	Blackberry	June	July	Sept.
	<i>saberectus</i>	Redberry	June	July	Aug.
	<i>corilifolius</i>	hazel leaved	June	July	Aug.
	<i>sexatiles</i>				
	<i>chamaemorus</i>	cloudberry	June	July	Aug.
	CORCHORUS	CORCHORUS			
	Japonica	yellow	e. Mar.	e. April	Sept.
	FRAEGARIA	STRAWBERRY, sp 9.			
	<i>vesca</i>	Wood, $\beta. \gamma.$	b. May	e. May	June
	<i>elatior</i>	Hautboy	—	—	—
	<i>collina</i>	Alpine, $\beta. \gamma.$	—	—	—
	<i>indica</i>	Indian	—	—	—
	Virginiana	Scarlet	—	—	—
	<i>grandiflora</i>	Pine, $\beta. \gamma.$	—	—	—
	<i>Chilensis</i>	Chili, $\beta. \gamma. \delta.$	—	—	—

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XII.	FRAGARIA cont.	STRAWBERRY			
5.	monophylla	oneleaved	June	e. June	b. July
Icos.	sterilis	barren	—	—	—
Poly.	POLENTILLA	CINQUEFOIL, sp. 39.			
	<i>fruticosa</i>	shrubby	e. June	July	Aug.
	<i>anserina</i>	Wild Tansy	June	July	Aug.
	<i>rupestris</i>	rock	June	July	Aug.
	<i>argentea</i>	Silver Weed	b. July	July	Aug.
	<i>reptans</i>	creeping	e. July	Aug	Sept.
	<i>grandiflora</i>	greatflowered	June	July	Aug.
	TORMENTILLA	SEPTFOIL, sp. 2.			
	<i>officinalis</i>	officinal	e. June	July	Aug.
	<i>reptans</i>	creeping	e. June	July	Aug.
	GEUM	AVENS, sp. 13.			
	<i>rivale</i>	water	m. Apr.	May	Aug.
	<i>intermedium</i>	wood	m. May	June	Aug.
	<i>urbanum</i>	Herb Benet	e. May	June	Aug.
	DRYAS	DRYAS			
	<i>octopetala</i>	mountain	July	Aug.	Sept.
	COMANIUM	MARSH CIN- QUEFOIL			
	<i>palustre</i>	common	June	July	Aug.
XIII.	ACTAEA	HERB CHRIS- TOPHER			
1.					
Poly	<i>spicata</i>	Baneberry	May	June	e. June
Mon.	<i>Americana</i>	American	May	June	June
	SANGUINARIA	BLOODWORT			
	<i>Canadensis</i>	Canadian or Pacoon	e. Mar.	b. April	e. April
	GLAUCIUM	HORNED POPPY, sp. 4.			
	<i>lutum</i>	yellow	b. July	July	Aug.
	<i>fulvum</i>	fulvus	b. July	July	Aug.
	<i>phoeniceum</i>	crimson	e. June	July	e. July
	<i>violaceum</i>	violet	e. May	June	e. June

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species	English Names.			
Poly. 1.	PAPAVER	POPPY, sp. 12.			
	<i>Somniferum</i>	garden	m. June	July	Oct.
	β . plenum	double	—	—	—
	γ . nigro se- mine	blackseeded	—	—	—
	δ . cinero se- mine	Maw	—	—	—
	ϵ . luteo se- mine	yellowseeded	—	—	—
	ζ . album	large officinal	—	—	—
	<i>Rhaeas</i>	red or Corn Rose	m. June	July	Oct.
	<i>dubium</i>	pale red	m. June	July	Oct.
	<i>Argemone</i>	long rough	m. May	b. June	e. June
	<i>hybridum</i>	bastard	e. June	July	Aug.
	<i>Oriente</i>	monkey	m. May	b. June	e. June
	<i>brachteatum</i>	largeflowered	m. May	b. June	e. June
	<i>Caucasicum</i>	Caucasian	June	July	e. July
	<i>floribundum</i>	manyflowered	June	July	e. July
	<i>Cambricum</i>	Welch	m. May	June	Aug.
	<i>alpinum</i>	Alpine	June	July	b. Aug.
	<i>nudicaule</i>	nakedstalked	m. May	June	July
	β . flavum	sulphurcolor.	m. May	June	July
	ARGEMONE	ARGEMONT			
	<i>Mexicana</i>	Mexican	m. July	Aug.	e. Aug.
	NUPHAR	WATER LILY, sp. 4. sols.			
	<i>luteum</i>	yellow	June	July	Aug.
<i>minimum</i>	little yellow	June	July	Aug.	
NYMPHAEA	WATER LILY, sp. 15 sols,				
<i>alba</i>	whiteflowered	June	July	Aug.	
<i>odorata</i>	sweetscented	e. June	July	Aug.	
Lotus	Egyptian Lotus, S.	—	—	—	
<i>pubescens</i>	Indian Lotus	—	—	—	

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names			
Poly. 1.	TILIA	LIME TREE, sp. 5. sols. common	June	July	e. July
	<i>Europaea</i>				
	CISTUS	ROCK ROSE, sp. 65. sols.			
	<i>Helsianthemum</i>	Little Sunflower	e. June	July	e. Aug.
	<i>guttatus</i>	spotflowered	e. June	July	b. Aug.
	<i>tomentosus</i>	tomentose			
	CORCHORUS	CORCHORUS			
	Japonicus	Chinese	e. Mar.	April	Sept.
Poly. 2.	PAEONIA	PIONY, sp. 18. vern.			
	<i>Corallina</i>	British	May	June	e. June
	<i>officinalis</i>	officinal	m. May	June	e. June
	β . <i>rosea</i>	rosecolored	m. May	e. May	e. June
	γ . <i>rubra</i>	deep crimson	m. May	e. May	e. June
	δ . <i>carnescens</i>	fleshcolored	m. May	e. May	e. June
	ϵ . <i>albicans</i>	whitish	m. May	e. May	e. June
	ζ . <i>blanda</i>	bluish	May	e. May	June
	Montan	Chinese, γ . δ . ϵ .	May	June	June
	<i>peregrina</i>	peregrine, γ . δ .	m. May	e. May	b. June
	<i>daurica</i>	Daurian	m. May	June	June
	<i>humilis</i>	Spanish Dwarf	m. May	e. May	June
	<i>anomala</i>	jagged	May	e. May	June
	<i>tenuifolia</i>	slenderleaved	b. May	m. May	e. May
	Byzantina	Constanti-			
	nople	e. May	June	b. July	
	<i>albiflora</i>	eatable, β . γ .			
		δ . ζ . &c.	e. May	June	June
Poly. 3.	DELPHINIUM	LARKSPUR, sp. 24.			
	<i>Censolida</i>	English	June	July	b. Aug.
	<i>Ajaxis</i>	Rocket	m. June	July	b. Aug.
	<i>grandiflorum</i>	largeflowered	June	July	e. July
	β . <i>plenus</i>	double	June	July	e. July

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.	
	GENUS & Species.	English Names				
Poly. 3.	DELPHI. <i>cont.</i>	LARKSPUR				
	<i>Pictum</i>	painted	March	May	Aug.	
	<i>aconiti</i>	aconitellared	June	July	e. July	
	<i>chroleucum</i>	sulphur	July	Aug.	Sept.	
	ACONITUM	WOLFSBANE, sp.				
	<i>Lycoctonum</i>	great yellow	e. June	July	Aug.	
	<i>Anthora</i>	wholesome	June	June	July	
	<i>Napellus</i>	Monkshood	<i>e. May</i>	<i>June</i>	<i>e. July</i>	
	<i>pyramidale</i>	pyramidal	b. June	June	July	
	<i>Cummarum</i>	purple	June	July	Aug.	
Poly. 4.	Septemtrion. <i>uncinatum</i>	Northern hookseeded	e. June June	July July	Aug. Aug.	
	CIMICIFUGA	BUGWORT, sp. 4. sols.				
	<i>foetida</i>	fetid	June	July	b. Aug.	
	<i>Serpentaria</i>	Black snake- root	June	July	Aug.	
	Poly. 5.	AQUILEGIA	COLUMBINE, sp. 8.			
		<i>vulgaris</i>	com. β . γ . δ .	b. May	e. May	June
		<i>hybrida</i>	twocolored	b. May	May	June
		<i>viridiflora</i>	greenflowered	May	May	June
		<i>atropurpurea</i>	dark purple	May	June	June
		NIGELLA	FENNELFLOW. sp. 6. sols.			
<i>Damascena</i>		Love in a mist	<i>m. June</i>	<i>July</i>	<i>Sept.</i>	
<i>Sativa</i>		Devil in a bush	<i>m. June</i>	<i>July</i>	<i>Sept.</i>	
<i>Hispanica</i>		Spanish	<i>e. June</i>	<i>July</i>	<i>Sept.</i>	
<i>Orientalis</i>		Lyrian	June	July	Sept.	
Poly. 6.	STRATIOTES	WATER SOLDIER				
	<i>aloides</i>	common	June	July	e. July	
	LILIODENDRON <i>Tulipifera</i>	TULIP TREE common	e. June	July	e. July	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
Poly. Poly.	MAGNOLIA	MAGNOLIA, sp. 15. vern. and sols.			
	grandifolia	greatflowered	June	July	Aug.
	glanea	swamp	June	July	Aug.
	ANEMONE	WINDFLOWER, vern.			
	Coronaria	Poppy Ane- mony	April	May	June
	pratensis	meadow	b. May	May	e. June
	hortensis	StarAnemony	Jan.	e. April	e. June
	nemorosa	Wood	b. April	m. April	May
	apennina	Apennine	April	May	e. May
	PULSATILLA	PASQUE FLOW.			
	pascalis	common	April	May	e. May
	alpina	alpine	e. June	July	e. July
	HEPATICA	LIVERWORT			
	nobilis	noble	b. Feb.	March	April
	β. coerulea	single blue	—	—	—
	γ. coerulea				
	plena	double blue	—	—	—
	δ. rubra	single red	—	—	—
	ε. rubra plena	double red	—	—	—
	ζ. alba	red anthered	—	—	—
	η. nivea	snowy white	—	—	—
	CLEMATIS	VIRGIN'S BOWER, sp. 24.			
	Cirrhosa	Evergreen	March	April	b. May
	Viticella	purple	June	July	Sept.
	integrifolia	entireleaved	e. June	July	Oct.
	vitalba	Traveller's Joy	b. July	Aug.	Sept.
	Flammula	Sweetscented	July	Sept.	Oct.
	THALICTRUM	MEADOW RUE, sp. 32.			
	majus	greater	May	June	July

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
Poly.	THALICT. <i>cont.</i>	MEADOW RUE			
Poly.	<i>minimum</i>	lesser	May	June	July
	<i>aquilegiafol.</i>	Austrian	May	June	June
	ADONIS	PHEASANT'S EYES			
	<i>aestivalis</i>	tall	May	June	
	<i>autumnalis</i>	common	e. April	May	e. Oct.
	<i>vernalis</i>	spring	March	April	e. April
	RANUNCULUS	CROWFOOT, sp. 44. nearly all vern.			
	<i>Auricomus</i>	Goldilocks	b. April	e. April	b. May
	<i>bulbosus</i>	bulbous	m. Apr.	b. May	e. June
	<i>repens</i>	creeping	e. April	e. May	b. July
	<i>acris</i>	Buttercups	e. April	e. May	b. July
	β. <i>plenus</i>	Yellow Ba- chellor's But.	e. April	b. May	e. June
	TROLLIUS	GLOBEFLOWER vern.			
	<i>Europaeus</i>	yellow	b. May	m. May	b. June
	<i>Asiaticus</i>	orange	b. May	m. May	b. June
	<i>Americanus</i>	American	May	June	
	<i>intermedius</i>	intermediate	b. May	June	e. June
	<i>hybridus</i>	hybrid	May	June	
	COPTIS	COPTIS			
	<i>trifolia</i>	threleaved Hellebore	June	July	
	ERANTHIS	ERANTHUS			
	<i>hyemalis</i>	yellow Helle- bore	e. Jan.	Feb.	b. Mar.
	HELLEBORUS	HELLEBORE			
	<i>niger</i>	Christmas Rose	b. Jan.	b. Feb.	e. Feb.
	<i>viridis</i>	Green	e. Feb.	March	b. April
	<i>foetidus</i>	Bearsfoot	m. Feb.	March	b. April
	<i>lividus</i>	spotleaved	m. Feb.	March	b. April

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
Poly.	CALTHA	MARSH MARI-GOLD			
Poly.	<i>palustris</i>	common	e. Mar.	m. Apr.	b. May
	<i>rudicans</i>	toothleaved	c. Mar.	April	b. May
	AJUGA	BUGLE, sp. 9.			
	<i>reptans</i>	common	e. April	m. May	b. June
	<i>Chamaepitys</i>	Ground Pine	June	July	e. July
	TEUCRIUM	GERMANDER, sp. 42.			
	<i>Scorodonia</i>	Wood Sage	e. June	July	e. July
	<i>Chanaedrys</i>	Wall	e. June	July	e. July
	SATUREJA	SAVORY, sp. 8.			
	<i>montana</i>	winter	May	June	June
	<i>hortensis</i>	summer	May	June	June
	HYSSOPUS	HYSSOP, sp. 5.			
	<i>officinalis</i>	common	June	July	Sept.
	NEPETA	CAT MINT, sp. 26.			
	<i>cataria</i>	common	July	Aug.	Sept.
	LAVANDULA	LAVENDER, sp. 9.			
	<i>Spica</i>	common	July	Aug.	Sept.
	<i>stocatus</i>	French	May	June	July
XIV.	SIDERITIS	IRONWORT, sp. 14.			
1.	<i>elegans</i>	darkflowered	b. June	June	e. June
Didy.	MENTHA	MINT, sp. 34.			
Gym.	<i>villosa</i>	horse	b. July	July	Aug.
	<i>Sylvestris</i>	wild	b. July	Aug.	Sept.
	<i>rotundifolia</i>	roundleaved	July	Aug.	Sept.
	<i>viridis</i>	spear	July	Aug.	Sept.
	<i>Palustris</i>	marsh	e. Aug.	Sept.	Sept.
	<i>piperita</i>	Peppermint	b. Aug.	m. Aug.	e. Aug.
	<i>odorata</i>	Bergamot	m. July	Aug.	e. Aug.
	<i>crispa</i>	curled	July	Aug.	Sept.
	<i>hirsuta</i>	rough	Aug.	Sept.	Sept.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIV.	MENTHA, cont.	MINT, sp. 34.			
1.	<i>acutefolia</i>	sharpleaved	Aug.	Sep.	Sept.
Didy.	<i>variegata</i>	variegated	e. Aug.	Sept.	e. Sept.
Gym.	<i>sativa</i>	full red	e. July	Aug.	e. Aug.
	<i>Pulegium</i>	Pennyroyal	e. Aug.	Sept.	e. Sept.
	<i>gentilis</i>	cardiac	m. July	July	Aug.
	GLECHOMA	ALEHOOF, sp. 2.			
	<i>hederacea</i>	Ground Ivy	e. Mar.	m. Apr.	b. May
	<i>hirsuta</i>	Hungarian	March	April	May
	LAMIUM	DEAD NETTLE			
		sp.			
	Orvale	balmleaved	May	June	July
	Garganicum	woolly Spanish	June	July	b. Aug.
	<i>purpureum</i>	purple Dead Nettle	Jan.	b. April	Dec.
	<i>album</i>	white Arch-angel	b. April	April	June
	<i>amplexicaule</i>	Henbit	March	April	June
	GALEOPSIS	HEMP NETTLE			
	<i>Ladanum</i>	red	b. July	e. July	e. Aug.
	<i>Tetrahit</i>	common	e. July	Aug.	e. Aug.
	<i>versicolor</i>	Bee Nettle	e. July	Aug.	e. Aug.
	<i>villosa</i>	yellow flower.	b. July	Aug.	e. Aug.
	<i>galeabdolon</i>	yellow	m. Apr.	b. May	e. June
	BETONICA	BETONY, sp. 7.			
		aest.			
	<i>officinalis</i>	wood	m. July	Aug.	e. Aug.
	<i>grandiflora</i>	Siberian	m. June	July	b. Aug.
	<i>Alopecuros</i>	Foxtail	b. July	July	b. Aug.
	STACHYS	HEDGE NETT.			
		sp. 30.			
	<i>arvensis</i>	corn	b. July	July	e. Aug.
	<i>sylvatica</i>	wood	b. July	July	e. Aug.
	<i>palustris</i>	Allheal	m. July	Aug.	b. Sept.
	<i>ambigua</i>	doubtful	e. June	July	Aug.
	<i>coccinea</i>	scarlet	July	Aug.	Sept.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIV.	BALLOTA	HENBIT,			
1.		sp. 3.			
Didy.	<i>nigra</i>	black	b. July	Aug.	e. Aug.
Gym.	MARRUBIUM	HOREHOUND,			
		sp. 13.			
	<i>vulgare</i>	common	June	July	Sept.
	LEONURUS	MOTHERWORT			
		sp. 6.			
	<i>cardiaca</i>	Cardiac	e. June	July	b. Aug.
	PHLOMIS	PHLOMIS,			
		sp. 11.			
	Lunarifolia (Bill 1043.)	JerusalemSage	20June	b. July	b. Aug.
	Lychnitis	Candlestick	e. June	July	Aug.
	Herba venti	Herb of the Wind	b. July	July	Sept.
	<i>tuberosa</i>	tuberooted	b. June	July	Oct.
	Sainia	large Grecian	June	July	b. Aug.
	CHIROPODIUM	WILD BASIL,			
		sp. 2.			
	<i>vulgare</i>	common	e. June	July	e. Aug.
	ORIGANUM	MARJORAM,			
		sp. 12.			
	Dictamnus	Dittany of Crete	June	July	Aug.
	<i>vulgare</i>	common	June	July	Sept.
	Marjoriana	sweet	b. July	July	e. Aug.
	THYMUS	THYME, sp. 20.			
	<i>serpyllum</i>	wild	June	July	Aug.
	<i>vulgaris</i>	common	May	June	Aug.
	Alcinos	Basil	June	July	Aug.
	MELISSA	BALM, sp. 8.			
	<i>officinalis</i>	common	June	July	Oct.
	Calamintha	Greater Ca- lamint	e. July	Aug.	e. Aug.

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIV.	MELISSA, <i>cont.</i>	BALM			
1.	Nepeta	Lesser Calamint	e. July	Aug.	e. Aug.
Didy.					
Gym.	DRACOCEPHALUM	DRAGONS-HEAD, sp. 16.			
	Virginianum	Virginian	20 July	b. Aug.	Sept.
	Canariense	Balm of Gilead	June	b. July	Sept.
	grandiflorum	greatflowered	June	b. July	b. Aug.
	MELLITIS	BASTARD BALM sp. 2.			
	<i>Melissophyllum</i>	common	May	b. June	b. July
	grandiflora	greatflowered	May	b. June	b. July
	OCYMUM	BASIL. sp. 17. aest.			
	Monachorum	Monk's Basil	July	b. Aug.	Sept.
	gratissimum	shrubby	July	b. Aug.	Sept.
	minimum	Bush	July	b. Aug.	Sept.
	suave	sweet	July	b. Aug.	Sept.
	Brasilicum	common	July	b. Aug.	Sept.
	SCUTELLARIA	SCULCAP, sp. 17. aest.			
	<i>galericulata</i>	common	June	b. July	Sept.
	<i>minor</i>	lesser	June	b. July	Sept.
	PRUNELLA	SELFHEAL, sp. 7. aest.			
	<i>vulgaris</i>	common	b. July	e. July	Aug.
	grandiflora	Austrian	m. July	Aug.	Sept.
XIV.	RHINANTHUS	YELLOW			
2.		RATTLE, sp. 7. solst.			
Didy.	<i>Crista Galli</i>	cockscorn	e. May	June	b. July
Ang.	<i>β versicolor</i>	particolored	—	—	—
	BARTSIA	PAINTED CUP, sp. 4.			
	<i>viscosa</i>	clarima	June	July	Aug.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIV. 2.	BARTSIA, <i>cont.</i>	PAINTED CUP			
	<i>alpina</i>	alpine	b. July	e. July	Sept.
Didy. Ang.	EUPHRASIA	EYEBRIGHT, sp. 3.			
	<i>Odontites officinalis</i>	red officinal	July b. July	Aug. July	Sept. Aug.
	GERARDIA	GERARDIA, sp. 5.			
	<i>flava</i>	yellow	b. July	July	Aug.
	<i>purpurea</i>	purple	b. July	July	Aug.
	LATHERAEA	TOOTHWORT			
	<i>squamaria</i>	great	b. April	April	April
	PEDICULARIS	LOUSEWORT, sp. 16.			
	<i>palustris</i>	march	June	—	—
	<i>sylvatica</i>	wood	June	—	—
	PENSTEMNON	PENSTEMNON, sp. 8.			
	Campanulata	Mexican	June	—	Oct.
	LINARIA	TOADFLAX, sp. 38. aest.			
	<i>hirta</i>	hairy	July	Aug.	e. Aug.
	<i>Elatine</i>	Fluellin	July	—	Sept.
	<i>triphylla</i>	threeleaved	e. June	July	Sept.
	<i>trioirnthrophora</i>	Birdshead	e. June	July	Sept.
	<i>purpurea</i>	Italian	e. June	July	Sept.
	<i>Spartia</i>	Spanish	e. June	July	Sept.
	<i>tristis</i>	darkflowered	July	Aug.	Sept.
	<i>Alpina</i>	Alpine	m. July	Aug.	Nov.
	<i>vulgaris</i>	common	e. July	Aug.	Sept.
	<i>β. Peloria</i>	Spurious	e. July	Aug.	Sept.
	ANTIRHINUM	SNAPDRAGON			
	<i>Orontium</i>	Calf's snout	July	Aug.	Sept.
	<i>Asarina</i>	Italian	m. July	e. July	e. Aug.

Class and Order.	Names of the Plants.		Begin- ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIV.	ANARRHINUM	ANARRHINUM			
2.	<i>bellidifolium</i>	daisileaved	e. June	July	Aug.
Didy.	SCROPHULA-	FIGWORT,			
Ang.	RIA	sp. 29.			
	<i>nodosa</i>	knobrooted	e. May	June	Aug.
	<i>aquatica</i>	water	e. May	June	Aug.
	<i>Scorodonea</i>	balmleaved	b. July	e. July	Aug.
	<i>vernalis</i>	yellow	m. Apr.	May	—
	CELSIA	CELSIA, sp. 7.			
	<i>Areturus</i>	Bearstail	July	Aug.	Sept.
	<i>cretica</i>	great	July	Aug.	Sept.
	DIGITALIS	FOXGLOVE,			
		sp. 18.			
	<i>purpurea</i>	common	June	July	Aug.
	<i>β. alba</i>	white	June	July	Aug.
	<i>ambigua</i>	Swiss	June	July	Aug.
	<i>Orientalis</i>	Levant	July	Aug.	Sept.
	<i>ochroleuca</i>	German	June	July	Aug.
	<i>leucophæa</i>	Grecian	July	Aug.	Oct.
	BIGNONIA	TRUMPET-			
		FLOWER			
	<i>Capriolata</i>	N. America	June	July	Aug.
	<i>Pandoræ</i>	Pandorus	March	—	June
	VERBENA	VERVAIN,			
		sp. 16.			
	<i>officinalis</i>	officinal	May	June	Aug.
	<i>salvifolia</i>	sageleaved	June	July	Sept.
	LANTANA	LANTANA			
	<i>odorata</i>	Sweet Vervain	May	June	Nov.
	<i>melissifolia</i>	balmleaved	July	Aug.	Sept.
	LINNÆA	LINNÆA			
	<i>borealis</i>	common	May	June	July
	SIBTHORPIA	SIBTHORPIA			
	<i>Europæa</i>	Cornish Mo- neywort	b. Aug.	Aug.	Sept.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIV.	LIMOSELLA	MUDWORT			
2.	<i>aquatica</i>	water	b. Aug.	Aug.	Sept.
Didy.	OROBANCHE	BROOMRAPE			
Ang.	<i>major</i>	larger	June	July	Aug.
	<i>minor</i>	lesser	July	Aug.	Aug.
	<i>rubra</i>	red	Aug.	—	—
	<i>coerulea</i>	blue	July	—	—
	MIMULUS	MONKEY- FLOWER			
	<i>luteus</i>	yellow	b. June	e. June	July
	<i>aurantiacus</i>	orange	June	July	Aug.
	<i>ringens</i>	gaping	July	Aug.	Sept
	<i>alatus</i>	wingstalked	July	Aug.	Sept.
	VITEX	CHASTETREE,			
		sp. 9.			
	<i>Agnus Castus</i>	common	e. Aug.	Sept.	Oct.
	ACANTHUS	ACANTHUS,			
		sp. 5.			
	<i>mollis</i>	soft	July	Aug.	Sept.
	<i>Spinus</i>	Italian	July	Aug.	Sept.
XV.	BUNIAS	BUNIAS			
1.	<i>cakile</i>	Sea Rocket	June	July	Sept.
Tetr.	MYAGRUM	GOLD OF PLEA- SURE, sp. 5.			
Silic.	<i>perenne</i>	German	b. July	July	Aug.
	<i>Austriacum</i>	Austrian	June	July	Aug.
	CRAMBE	COLEWORT,			
		sp. 3.			
	<i>maritima</i>	Sea Kale	May	June	July
	ISATIS	WOAD			
	<i>tinctoria</i>	dyers'	May	June	e. June
	VELLA	CRESSROCKET			
	<i>annua</i>	annual	e. May	June	July
	<i>Pseudocypisus</i>	shrubby	April	May	e. May
	ANASTATICA	ANASTATICA			
	<i>trienchuntica</i>	Rose of Jericho	June	July	Aug.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XV. 1. Tetr Silic.	SUBULARIA	AWLWORT			
	<i>aquatica</i>	water	e. June	July	e. July
	DRABA	WHITLOW GRASS			
	<i>aizoides</i>	hairy	b. Mar.	April	e. April
	<i>verna</i>	early	b. Mar.	April	May
	<i>muralis</i>	wall	e. April	May	b. June
	LEPIDIUM	PEPPERWORT, sp. 16.			
	<i>latifolium</i>	Dittander	June	July	e. July
	<i>Salivum</i>	Garden Cress	b. June	July	e. July
	<i>campestre</i>	field	b. June	July	e. July
	<i>rudérale</i>	narrowleaved	June	July	Aug.
	THLASPI	BASTARD CRESS, sp. 7.			
	<i>arvense</i>	Penny Cress	June	July	Aug.
	<i>alliaceum</i>	garlic	b. July	Aug.	b. Sept.
	<i>Bursa Pasto- ris</i>	Shepherd's Purse	b. April	e. April	e. May
	COCHLEARIA	SCURVY GRASS sp. 9.			
	<i>officinalis</i>	common	May	June	e. June
	<i>Armoracia</i>	Horse Radish	May	June	b. July
	CORONOPUS	SWINE'S CRESS sp. 2.			
	<i>Ruellii</i>	common	June	July	Aug.
IBERIS	CANDYTUFT				
<i>amara</i>	bitter	m. June	July	Sept.	
<i>umbellata</i>	purple	e. June	July	Sept.	
<i>corifolia</i>	corisleaved	April	May	June	
CAMELINA	CAMELINA				
<i>Sativa</i>	cultivated	May	June	July	
ALYSSUM	MADWORT, sp. 12.				
<i>maritimum</i>	sweet Alysson	May	June	Nov.	
<i>saxatile</i>	yellow Alysson	e. Mar.	April	e. May	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XV.	ALYSSUM, <i>cont.</i>	MADWORT			
1.	Olympicum	Grecian	March	April	May
Tetr.	FARSETIA	FARSETIA,			
Silic.		sp. 6.			
	delsoidea	PurpleAlysson	March	April	May
	cheiranthoides	stock	June	July	b. Aug.
	VESICARIA	VESICARY			
	utricalata	smooth	April	May	b. June
	LUNARIA	MOONWORT			
	annua	Honesty	<i>e. Mar.</i>	<i>m. April</i>	<i>May</i>
	rediviva	perennial	<i>b. May</i>	June	—
XV.	DENTARIA	TOOTHWORT,			
2.		sp. 5.			
Tetr.	<i>bulbifera</i>	bulbbearing	<i>e. April</i>	May	<i>e. Mar.</i>
Silic.	CARDAMINE	LADYSMOCK,			
		sp. 8.			
	<i>bellidifolia</i>	daisileaved	April	May	—
	<i>hirsata</i>	rough	<i>b. May</i>	June	<i>e. June</i>
	<i>amara</i>	bitter	<i>e. April</i>	<i>m. May</i>	June
	<i>pratensis</i>	Cuckooflower	6 April	<i>m. Apr.</i>	May
	SISYMBRIUM	SISYMBRIUM,			
		sp. 14.			
	<i>officinale</i>	common	May	June	July
	<i>Sophia</i>	Flixweed	<i>m. June</i>	<i>b. July</i>	<i>e. July</i>
	Irio	broadleaved	July	Aug.	<i>b. Sept.</i>
	BARBAREA	WINTERCRESS			
	<i>vulgaris</i>	bitter	May	June	Aug.
	<i>praecox</i>	early	April	May	Oct.
	NASTURTIIUM	NASTURTIIUM,			
		sp. 6.			
	<i>officinale</i>	Water Cress	May	June	July
	<i>Sylvestre</i>	creeping	June	—	Sept.
	<i>amphibium</i>	Water Radish	June	—	Aug.
	ERYSEMUM	HEDGE MUE-			
		TARD, sp. 11			
	<i>Alliaria</i>	Sause alone	<i>e. April</i>	<i>m. May</i>	<i>e. May</i>

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names			
XV. 2.	ERYSEMUM, <i>continued.</i>	HEDGE MUS- TARD			
	<i>Cheiranthoides</i>	Wormseed	e. June	July	Aug.
	<i>Helveticum</i>	Swiss	May	June	b. July
	CHEIRANTHUS	WALLFLOWER			
		sp. 10.			
	<i>Cheiri</i>	common	b. April	e. April	b. June
	β . <i>multifer</i>	double	e. Mar.	April	July
	<i>fruticulosus</i>	shrubby, &c.	b. April	e. April	b. June
	<i>mutabilis</i>	changeable	March	April	May
	<i>Armeniacus</i>	Armenian	May	—	—
	<i>scoparius</i>	chamaeleon	April	—	Oct.
	MATTHIOLA	GILLYFLOWER			
		sp. 9.			
	<i>incana</i>	stock	e. April	e. May	July
	β . <i>rubra</i>	double red	e. April	May	Oct.
	γ . <i>purpurea</i>	double purple	e. April	May	Oct.
	δ . <i>alba</i>	double white	e. April	May	Oct.
	<i>annua</i>	fenwreak	April	June	July
	<i>sinuata</i>	sinuate	May	June	July
	<i>fenestralis</i>	window	May	July	Aug.
	<i>tristis</i>	darkflowered	e. June	June	July
	HELIOPHILA	HELIOPHILA,			
	sp. 7.				
<i>incana</i>	hoary	May	June	Aug.	
<i>araboides</i>	blueflowered	June	July	b. Aug.	
MALEOMIA	SEA ROCKET,				
	sp. 4.				
<i>maritima</i>	dwarf stock	May	June	July	
HESPERIS	ROCKET, sp. 5.				
<i>tristis</i>	nightsmelling	e. April	May	June	
<i>matronalis</i>	Dames Violet	m. May	e. May	e. June	
β . <i>alba plena</i>	double white	—	—	—	
γ . <i>purpurea</i>	double purple				
<i>plena</i>		b. May	e. May	e. June	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XV. 2.	ARABIS	WALL CRESS, sp. 19.			
	<i>ciliata</i>	Irish	June	July	b. Aug.
	<i>alpina</i>	alpine	March	April	May
	<i>thaliana</i>	common	April	May	June
	<i>turrita</i>	tower	e. April	May	e. May
	<i>stricta</i>	upright	May	June	b. July
	<i>hispida</i>	Welch	May	June	July
	TURRITIS	TOWER MUS- TARD, sp. 5.			
	<i>glabra</i>	smooth	May	June	b. July
	Lorselli	annual	e. July	Aug.	b. Sept.
	BRASSICA	CABBAGE, sp. 11.			
	Rapa	Rape	e. May	June	July
	<i>Napus</i>	Turnip	April	May	b. June
	<i>Campestris</i>	Navew	e. May	June	b. July
	<i>oleracca</i>	esculent	May	June	July
	β . capitata	white	—	—	—
	γ . rubra	red	—	—	—
	δ . subauda	Savoy	—	—	—
	ϵ . sabellica	Boreale	—	—	—
	ζ . botrytis	Cauliflower	May	July	Oct.
	η . Broccoli	Broccoli	April	May	Oct.
	θ . napbrassica	turniprooted	—	—	—
	SINAPIS	MUSTARD, sp. 19.			
<i>arvensis</i>	kidlock	e. April	e. May	July	
<i>alba</i>	white	e. May	June	July	
<i>nigra</i>	black	e. May	June	July	
<i>tenuifolia</i>	slender	b. July	e. July	Oct.	
<i>muralis</i>	wall	b. July	e. July	Sept.	
RAPHANUS	RADISH, sp. 5.				
Rhaphanist- rum	Charlock	b. June	July	Aug.	
maritimus	Sea	—	—	—	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XV. 2.	RAPHANUS, <i>continued.</i>	RADISH			
	<i>sativus</i>	Radish	—	—	—
XVI. 1.	FIGRIDIA	TIGERFLOWER			
mon. tria.	<i>pavonia</i>	sp. 1. Mexican	May	June	Aug.
XVI. 2.	ERODIUM	HERONSBILL, sp. 19.			
mon. pent.	<i>cicutarium</i>	hemlockleav.	April	May	Aug.
	<i>moschatum</i>	musky	June	July	Aug.
	<i>chamaedryoi.</i>	little	April	May	Aug.
XVI. 3.	PELARGONIUM	STORKSBILL, sp. 160.			
mon. hept	<i>inquinans</i>	scarlet	June	July	Oct.
	<i>selinum</i>	curly	April	May	June
	<i>lobatum</i>	lobeleaved	e. June	July	Sept.
	<i>aspernus</i>	multifid	July	Aug.	Sept.
	<i>graveolens</i>	Odor of Rose	March	April	June
	<i>gibbosum</i>	gibbous	May	June	Sept.
	<i>fulgidum</i>	fulgid	May	June	Aug.
XVI. 5.	GERANIUM	CRANESBILL, sp. 43.			
mon. dec.	<i>sylvaticum</i>	wood	b. June	July	e. July
	<i>sanguineum</i>	pike Ger.	e. May	June	Aug.
	<i>Lancastrien.</i>	Lancashire	b. June	July	Aug.
	<i>Phaetum</i>	dark	April	May	July
	<i>Robertianum</i>	Herb Robert	29 Apr.	May	Aug.
	<i>molle</i>	Dove's foot	May	June	b. July
	<i>pratense</i>	meadow	June	b. July	July
	<i>rotundifolium</i>	roundleaved	e. June	July	Aug.
	<i>sylvaticum</i>	wood	m. June	July	Aug.
	<i>nodosum</i>	knotty	May	June	Aug.
	<i>Pyrenaicum</i>	mountain	May	June	July
	<i>lucidum</i>	shining	May	June	Aug.
	<i>Columbinum</i>	Colmubine	e. June	July	Aug.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XVI. 5. mon. dec.	GERANIUM, <i>continued.</i> <i>pusillum</i> <i>purpurium</i> <i>Ibericum</i> <i>dissectum</i>	CRANESBILL small purple Iberian jagleaved	June May June May	July June July June	b. Aug. Aug. Aug. July
XVI. mon. Poly.	ALTHAEA <i>officinalis</i> <i>rosea</i> <i>ficifolia</i> MALVA <i>rotundifolia</i> <i>sylvestris</i> <i>moschata</i> Alcea LAVATERA <i>arborea</i> Olbia <i>trimestris</i> HIBISCUS Rosa Sinensis Syriacus	MARSH MAL- LOW, sp. 11. common Holyhock Antwerp, H. MALLOW, sp. 48. roundleaved common musk Vervain LAVATERA, sp. 13. Tree Mallow downy common, α . and β . HIBISCUS, sp. 46. China Rose, S Althea frutex	July <i>b. July</i> e. June June <i>b. June</i> <i>b. July</i> <i>b. July</i> e. July June <i>b. July</i> July Aug. July July b. Aug.	Aug. <i>Aug.</i> July July <i>July</i> <i>e. July</i> e. July Aug. July July Aug. Sept.	Sept. <i>e. Sept.</i> Sept. Sept. Sept. b. Sept. Oct. <i>Sept.</i> — e. Sept.
XVII. 2. Diad. hex.	CAMELLIA <i>Japonica</i> CORYDALIS <i>cucularia</i> <i>solida</i> <i>cava</i>	CAMELIA Japan, β . γ . CORYDALIS, sp. 13. naked stalked fostered Fu- mitory hollow Fumi- tory	Feb. June <i>March</i> March	March July <i>April</i> April	May Aug. <i>May</i> May

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XVII.	CORYDALIS,	CORYDALIS			
2.	<i>continued.</i>				
Diad.	<i>lutea</i>	yellow	April	May	Oct.
hex.	<i>claviculata</i>	climbing	June	July	b. Aug.
	FUMARIA	FUMITORY,			
		sp. 5.			
	<i>officinalis</i>	officinal	m. May	e. May	Aug.
	<i>capreolata</i>	ramping	m. May	e. May	Aug.
	<i>parviflora</i>	smallflowered	b. Aug.	e. Aug.	Sept.
	Vesicaria	African	June	July	Aug.
XVII.	POLYGALA	MILKWORT,			
3.		sp. 29.			
Diad.	<i>vulgaris</i>	common	b. May	June	July
oct.	<i>chamaebuxus</i>	Austrian	May	June	July
	Senega	Rattlesnake	e. June	July	Aug.
	<i>purpurea</i>	purple	May	June	July
	<i>lutea</i>	yellow	June	July	Aug.
	<i>viridescens</i>	greenish	b. July	Aug.	Aug.
XVII.	SPARTIUM	BROOM, sp. 20.			
4.	<i>alpinum</i>	alpine	May	June	b. July
Diad.	<i>scoparium</i>	common	April	May	e. June
decan.	<i>juncum</i>	Spanish	July	b. Aug.	Sept.
	<i>multiflorum</i>	Portuguese	May	June	July
	GENISTA	GENISTA,			
		sp. 19.			
	<i>tinctoria</i>	dyers'	June	July	Aug.
	<i>florida</i>	florid	June	July	Aug.
	<i>pilora</i>	Pilore	May	b. June	July
	<i>Anglica</i>	Petty Whin	May	b. June	July
	<i>triquetra</i>	Corsican	May	June	July
	<i>lenifolia</i>	flaxleaved	April	May	July
	ULEX	FURZE			
	<i>nanus</i>	little	April	June	July
	<i>Europaeus</i>	gorse	e. Mar.	e. April	b. July
	ONONIS	RESTHARROW			
	<i>spinosa</i>	spina	June	July	—

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XVII.	ONONIS, <i>cont.</i>	RESTHARROW			
4.	<i>repens</i>	creeping	—	—	—
Diad.	ANTHYLLIS	KIDNEY			
decan.		VETCH			
	<i>vulneraria</i>	common	May	June	July
	<i>alpina</i>	alpine	June	July	Aug.
	Barba Jovis	Jupiter's			
		Beard, G.	April	May	June
	tragacanthoi.	Goatsthorn	June	July	Aug.
	LUPINUS	LUPIN, sp. 13.			
	<i>perennis</i>	N. American	May	June	July
	<i>Nootkasensis</i>	Nootkasound	May	June	July
	<i>arborem</i>	shrubby	June	July	Aug.
	Varius	smallblue	b. July	Aug.	e. Aug.
	<i>hirsutus</i>	greatblue	b. July	Aug.	e. Aug.
	<i>luteus</i>	yellow	b. July	e. July	Aug.
	<i>pilosus</i>	rose	b. July	e. July	Aug.
	PHASEOLUS	KIDNEY BEAN,			
		sp. 20.			
	<i>vulgaris</i>	common	June	July	Sept.
	<i>multiflorus</i>	Scarlet Run- ner	b. July	Aug.	Sept.
	<i>nanus</i>	dwarf	June	July	Aug.
	DOTICHOS	DOTICHOS,			
		sp. 23.			
	Lableb	blackseeded	June	July	Aug.
	Soja	Soy	July	Aug.	e. Aug.
	GLYCINE	GLYCINE			
		sp. 19.			
	<i>Apios</i>	tuberous	e. July	Aug.	e. Aug.
	<i>frutescens</i>	shrubby	b. June	June	b. July
	PISUM	PEA, sp. 4.			
	<i>Sativum</i>	garden	May	June	Aug.
	<i>arvense</i>	field	e. May	June	Aug.
	<i>maritimum</i>	sea	July	July	Aug.
	Ochnes	blackseeded	June	July	Aug.

Class and Order	Names of the Planets.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XVII.	OROBUS	BITTER VETCH			
4.	<i>tuberosus</i>	tuberous	May	June	—
Diad.	<i>sylvaticus</i>	wood	—	—	—
deca.	<i>lathyroides</i>	Lathyrus	e. May	June	—
	LATHYRUS	VETCHLING, sp. 28.			
	<i>Aphaca</i>	common yel- low	June	July	Aug.
	<i>Nissolia latifolius</i>	Crimson Everlasting Pea	May	June	July
	<i>sylvestris</i>	wild Pea	e. June	July	Sept.
	<i>Odoratus</i>	Sweet Pea	e. June	July	Sept.
	VICIA	VETCH, sp. 43.			
	<i>pissiformis</i>	Pea Vetch	b. July	Aug.	Sept.
	<i>Ervilia</i>	official	June	July	Aug.
	<i>onobrychioi. sativa</i>	Saintfoin common	e. May	June	July
	<i>lathyroidis</i>	spring	b. April	May	June
	<i>lutea</i>	yellow	b. July	e. July	Aug.
	<i>Faba</i>	Bean, β . γ . δ .	b. June	July	Aug.
	ERVUM	TARE, sp. 3.			
	<i>Lens</i>	Lentil	May	June	b. July
	<i>tetraspermum</i>	smooth	—	—	—
	CICER	CHICK PEA			
	<i>arietinum</i>	common	b. July	e. July	e. Aug.
	CYTISUS	CYTISUS, sp. 24			
	<i>Laburnum purpureus</i>	Laburnum purple	b. May	e. May	June
	ROBINIA	ROBINIA, sp. 17.			
	<i>Pseudacacia hispida</i>	False Acacia Rose Acacia	May	June	— Sept.
	<i>Halodendron</i>	Salt Tree	—	—	—
	<i>Chamlaga tragacanthoi.</i>	Chinese goatsthorn	— April	— May	— June

Class and Order	Names of the Plants:		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XVII.	COLUTEA	BLADDER SEN-NA, sp. 4.			
4.					
Diad	arborescens	common	June	July	Aug.
deca.	frutescens	scarlet	—	—	—
	cruenta	red	—	—	—
	GLYCYRRHIZA	LIQUORICE, sp. 6.			
	glabra	common	e. June	July	b. Aug.
	CORONILLA	CORONILLA, sp. 11.			
	Emerus	Scorpion Senna	April	May	June
	Secaridaca	Spanish	March	April	May
	ORNITHROPUS	BIRD'S FOOD, sp. 4.			
	<i>perpusillus</i>	serradilla	May	June	b. July
	HIPPOCREPIS	HORSESHOE VETCH, sp. 4.			
	<i>comosa</i>	common	April	May	June
	HEDYSARUM	HEDYSARUM, sp. 55.			
	coronarium	French Ho-neysuckle	June	July	e. July
	<i>Onobrychis</i>	Saintfoin	—	—	—
	Caput Galli	Cockshead	—	—	—
	Crista Galli	Cockscomb	—	—	—
	INDIGOFERA	INDIGO, sp. 21.			
	tinctoria	dyers' S.	b. July	e. July	Aug.
	GALEGA	GOAT'S RUE, sp. 6.			
	officinalis	common	June	July	Aug.
	OXYTROPIS	OXYTROPIS, sp. 12.			
	<i>sordida</i>	Scotch	May	June	Aug.
	montana	mountain	July	Aug.	b. Sept.

Class and Order.	Names of the Plants.		Begin- ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XVII.	ASTRAGALUS	MILK VETCH, sp. 63.			
4.	Christianus	great yellow	e. June	July	e. July
Diad.	<i>Glycyphylus</i>	Wild Liquorice	b. June	e. June	July
deca.	stella	starred	b. July	July	Aug.
	DALEA	DALEA			
	laxiflora	loose	July	e. July	Aug.
	aurea	golden	—	—	—
	PSORALEA	PSORALEA, sp. 26.			
	onobryalus	rough	e. July	Aug.	b. Sept.
	TRIFOLIUM	TREFOIL, sp. 74.			
	<i>officinale</i>	Melilot	e. July	Aug.	—
	coeruleum	blue	—	—	—
	<i>ornithiopodi-</i> <i>oides</i>	birdsfoot	June	July	Aug.
	<i>repens</i>	Dutch Clover	e. May	June	Sept.
	<i>pratense</i>	Clover	—	—	—
	medium	Cowgrass	—	—	—
	LOTUS	BIRDSFOOT TREFOIL, sp. 26.			
	tetragonolob.	winged Pea	July	Aug.	b. Sept.
	edulis	eatable	—	—	—
	corniculatus	common	June	July	Aug.
	TRIGONELLA	FENUGREEK, sp. 12.			
	FoenumGrae- cum	common	e. June	July	Aug.
	MEDICAGO	MEDICK, sp. 39.			
	<i>sativa</i>	Lucern	June	July	—
	<i>lupulina</i>	Nonsuch	May	June	Aug.
	<i>maculata</i>	clover	June	July	—

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XVIII 4.	CITRUS	CITRON, sp. 7. G.			
Polyad.	<i>acida</i>	Lemon	May	June	Aug.
Polyan.	<i>Limonium</i>	Lime	—	—	—
	<i>Aurantium</i>	Orange	—	—	—
	<i>nobilis</i>	Mandarin	—	—	—
	<i>Decumana</i>	Shaddock	—	—	—
	<i>myrtifolia</i>	myrtleleaved	—	—	—
	<i>buxifolia</i>	boxleaved	—	—	—
	HYPERICUM	ST. JOHN'S WORT, sp. 52.			
	<i>perforatum</i>	common	<i>e. June</i>	<i>July</i>	<i>b. Aug.</i>
	<i>calycinum</i>	large	<i>e. June</i>	<i>July</i>	<i>Sept.</i>
	<i>Androsemum</i>	Tussan	<i>e. June</i>	<i>b. July</i>	<i>Sept.</i>
	<i>quadrangu.</i>	square	—	—	—
	<i>pulchrum</i>	upright	—	—	—
	ASCYRUM	ASCYRUM			
	<i>Crux Andrea</i>	St. Andrew's Cross	July	Aug.	<i>b. Sept.</i>
XIX. 1.	<i>hypericoides</i>	hypericum- like	—	—	—
Syng. aequ.	GEROPOGON	OLD MAN'S BEARD, sp. 3.			
	<i>glaber</i>	smooth	<i>m. July</i>	Aug.	<i>b. Sept.</i>
	TRAGOPOGON	GOAT'S BEARD, sp. 9.			
	<i>major</i>	great	May	June	<i>e. June</i>
	<i>pratensis</i>	Yellow Star of Jerusalem	<i>m. May</i>	<i>June</i>	<i>July</i>
	<i>ponifolius</i>	Purple Star of Jerusalem	<i>m. May</i>	<i>June</i>	<i>July</i>
	<i>hybridum</i> *	Red Star of Jerusalem	<i>m. May</i>	June	July

* This variety most resembles the purple species, but has a flower of a redder purple; it flowered at Hartwell in 1824 and 1825.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX.	ARNOPOGON	LAMB'S BEARD			
1.		sp. 3.			
Syn.	Datechampii	great	June	July	Oct.
aequ.	TROXIMON	TROXIMON			
	glaucum	glaucous	m. May	June	e. July
	Virginicum	Virginian	b. July	Aug.	b. Sept.
	SCORZONERA	VIPER'S GRASS			
		sp. 13.			
	humilis	little	July	Aug.	Sept.
	PICRIDIMUM	SALLAD			
	Tingitanum	Tangier	June	July	Sept.
	Sativum	common	June	July	Sept.
	SONCHUS	SOWTHISTLE,			
		sp. 19.			
	<i>palustris</i>	marsh	July	Aug.	b. Sept.
	<i>arvensis</i>	corn	—	—	—
	<i>oleraceus</i>	prickly	e. June	July	Sept.
	<i>glaber</i>	smooth	—	—	—
	Forsteri *	tall blue	e. June	July	b. Aug.
	<i>alpinus</i>	alpine	b. July	Aug.	e. Aug.
	LACTUCA	LETTUCE,			
		sp. 14.			
	sativa	common	June	July	b. Aug.
	crispa	curled	—	—	—
	virosa	wild	July	Aug.	b. Sept.
	saligna	least	e. July	Aug.	b. Sept.
	CHONDILLA	GUM SUCCORY			
	junceae	common	b. Aug.	e. Aug.	Sept.
	PRENANTHES	IVYLEAF, sp. 7.			
	muralis	wall Lettuce	e. June	July	Aug.
	purpurea	purple	—	—	—
	alba	white	—	—	—
	LEONTODON	DANDELION,			
		sp. 4.			
	<i>Dens Leonis</i>	common	e. Mar.	b. Apr.	Nov.

* Resembles s. coerullus, introduced by T. F. Forster, Esq. in 1805.

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX	LEONTODON,	DANDELION			
1.	<i>continued.</i>				
Syn. aequ.	<i>Palustris</i>	marsh	e. May	June	Sept.
	APARGIA	APARGIA, sp. 11.			
	<i>hispida</i>	rough Dan- delion	m. June	July	Aug.
	<i>autumnalis</i>	autumnal	m. July	Aug.	Sept.
	<i>Taraxici</i>	alpine	July	Aug.	Sept.
	<i>aurantiaca</i>	orange	May	June	July
	THRINCIA	THRINCIA, sp. 2.			
	<i>hirta</i>	hairy	b. July	Aug.	b. Sept.
	<i>hispida</i>	hispid	June	July	Aug.
	PICRIS	OXETONGUE, sp. 4.			
	<i>hieracioides</i>	hawkweedlike	b. July	Aug.	Sept.
	HIERACIUM	HAWKWEED, sp. 59.			
	<i>Pilosella</i>	Mouse Ear	m. May	e. May	July
	<i>alpinum</i>	alpine	b. July	Aug.	—
	<i>Auricula</i>	eared	—	—	—
	<i>aurantiacum</i>	orange	e. June	July	Aug.
	<i>Lawsoni</i>	Lawson's	July	Aug.	Sept.
	<i>molle</i>	soft	e. June	July	e. Aug.
	<i>murorum</i> *	wall	e. May	June	Oct.
	<i>maculatum</i>	spotted	July	Aug.	Sept.
	<i>pulmonarum</i>	Liverwortlike	e. June	July	Aug.
	<i>sylvaticum</i>	wood, β. & γ.	e. June	July	Aug.
	<i>Forsteri</i>	Forster's	—	—	—
	<i>paludosum</i>	marsh	—	—	—
	<i>Villosum</i>	villous	e. July	Aug.	Sept.
	<i>umbellatum</i>	umbelled	e. July	Aug.	Sept.
	<i>subaudum</i>	manyflowered	—	—	—

* Flowers a second time early in October.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX.	HIERACIUM,	HAWKWEED			
1.	<i>continued.</i>				
	<i>prenanthoides</i>	glaucous	—	—	—
	<i>denticulatum</i>	toothed	—	—	—
	<i>laevigatum</i>	smooth	—	—	—
	<i>chendrilloides</i>	Gum Succory	June	July	b. Aug.
	<i>cerinthoides</i>	Honeywort	July	Aug.	b. Sept.
	<i>incarnatum</i>	fleshcolored	e. June	July	Aug.
	<i>grandiflorum</i>	great	b. July	Aug.	e. Aug.
	<i>pallescens</i>	pale	June	July	Aug.
	<i>dubium</i>	doubtful	b. July	Aug.	b. Sept.
	CREPIS	HAWKSBEARD,			
		sp. 20.			
	<i>biennis</i>	biennial	m. June	July	Aug.
	<i>gallica</i>	tall	m. June	July	Sept.
	<i>pulchra</i>	fair	b. July	e. July	Aug.
	<i>foetida</i>	fetid	June	July	Aug.
	<i>tectorum</i>	wall	b. June	July	Sept.
	<i>hieracioides</i>	hawkweedlike	July	Aug.	Sept.
	<i>rubra</i>	red	June	July	Aug.
	<i>leontodontoi-</i> <i>des</i>	dandelionlike	July	Aug.	Sept.
	HELMINTHIA	FALSE OXE-			
		TONGUE			
	<i>echioides</i>	bristly	June	July	Aug.
	TOLFIS	HAWKSEYES			
	<i>barbata</i> *	yellow	m. June	July	Aug.
	ANDRYALA	ANDRYALA,			
		sp. 6.			
	<i>cheiranthifol.</i>	stockleaved	July	Aug.	b. Sept.
	ROTHIA	ROTHIA, sp. 3.			
	<i>cheiranthifol.</i>	stockleaved	July	Aug.	Sept.
	HYOSERIS	SWINE'S SUC-			
		CORY, sp. 5.			
	<i>radiata</i>	radiated	June	July	b. Aug.

* The old garden crepis, *c. barbata*.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX I.	HEDYPNOIS	HEDYPNOIS, sp. 3.			
	monspreliensis	Montpelier	June	July	b. Aug.
	rhagadeoloides	Nipplewort	—	—	—
	HYPOCHAERIS	CATSEAR, sp. 6.			
	helvetica	Swiss	e. June	July	b. Aug.
	radicata	rooted	e. May	June	Aug.
	glabra	smooth	b. June	July	Aug.
	maculata	spotted	—	—	—
	arachnoidea	Cobweb	e. June	July	b. Aug.
	LAPSANA	NIPPLEWORT sp. 6.			
	communis	common	m June	July	Aug.
	pusilla	least	May	June	July
	ZACINTHA	ZATHINTHA			
	verrucosa	verrucose	June	July	Aug.
	CATANANCHE	CATANANCHE			
	coerulea	blue	b. July	Aug.	Sept.
	lutea	yellow	e. June	July	Aug.
	CICHORIUM	SUCCORY, sp. 5.			
	Intybus	wild	b. July	Aug.	Sept.
	Endivia	Endive	—	—	—
	SCOLYMUS	GOLDEN THISTLE			
	maculatus	Spotleaved	July	Aug.	Sept.
	hispanicus	perennial	—	—	—
LYATRIS	LIATRIS				
scabiosa	scaly	b. Sept.	e. Sept.	Oct.	
elegans	hairycupped	—	—	—	
pilosa	pilose	—	—	—	
spicata	spiked	Aug.	Sept.	Oct.	
ARCTIUM	BURDOCK				
Lappa	Clotbur	July	Aug.	Sept.	
Karduna	woolly	—	—	—	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX. 1.	SERRATULA	SAWWORT, sp. 9.			
	<i>alpina</i>	alpine	July	Aug.	Sept.
	<i>tinctoria</i>	common	b. Aug.	e. Aug	Oct.
	CARDUUS	THISTLE, sp. 24.			
	<i>nutans</i>	musk	e. June	July	Aug.
	<i>Marianus</i>	Our Lady's Thistle	m. June	July	b. Aug.
	<i>Marianus</i> β.	milkless This.	m. June	July	b. Aug.
	<i>acanthoides</i>	welted	—	—	—
	<i>tenuiflorus</i>	slender	—	—	—
	CNICUS	FALSE THIST. sp. 34.			
	<i>palustris</i>	marsh	e. June	m. July	b. Sept.
	<i>pratensis</i>	meadow	e. May	e. June	b. July
	<i>lanceolatus</i>	spearleaved	e. June	July	Sept.
	<i>arvensis</i>	Way Thistle	b. July	b. Aug.	Sept.
	<i>heterophylus</i>	melancholy	—	—	—
	<i>acaulis</i>	stemless	—	—	—
	<i>spinosissimus</i>	Siberian	June	July	b. Sept.
	<i>eriophorus</i>	woolly	e. July	Aug.	b. Sept.
	ONOPORDON	COTTON THIS. sp. 9.			
	<i>acanthium</i>	British	m. July	Aug.	b. Sept.
CYNARA	ARTICHOKE, sp. 6.				
<i>scolymus</i>	common	e. July	Aug.	Sept.	
CARLINA	CARLINE, sp. 8.				
<i>vulgaris</i>	common	b. June	e. June	b. July	
ATRACYLIS	ATRACYLIS, sp. 3.				
<i>gummifera</i>	gummy	June	July	Aug.	
CARTHAMUS	CARTHAMUS				
<i>tinctorius</i>	Bastard Saffr.	June	July	Aug.	
<i>tingitanus</i>	Tangier	—	—	—	

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX. 1.	SPILANTHES	SPILANTHES sp. 5.			
	<i>pseudoalcmella</i>	spearleaved	e. June	July	b. Aug.
	<i>Alcmella</i>	balnleaved	b. June	July	b. Aug.
	BIDENS	BUR MARY- GOLD, sp. 11.			
	<i>cernua</i>	nodding	e. Aug.	b. Sept.	e. Sept.
	<i>tripartita</i>	trifid	July	Aug.	Sept.
	EUPATORIUM	EUPATORIUM			
	<i>Cannabinum</i>	Hemp Agri- mony	b. Aug.	b. Sept.	e. Oct.
	CHRYSOCOMA	GOLDBLOCKS, sp. 9.			
	<i>comaurea</i>	Great Shrub.	m. June	July	Aug.
	<i>Linosyris</i>	flaxleaved	b. Sept.	e. Sept.	Oct.
	SANTOLINA	LAVENDER COTTON			
	<i>Chamaecy- perissus maritima</i>	common sea	e. June Aug.	July Sept.	b. Aug. e. Sept.
	XIX. 2. Syn. Sup.	TANACETUM	TANSY, sp. 5.		
<i>vulgare</i>		common	m. July	e. July	b. Sept.
ARTEMESIA		WORMWOOD, sp. 48.			
<i>gallica</i>		upright	e. July	Aug.	Sept.
<i>Abrotanum</i>		Southernwood	e. July	Aug.	Oct.
<i>campestris</i>		field	e. July	Aug.	b. Sept.
<i>maritima</i>		drooping	—	—	—
<i>Absinthium</i>		common	—	—	—
<i>coerulescens</i>		blue	—	—	—
<i>vulgaris</i>		Mugwort	—	—	—
GNAPHALIUM	EVERLASTING sp. 54.				
	<i>fruticans</i>	shrubby	July	Aug.	Sept.
	<i>Stoechas</i>	Cudweed	e. June	July	Oct.
	<i>luteoalbum</i>	Jersey	July	Aug.	Oct.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX.	GNAPHALIUM,	EVERLASTING			
2.	<i>continued.</i>				
Syn.	<i>margaritaceum</i>	pearl	—	—	—
sup.	<i>silvaticum</i>	wood	—	—	—
	<i>rectum</i>	upright	—	—	—
	<i>supinum</i>	trailing	—	—	—
	<i>hyperboreum</i>	northern	—	—	—
	<i>uliginosum</i>	bog	—	—	—
	<i>Germanicum</i>	Cudweed	July	Aug.	Sept.
	<i>Gallicum</i>	narrow	—	—	—
	<i>minimum</i>	least	—	—	—
	XERANTHE- MUM	DRYFLOWER, sp. 3.			
	<i>annuum</i>	Everlasting	July	Aug.	Sept.
	<i>inapertum</i>	small	—	—	—
	<i>Oriente</i>	Eastern	—	—	—
	CONYZA	FLEABANE, sp. 24.			
	<i>squarrosa</i>	Spikenard	July	Aug.	Sept.
	<i>Marilandica</i>	Maryland	Aug.	b. Sept.	e. Sept.
	TUSSILAGO	COLTSFOOT, sp. 15.			
	<i>Farfara</i>	officinal	<i>m. Mar.</i>	<i>b. April</i>	<i>e. April</i>
	<i>Petasites</i>	Butterbur	<i>b. April</i>	<i>m. Apr.</i>	<i>b. May</i>
	<i>hybrida</i>	bustard	—	—	—
	<i>alba</i>	white	<i>e. Jan.</i>	<i>e. Feb.</i>	<i>e. Mar.</i>
	<i>fragrans</i>	sweet *	<i>e. Nov.</i>	<i>Dec.</i>	<i>e. Feb.</i>
	<i>nivea</i>	snowy	<i>e. Mar.</i>	April	<i>e. April</i>
	<i>paradoxa</i>	downy	March	April	<i>e. April</i>
	<i>palmata</i>	palmata	—	—	—
	<i>lobata</i>	Swiss	—	—	—
	<i>sylvestris</i>	Austrian	April	<i>e. April</i>	May
	<i>alpina</i>	alpine	<i>e. April</i>	May	<i>e. May</i>
	<i>frigida</i>	Lapland	—	—	—

* Called also Herb Catherine or Shepherd of Madonna.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX. 2.	TUSSILAGO,	COLTSFOOT			
	<i>continued.</i>				
	<i>integrifolia</i>	American	?	?	?
	<i>nutans</i>	drooping	June	July	e. July
	<i>discolor</i>	twocolored	April	May	e. May
	SENECIO	GROUNDSEL,			
		sp. 51.			
	<i>vulgaris</i>	common	b. June	April	Dec.
	<i>viscosus</i>	clammy	June	July	Aug.
	<i>sylvaticum</i>	Wood	—	—	—
	<i>squalidus</i>	Oxford	b. April	May	Oct.
	<i>tenuifolius</i>	slender	July	Aug.	Sept.
	<i>Jacobaea</i>	Ragwort	b. July	e. July	Sept.
	<i>aquaticus</i>	marsh	e. June	b. July	Aug.
	<i>aureus</i>	golden	May	June	July
	<i>paludosus</i>	Birdstongue	m. July	Aug.	Sept.
	<i>Saracenicus</i>	creeprooting	b. July	e. July	Aug.
	<i>Doria</i>	broadleaved	—	—	—
	<i>Doronicum</i>	mountain	—	—	—
	ASTER	STARWORT,			
		sp. 120.			
	<i>alpinus</i>	alpine	m. July	Aug.	Sept.
	<i>tenellus</i>	slender	m. June	July	Aug.
	<i>Amellus</i>	Italian	Aug.	Sept.	Oct.
	<i>grandiflorus</i>	great	e. Sept.	Oct.	e. Oct.
	<i>phlogifolius</i>	redflowered	Aug.	Sept.	Oct.
	<i>Chinensis</i>	China Aster	e. July	e. Aug.	Nov.
<i>conyzoides</i>	Fleabane	Aug.	Sept.	Oct.	
<i>Tripolium</i>	sea	—	—	—	
<i>annuus</i>	annual	July	Aug.	Sept.	
<i>Tradescanti</i>	Tradescants	e. Aug.	Sept.	Oct.	
<i>β. St. Michaelis</i>	Michaelmas				
	Daisy	m. Sept.	e. Sept.	Oct.	
<i>praecox</i>	early	e. June	July	Aug.	
<i>floribundus</i>	floribund	Sept.	Oct.	e. Oct.	
<i>tardiflorus</i>	lateflowering	e. Sept.	b. Oct.	b. Nov.	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX. 2.	SOLIDAGO	GOLDEN ROD, sp. 49.			
	<i>virgaurea</i>	common	<i>e. July</i>	<i>Aug.</i>	<i>Sept.</i>
	<i>Cambrice</i>	Welch	—	—	—
	<i>Canadensis</i>	Canadian	—	—	—
	<i>procera</i>	full	—	—	—
	<i>serotina</i>	late	Aug.	Sept.	Oct.
	<i>gigantea</i>	great	—	—	—
	<i>flexicaulis</i>	bending	<i>e. Aug.</i>	Sept.	<i>b. Oct.</i>
	<i>Mexicana</i>	thickleaved	July	Aug.	<i>b. Sept.</i>
	<i>tenuifolia</i>	slender	<i>b. Sept.</i>	<i>e. Sept.</i>	Oct.
	CINERARIA	FLEAWORT, sp. 26.			
	<i>palustris</i>	marsh	June	July	Aug.
	<i>integrifolia</i>	mountain	June	July	Aug.
	<i>Petasites</i>	Mexican, G.	Nov.	Dec.	<i>b. Jan.</i>
	INULA	INULA, sp. 26.			
	<i>OculusChristi</i>	hoary	July	Aug.	Sept.
	<i>Britannica</i>	German	—	—	—
	<i>dysenterica</i>	middle Flea- bane	<i>b. Aug.</i>	<i>e. Aug.</i>	<i>Sept.</i>
	<i>pulicaria</i>	small Fleab.	—	—	—
	<i>crithmifolia</i>	golden sam- phire	—	—	—
<i>Helenium</i>	Elecampane	<i>e. June</i>	<i>July</i>	<i>Aug.</i>	
ARNICA	ARNICK, sp. 4.				
<i>montana</i>	mountain	<i>b. July</i>	<i>e. July</i>	<i>b. Aug.</i>	
<i>Doronicum</i>	alpine	—	—	—	
<i>bellidiastrum</i>	daisylike	—	—	—	
GRINDELIA	GRINDELIA, sp. 3.				
<i>squarrosa</i>	stakeheaded	July	Aug.	Sept.	
DORONICUM	LEOPARDS- BANE, sp. 4.				
<i>Pardalianches</i>	great	<i>e. Mar.</i>	<i>e. April</i>	<i>June</i>	
<i>Plantagineum</i>	small	<i>e. April</i>	<i>May</i>	<i>June</i>	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.	
	GENUS & Species.	English Names.				
XIX 2.	XIMENESIA enclioides	XIMENESY hoary	July	Aug.	Sept.	
	HELENIUM autumnale	HELENIUM, sp. 3. autumnal	Aug.	Sept	Oct.	
		pubescens	Aug.	Sept.	Oct.	
	BELLIS perennis	DAISY, sp. 3. common	March	e. May	Aug.	
		<i>β. rubra</i>	Herb Marga.	Feb.	May	June
		sylvestris	Portuguese	e. June	July	Aug.
		annua	annual	March	April	July
	BELLIUM bellidioides	BASTARD DAISY daisylike	June	July	Sept.	
		minutum	least	June	July	Oct.
	DAHLIA superflua	DAHLIA, sp. 3. superfluous	July	Aug.	Nov.	
		frustranea	barrenrayed	July	Aug.	Oct.
		crocata	crocate	—	—	—
	TAGETES lucida	TAGETES, sp. 5. shining	b. July	Aug.	Oct,	
		patula	Fr. Marigold	e. July	—	—
		erecta	African Mari.	m. July	—	—
		minuta	small	—	—	—
		tenuifolia	slender	—	—	—
	ZINNIA multiflora	ZINNIA, sp. 6. red	July	Aug.	Oct.	
		elegans	elegant	—	—	—
		tenuiflora	resolute	—	—	—
	pauciflora	yellow	—	—	—	
	verticillata	whorled	—	—	—	
	hybrida	hybrid	—	—	—	
LIDBECKIA pectinata	LIDBECKIA, sp. 2. silvery	May	June	July		

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX. 2.	CHRYSANTHE- MUM	GOLDFLOWER, sp. 20.			
	<i>Indicum</i>	Indian	—	—	—
	<i>Leucanthe- num</i>	Midsummer Daisy	b. Sept. <i>b. June</i>	Sept. <i>m. June</i>	Nov. <i>July</i>
	<i>segetum</i>	Corn Marigold	<i>e. June</i>	<i>July</i>	<i>Aug.</i>
	<i>coronarium</i>	garden, β . γ .	<i>e. June</i>	<i>July</i>	<i>Sept.</i>
	<i>Myconis</i>	Italian	June	July	Aug.
	<i>coccineum</i>	scarlet	June	July	Aug.
	<i>grandiflorum</i>	Portuguese	<i>e. June</i>	July	b. Aug.
	<i>carinatum</i>	tricolored	July	Aug.	Oct.
	PYRETHRUM	FEVERFEED, sp. 25.			
	<i>Parthenium</i>	common	June	July	Aug.
	<i>inodorum</i>	scentless	July	Aug.	Sept.
	<i>maritimum</i>	sea	—	—	—
	<i>speciosum</i>	showey	Jan.	Feb.	Dec.
	<i>roseum</i>	rosecolored	Aug.	b. Sept.	e. Sept.
	MATRICARIA	MATRICARIA, sp. 4. [mille			
	<i>Chamomilla</i>	Wild Chamo-	May	June	July
	COTULA	COTULA, sp. 8.			
	<i>coronopifolia</i>	Buckshorn	July	Aug.	Sept.
	ANTHEMIS	CHAMOMILE, sp. 26.			
	<i>maritima</i>	sea	July	Aug.	b. Sept.
	<i>nobilis</i>	officinal	—	—	—
<i>arvensis</i>	corn	—	—	—	
<i>cotula</i>	Mayweed	<i>e. May</i>	June	<i>e. July</i>	
Pyrethrum	Pellitory of Spain	—	—	—	
<i>tinctoria</i>	dyers'	June	July	Oct.	
ACHILLAEA	MILFOIL, sp. 47				
<i>Herbarota</i>	Herbarota	June	July	Aug.	
<i>Ptarmica</i>	Sneezewort	July	Aug.	Sept.	
<i>Millefolium</i>	Yarrow	June	July	Oct.	

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX. 2.	ACHILLAEA, <i>continued.</i>	MILFOIL			
	ageratum aurea	sweet Maudlin golden	Aug. June	Sept. July	Oct. Sept.
XIX. 3. Syn. frus.	HELIANTHUS	SUNFLOWER. sp. 20.			
	annuus	common	b. July	Aug.	Oct.
	indicus	small	—	—	—
	multiflorus	manyflowered	b. Aug.	Sept.	Oct.
	atrorubens	dark red	m. July	Aug.	e. Sept.
	diffusus	diffuse	Aug.	Sept.	Oct.
	linearis	linear	—	—	—
	RUDBECKIA	RUDBECKIA, sp. 11.			
	laciniata	jagleaved	Aug.	Sept.	Oct.
	columnaris	crowned	—	—	—
triloba	threelobed	—	—	—	
lobata	lobate	—	—	—	
pinnata	pinnate	—	—	—	
fulgida	fulgid	July	Aug.	Sept.	
purpurea	purple	b. Aug.	Sep.	Oct.	
hirta *	hairy	June	July	Nov.	
angustifolia	narrow	Aug.	Sept.	Oct.	
digitata	fingered	—	—	—	
amplexicaulis	clasping	June	July	Aug.	
COREOPSIS	TICKSEED SUN FLOWER, sp. 20.				
verticillata	whorled	b. Aug.	Sept.	Oct.	
aurea	golden	—	—	—	
procera	tall	b. Sept.	e. Sept.	Oct.	
ferulaefolia	fennel	e. Sept.	Oct.	Nov.	
chrysantha	angelical	July	Aug.	Sept.	
alba	climbing	S. June	July	Aug.	
tinctoria	annual	b. Aug.	e. Aug.	e. Sept.	

* *R. hirta vera* has since been discovered.

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX. 3.	SPHENOGYNE	SPHENOGYNE, sp. 7.			
	anthemoides	white	July	Aug.	Sept.
	TITHONIA	TITHONIA			
	tagetiflora	Vera Cruz	Aug.	b. Sept.	e. Sept.
	ZOEGEA	ZOEGEA			
	leptaurea	yellow	e. June	July	e. July
	CENTAUREA	CENTAURY, sp. 82.			
	<i>Cyanus</i>	Blue Bottle	b. June	b. July	e. Aug.
	<i>glauca</i>	glaucous	—	—	—
	<i>cuprina</i>	blackseeded	—	—	—
	<i>moschata</i>	Sweet Sultan	July	Aug.	Oct.
	<i>suaveolens</i>	Yellow Sultan	—	—	—
	<i>ochroleuca</i>	Buff Bottle	May	July	Aug.
	<i>montana</i>	garden Blue Bottle	b. May	m. June	Aug.
	<i>Jacea</i>	Knapweed	July	Aug.	e. Aug.
	<i>nigra</i>	Black Knap.	June	July	Aug.
	<i>Solstitialis</i>	St. Barnaby's Thistle	m. June	July	Aug.
	<i>Calcitrapa</i>	Star Thistle	e. June	July	Aug.
	<i>Isnardi</i>	Jersey Star Thistle	—	—	—
	<i>Benedicta</i>	Blessed Thist.	June	July	Sept.
<i>aurea</i>	golden	July	Aug.	Sept.	
<i>Crocodylium</i>	blushing	—	—	—	
<i>sempervirens</i>	evergreen	—	—	—	
<i>splendens</i>	Spanish	—	—	—	
<i>alpina</i>	alpine	—	—	—	
XIX. 4.	SILPHIUM	SILPHIUM, sp. 7.			
Syn.	laciniatum	jagged	July	Aug.	Sept.
neces.	compositum	scallopped	—	—	—
	Asteriscus	hairy	July	Sept.	Oct.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX. 4.	ALCINA	ALCINA, sp. 1.			
	perfoliata	perfoliate	July	e. July	Aug.
	CALENDULA	MARIGOLD, sp. 15.			
	arvensis	field	May	June	Sept.
	officinalis	common	b. April	b. July	b. Nov.
	pluvialis	indicating	June	July	Aug.
	Chrysanthi- mifolia	large, G.	—	—	—
	PARTHENIUM	PARTHENUM			
	Hysteropho- rus	Jamaica	July	Aug.	b. Sept.
	integrifolium	Virginian	June	July	Oct.
IVA		BASTARD JE- SUITS BARK, sp. 2.			
	frutescens	shrubby	b. Aug.	m. Aug.	e. Aug.
	MICROPUS	MICROPUS			
	erectus	upright	June	July	Sept.
	sapinus	trailing	—	—	—
XIX. 5. Syn. segr.	ECHINOPS	GLOBE THISTLE, sp. 6.			
	sphaeroce- phalus	great	July	Aug.	Sept.
	spinosus	thorny	—	—	—
	lanuginosus	woolly	June	July	Aug.
	Ritro	small	July	Aug.	Sept.
	strigosus	annual	—	—	—
	paniculatus	panicked	—	—	—
XX. 1. Gyn. dian.	ORCHIS	ORCHIS, sp. 15.			
	pyramidalis	pyramidal	June	July	e. July
	Morio	female	m. May	June	e. June
	mascula	Ramshorns	e. April	May	June
	militaris	Manorchis	May	June	e. June
	ustulata	dwarf	—	—	—
fusca	brown	e. May	June	e. June	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XX.	ORCHIS, <i>cont.</i>	ORCHIS			
1.	<i>hircina</i>	Lizard	June	e. June	July
	<i>latifolia</i>	broadleaved	b. May	May	June
	<i>maculata</i>	spotted	—	—	—
	<i>spectabilis</i>	showy	—	—	—
	<i>acuminata</i>	pointed	April	May	e. May
	HABENARIA	HABENARIA, sp. 10.			
	<i>viridis</i>	green	June	July	July
	<i>alba</i>	white	—	—	—
	<i>bifolia</i>	twoleaved	May	June	b. July
	ACERAS	MAN ORCHIS			
	<i>antropophera</i>	common	May	June	b. July
	HERMINIUM	MUSK ORCHIS			
	<i>Monorchis</i>	common	—	—	—
	OPHRYS	OPHRYS, sp. 5.			
	<i>muscifera</i>	fly	May	June	e. June
	<i>apifera</i>	bee	June	e. June	July
	<i>aruncifera</i>	spider	April	May	e. May
	GOODYERA	GOODYERA			
	<i>repens</i>	creeping	b. July	e. July	Aug.
	<i>pubescens</i>	pubescent	—	—	—
	NEOTTIA	BIRDS NEST ORCHIS			
	<i>Nidus Avis</i>	common	b. May	e. May	b. June
	SERAPIAS	HELLEBORINE			
	<i>lingua</i>	tongue	May	June	July
	<i>cordigera</i>	heart	e. June	July	Sept.
	SPIRANTHES	SPIRANTHES, sp. 6.			
	<i>Spiralis</i>	Our Lady's Traces	e. July	Aug.	Sept.
	<i>cernua</i>	nodding	e. June	July	Aug.
	LISTERA	TWAYBLADE			
	<i>orata</i>	common	May	June	July
	<i>cordata</i>	cordate	June	July	Aug.

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XX. 1.	EPIPACTIS	EPIPACTIS			
	<i>latifolia</i>	broad marsh	m. July	Aug.	e. Aug.
	<i>palustris</i>	marsh	—	—	—
	CALYPSO	CALYPSO			
	<i>borealis</i>	northern	May	June	e. June
	MALAXIS	MALAXIS			
	<i>paludosa</i>	marsh	b. July	Aug.	e. Aug.
	<i>Loeselii</i>	Loesels	—	—	—
	CYPRIPEDIUM	OUR LADY'S SLIPPER			
	<i>calceolus</i>	common	e. May	June	July
	<i>spectabile</i>	white	—	—	—
	<i>arietinum</i>	Ramshead	May	b. June	June
ARISTOLO-CHIA	BIRTHWORT, sp. 20.				
<i>pallida</i>	Italian	May	June	Aug.	
<i>Pistilochia</i>	small	June	July	b. Aug.	
<i>Sipho</i>	broadleaved	—	—	—	
<i>Clematitis</i>	common	May	June	July	
XXI. 1.	ZANICHELLIA	HORNED PONDWEED, sp. 1.			
	<i>palustris</i>	common	b. July	July	Aug.
Mon. mon.	CHARA	WATERHORSE-tail, sp. 7.			
XXI. 2.	<i>vulgaris</i>	stinking	e. June	July	b. Aug.
Mon. dian.	LEMNA	DUCKSMEAT, sp. 4.			
	<i>minor</i>	small	m. July	Aug.	e. Aug.
XXI. 3.	TYPHA	CATSTAIL, sp. 3.			
	<i>latifolia</i>	Bull Rush	e. June	July	b. Aug.
	<i>angustifolia</i>	Reed Mace	—	—	—
Mon. trian.	SPARGANIUM	BUR REED branching			
	<i>ramosum</i>	branching	e. June	July	e. July

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXI. 3. Mon. trian.	ZEA	INDIAN CORN	June	July	b. Aug.
	Mayo	common			
	COIX	JOB'S TEARS, sp. 2.	June	July	Aug.
	Lachrymata	Indian, S.			
XXI. 4 Mon. tetr.	CAREX <i>flava</i>	SEDGE, sp. 81. yellow	June	July	b. Aug.
	<i>fulva</i>	tawney			
	AUCUBA	GOLD PLANT	May	June	July
	Japonica	Japanese			
	ALNUS <i>glutinosa</i>	ALDER, sp. 5. common	e. June	July	b. July
	BUXUS <i>Sempervirens</i>	BOX TREE common			
	URTICA <i>pilulifera</i>	NETTLE, sp. 19. Roman	July	Aug.	—
	<i>urens</i>	small			
	<i>diosca</i>	common	—	—	—
	MORUS	MULBERRY, sp. 5.	e. May	June	b. July
<i>nigra</i>	common				
	<i>alba</i>	white	—	—	—
	<i>tartarica</i>	tartarian	—	—	—
	<i>rubra</i>	red	—	—	—
	<i>tinctoria</i>	Indigo Wood	—	—	—
XXI. 5. Min. pent.	XANTHIUM <i>strumarium</i>	XANTHIUM Burdock	Aug.	Aug.	Sept.
	AMARANTHUS	AMARANTH, sp. 35.			
	<i>Blitum</i>	Blite	e. July	Aug.	Aug.
	<i>hypochondri- acus</i>	Prince's Fea.	e. July	Aug.	Sept.
	<i>caudatus</i>	Love lies bleeding	—	—	—
	<i>cruentus</i>	red leaved	—	—	—
	<i>melancholicus</i>	melancholly	—	—	—

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXI.	AMARANTHUS	AMARANTH			
5.	<i>continued.</i>				
	<i>flavus</i>	yellow	—	—	—
	<i>cruentus</i>	bloody	—	—	—
	<i>prostratus</i>	trailing	—	—	—
	<i>albus</i>	white	—	—	—
	<i>speciosus</i>	showy	—	—	—
XXI.	CERATOPHYL- LUM	HORNWORT, sp. 2.			
Mon.	<i>demersum</i>	prickly	e. June	July	e. July
Poly.	<i>immersum</i>	smooth	—	—	—
	MYRIOPHYL- LUM	WATER MIL- FOIL			
	<i>spicatum</i>	spiked	June	July	e. July
	<i>verticillatum</i>	whorled	b. July	July	e. July
	SAGITTARIA <i>sagittifolia</i>	ARROWHEAD common	b. June	June	July
	BEGONIA <i>spatulata</i>	BEGONIA, sp. 12. spatulate	July	Aug.	Oct.
	POTERIUM <i>sanguisorba</i>	BURNET, sp. 5. common	July	July	Aug.
	<i>polygonatum</i>	angular	b. July	July	Aug.
	QUERCUS	OAK, sp. 43.			
	<i>suber</i>	corktree	b. June	June	July
	<i>Ilex</i>	evergreen	e. May	June	e. June
	<i>tinctoria</i>	dyers'	—	—	—
	<i>Escalus</i>	Italian	—	—	—
	<i>Robur</i>	common	April	May	e. May
	<i>pedunculata</i>	longstalked	—	—	—
	<i>pubescens</i>	durmast	—	—	—
	<i>Cerris</i>	Turkey	—	—	—
	JUGLANS	WALNUT, sp. 13.			
	<i>regia</i>	common	m. Apr.	May	e. May
	<i>nigra</i>	black	—	—	—

Class and Order.	Names of the Planets.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXI. 7.	JUGLANS, <i>cont.</i>	WALNUT			
	<i>alba</i>	white	e. April	May	June
	FAGUS	FAGUS, sp. 3.			
	<i>ferruginea</i>	rusty	April	May	e. May
	<i>sylvatica</i>	common	—	—	—
	<i>β. rubifolia</i>	red	—	—	—
	CASTANEA	CHESNUT, sp. 2.			
	<i>vesca</i>	common	May	June	e. June
	<i>pumila</i>	chinquapin	e. June	July	July
	BETULA	BIRCH, sp. 10.			
	<i>alba</i>	common	e. June	July	July
	<i>nana</i>	small	—	—	—
	<i>excelsa</i>	tall	e. April	May	e. May
	CARPINUS	HORNBEAM, sp. 3.			
	<i>Betulus</i>	common	b. May	m. May	e. May
	OSTRYA	HOP HORN- BEAM			
	<i>vulgaris</i>	Italian	—	—	—
	CORYLLUS	Hazel	—	—	—
	<i>Avellana, β. γ.</i>	common	—	—	—
	PLATANUS	PLANE			
	<i>Orientalis</i>	Eastern	e. April	May	May
<i>Occidentalis</i>	Western	—	—	—	
<i>cuneata</i>	wedged	—	—	—	
<i>acerifolia</i>	Spanish	—	—	—	
LIQUIDAMBAR	SWEET GUM				
<i>styracifolia</i>	American	—	—	—	
<i>imberbe</i>	Levant	—	—	—	
ARUM	CUCKOO PINT, sp. 24.				
<i>Dracunculus</i>	Dragon	June	July	e. July	
<i>Dracunculus</i>	Green Dragon	—	—	—	
<i>Colocasia</i>	Colocasia, S.	May	June	July	
<i>maculatum</i>	Lord & Lady	e. April	May	June	
<i>Arisarum</i>	Friar's Cowl	—	—	—	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXI.	PINUS	PINE, sp. 33.			
8.	<i>sylvestris</i>	Scotch	b. May	May	June
Mon.	Pinaster	Pinaster	April	May	e. May
mon.	resinosa	pitch	b. May	May	June
	Pinea	stone	—	—	—
	Taeda	Frankincense	—	—	—
	Cembra	Siberian	—	—	—
	Strobus	Weymouth	April	May	May
	Cedrus	Cedar of Le- banon	May	m. May	June
	Larix	Larch	March	April	b. May
	Canadensis	Spruce Fir	b. May	May	June
	Abies*	Norway	April	May	May
	THUJA	ARBOR VITAE, sp. 7.			
	Occidentalis	American	May	May	b. June
	Orientalis	China	—	—	—
	Cupressioides	Cypress	—	—	—
	CUPRESSUS	CYPRESS, sp. 5.			
	sempervirens	common	May	May	b. June
	thyoides	White Cedar	April	May	May
	ACALYPA	ACALYPA, sp. 7.			
	Indica	Indian	b. July	m. July	Aug.
	CROTON	CROTON, sp. 19.			
	tinctorium	officinal	—	—	—
	RICINUS	PALMA CRIST, sp. 19.			
	Palma Cristi	Caster Oil	e. July	Aug.	b. Sept.
	XYLOPHYLLA	XYLOPHYLLA, sp. 4.			
	ramiflora	Siberian	July	Aug.	Aug.

* See article TREES, in Part II.

Class and Order.	Names of the Plants.		Beginning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XIX.	TRICHOSANTHES	SNAKEGOURD			
9.					
Mon.	<i>anguina</i>	common	May	June	Aug.
Syn.	MOMORDICA	MOMORDICA,			
		sp. 5.			
	<i>Elaterium</i>	squirting cucumber	June	July	e. July
	CUCURBITA	GOURD, sp. 7.			
	<i>lagenaria</i>	Bottle	July	Aug.	Sept.
	<i>aurantia</i>	orange	—	—	—
	<i>Pepo</i>	Pumpkin	—	—	—
	<i>verucosa</i>	verucose	July	Aug.	Sept.
	<i>melopesso</i>	squash	—	—	—
	<i>citrullus</i>	water melon	—	—	—
	CUCUMIS	CUCUMBER,			
		sp. 11.			
	<i>sativus</i>	common	—	—	—
	<i>Mello</i>	Melon, $\beta. \gamma. \delta.$	May	June	Sept.
	BRYONIA	BRYONY,			
		sp. 14.			
	<i>dioica</i>	common	May	June	July
	<i>alba</i>	white	June	July	Aug.
	SICYOS	SINGLESEEDED			
		CUCUMBER			
	<i>angulata</i>	angula	July	Aug.	Sept.
XXII	SALIX	WILLOW,			
2.		sp. 87.			
Dio.	<i>purpurea</i>	bitter	e. Mar.	b. April	May
dian.	<i>rubra</i>	Green Osier	—	—	—
	<i>Lambestiana</i>	Lamberts	—	—	—
	<i>Forbyana</i>	basket	—	—	—
	<i>amygdalina</i>	almond	—	—	—
	<i>Russelliana</i>	Bedford, W.	—	—	—
	<i>vitellina</i>	yellow	—	—	—
	<i>cinerea</i>	gray	—	—	—
	<i>aurita</i>	eared	—	—	—

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXII.	SALIX, cont.	WILLOW			
2.	<i>aquatica</i>	water	—	—	—
	<i>Forsteriana</i>	Forster's	—	—	—
	<i>Babylonica</i>	weeping	—	—	—
	<i>viminalis</i>	Osier	—	—	—
	<i>alba</i>	white	b. Mar.	e. Mar.	April
	<i>coerulea</i>	Sallow	—	—	—
	<i>caprea</i>	roundleaved	e. Mar.	April	May
XXII.	<i>acuminata</i>	sharp	—	—	—
3.	EMPETRUM	CRAKEBERRY,			
Dioe.		sp. 2.			
trian.	<i>nigrum</i>	black	m. Apr.	May	e. May
XXII.	<i>album</i>	white	—	—	—
4.	VISCUM	MISSLETOE			
Dioe.	<i>album</i>	common	e. April	May	e. May
tetr.	HIPPOPTAE	SEA BUCK- THORN			
	<i>rhamnoides</i>	common	—	—	—
	MYRICA	CANDLEBERRY MYRTLE			
	<i>cerifera</i>	American	May	June	e. June
XXII.	<i>Gale</i>	Sweet Gale	e. May	m. May	e. May
5.	PISTACIA	PISTACEA			
Dioe.		sp. 5.			
pent.	<i>trifolia</i>	officinal	April	May	e. May
	XANTHOXY- LON	TOOTHACHE TREE			
	<i>clava Herculis</i>	common	March	April	b. May
	SPINACIA	SPINACH			
	<i>oleracea</i>	common	June	July	e. July
	HUMULUS	HOP			
	<i>Lapulus</i>	common	—	—	—
XXII.	POPULUS	POPLAR,			
7.		sp. 14.			
Dioe.	<i>alba</i>	white	March	e. Mar.	b. April
hept.	<i>canescens</i>	hoary	—	—	—

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXII.	POPULUS, <i>cont.</i>	POPLAR			
7.	<i>tremula</i>	Asp	—	—	—
	<i>trepida</i>	trembling	—	—	—
	<i>nigra</i>	black	—	—	—
	<i>dilatata</i>	Lombardy	—	—	—
	RHODIOLA	ROSEROOT			
	<i>rosea</i>	common	May	e. May	June
XXII.	MERCURIALIS	MERCURY,			
8.		sp. 5.			
Dioe.	<i>perennis</i>	perennial	May	June	Aug.
oct.	<i>annua</i>	annual	b. July	July	Aug.
	HYDROCHAE- RIS	HYDROCHAE- RIS			
	<i>Morsus Ranae</i>	Trogbit	m. June	b. July	e. July
XXII.	MENISPER- MUM	MOONSEED,			
10.		sp. 7.			
Dioe.	<i>Canadense</i>	Canada	July	Aug.	e. Aug.
dodec.	<i>Carolinum</i>	Carolina	—	—	—
	TAXUS	YEW, sp. 1.			
	<i>baccata</i>	common	Feb.	March	April
	JUNIPERUS	JUNIPER,			
		sp. 16.			
	<i>communis</i>	common	May	June	July
	<i>alpina</i>	alpine	—	—	—
	RUSCUS	BUTCHER'S BROOM			
	<i>aculeatus</i>	prickly	Jan.	April	June
XXIII.	VERATRUM	VERATRUM,			
1.		sp. 5.			
Poly.	<i>viride</i>	green	July	Aug.	e. Aug.
mono.	<i>album</i>	white	June	July	Aug.
	<i>nigrum</i>	black	—	—	—
	<i>Virginicum</i>	Virginian	—	—	—
	HOLCUS	INDIAN MIL- LET, sp. 9.			
	<i>mollis</i>	soft	e. June	July	e. July

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.	
	GENUS & Species.	English Names.				
XXIII. 1.	VALENTIA	CROSSWORT, sp. 9.				
	Cucullaria	Nunshood	m. May	June	b. July	
	<i>Aparine</i>	Verncose	June	July	Aug.	
	PARIETARIA	PELLITORY, sp. 8.				
	<i>officinalis</i>	of the wall	June	July	Sept.	
	ACER	MAPLE, sp. 16.				
	<i>Pseudoplata- nus</i>	Sycamore	April	May	May	
	<i>campestre</i>	common	May	May	June	
	Opalus	Italian	—	—	—	
	PLANERA	WITCH ELM				
XXIII. 2. Poly. Dioe.	ulmifolia	water	April	May	June	
	ACACIA	ACACIA, sp. 63.				
	Julibrissia	Smooth Tree	July	Aug.	Aug.	
	FRAXINUS	ASH, sp. 14.				
	<i>excelsior</i>	common	m. Apr.	May	e. May	
	<i>simplicifolia</i>	oneleaved	—	—	—	
	ornus	flowering	May	June	June	
	NYSSA	TUPELO, sp. 5.				
	<i>villosa</i>	villous	June	July	b. Aug.	
	CERUSONIA	ST. JOHN'S BREAD				
XXIV. 1. Crypt. fil.	<i>siliqua</i>	common	Sept.	Oct.	Oct.	
	FICUS	FIG, sp. 29.				
	<i>carica</i>	common	June	July	July	
	XXIV. 2. Fungi.	EQUISETUM	HORSETAIL, sp. 8.			
	<i>arvense</i>	corn	March	April	b. May	
	<i>fluviatrice</i>	river	May	June	July	
	XXIV. 2. Fungi.	AGARICUS	AGARICK, sp. 100.			
	<i>Campestris</i>	Mushroom	e. July	Aug.	Oct.	
	<i>Georgius</i>	yellowjuiced	—	—	—	

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXIV.	AGARICUS,	AGARICK			
2.	<i>continued.</i>				
	<i>Chanterillus</i>	Chanterell	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>
	<i>piperatus</i>	Pepper	—	—	—
	<i>procerus</i>	tall	—	—	—
	<i>elephantinus</i>	large	—	—	—
	<i>ulmarius</i>	Elmtree	—	—	—
	<i>roseus</i>	purple	—	—	—
	<i>coccineus</i>	Scarlet	—	—	—
	<i>vulpinus</i>	Fox	—	—	—
	<i>rutilus</i>	ruddy	Sept.	Oct.	Nov.
	<i>integer fusca</i>	brown	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>
	<i>integer rubra</i>	red	—	—	—
	<i>conicus</i>	conical	—	—	—
	<i>integer coeru- lescans</i>	blueish	—	—	—
	<i>delicosus</i>	orange	—	—	—
	<i>lactifluus</i>	milky	—	—	—
	<i>glutinosus</i>	hooded	—	—	—
	<i>piperatus</i>	pepper	—	—	—
	<i>muscarius</i>	crimson fly	<i>Aug.</i>	<i>b. Oct.</i>	<i>b. Nov.</i>
	<i>opacus</i>	opake	—	—	—
	<i>virgineus</i>	ivory	—	—	—
	<i>Verucosus</i>	verucose	—	—	—
	<i>tener</i>	slender	—	—	—
	<i>flocosus</i>	floccose	<i>b. Oct.</i>	<i>m. Oct.</i>	<i>Nov.</i>
	<i>palmatus</i>	palmete	Sept.	Oct.	Nov.
	<i>congregatus</i>	congregated	Aug.	Sept.	Oct.
	<i>fuscicularius</i>	Bundle	—	—	—
	<i>Ovatus</i>	Ovate	—	—	—
	<i>bulbosus</i>	bulbous	—	—	—
	<i>stercorarius</i>	dunghill	—	—	—
	<i>hybridus</i>	hybrid	—	—	—
	<i>pratensis</i>	Champignon	—	—	—
	<i>Pileolaris</i>	pileolar	—	—	—
	<i>compressus</i>	compressed	—	—	—

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXIV.	AGARICUS,	AGARICK			
2.	<i>continued.</i>				
	<i>alliaceus</i>	garlick	—	—	—
	<i>psitticinus</i>	Parroquet	—	—	—
	<i>cinnamomeus</i>	Cinnamon	—	—	—
	<i>spinipes</i>	spurfooted	—	—	—
	<i>farinaceus</i>	farinaceous	—	—	—
	<i>violaceus</i>	violet	—	—	—
	<i>turfosus</i>	heath	—	—	—
	<i>fragrans</i>	fragrant	—	—	—
	<i>Aurantiacus</i>	orange	—	—	—
	<i>tentaculum</i>	longstalked	Sept.	Oct.	Nov.
	<i>aerugenosus</i>	green	Aug.	Sept.	Oct.
	<i>flabelliformis</i>	fan	March	Sept.	Oct.
	<i>camosus</i>	fleshcolored	Aug.	Sept.	Oct.
	<i>buccinalis</i>	bugle	—	—	—
	<i>tremulus</i>	delicate	—	—	—
	<i>muralis</i>	wall	—	—	—
	<i>giganteus</i>	gigantic	—	—	—
	<i>monstrosus</i>	monster	—	—	—
	<i>graveolens</i>	smelling	—	—	—
	<i>semiglobatus</i>	globose	—	—	—
	<i>rimosus</i>	chincky	—	—	—
	<i>lycoperdonoi-</i> <i>des</i>	lycoperdon	—	—	—
	<i>Acicula</i>	pin	—	—	—
	BOLETUS	BOLETUS,			
		sp. 100.			
	<i>Aurantiacus</i>	golden	Aug.	Sept.	Oct.
	<i>edulis</i>	eatable	—	—	—
	<i>hepaticus</i>	liver	—	—	—
	<i>igniarius</i>	Spunck	—	—	—
	<i>formentarius</i>	tinder	—	—	—
	<i>bovinus</i>	brown	—	—	—
	<i>communis</i>	common	—	—	—

Class and Order.	Names of the Plants.		Begin-ning of Flower.	In full Flower.	End of Flower.
	GENUS & Species.	English Names.			
XXIV.	BOLETUS,	BOLETUS			
2.	<i>continued.</i>				
	<i>versicolor</i>	striped	Aug.	Sept.	Oct.
	<i>impubes</i>	byssuslike	—	—	—
	<i>lucidus</i>	lucid	—	—	—
	<i>scaber</i>	rough	—	—	—
	<i>sinuosus</i>	sinuous	—	—	—
	<i>betulinus</i>	beech	—	—	—
	<i>piperatus</i>	pepper	—	—	—
	<i>velutinus</i>	velvet	—	—	—
	<i>suberosus</i>	cork	—	—	—
	<i>hybridus</i>	hybrid	—	—	—
	<i>versicolor</i>	oneleaved	—	—	—
	<i>arboreus</i>	free	—	—	—
	<i>variegatus</i>	variegated	—	—	—
	<i>lachrymans</i>	Dry Rot	—	—	—
	<i>heteroclitus</i>	shapeless	—	—	—
	<i>sulphureus</i>	sulphur	—	—	—
	PHALLUS	MOREL			
	<i>impudicus</i>	stinkhorns	—	—	—
	HELVELIA	HELVELIA			
	<i>acruginosa</i>	verdigris	—	—	—
	<i>membranacea</i>	membrane	—	—	—
	PEZIZA	PEZIZA			
	<i>coccinea</i>	scarlet cup	Sept.	Oct.	Nov.
	LYCOPERDON	PUFFBALL			
	<i>Bovista</i>	common	—	—	—
	<i>recolligens</i>	starry	—	—	—
	<i>Proteus</i>	changeable	—	—	—

We have inserted but few of the cryptogamous plants, not considering them as belonging to the *Flora Spectabilis*.

SUPPLEMENTARY ADDITIONS

TO

PART V.

Being a correct Catalogue of the Ornithologia Europaea, or Birds of Europe ; compiled from the best authorities, and intended to serve as a table of reference to the Birds alluded to in the other Parts of this work, as well as being a general Index to the Birds of Europe, with the Latin, English, and French names of each genus and species. The Arabic figures, when prefixed to the names, refer to the Synoptical Catalogue of the Birds of Britain, which the author compiled some years ago, and which was published by Messrs. Nichols and Son in 1817. This reference is used where identification of the species by different synonyms becomes necessary.

Class.	GENUS & Species.	English Names.	Foreign Names.
I.	VULTUR Cinereus fulvus	VULTUR grey tawney	LE VAUTOUR arrian Grifon
II.	CATHARTES perenopterus	VULTURINE white	LE CATHARTE alimoche
III.	GYPÆTUS barbatus	BEARDED VUL- TUR common	LE GYPÆTE barbu
IV.	AQUILA heliaca	EAGLE of the Sun	L'AIGLE imperiale

Class.	GENUS & Species.	English Names.	Foreign Names.
IV.	AQUILA, <i>cont.</i>	EAGLE	L'AIGLE
	<i>chrysaetus</i>	golden	royal
	<i>β. fulva</i>	ringtailed	commun
	<i>γ. Melanaetos</i>	black	noire
	<i>δ. Cygneus</i>	white	des Alpes
4.	Pygargus	whitetailed	Grand Pygarg.
	<i>leucocephala</i>	bald	tête blanche
	<i>brachydactyla</i>	German	Jean le blanc
V.	HALIAETOS	SEA EAGLE	L'ORFRAIE
2.	<i>ossifragus</i>	common	grand
VI.	TRIORCHES	OSPREY	BALBUZARD
	<i>fluvialis</i>	common	commun
VII.	FALCO	FALCON	FAUCON
	<i>Islandicus</i>	Gerfalcon	Gerfaut
	<i>peregrinus</i>	Lanner	Lanier
	<i>Sabbuteo</i>	Hobbie	Hobereau
	<i>Aesalon</i>	Merlin	Emerillon
	<i>Tinnunculus</i>	kestrel	Cresserelle
	<i>rufipes</i>	Ingrian	rouge
	<i>versicolor</i>	spotted	Schryadler ?
VIII.	ACCIPITER	HAWK	AUTOUR
	<i>palumbarius</i>	Goshawk	l'Autour
	<i>nisus</i>	Sparrowhawk	Epervier
IX.	MILVUS	KITE	MILAN
	<i>vulgaris</i>	glead	royal
	<i>ater</i>	black	noir
X.	BUTEO	BUZZARD	BUSE
	<i>vulgaris</i>	common	La Buse
	<i>lagopus</i>	roughlegged	pattue
XI.	CIRCUS	HARRIER	BUSARD
	<i>aeruginosus</i>	Moorbuzzard	Harpaye
	<i>apivorus</i>	honey	bondree
	<i>cyaneus</i>	Ringtail, or Henharrier	St. Martin
XII.	OTUS	HORNOWL	HIBOU
	<i>Bubo?</i>	Eagle Owl	Grand Duc
	<i>Asio</i>	Hornowl	Moyen Duc
	<i>brachyotus</i>	shorteared	Brachiote

Class.	GENUS & Species.	English Names.	Foreign Names.
XIII.	OTUS, <i>cont.</i>	HORNOWL	HIBOU
	<i>Scops</i>	scopseared	petit duc
	STRIX	OWL	CHOUETTE
	<i>nyctea?</i>	Snowy	Harfang
	<i>nebulosa</i>	barred	nebuleuse
	<i>Stridula</i>	Screechowl	Chathuant
	$\beta.$ <i>Aluco</i>	black	hulotte
	<i>flammea</i>	white	Effraie [che
	Ulula	grey	grand Cheve-
	Noctua	rufous	rouge
XIV.	posserina	little	petite Cheve.
	tengmalmi	lesser	tengmalm
	accidica	Acadian	Chevechette
	NOCTUA	NIGHTHAWK	ACCIPITRINE
XV.	uralensis	common	de l'Oural
	funera	funereal	eperriere
XVI.	LANIUS	SHRIKE	PIEGRIECHE
	<i>excubitor</i>	ashcolored	grise
	<i>rufus</i>	redbacked	ecorceur
	<i>nutilus</i>	woodchat	rousse
XVII.	minor	lesser	petit
	CORVUS	CROW	CORBEAU
	<i>Corax</i>	Raven	Corbeau
	<i>Corone</i>	Crow	Corneille
	<i>Cornix</i>	Hooded	Coucentetée
	<i>frugilegus</i>	Rook	Freux
	<i>Monedula</i>	Jackdaw	Choucas
	<i>pyrrhocorax</i>	alpine	Choquard
	<i>Gracculus</i>	Chough	Coracias
	<i>Pica</i>	Magpie	Pie
XVIII.	<i>Glandarius</i>	Jay	Geay
	BOMBICI	WAXWING	JASSEUR
XVIII.	VORA		
	<i>Bohemica</i>	silktail	grand
XVIII.	CARYOCATAC-	NUTCRACKER	CASSENOIR
	TES		
	<i>nucifraga</i>	common	grand

Class.	GENUS & Species.	English Names.	Foreign Names.
XIX.	ORIOIUS <i>Galbula</i>	ORIOLE golden	LORIENT le Lorient
XX.	CORACIAS <i>garrula</i>	ROLLER common	ROLLIER vulgaire
XXI.	STURNUS <i>vulgaris</i>	STARLING common	ÉTOURNEAU vulgaire
XXII.	CUCULUS <i>canorus</i>	CUCKOO common	COUCOU gris
XXIII.	JYNX <i>Torquilla</i>	WRYNECK common	TORCOL ordinaire
XXIV.	SITTA <i>Europæa</i>	NUTHATCH woodcracker	SITELLE tordepot
XXV.	PICUS <i>martius</i> <i>viridis</i> <i>canus</i> <i>major</i> <i>medius</i> <i>minor</i> <i>leuconotus</i> <i>tridactylus</i>	WOODPECKER black green hoary greater middle smaller various tridactile	PIC noir vert cendré epeiche mar epeichette leuconote tridactyle
XXVI.	UPUPA <i>Eops</i>	HUPPOC common	HUPPE La hapé
XXVII.	CERTHIA <i>familiaris</i>	CREEPER common	GRIMPEREAU le Grampereau
XXVIII.	TRICHODROMA <i>phaenicoptera</i>	WALLCREEPER common	TRICHODROME rouge
XXIX.	MEROPS <i>apsiaster</i>	BEE-EATER common	GUEPIER vulgaire
XXX.	ALCEDO <i>Alcyo</i>	KINGFISHER common	ALCYON Martin Pe- cheur
XXXI.	TURDUS <i>Viscivorus</i> <i>musicus</i> <i>pilaris</i> <i>iliacus</i> <i>torquatus</i>	THRUSH Misslethrush Songthrush Fieldfare Redwing Ringouzel	MERLE La Draine La Grive Liorne La Mauvis à Plastrou

Class.	GENUS & Species.	English Names.	Foreign Names.
	TURDUS, <i>cont.</i>	THRUSH	MERLE
	<i>Merula</i>	Blackbird	Le Merle
	<i>Saxitiles</i>	rock	de roche
	<i>cyanus</i>	blue	bleu
	<i>arundinacius</i>	reed	La Rousserolle
XXXII.	CINCLUS	OWZEL	CINCLE
	<i>aquaticus</i>	Waterowzel	Le Merled'Eau
XXXIII.	MUSICAPA	Flycatcher	Gobemouche
	<i>Grisola</i>	spotted	Le Gobemou.
	<i>albicollis</i>	whitenecked	à Colléer
	<i>luctuosa</i>	Pied	le Traquet
	<i>parva</i>	small	rogeâtre
XXXIV.	SYLVIA	WARBLER	BECFIN
	<i>Luscinia</i>	Nightingale	Rossignol
	<i>Philomela</i>	greater	Philomele
	<i>orphea</i>	Orphean	Orphée
	<i>nisoria</i>	Grassmücke	rayé
	<i>atricapilla</i>	Blackcap	à tete noire
	<i>hortensis</i>	Pettychaps	Fauvette
	<i>Cinerea</i>	Whitethroat	Grisette
	<i>curruca</i>	karuka	Babillarde
	<i>rubecula</i>	Redbreast	Rougegorge
	<i>Succica</i>	Bluebreast	Bluegorge
	<i>tithys</i>	Redtail	Rougequeue
	<i>Phoenicurus</i>	Redstart	Rosignolle de Murailles
	<i>modularis</i>	Hedgesparrow	Mouchet
XXXV.	FICARIA	WILLOWWREN	FAUVETTE
	<i>Hippolais</i>	Lesser Petty- chaps	Gelbraüchi- ger sänger
	<i>flavescens</i>	Yellow Wren	Fitis sanger
	<i>sylvicola</i>	Green Wren	Grünersanger
	<i>sibilatrix?</i>	kissing	siffleur?
	<i>rufa</i>	rufous	véloce
XXXVI.	REGULUS	WREN	TROGLODITE
	<i>Cristaurea</i>	Goldcrest	Roitelet
	<i>Troglodytes</i>	common	Troglodite

Class.	GENUS & Species.	English Names.	Foreign Names.
XXXVII.	SALICARIA	REED WREN	FAUVETTE DE EAU
	<i>fluviatilis</i>	river	riverain
	<i>locustella</i>	Grasshopper- lark	locustelle
	<i>nigrifrons</i>	blackfronted	à bandeau noir
	<i>aquatica</i>	water	aquatique
	<i>phragmitis</i>	phragmite	phragmite
	<i>arundinacea</i>	Reedsparrow	des Roseaux
XXXVIII.	CURRUCA	MOORTITLING	TRAQUET
	<i>Oenanthe</i>	Wheatear	Moteux
	<i>vitiflora</i>	red wheatear	montaguard
	<i>melanoleuca</i>	pie	leucomete
	<i>rubetra</i>	Winchat	Tarier
	<i>rubicola</i>	Stonechat	Traquet
XXXIX.	ACCENTOR	ALPINE STAR- LING	ACCENTEUR
	<i>alpinus</i>	common	des Alpes
XL.	MOTACILLA	WAGTAIL	BERGERONETE
	<i>alba</i>	pie	La Lavandiere
	<i>boarula</i>	grey	jacine
	<i>flava</i>	spring	printaniere
XLI.	ANTHUS	WOODLARK	FARLOUSE
	<i>arboreus</i>	common	des buissons
XLII.	SPIPOLA	PIBIT	PIBIT
	<i>aquatica</i>	Meadowlark	Spioncelle
	<i>rufescens</i>	Willowlark	Rousselene
	<i>pratensis</i> *	Titlark	Cujelier
XLIII.	AULADA	LARK	ALOUETTE
	<i>tartarica</i>	mutable	nègre
	<i>Calandra</i>	Mongolian	Calandre
	<i>Cristata</i> †	crested	cochevis
	<i>alpestris</i>	Shorelark	Hausse col noir

* The Germans call this bird *Wiesenpieper*.

† This is the *Hauberlerche* of Bechstein; and the *Cochillarde* of Buffon is a variety of it.

Class.	GENUS & Species.	English Names.	Foreign Names.
XLIV.	ALAUD, <i>cont.</i> <i>arvensis</i> *	LARK Skylark	ALOUETTE ordinaire
	<i>arborea</i>	lesser crested	Lula
	<i>brachdactyla</i>	Temminck's	a doists courts
	PARUS <i>viridis</i>	TITMOUSE Oxeye	MESANGE grosse
	<i>coeruleus</i> <i>ater</i>	Tomtit Colemouse	bleu petite cher- honiere
XLV.	<i>palustris</i> Sibericus	marsh Siberian	Nonnette à ceinture blanche
	Cyanus Cristasus	azure crested	azurée cristée
	MECISTURA <i>Vagans</i>	TAILPYE wandering	Lorgequeue Codibugnolo
XLVI.	CALAMOPHI- LUS <i>biarmicus</i> <i>pendulinus</i>	REEDBIRD bearded penduluni	MONSTACHE barbue Remiz
XLVII.	EMBERIZA <i>citrinella</i> † <i>Schoeniclus</i>	BUNTING Yellowham. Reedsparrow	ORTOLAN Bruant Cocholuche de Roseaux
	<i>miliaria</i> ‡ <i>hortulana</i>	common Ortolan	Proyer Ortolan
	<i>Circlus</i> § Cia	Cirb Lorraine	Zizi de Lorraine
	<i>rivalis</i> || <i>calcarata</i>	Snow Bunting Laplandfinch	de neige eperonnier
	XLVIII.	CRUCIROSTRA <i>pytiopsittacus</i> <i>Curvirostra</i>	CROSSBILL greater common	BECCROISE des sapins des pins

* The Skylark is the *Feldlerche* of Bechstein.† This is the *Goldammer* of Bechstein.‡ Die *Grauanmer*. Beech.§ *Zivolo nero*. Stor. del-recc.|| *Schneammer*. Bech.

Class.	GENUS & Species.	English Names.	Foreign Names.
XLIX.	LOXIA <i>coccythrustus</i> <i>rosea</i> <i>chloris</i>	GROSBEEK common crimson head. Greenfinch	GROSBEC vulgaire crainoisi Verdier
L.	PYRRHULA <i>enucleator</i> <i>cocinea</i>	BULLFINCH pine common	BOUVREUIL Durbec commun
LI.	PASSER <i>domesticus</i> <i>montanus</i> <i>petronia</i> Seripus <i>Linota</i> <i>β Cannabinus</i>	SPARROW house mountain Boulogne Serin Linnet Great Redpole	MOINEAU franc friquet de Boulogne Cini Linote Linote des Vignes
LII.	FRINGILLA <i>Coelebs</i> <i>montifringilla</i> <i>nivalis</i>	FINCH Chaffinch Brambling Snow	PINSON Pinson d'Ardenne Niverolle
LIII.	LINARIA <i>citrinella</i> <i>Spinus</i> <i>Carduelis</i> <i>minor</i> *	LINNET Citrilfinch Siskin Goldfinch lesser Redpole	TARIN venturon Tarin Chardonneret Sizerin
LIV.	HIRUNDO <i>Procne</i> <i>clivicola</i> <i>urbica</i> <i>rupestris</i>	SWALLOW chimney Landmartin Martlet Rockswallow	HIRONDELLE de cheminée de rivage de fenêtre du roches
LV.	CYPSELUS <i>alpinus</i> <i>apus</i>	SWIFT mountain Blackmartin	MARTINET a ventre blanc noir
LVI.	COLUMBA <i>Oenas</i> <i>Turtur</i> <i>livia</i>	PIGEON Rockpigeon Turtle domestic	PIGEON Colombin tourterelle domestique

* Also called *petite Linote du Vignes*, or *Carbaret*.

Class.	GENUS & Species.	English Names.	Foreign Names.
LVII.	PALUMBIS <i>torquata</i>	DOVE Ringdove	COLOMBE Ramier
LVIII.	PHASIANUS <i>Colchicus</i>	PHEASANT common	FAISAN vulgaire
LIX.	TETRAO <i>Urogallus</i> <i>Tetrix</i> <i>medius</i> <i>bonasia</i>	GROUSE Cock of the Wood Black Cock bustard Hazel Grouse	TETRAS Ceq. de Bruy- ère Gallo di Monte Rakkelhan Gélinotte
LX.	LAGOPUS <i>rupestris</i> <i>Scotticus</i> <i>saleceti</i> <i>Lapponicus</i>	PTARMIGAN Ptarmigan Moorcock Willow Lapland	LAGOPETE blanc Attagas des Saules Rehusak
LXI.	PTEROCLES <i>arenarius</i> <i>setarius</i>	GANGA Sandgrouse pintailed	GANGA Unibande cata
LXII.	FRANCOLINUS <i>vulgaris</i>	FRANCOLINE common	FRANCOLIN a collen rouge
LXIII.	PERDIX * <i>Graeca</i> <i>rubra</i> <i>Petrosa</i> <i>cinerea</i>	PARTRIDGE Greek Guernsey Barbary common	PERDRIX Bastavelle rouge de Barbaric — —
LXIV.	COTURNIX <i>dactylisonans</i>	QUAIL common	CAILLE vulgaire
LXV.	TURNIX <i>Africanus</i> <i>lunatus</i>	BASTARDQUAIL African Gibraltar	TURNIX tachidrome à croissants
LXVI.	OTIS <i>tarda</i> <i>tetrax</i> <i>houbara</i>	BUSTARD great little ruffed	OUTARDE barbue Canepetiere houbara
LXVII.	FEDOA <i>Oedienemus</i>	STONECURLEW common	OEDICNEME Courlis de terre

* The Germans call the Partridge *Feldhuhn*.

Class.	GENUS & Species.	English Names.	Foreign Names.
LXVIII.	CHARADRIUS *	PLOVER	PLUVIER
	<i>Pluvialis</i>	Golden Plover	Pluvier d'or
	<i>griseus?</i>	Grey Plover	Pluvier gris
	<i>Morinellus</i>	Dotterel	Guignard
	<i>hiaticula</i>	Ring Dotterel	Pluvier à col- lier
	minor	Curonian	Petit P. à col- lier
	Cantianus	Kentisch	— —
LXIX.	ARENURIA	SANDERLING	SANDERLING
	<i>calidris</i>	Sanderling	Sanderling
LXX.	HIMANTOPUS	LONGSHANKS	ECHASSE
	atropterus	— —	cavaliere
LXXI.	HAEMATOPUS	OYSTERCATCH.	HUITIERIER
	Ostrallgus	common	pie
LXXII.	CURSORIUS	CURSOR	COUREVITE
	isabellinus	creamcolored	isabelle
LXXIII.	VANELLUS	LAPWING	VANNEAU
	<i>Gavia</i>	Peewit	Vanneau
LXXIII.	SQUATAROLA	SQUATEROLE	SQUATEROLLE
	<i>grisea</i>	grey	V. Pluvier
LXXIV.	STREPSILAS	TURNSTONE	TOURNEPIERRE
	Interpres	common	vulgaire
	PRATINCOLA	PRATINCOLE	GLAREOLE
	Austriaca	Austrian	Perdrinde mer
LXXV.	GRUS	CRANE	GRUE
	canorus	common	commune
LXXVI.	CICONIA	STORK	CIGOGNE
	nigra	black	noire
	Magnari	American	Le Magnari
	ARDEA	HERON	HERON
	<i>Cinerea</i>	Ammon	commune
	purpurea	purple	pourpré
	Aigreta	Egret	Aigrette

* The words *Plover* and *Pluvier* signify foretellers of rain. The Germans call them *Regenpfeifer*, the Italians *Piviere*, the Flemish *Plevier*.

Class.	GENUS & Species.	English Names.	Foreign Names.
	ARDEA, cont.	HERON	HERON
	garzetta	garzett	garzette
	ralloides	squacio	crabier
	minuta	lesser	petit blongios
LXXIII.	BUTOR	BITTERN	BUTOR
	<i>Stellaris</i>	common	grand
LXXIV.	NYCTICORAX	NIGHTRAVEN	BITEREAN
	<i>infrustus</i>	common	vulgaire
LXXV.	PHOENICOP- TERUS	FLAMINGO	FLAMMANT
	ruber	red	rouge
LXXVI.	RECURVIROS- TRA	AVOCET	AVOCETTE
	<i>avocetta</i>	common	à nuque noire
LXXVII.	PLATALEA	SPOONBILL	SPATULE
	<i>leucoradia</i>	white	blanche
LXXVIII.	IBIS	IBIS	IBIS
	<i>Sacra</i>	sacred	sacré
LXXIX.	Numenius	CURLEW	COURLIS
	<i>arcuata</i>	common	cendrè
	<i>Ptaeopus</i>	Whimbrel	corlieu
LXXX.	TRINGA *	KNOT	BECASSEAU
	<i>suberquata</i>	red	corealli
	<i>variabilis</i>	strandläufer	Cincle
	<i>Patiryncha</i>	Pigmy	Platyrinque
	<i>Temminckii</i>	Temminicks	temmia
	<i>minuta</i>	small	echasses
	<i>Cinerea</i>	common knot	Maubecie
LXXXI.	PAVONCELLA †	RUFF & REEVE	PAVONCELLE
	<i>pugnax</i>	common	Combattant
LXXXII.	GOTANUS ‡	SANDPIPER	CHEVALIER
	<i>fuscus</i>	brown	De Courlande
	<i>Calidris</i>	Redshank	Gambetta
	<i>stagnitiles</i>	northern	Stagnatile

* The Germans call this genus *Standläufer*.

† The female is the *Reeve*, and the male the *Ruffe*.

‡ The Dutch call this genus *Strandlooper*.

Class.	GENUS & Species.	English Names.	Foreign Names.
	TOTANUS, <i>cont.</i>	SANDPIPER	CHEVALIER
	<i>ochropus</i>	Greenedged	culbiano
	<i>glareola</i>	wood	sylvain
	<i>macularia</i>	spotted	perlé
	<i>hypoleucos</i>	Sealark	Guignette
LXXXIII.	LIMICULA	HORSEMAN	LIMICULE
	<i>Glottis</i>	Greenshank	Barge Aboy- euse
LXXXIV.	LIMOSA	GODWIT	BARGE
	<i>Jadrecka</i>	Jadrecka	à que noire
	<i>rufa</i> ? *	red ?	rouge ?
	<i>rufa</i>	common	rousse
	<i>Meijeri</i>	Meyer's	de Meyer
LXXXV.	SCOLOPAX	WOODCOCK	BECASSE
	<i>rusticola</i>	common	vulgaire
LXXXVI.	GALLINAGO	SNIBE	BECASINE
	<i>major</i>	greater	grand
	<i>media</i>	common	vulgaire
	<i>minima</i>	Jacksnipe	petite
LXXXVII.	RALLUS	RAIL	RALE
	<i>aquaticus</i> †	Water Rail	Râte d'eau
LXXXVIII.	CREX	CORNCRAKE	CRECCA
	<i>pratensis</i>	Land Rail	Roi de Cailles ‡
	<i>porzana</i>	Spotted Rail	marouette
LXXXIX.	ZAPORINA	CRAKER	NAINE
	<i>Galinella</i>	little	petite
XC.	GALLINULA	GALINALE	POULE d'eau
	<i>chloropus</i>	Water Hen	ordinaire
XCI.	FULICA	COOT	MACROULLE
	<i>atra</i> §	Bald Coot	morelle
XCII.	PHALAROPUS ||	PHELAROPÉ	PHALAROPÉ
	<i>griseus</i>	grey	endre
	<i>hyperboreus</i>	red	rouge

* There is a var. called Red and Godwit, besides the real Red Godwit.

† *Wasser Ralle*, German.

‡ The English also call this bird *King of the Quails*, and the Germans *Wiesenkarrner*; the Dutch call it *Kwartel Konig*.

§ *Wasserhuhn*, German.

|| *Wassertreper*, German.

Class.	GENUS & Species.	English Names.	Foreign Names.
XCIV.	PODICEPS *	GREBE	GREBE
	<i>cristatus</i>	crested	huppé
	<i>rubicollis</i>	rednecked	jougris
	<i>carnutus</i>	Slavonian	Esclavon
	<i>auritus</i>	eared	Orcillard
	<i>minor</i>	Didapper	Castagneux
	<i>obscurus?</i>	dusky	gris
	<i>hybridicus?</i>	hybrid	hybride
XCV.	STERNA	TERN	HIRONDELLE DE MER
	<i>Caspia</i>	Caspian	techegrave
	<i>Boysii</i>	Sandwich	caugek
	<i>Hirundo</i>	Sea Swallow	Pierre garin
	<i>minuta</i>	Little Sea Swallow	petit
	<i>nigra</i>	Car Swallow	Epouvantail
	<i>Anglica?</i>	English	d'Angleterre
	<i>Dorgolli?</i>	Roseat	colour de rose
	<i>obscura</i>	Dusky	obscure
	XCVI	CATURATES	SEA GULL	GOELAND
<i>maximus</i>		Blackbacked	à manteau noir
<i>naevius? †</i>		Wagel	varié
<i>glaucus</i>		glaucus	à manteau bleu
XCVII.	<i>fuscus</i>	Herring	gris
	LARUS	MEW	MOUETTE
	<i>eburneus</i>	ivory	blanche
	<i>canus</i>	common Sea Mew	d'hiver
	<i>rissa</i>	Kittiwake	kutgeghet
	<i>ridibundus</i>	Blackheaded	ricuse
XCVIII.	<i>minutus</i>	least	Plus petite.
	LESTRIS	SKUA GULL	MAUVE
	<i>fusca</i>	Skua Gull	brun
	<i>parasiticus</i>	arctic	Labbe
	<i>crepicatus</i>	Blacktoed	Stercoraire

* *Steissfuss*, German.

† This is the Wagel of Bewick.

Class.	GENUS & Species.	English Names.	Foreign Names.
XCIX.	LESTRIS, cont. Pomerinus	SKUA GULL rayed	MAUVE Pomarin
	PROCELLARIA Glacialis	PETREL Tulmar	PETREL Tulmar
	Pelagica	Stormy	pigné
C.	CYGNUS <i>caneus</i> <i>olor</i> <i>nigra</i>	SWAN wild tame black	CYGNE sauvage d'ambigue noir
CI.	ANSER <i>hyperboreus</i> <i>Cinereus</i> * <i>Segetum</i> <i>albifrons</i> <i>Bernicla</i> <i>leucopsis</i> <i>ruficollis</i> <i>Canuginosus</i>	GOOSE Snow Goose Wild Goose Bean Goose Whitefronted Brent Goose Bernicle redbreasted eider	OIE de neige Cendrée sauvage rieuse Cravant Bernache à cou rouge eider
CII.	ANAS <i>nitila</i> <i>tadorna</i> <i>Boscas</i> <i>Strepera</i> <i>acuta</i> <i>Penelope</i> <i>clypeata</i> <i>querquedula</i> <i>Crecea</i>	DUCK ruddy Shieldra ke Mallard Gadwall pintailed Widgeon red Shoveller Summer Teal Teal	CANARD ktarka Tadorne sauvage chifreau à longue queue Siffleur souchet Sarcelle d'été Sarcelled'hyv.
CIII.	QUERQUEDU- LA <i>fusca</i> <i>nigra</i> <i>cinaeracus</i> <i>leucocephala</i> <i>glacialis</i>	QUERQUEDU- LA velvet Scoter cinaeracus White Headed longtailed	QUERQUE- DRULE double Ma- creuse Macreuse grisette Couronnée dimiclon

* Wild gemeine Gans, German.

Class.	GENUS & Species.	English Names.	Foreign Names.
	QUERQ. <i>cont.</i> <i>rufina</i> <i>marila</i> <i>ferina</i> <i>clangula</i> <i>fuligula</i> <i>nyroca</i>	QUERQUED. redcrested Scaupduck Pochard goldeneyed tufted African Teal	QUERQUED. Siffleur huppé Milouin Milouin Garrot Morillon Scarcelle d'Aegypt histrion
CIV.	MERGUS * <i>Merganser</i> <i>femine</i> ? † <i>Serrator</i> <i>albellus</i> ‡	GOOSANDER goosander Dundiver Merganser Smew	HARLE grand female? happé niette
CV.	PELICANUS <i>onochrontalus</i>	PELICAN white	PELICAN blanc
CVI.	CARBO <i>cormoranus</i> <i>graculus</i> <i>pygmaeus</i>	CORMORANT Cormorant Shag Lesser Shag	CORMORANT grand Nigaud Pigme
CVII.	SULA <i>moris</i> §	GANNET Gannet	BASSAN Grand Tou.
CVIII.	COLYMBUS <i>glacialis</i> <i>arcticus</i> <i>septentrionalis</i>	DIVER Northern blackthroated redthroated	PLONGEON Imbrim Lumme Cat Marin
CIX.	URIA <i>troile</i> <i>minor</i> ? <i>grylle</i>	GUELLEMOT foolisch lesser? black	GUELLEMOT guellemot petit? noir
CX.	FRATERCULA <i>arctica</i>	PUFFIN coulterneb	MACAREU vulgaire
CXI.	MERGULUS <i>melanoleucos</i>	AUK little	GUILEMETTE petite

* *Mergo*, Italian. *Gansensüger*, German. *Zaagliek*, Flemish.

† Also called Sparling Fowl. ‡ Or White Nun.

§ The young of this are the Spotted Boby, &c.

Class.	GENUS & Species.	English Names.	Foreign Names.
CXII.	ALCA <i>impennis</i>	PENQUIN great	PENGOIN grand
CXIII.	UTAMANNIA <i>torda</i> <i>pica</i>	RAZORBILL great whitethroated	MORMON grand petit

To which may be added,

PAVO *cristatus*, the Pea Fowl; CYGNUS *mutus*, tame Swan; GALLUS *domesticus*, Dunghill Fowl; MELLEAGRIS *gallipova*, Turkey; NUMIDIA *Meleugris*, Guinea Fowl.

APPENDIX.

Nomenclature of Colours used in describing Flowers

FROM WILDENOW AND OTHERS.

We shall append the ensuing Catalogue of Colours for general uses, in addition to what we have said at pp. 89, 90, and 91.

P. 89. *Coeruleus*, sky blue, like the flowers of the *Veronica chamaedrys*, the *Anchusa sempervirens*, or the *Borago officinalis*.

Azareus, azure blue, much like the former, but brighter, like ultramarine, are in the pure light blue flowers of the *Cynoglossum omphalodes*.

Cyaneus, deep blue, like Prussian blue, as in the flowers of the beautiful *Gentiana acaulis*, and others of this genus, the *Delphinian Ajacis*, and other Larkspurs; the same colour, but duller, is seen in the Monkshood, *Aconitum napellus*, and other Wolfsbanes.

Caesius, dull light blue grey.

Aeruginosus, bluish green like verdigrease, or the leaves of some of the Pine trees.

Atrovirens, dark green.

Prasinus, grass green of the purest kind, like the colour of the fresh meadows before there is any mixture of yellow from the vernal flowers; this colour is expressed sometimes by *laeti virens*.

Smaragdus, pure green.

Flavovirens, yellowish green.

Glaucus, sea green bordering on grey.

Olivaceus, olive colour.

Aureus, golden yellow, like the inside of the wild *Ranunculi* that cover our meadows, the bright star of the Pilewort *Ficaria verna*, the Sunflower, the Dandelion, and many of our syngeneceous flowers.

- Flavus*, yellow, as in early Daffodil, *Narcissus Pseudonarcissus*, and many others of this tribe.
- Luteus*, rather a deeper and more dead yellow, like the outside of the petals of the yellow Crocus; in flowers of *cistus helianthemum*.
- Sulphureus*, bright but paler yellow, that is, having not the slightest orange tinge whatever, as for instance, the flowers of the *Hieracium Pilosella*, or of one variety of the *Tagetes erecta*, though the most common variety has orange flowers.
- Flavescens*, yellowish or pale whitish yellow.
- Ochraceus*, yellow striped with brown, like yellow Ochre, or the feathers on the upper parts of the *Strix flammula*.
- Vitellinus*, yellow verging to orange, as in pale Marigolds.
- Croceus*, deep yellow, as in the inside the petals of *Crocus moesiacus*.
- Aurantiacus*, orange coloured, as in the flowers of the Marigold *Calendula officinalis*, or deeper in the *Hieracium aurantiacum*; when *loete aurantiacus* is expressed it means bright and deeper, as in the flower of the Nasturtians *Tropaeolum majus*.
- Ferrugineus*, yellowish brown, like Scotch snuf, yellow Cinctora or rust of iron.
- Fuscus*, greyish brown.
- Brunneus*, deep dark brown.
- Castaneus*, chesnut, a sort of orange brown.
- Hepaticus*, liver coloured.
- Badius*, nearly the same but browner.
- Atropurpureus*, very dark reddish purple, as in *Scabiosa atropurpurea*.
- Purpureus*, purple, of which are many shades and mixtures, as we may see by comparing the purple spring Crocus *crocus vernus*, the *Convolvulus purpureus*, the *Paeonia peregrina*, which is almost like some varieties of *Aster Chinensis*.
- Phoeniceus*, crimson, as in *Paeonia officinalis*, some varieties of the *Aster Chinensis*, &c.
- Atrorubens*, dark red, as in *Amaranthus hypochondriacus*.

Coccineus, high crimson, used also for the bright scarlet, as in *Salvia coccinea*.

Puniceus, fine bright red or carmine, as in *Lobelia fulgens*.

Cinnabarinus, like red lead or cinnabar; a sort of cinnabar is exemplified in the gay light red of *Papaver Orientalis*, or paler in *Anagallis arvensis*.

Carneus, flesh colour, as the pale blossom of *Hesperis matronalis*.

Miniatus, dull red.

Ruber, red in general.

Rufus, carrot colour, or brownish red orange.

Sanguineus, blood colour.

Roseus, rose colour, or red pink, whereas *pallide roseus* is pale pink.

Violaceus, violet deep bluish purple, as in *Viola odora*.

Liliacinus, lilac, as in *Syringa vulgaris*.

Niger, black.

Ater, deepest black.

Cinereus, ash coloured.

Griseus, lively grey, and when hoary *Canus*.

Lividus, dark greyish violet.

Lacteus, milkwhite.

Albus, white in general.

Albidus, stone colour.

Hyalinus, transparent like glass.

Various other compound words are used, and made for each occasion.

Note to p. 204, article *Nebula*. Sir William Herschell considered all the stars which we see as single insulated stars to be Solar Systems, having probably planets and comets moving round them, and that all these were in the plane of that great zone of light called the Galaxy. He also thought that the composition of this said milky way was different from that of the stars which might be called Solar Systems, and that it contained Sidereal Systems, or double and multiple stars revolving round empty centres, and also various other groups, clusters, and nebulae; indeed he enumerated the sorts which compose what we call the starry heavens,—to wit:

1. *Solar Systems*, as the Sun and planets, Sirius and probably his planetary system, Procyon, Rigal, Markab, Menkar, Lyra, Arcturus, Aquila, and so on.
2. *Sidereal Systems* of double stars, revolving round an empty centre.
3. *Sidereal Systems* more complicated, and made of triple and multiple stars moving round a common empty centre.
4. *Clustering Stars* and the Milky way, or myriads of small telescopic stars which shew a tendency to a sort of centre.
5. *Groups of Stars* or collections of closely compressed stars forming a group of almost any figure or outline.
6. *Clusters of Stars*, a magnificent and rather beautiful arrangement of stars, whose compression shews a gradual and rather sudden accumulation towards the centre.
7. *Nebulae*, or circumscribed luminous spaces.
8. *Stars with Bars*, or stellar Nebulae.
9. *Milky Nebulosities* of irregular shapes, the most remarkable of which is the one in the head of Orion, which in some measure varies its figure.
10. *Nebulous Stars*, which appear to have a luminous atmosphere round them.
11. *Planetary Nebulae*, or light round spaces.
12. *Planetary Nebulae*, with lucid centres.

SUPPLEMENT TO PART IV.

Being a curious MS. Ephemeris of Nature, in which the Days are named according to the phenomena which happens on an average of Years on each Day; the names of the Months are also taken from their natural character.

JANUARY,

HYEMALIS.

1. Prothemera
2. Senecioniflora
3. Nivalis
4. Helleboriflora
5. HEMBRAUXIS
6. Nivosus
7. Erythacicantus
8. Aurorifera
9. Funaria
10. PHOTODOSIA
11. Coryliflora
12. Taxiflora
13. Veroniciflora
14. Frigidissima
15. VISCIVORICANTUS
16. Electrica
17. Stellibunda
18. Hederiflora
19. Glaciosa
20. MERULICANTUS
21. Stillicidium
22. Solispicium
23. Vinciflora

24. Vigilantia
25. PROGNOSTICARIA
26. Tussilaginiflora
27. Rosmariniflora
28. Earanthiflora
29. Diluviosa
30. RHIGEOMIOSIS
31. Turdicantus

FEBRUARY,

PLUVIALIS.

1. *Primaveralis*
2. Galanthiflora
3. Gallinovipara
4. Fossiflumina
5. ALAUDICANTUS
6. Crociflora
7. Drabiflora
8. Pluviosa
9. Primuliflora
10. Agnosa
11. Nivimbris
12. Hepaticiflora

13. Vespertilionivola
14. Galanthosa
15. CORVINIDUS
16. Cyclaminiflora
17. Laureoliflora
18. Perdicinubia
19. Alsiniflora
20. FEBRICULOSA
28. Picocachinnus
22. Margaritiflora
23. Hepaticosa
24. Anniflua
25. ORNITHOGAMIA
26. Crocosa
27. Columbaria
28. OEDICNEMISONA
29. Intercalaria

MARCH,
VERSATILIS.

1. Porrifolia
2. Armeniaciflora
3. Pruniflora
4. Violodora
5. RANICOAXUS
6. Mezereonanthis
7. Daffodilliflora
8. Saliciflora
9. Amygdaliflora
10. HIPPOLAIDICANTUS
11. Jonquilliflora
12. Ulularia
13. Pansiflora
14. Narcissiflora
15. NIDIFICATIO
16. Persiciflora
17. Farfariflora
18. Erythroniflora

19. Violiflora
20. AEQUINOCTIUM
21. Omphalodeanthis
22. Ficariflora
23. Daffodillosa
24. Bellidiflora
25. PAPILIONIFERA
26. Scopoliflora
27. Hyacinthiflora
28. Calthiflora
29. Lamiosa
30. AVENISATIO
31. Coroniflora

APRIL,
GERMINALIS.

1. Ornithophoria
2. Fritillariflora
3. Cheiranthiflora
4. Cerasiflora
5. CARDAMINIFLORA
6. *Vernalis*
7. Anemoniflora
8. Doroniciflora
9. Primulosa
10. PHOENICUROPHORIA
11. Leontodontodes
12. Philomelicantus
13. Ficariosa
14. Grandinifera
15. CHELIDONOPHORIA
16. Violosa
17. Pyriflora
18. Ulmifrondes
19. Spiniflora
20. CUCULISONA
21. Jyngisona
22. Hippocastinifrondes

23. Scilliflora
24. Trogletiphoria
25. ORNITHOSYNODIA
26. Pratingala
27. Galeobdoliiflora
28. Tulipiflora
29. Matheoliiflora
30. CYPSELOPHORIA

MAY,
FLORALIS.

1. Florilegium
2. Pomiflora
3. Cruciflora
4. Quercifrones
5. ULMIFOLIA
6. Asphodiliiflora
7. Syringiflora
8. Globiflora
9. Convallaria
10. APODIPHORIA
11. Oxycanthiflora
12. Iridiflora
13. Rallierecca
14. Cuculiflora
15. Tulipigaudium
16. Laburniflora
17. Rhododendriflora
18. Hieracialis
19. Paeoniflora
20. CHRYSOLIMONES
21. Fagifolia
22. Papaveriflora
23. Opuliflora.
24. Floridissima
25. MEGAHEMERA
26. Protorhodia
27. Argemoniflora

28. Quercifolia
29. Caryophylliflora
30. ANYCTERA
31. Xantholilianthis

JUNE,
SOLSTITIALIS.

1. Pseudacoriflora
2. Pimpernelliflora
3. Leucanthemiflora
4. Sambuciflora
5. TONSURA
6. Rosiflora
7. Caryophillodes
8. Fragilegium
9. Gladioliiflora
10. DIESTITIUM
11. *Solstitialis*
12. Iridodes
13. Rhaeadiflora
14. Pantorhodia
15. CERASILEGIUM
16. Campaniflora
17. Rutililianthis
18. Dianthiflora
19. Lychnidiflora
20. FULGURIFERA
21. SOLSTITIUM
22. Lampyridopsis
23. Calceolaria
24. Hypericiflora
25. FOENISECIUM
26. Papaverosa
27. Fulminisona
28. Helianthemiflora
29. Agrimoniflora
30. HEMEROMIOSIS

JULY,
AESTIVALIS.

1. Agrostemmatiflora
2. Calenduliflora
3. Oenotheriflora
4. Cyaniflora
5. ORNITHOSIOPE
6. Ribefructus
7. Leucolilianthis
8. Rubifructus
9. Imbrifera
10. NYCTODOSIA
11. Lavanduliflora
12. Tropoeolosa
13. Verbasciflora
14. Convolvuliflora
15. INDICATORIA
16. *Aestivalis*
17. Tracheliflora
18. Helianthiflora
19. Epilobiosa
20. SECALISECIUM
21. Alismiflora
22. Apicidium
23. Butomiflora
24. Baccaurantia
25. FRUMENTISECIUM
26. Tagetiflora
27. Lithrosa
28. Campanuliflora
29. Veratriflora
30. HORDEISECIUM
31. Melonifera

AUGUST,
MESSIFERUS.

1. Calendulosa

2. Muscaria
3. Hieraciodes
4. Tigridiflora
5. AVENISECIUM
6. Ostralegium
7. Antirrhinaria
8. Scabiosiflora
9. Spicilegium
10. METEORODES
11. Vorticaria
12. Astriflora
13. Oestripestis
14. Carthamiflora
15. CLEMATIDANTHODES
16. Nephalichromata
17. Solidaginiflora
18. Megaphotophora
19. Virgaurea
20. VESPIFERA
21. Aphantapus
22. Inuliflora
23. Conyziflora
24. Helianthosa
25. RECENENTIA
26. Tagetosa
27. Apargiosa
28. Amelliflora
29. Uranochromata
30. BOVISTRIDULA
31. Ambustularia

SEPTEMBER,
POMOSUS.

1. Perdiciidia
2. Incendaria
3. Hirundinigregia
4. Vesposa
5. PASSERIGREGIA

6. Ponderata
7. Boviboatio
8. Humulilegium
9. Vanelligregia
10. PRUNILEGIUM
11. Juglantilegium
12. Astrodes
13. Stigmaticisio
14. Passiflora
15. FABISECIUM
16. Boletosa
17. Agaricosa
18. Coreopsidiflora
19. Colchiciflora
20. DYSENTERIALIS
21. Nucilegium
22. Tabacilegium
23. LIBRATIO
24. Nepheoschemata
25. OSCHROPHORIA
26. Zinnianthis
27. Glandilegium
28. Saffraniflora
29. *Autumnalis*
30. METOICESIS.

OCTOBER.

VINDEMIALIS.

1. Venatoria
2. Cynophonia
3. Vepricomburium
4. Malipremium
5. VINDEMIA
6. Calcatio
7. Linotigregia
8. Porcivaga
9. Noctifrigida
10. POMILEGIUM

11. Baccarubra
12. Aribes
13. Fontiflua
14. Aphantachelidon
15. PYRILEGIUM
16. Amaryllidanthis
17. Botryophoria
18. Oligotheros
19. Mycetodes
20. FRUMENTISATIO
21. Viburniflora
22. Refractirubus
23. Aphantacypselos
24. Vulpeculicidia
25. GALLINAGINARIA
26. Mespilicarpa
27. Columbaria
28. Vestifera
29. Scolopacifera
30. PSUCHOPHORIA
31. Nucifragium

NOVEMBER,
FLAMINOSUS.

1. Caducifolia
2. Caduciflora
3. Veilthemia
4. Pilaria
5. ANEMODOSIA
6. Ventosa
7. Nimbosa
8. Nebulosa
9. Flaminosa
10. NAUFRAGIOSA
11. Fringilligregia
12. Humidissima
13. Sternifolia
14. Hygrodes

15. NYCTANIMOS
16. Anserigregia
17. Foliisternia
18. Anatigregia
19. Ventiliquium
20. OLIGOHEMERA
21. Pruinaria
22. Corvicroccia
23. Baccamicantia
24. Hiberniflora
25. CHEIMONOPHORIA
26. Coracicroccia
27. Pruinosa
28. Chimonorhodia
29. Aletriflora
30. BRACHYHEMERA

DECEMBER,
BRUMALIS.

1. Antefocaria
2. Hygrophoria
3. Oligopsuchos
4. Lathyrisatio
5. APHYLLA

6. Melanocheimon
7. Tussilaginodora
8. *Brumalis*
9. Frigorifera
10. NOCTISTITIUM
11. Alcyonia
12. Tranquillia
13. Raminudia
14. Gelida
15. ORNITHOLIMOS
16. Aquosa
17. Hortivacua
18. Nigerrima
19. Tenebrosa
20. ALCETROPHONIA
21. HELIOTROPIUM
22. Caliginosa
23. Obscurissima
24. Gallicantus
25. AGNIPARA
26. Hibernalis
27. Uranomelania
28. Messocheimon
29. Achloris
30. Rhigeophoria
31. Cyclotelos.

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PART I.

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