

A Catalogue of the Plants growing wild in Hampshire, with occasional Notes and Observations on some of the more remarkable Species. By WILLIAM ARNOLD BROMFIELD, M.D., F.L.S., &c.

(Continued from page 768).

Empetrum nigrum, although now apparently extinct, has certainly occurred in Sussex (near Amberley), and may therefore be looked for with some hopes of success on our boggy tracts and forest peat. Its discovery would be an acquisition to the Hampshire flora of no small interest, as being at once the type and sole British representative of the small order Empetraceæ.

The Box (*Buxus sempervirens*) should be looked for on the northern slopes of our chalk downs. It is profusely abundant on most parts of Sidon (Sidedown) Hill, in Highclere Park (Lord Caernarvon's), scattered over its shelving sides as if quite spontaneous, and said to disperse itself freely by seed. I could not, however, satisfy myself of this fact by finding young plants newly springing up, and therefore omit it from the category of *naturalized* Hampshire species. It is an evident, and indeed acknowledged, introduction at Highclere, and only found on Sidon Hill, which is wholly within the boundaries of the park, the most extensive and picturesque in the county.* I believe there are no recorded habitats for the box on the continent quite so far to the north as the well-known and now sole existing station for this shrub in England at Box Hill, in Surrey,† but it is an undoubted native of calcareous hills in southern Belgium, between latitude 50° and 51°, within a degree of the Box Hill station, the aboriginality of which has by some been called in question as usual.

Euphorbia Peplis. On sandy sea-shores; extremely rare, and I fear now quite extinct in Hampshire. A single specimen found in Sandown Bay, in this island, now some years since, by J. S. Mill, Esq. ! (Phytol. i. p. 91). Through the kindness of Mr. Mill I possess the above example of this rare British species from the most easterly

* The park at Highclere is thirteen miles in circumference, and besides Sidon Hill, is overlooked by the still loftier eminence of Beacon Hill, just outside the park, and the highest culminating point in the county. I have no hypsometric data as yet for the mainland of Hants, but the elevation of Beacon Hill must verge very closely on, if it does not exceed, 1000 feet.

† The Box is said to grow profusely at a place called Checquers, in Bucks or Berks, I forget which, as well as the name of the proprietor; but from the silence of our botanists on the subject I infer that the tree is at most only naturalized about the house and grounds, and perhaps quite as dubiously so as at Highclere.

station for it in Britain, if not in Europe. I have repeatedly searched Sandown Bay in the hope of again finding this *Euphorbia* in greater quantity, and am willing to believe that with *Lathyrus maritimus*, which formerly inhabited the Bay, its disappearance may be only temporary, as expressed under the head of that plant in these Notes. In 1835 I collected noble specimens on Slapton Sands, near Star Cross, Devonshire. From its intense purple colour, small comparative size, and perfectly depressed growth, it may be overlooked on a casual glance for a fragment of sea-weed. It belongs to a section of the genus with opposite, stalked, oblique leaves, furnished with stipules, prostrate stems, and a rudimentary corolla to the pistillate flowers, mostly found within the tropics.

Euphorbia Helioscopia. A common weed in waste and cultivated ground, corn-fields, neglected gardens, amongst turnips, potatoes, &c., in autumn and later summer months; occasionally, too, in the spring.

———— *platyphylla.* In corn-fields, fallows, waste and cultivated ground, and by road-sides; far from an uncommon species in the Isle of Wight, very often occurring in great abundance in tillage lands as a rather troublesome weed, but not very constant in its stations, which on that account it would be useless to give, except in a general way. Rather frequent about Ryde, at Quarr and Fishbourne; wheat-field betwixt Prestwood and Smallbrook farms, and near Westbrook farm betwixt Ryde and Nettleston, and found remarkably fine and abundant in a corn-field by Beaper farm between Ryde and Brading, some of the stems being nearly a yard high, and much branched. About E. and W. Cowes, by no means unfrequent in corn-fields, clover-lays, &c. About Yarmouth, Ningwood, Shalcombe, Gatcombe, Thorley, and in most other parts of the island, often in the greatest plenty. About Colwell and Brading; Mr. W. D. Snooke, Fl. Vect. Perhaps not less general in mainland Hants, but I have not remarked it in that part of the county myself. Matterly farm, about four miles from Winchester, towards Alresford; Dr. Sibthorp (Bot. Guide). Selborne (the var. *E. stricta*, *E. B.*); Mr. Yalden, *Id.* This last form, the *E. stricta* of Smith (an Linn.?), is a mere immature or starved state of the plant with simple or very slightly branched stems, as it commonly appears in the earlier part of the summer, when it seldom exceeds a foot or eighteen inches in height. The stem is very commonly furnished with a pair of opposite, ascending branches, springing from its very base, and far shorter than itself, but as the season advances these lateral stems or branches attain nearly the height of the middle or principal one, become, like that, much expanded at top

into broad umbels, and the entire plant acquires a much larger size (often three feet in height), and a beautiful coral red colour. The *E. stricta* of Koch, found in the west of England, certainly comes very close to the present species in all its characters, as appears from excellent specimens I possess through the kindness of W. H. Purchas, Esq., of Ross, and from the living plant, which I had some few years ago in the garden, from Mr. Borrer, but have since lost. From what has been just said, it will be evident, I think, that these two species do not differ in size; the examples of *E. platyphylla* usually found in herbaria being mostly small entire specimens, as seen in corn-fields early in the summer, may have given rise to the opinion of its being a smaller plant than *E. stricta* of Koch. The leaves in every specimen of *E. platyphylla* that I have seen, like those of *E. stricta*, are more or less narrowed above their clasping and cordate base, giving to the outline of the leaf an elongate-oblong, somewhat obovate-oblong, strap or tongue-shaped form, equally conspicuous in each species. It is remarkable that Koch, who considers the Monmouthshire *E. stricta* as the Linnean species of that name, actually cites the E. B. figure of our *E. platyphylla* (the var. *stricta*, *E. stricta*, *Sm.*) as the true plant of Linnæus,* showing clearly how very closely the two are allied in botanical character and aspect, although it must be owned that the figure in E. B. is so defective from the miserably starved, or perhaps very young state of the specimen, that it might stand for either one or the other. *E. platyphylla* and *E. stricta* are probably really distinct, as their distribution and localities are different, the former being an agrestal and viatical, the latter a sylvestral species, each preserving its proper habitudes in this country and on the continent.

Euphorbia amygdaloides. A beautiful and most abundant species in woods, thickets, hedges, the shady borders of fields, and bushy places throughout the county and Isle of Wight. The earliest of all our Spurges, in very mild seasons beginning to flower, though sparingly, in January or February, and retaining its bright red shoots fresh through the winter, yet it is never in general and complete flower here till early in April.

OBS.—*E. Cyparissias* is plentifully naturalized in the shrubbery at Northwood Park, W. Cowes, the residence of the late George Henry Ward, Esq.; Miss G. E. Kilderbee !!! The Rev. G. E. Smith recollects gathering a *Euphorbia* with hairy fruit some years ago in a

* Koch, Synop. Fl. Germ. et Helv. edit. secunda, p. 723.

wood along the shore west of Ryde, which, as far as his memory serves, agreed with specimens of *E. pilosa*, *L.*, since seen by him at Oxford. Nothing of the kind has fallen in my way there yet.

Euphorbia Paralias. On sandy or pebbly sea-shores. In vast profusion along the wide beach of the south shore of Hayling Island, more particularly amongst the drift sand towards its western extremity, where this elegant species occurs for nearly a mile over some hundreds of acres, springing up by tens and hundreds of thousands, and forming bush-like clumps or tufts on the otherwise bare sand. First communicated to me by the Rev. G. E. Smith, and subsequently by Miss G. E. Kilderbee !!! Not known to me on any other part of the Hampshire coast, although we have other sandy tracts, but more limited in extent, both in the Isle of Wight and on the mainland, apparently as well fitted for its production. It is indeed remarkable that the seeds of this *Euphorbia* should not have been long since wafted across from Hayling Island to the almost opposite sandy spit or neck of land that nearly closes the mouth of Brading harbour, and which is barely seven miles S.W. from the nearest point of Hayling beach, where the plant most abounds. A similar sandy spit occurs at Norton, on the Freshwater side of Yarmouth harbour, and like that below St. Helens, is very similar in its vegetation to the Hayling beach, but does not produce the sea spurge. Desirous to know whether or not the absence of the *Euphorbia* in these stations, apparently so perfectly adapted to it, were merely accidental and unconnected with climatic or other causes hostile to its spontaneous growth, I last year planted roots and scattered seeds in the loose sand at each place, a few of which have vegetated, and should no natural obstacles exist to prevent its spreading, it is probable the *Euphorbia* will establish itself abundantly on these sandy spits, and become completely naturalized to this island. To prevent, therefore, its being announced as a new station for the species, or taken for an aboriginal Isle-of-Wight plant, I have put the fact on record, that before the year of grace, 1848, *Euphorbia Paralias* was an utter stranger on Vectian ground, and should it spread and become plentiful at these two opposite ends of the island, I hope by this free confession and announcement to stand acquitted of all intention to mislead or deceive others into the belief of its being a native. I likewise trust for the experiment's sake to be pardoned this attempt to naturalize so beautiful a plant on the shores of the Solent, by those who, with myself, hold such assistance given to Nature in flinging abroad her productions, a disservice done to Botany and its votaries, and as a general practice, highly re-

prehensible. The Rev. Hugh Davies, in his 'Welsh Botany,' which uncouth word stands for the Flora of Anglesey, not of the principality at large, mentions a form of the plant as growing on the sandy south-west coast of that island, which, from his description, I supposed might be *E. pitynsa*, a species nearly allied to the present, but inhabiting the south of Europe, one of the characters of which is to have, like Davies's plant, the lower stem-leaves reflexed. Mr. Borrer, to whom I mentioned my suspicion, in which I was the more confirmed by Davies's own doubts of its being only *E. Paralias*, kindly examined the plant in its locality, and satisfied me by a specimen from thence of its being merely a form of the latter.

Euphorbia portlandica. On rocks and cliffs by the sea, as also on the sandy or pebbly beach itself; occasionally, too, in woods and thickets along the shore; very local. Plentiful on the steep chalk banks and cliffs at the upper, or N.E. end of Sandown Bay, the only Isle-of-Wight station known to me, and where it seems to have been first observed by Mr. W. D. Snooke, in his little work, the 'Flora Vectiana,' referred to in a former part of these Notes. Very abundant and luxuriant on the wide, flat beach of Stokes Bay, near Gosport, formed by the recession of the sea, and interesting from the number of rather rare plants it produces, amongst which may be mentioned this *Euphorbia*, *Cochlearia danica*, *Silene nutans*, *Linaria repens* and *Teesdalia nudicaulis*. The flowering time of this very pretty, almost shrubby spurge, is very erroneously given in our books, not excepting Babington's Manual, in which so much has been done in the way of correcting these and other mistakes of his predecessors. The Portland Spurge begins to flower early in May, and continues in bloom till August or September. At Torquay I have remarked it growing in the borders of thickets by the side of the Tor Abbey walks, but in this county it shows no tendency to become a wood plant.

———— *Peplus*. Common in waste and cultivated ground; particularly in weedy, ill-kept gardens in autumn all over the county. I have remarked a monstrous form, in which some of the ovaries were converted into a long, horn-shaped excrescence, surmounted by the styles.

———— *exigua*. In waste and cultivated ground, fallows, and especially in corn-fields; most abundantly, both on chalk and sand, over the whole county and island.

†———— *Lathyrus*. Here and there in waste and garden ground, amongst potatoes, by road-sides, and along hedges near houses, very rarely in newly cut copses; doubtfully indigenous in any part of the

county, and certainly not so to the Isle of Wight. On Ryde Dover formerly. Seen at Binstead, Cowes, St. Lawrence, and elsewhere in the island, but in no fixed stations. Frequent in cottage gardens, and when once introduced not easily got rid of. Said to drive away moles, and the large, unripe capsules have been sometimes ignorantly pickled for capers, hence the common name of Caper-bush in Hants, which we may further suppose to have been appropriately given it from the saltatory movements the condiment so prepared would be apt to excite in such as partook of it. Certes we may imagine at the least, such pungent sauce to elicit a reply like that of the first lieutenant, on the soup at the captain's table, into which the contents of a whole bottle of cayenne had accidentally been transferred, who, when the necessity for patient endurance which the etiquette of the service imposed, was removed by his superior asking if he did not find the soup a little too highly seasoned, abruptly made answer, "smart eating, certainly, Sir, smart eating!" The Caper Spurge is said to be truly wild in a few localities, as at Ufton, near Reading, springing up in dry, stony thickets for a year or two after they have been cut, and I have myself seen it perfectly naturalized, if not indigenous, on that curious rocky islet, the Steep Holmes, in the Severn. In this county Dr. Macreight gives "woods at Selborne," as a station for *E. Lathyris*, in his 'Manual of British Botany,' but in a communication with which that gentleman favoured me in reply to an application I made to him for particulars, he expresses an opinion that the species is not indigenous to the station in question.

Mercurialis perennis. In woods, thickets, copses, on hedge-banks and in moist, shady, bushy places; most abundantly in all parts of the county and Isle of Wight. One of the most social of our native vegetables, often covering the surface of the ground in our damp woods to the utter exclusion of all other plants; it is also remarkable as being one of the earliest herbs to appear above ground in the spring, and the latest to die down on the approach of winter. In mild seasons it may be found in flower at the close of February, before its leaves are unfolded,* and numbers of the stems survive and retain their leaves tolerably green into the second year. Both our native species turn partially blue in drying, and perhaps contain indigo, or some analogous principle, which, after vitality is extinguished in the plant, absorbs oxygen, and becomes apparent by precipitation in the

* In 1843 I gathered *M. perennis* in flower in this island as early as the 9th of February. It is always fully in bloom here in March, continuing to flower on into May.

vegetable tissue, yet the attempts of a chemist at Glasgow to obtain a permanent colouring matter or dye stuff from this plant have failed of success. Some species of the genus, as *M. tomentosa*, are devoid of colouring matter. The Miss Sibleys, of Hall Place, West Meon, inform me that cows greedily devour the herbage of *M. perennis* when they can get at it, without injury to themselves, though reputed extremely poisonous to cattle and the human species. See Gardiner's 'Flora of Forfarshire,' p. 160. The Rev. Hugh Davies has seen this species perfectly monœcious, like the following (Welsh Botan. p. 95).

Mercurialis annua. In waste and cultivated places about towns, on banks and along suburban fences, and particularly in kitchen-garden ground. Formerly not very uncommon in the Isle of Wight, but of late years it has become exceedingly scarce here through the progress of building effecting its extirpation.* In Ray's time it grew plenti-

* Although given without an expression or mark of doubt as a genuine native by those authors most inclined to dispute the indigenous origin of many a British plant, I am strongly disposed to believe the annual Mercury more deserving of the asterisk than a large majority of species to which that symbol of doubt has been affixed. In the time of Gerarde and Parkinson it was evidently, from their accounts, much rarer and more local than at present, and would seem chiefly to have grown in Kent and on some parts of the south coast. Such distant localities as Rochester and Romney would hardly have been cited as stations by these old authors, had the species been the abundant weed it has since become in so many parts of the metropolitan district. Ray (Hist. Plant. i. p. 163) makes it rare by implication in his own day, for although he says of it "reperitur in hortis olitoriiis, vinctis, aliisque locis humentibus ac umbris;" it is evident by the word *vinctis* he is speaking of its usual places of growth, without reference to any country in particular, and it is remarkable that he gives as an English station the shore of the very place from which I am writing; "In maris littore propè Ryde Vectis insulæ oppidulum spontè et copiosà provenit." Had he been acquainted with habitats nearer his own part of England, he would surely have mentioned them in preference to, or at least in conjunction with, one so remote as the coast of the Isle of Wight. Besides that it has all the appearance of an introduced species, the very ancient name of French Mercury seems to point at its foreign extraction, although I would by no means insist much on this head apart from the other considerations just urged, knowing how fallacious are inferences deduced from popular names alone. The most of us have heard that so late as the reign of Henry the Eighth this country was chiefly supplied with esculent vegetables from Flanders; is it not likely that the annual Mercury may have migrated from the continent into England when kitchen-gardens first began to be general, spreading with the progress of horticulture from our south-eastern coast, where it would naturally be first established, more and more widely through the land? In further confirmation of my views on this subject, I will now quote the following curious passages from Turner's Herbal, the black-letter edition of Cologne, 1568, the description illustrated by two excellent woodcuts of *M. annua*, pistillate and staminate. It is to be observed

fully on the shore at Ryde, (Syn. edit. Dillen. p. 139, see note below), doubtless on what is now called the Dover, and where it lingered in defiance of the changes that have converted that waste into a part of this populous town, till within a very few years back, having myself gathered it there in tolerable plenty on one spot, but it has now quite disappeared from every part of this neighbourhood. Mr. Wm. W. Saunders noticed it, as he believes, some years ago not unfrequently about the town, and I have certainly gathered it in other places besides the Dover, although it has always seemed to me very uncommon at Ryde, and I believe it is at present all but, if not quite, extinct

that Turner makes no mention of *M. perennis* under the head of Mercury (Herb. part 2nd, p. 55). After a short account of the plant he thus proceeds: "By thys description it is playn that our forefathers have erred in England which hitherto in the most parte of all England have used another herbe in the stede of the ryghte Mercury. Therfore as many as had leuer ete whete than acornes, let them use no more theyr old Mercury, but thys Mercury (*M. annua*) whych Dioscorides describeth. The ryght Mercury groweth comon in the fields and wynyardes of Germany without any setting or sowyng. And it beginneth now to be knowen in London, and in Gentle mennis places not far from London. I neuer saw it grow more plentuously in all my lyfe than about Wormes in Germany." What the false Mercury may be which Turner alludes to above is not clear, it can hardly be *M. perennis*, if all that is said of its poisonous properties be true, since it would seem to have been used instead of *M. annua* in "sallettes and mouses" (*Gemüse*, Germ.). It was most likely *Chenopodium Bonus Henricus*, one of the old names for which was English Mercury, a plant much used by our forefathers in lieu of greens or spinage. It is observable that Turner does not apply the name of French Mercury to *M. annua*, which was probably imposed on it at a later period, when it was better known and more plentiful than when he wrote. I should infer from Turner's words given above, that the Annual Mercury was at first purposely grown as a pot-herb, which those of Gerarde (em. p. 332) seem to confirm, where he says, "French Mercury is sown in kitchen gardens among pot-herbs. I found it under the dropping of the Bishop's house at Rochester; from whence I brought a plant or two into my garden, since which time I cannot rid my garden from it." It seems to have been more used medicinally than dietetically, and to have soon gone out of use as a pot-herb, being scarcely mentioned as such by Gerarde and Parkinson. I think I have adduced sufficient evidence to show that *M. annua* was once a much rarer plant in this country than at present, and that the presumption amounts almost to a demonstration of its having been imported originally from the continent as a garden production. I may here remark that *Impatiens Noli-me-tangere* was regarded as a kind of *Mercurialis* by these old herbalists, and which Parkinson tells us was found in his time "by an industrious Gentleman and Herbalist Mr. George Bowles, by the shadie wood sides of the mountains and their vallyes in Wales," a fact which, as it is confirmed by botanists of the present day, sufficiently refutes the unreasonable doubt sought to be attached to this widely-spread European plant as a genuine, indisputable native.

here. In a garden in George Street, along with *Nicandra physaloides*, but sparingly, October 3rd, 1844, the last specimen seen. Field at Gurnet Bay, near Gurnet farm, 1838. At Ventnor; Dr. Martin!!! (Still here and there in garden ground, but less frequent than it was a few years back). Abundant in Northwood Park, amongst potatoes; Miss G. E. Kilderbee!!! Betwixt Godshill and Sandford, 1848; Mr. Albert Hamborough. At Steeplehill; *Id.*, 1848!!! Far more frequent and abundant in mainland Hants, where it cannot be accounted a rare species. In several parts of Portsea Island, at Frotton, and abundantly on waste lots (formerly garden ground) about half a mile inland from Southsea Castle, at the back of Southsea Common, along with *Chenopodium murale*, the purple variety of *Datura Stramonium* (*D. Tatula*, *L.*), and *Solanum nigrum* with flowers rather larger than usual; November 5th, 1849. Frequent at Southampton, and profusely in and around Winchester, where it is a vile weed in kitchen-garden ground, choking the soil and spreading about the fences and hedges. I have seen it at Emsworth, Porchester, Wicor farm, near Fareham, and at Andover. Petersfield; Mr. Pamplin!!! Church Lane, Fareham; Mr. W. L. Notcutt: and doubtless in most other parts of the county. Var. *β. ambigua* (*M. ambigua*, *L. fil.*): staminate and pistillate flowers in sessile axillary clusters. With the common form, but rarely. A troublesome weed for many years past in the kitchen garden at St. John's, near Ryde, where it may be seen occasionally passing, more or less distinctly, into the usual diœcious and spicate form of inflorescence. As found at Ryde, this variety differs from the usual state of the species in its more ovate, less lanceolate leaves, of a paler green, with less distinct veins, and more remotely serrated, according well in this respect with the figure and description of the younger Linnæus, in the first decade of his '*Plantarum rariorum Horti Upsaliensis*,' tab. 8. The flowers stand in small, roundish, axillary clusters of eight or ten together, sometimes consisting entirely of pistillate or staminate blossoms, more usually intermixed, the latter elevated above the former on rather long peduncles. This arrangement is such as we find in *Buxus*, *Euphorbia* and other genera of the order (*Euphorbiaceæ*) naturally diœcious. I found in May, 1839, at Hermit's Tower, Winchester, *M. annua* exhibiting its usual diœcious character, but with the flowers of both sexes in axillary clusters, sessile, or nearly so, as in the monœcious variety *β. ambigua*.

Parietaria officinalis. On old walls, churches, ruins, and amongst rubbish; also on hedge-banks, rocks and sea-cliffs; very frequent

over the county and Isle of Wight. Amongst the ruins of Quarr Abbey. Walls of Carisbrook Castle, plentifully. Common in most of the churchyards of the island, as those of Brading, Brixton, Carisbrook, Northwood, Newchurch, Freshwater, &c. Plentiful at the base of the chalk cliffs in Scratchell's Bay, and abundant on the down along the edge of the cliffs from thence towards Freshwater Gate at intervals. Profusely on Rosehall Green, Main Bench. Hedge-banks by the road-side between Carisbrook and Buccombe, on the way to Shorwell, in several places. Hedge-banks by Blackbridge, Freshwater, and near the farm (Old Warren House) at Alum Bay. Not less general in mainland Hants. Most profuse and luxuriant on the walls of Porchester Castle, Beaulieu Abbey, Winton and Southampton town walls, and many another venerable relic of feudal or ecclesiastical magnificence,

"Where the mouldering walls are seen
Hung with pellitory green."—CLARE.

I am not at present prepared to say which of the two species of *Parietaria* admitted as British into the Manual, is the commoner in Hants, or whether we possess both, as I am inclined to believe we do. This genus connects *Urticaceæ* with *Euphorbiaceæ* through *Acalypha*, belonging to the latter order, some species of which, as *A. virginica*, have considerable resemblance to a *Parietaria*, in aspect as well as structure.

Urtica pilulifera. Under walls, amongst rubbish, and in waste places about towns; very rare, and not seen by myself in Hants. Portsmouth; the Rev. G. E. Smith in New Bot. Guide. It was rather at Gosport that my worthy friend met with this species, now a good many years since; the exact locality he cannot recal, but believes it to have been somewhere on the way from Gosport to Gomer Pond, perhaps at Alverstoke or Privet, but if so, it still eludes my endeavours to rediscover it at all three places. Hayling Island, according to the catalogue of plants in the Hayling Guide, but the wording leaves it uncertain whether the intended station be not at Emsworth, part of which town is in Sussex. The list of Hayling plants in the work just mentioned is meagre enough, but contains no unlikely species calculated to throw suspicion on the author's botanical knowledge, as too often happens in local catalogues, and as the Roman nettle unquestionably occurred at Gosport, it may equally inhabit the adjacent parts of the county. This species is commonly looked upon by

recent British botanists as an introduced plant: I am disposed to think it as truly wild on the Suffolk coast, as in the south of Europe, where, although abundant, I have never seen it, except in or about towns, as with us. At Gorleston by Yarmouth it seemed to me as much at home as at Montpellier, though less plentiful, but the progress of building has done much to diminish its frequency in that English station. *U. Dodartii* I have every reason for believing a mere variety of *U. pilulifera*, with entire, or partially entire leaves.

Urtica urens. Very common in waste and cultivated places, by road-sides and on dunghills, but less general than the following, and more confined to the neighbourhood of habitations. I remarked it as unusually frequent in west Hants, about Ringwood and Christchurch, last summer.

——— *dioica*. In waste ground, along hedges, in woods, lanes, on weedy banks, and by road-sides; everywhere abundant. The var. *β. angustifolia* (Wim. and Grab.), with ovate-lanceolate leaves rounded at base, I have remarked in this island occasionally.

Humulus Lupulus. In moist or boggy woods, thickets, hedges, banks of streams and bushy places, a truly indigenous plant, universally and abundantly distributed over the county. As common as brambles in very many parts of the Isle of Wight, particularly in low, damp thickets, which are often impenetrably matted with its interlacing stems, or it may be seen running up the slender trunks of alders and sallows in our boggy copses, in such abundance as to resemble natural hop-gardens, and in these situations has a very picturesque effect. Never grown in this island for its strobiles, which in the wild plant yield excellent hops, and are sometimes gathered by the country people in lieu of the more expensive produce of Kent and Surrey. The hop is cultivated for commercial purposes in a very small part only of Hants, in the north-eastern portion of the county, along the Surrey border, as Alton, Selborne, &c., yet is equally plentiful where its culture is unknown; I have never failed seeing it in every district I have yet visited. Mr. H. C. Watson, in his valuable work the 'Cybele Britannica,' where, on the subject of the indigenous origin of the plants composing our flora, he has, I cannot help thinking, suffered his own independent and inquiring mind to be somewhat biassed by the antiquated and crude speculations of others, puts the following string of queries under the head of *Humulus Lupulus* (Cyb. Brit. ii. p. 372). "Has the hop been introduced into Britain by human agency, or is it an aboriginal native? If native, how much of its present area, how many of its localities, should be deemed natural? and

how much of that area, how many of those localities, may be considered artificial? Who can undertake to answer these questions with certainty?" The two middle or intermediate queries are soon disposed of as transcending human ability to resolve. The challenge contained in the last question I will venture to accept, and undertake to answer the inquiry with as much confidence and just as much (but not more) certainty, as if the spontaneous origin of the oak were the subject of debate. Propositions like these are not mathematical problems, capable of rigid, undeniable demonstration; the weight of probability must here be allowed to decide where proof of any more exact kind is impossible. I need not recapitulate what I have said on the subject of the Hop in a former part of these Notes (Phytol. iii. p. 382), to which I beg to refer the reader, I will only add a few observations, and cite a few authorities in support of the opinion there expressed. It would be wasting time and trouble to be at the pains of refuting the puerile and inconclusive objection against the indigenous origin of the Hop in Britain by such as come armed with the traditionary distich

"Turkeys, carp, hops, pickerel and beer
Came into England all in one year."

First, because like the cherries of Lucullus, it was unquestionably the improved and cultivated produce of the hop-gardens of Flanders that is to be understood, and not the wild vines or the burrs, which might have been had from many a hedge and thicket, as I shall show anon; secondly, because there is a suspicious appearance of poetic licence, or contempt for plain, matter-of-fact historical truth, about the gastronomic bard, when he enumerates beer as one of the good things that flowed in upon us during that memorable epoch, it being well known that ale or beer was the national beverage long before hops were employed in its fabrication. Turner, who published his *Herbal* in 1568, in his rather long account of "Hoppes," never once alludes to them as an ingredient in malt liquors, but speaks only of their virtues from the writings of others, nor does he drop a word that could lead to the conclusion that they were cultivated in England at that period, yet he says, "They grow also wylde in many places both of England and of Germany," (*Herb.* part 2nd, p. 43, Cologne edit. black letter). Gerard and Parkinson both speak of the wild hop in England, but as they refer also to the plant as cultivated for the brewer, I suppose their testimony will be objected to on the ground that the hop had become wild from the gardens. Neither in the *Synopsis*, nor in his

opus magnum, the 'Historia Plantarum,' does Ray intimate the slightest suspicion of hops not being indigenous to this country, and he was one by no means hasty in admitting dubious species to the rights of natives. Whence, then, the disposition of some moderns to regard the hop as a naturalized foreigner with us? I hope on some better pretext than the mere follow-my-leader principle, because Sir J. E. Smith says in 'English Flora' (vol. iv. p. 241), "I have sometimes suspected Hops not to be indigenous, which was also the opinion of Lightfoot with regard to Scotland." We are not bound, nor do I think we ought to attach importance to any man's mere suspicions, unless he condescends to show cause for entertaining them. That the hop may not be indigenous to Scotland I think highly probable, for as I have before observed, many plants fall far short in the British Isles of the latitude they attain on the continent, and the hop *may* be one of these. The striking difference observable in the variety and nature of the species composing the floras of Hants and Forfar, for example,* is much greater than is due to mere diminution of the mean annual or summer temperatures, or even to the higher latitude of the Scottish county. The true cause of the rapid failure of so large a number of south of England plants before reaching the Scottish parallels, is to be sought in the greater humidity and cloudiness of the climate, and comparative deficiency of direct solar light, so essential to the spontaneous growth of plants, although in general but little affecting their health and luxuriance under cultivation. An atmosphere often at the point of aqueous saturation, deposits a portion of its moisture when in that condition upon trifling depressions of temperature, and the vapour, now rendered visible, by impairing the transparency of the air, intercepts, even in the absence of clouds, much of the sun's light and heat, which in a clearer and drier sky would exert its direct influence on vegetation. If the heat of our summer be not very much above that of the same season in the north, it commences earlier, and is protracted into an autumn of longer duration, dryness and serenity, better able to ripen the vegetable tissues, and bring the seeds of plants to maturity. It is from our proximity to the continent, and the greater breadth of the mainland of England along its southern coast than elsewhere, that our atmosphere is less loaded with clouds and vapour than is that over the narrow and deeply indented promontory of North Britain, environed by a wide expanse of water

* I select Forfarshire as being the Scottish county of which, through the labours of Don and Gardiner, we possess the fullest published flora.

on three sides, without any adjacent land surface to maintain heat by terrestrial radiation, or to arrest the deposition of moisture from the Atlantic, much of which is precipitated, before it can reach Hampshire, upon the peninsular counties of Cornwall and Devon. Hence the amount of direct solar radiation, so active an agent in developing a varied and vigorous vegetation, is oftener and more continuously exerted here than in the north, proving more than equivalent in energy to the power of a diffuse light protracted through days considerably exceeding our own in length at the season in question. These conditions of atmospheric dryness and unimpeded solar action, characterize the countries of continental Europe in a still greater degree, and hold good into latitudes higher than those of any part of Britain, enabling plants that are indifferent to the increased rigour of the winters, to advance far to the northward of the parallels they can attain in our insular climate, where their progress towards the poles is much sooner arrested by the failure of the conditions above mentioned. To these causes, more than to the very moderate increased heat of the summers, must be attributed the difference we find in the amount of species betwixt the floras of Edinburgh and Copenhagen; places having almost exactly the same latitude,* but enjoying, the one an ultra-insular, cloudy and equable climate, the other an all but continental, somewhat extreme climate, the greater dryness and sunniness of which gives to the Danish metropolitan flora a much more varied aspect. The same comparative poverty of species, though much less evident, because latitude is not concerned in producing the change, is manifested in the flora of Wales and the west of England over that of the eastern counties, and on crossing St. George's Channel, the total absence or great rarity of plants of common or abundant occurrence on the English side, is a striking feature in the flora of the sister island. In each case the cause is the same, diminished solar influence from impeded radiation and increased humidity acting as a bar to the proper hardening of the vegetable fibres. We must all of us have remarked that those localities are not the richest in species where the vegetation is most luxuriant; indeed, that the most unpromising spots to the eye, barren, sandy fields and wastes, often yield an ampler harvest than the merry green wood conceals beneath its leafy bowers.

* The Edinburgh Catalogue of Plants gives a most unfaithful picture of the real or indigenous, as well as the derived or naturalized flora of that district, embracing, as it does, a multitude of imperfectly established and even planted species, as *Staphylea*, &c.

So Humboldt, I think, observes that the damp shaded forests of the Upper Amazons and Orinoco rivers, where frequent rains and a clouded sky maintain a majestic arboreous vegetation, are far poorer in the number of species they produce than the open burnt-up *campos* of Brazil, covered with an infinite variety of low shrubby plants, with a host of herbaceous ones scarcely less numerous. The astonishing number of plants that crowd the arid shores of the Mediterranean, where the great hygrometric dryness forbids the growth of the major part of our deciduous thin-leaved forest trees, and the landscape is scantily clothed with triste thickets of evergreen and cork oaks (*Quercus Ilex* and *Q. Suber*), wild olives (*Olea sylvestris*), and pines (*Pinus pinea* and *P. halepensis*), is perhaps not much inferior to the amount of species on an equal area between the tropics, though differing in kind, and owes its existence to the uninterrupted action of solar radiation through the long dry summer of that inland basin. Experience fully proves that a wet and consequently cloudy climate, however mild and agreeable, sustains a flora distinguished usually by great luxuriance, but by as remarkable a paucity of species, which, however, make some amends for their fewness by their beauty or peculiarity. New Zealand, Ireland and southern Patagonia furnish striking illustrations of this fact, in the comparative poverty of their ultra-oceanic but handsome and peculiar phanerogamic floras. Mr. Watson found northern (British) forms constituting a large proportion of the Azorian vegetation, in a climate warm enough to ripen the orange, but too cloudy and humid for the great mass of Portuguese and Spanish plants, requiring a larger share of direct solar light to flourish spontaneously.* Enough has been said to show why so

* The climate of this part of England along the south coast combines the advantages of an insular and continental position. In summer we enjoy the warmth radiated from the adjacent continent, and from the broad expanse of mainland to the north of us, which ensures us considerable hygrometric dryness, and more sunshine than falls to the lot of the northern counties, where the land narrows betwixt wider waters, and losing the advantages of terrestrial radiation, becomes more completely oceanic. In winter, on the other hand, our southerly position and the warm vapours from the Channel generate a tolerably mild temperature, and the great prevalence of south-westerly winds renders that season more rainy than frosty; but except on and near the coast, the mean heat of winter in Hants is little, if at all, higher than in the north of England or Scotland, although that season is of shorter duration and preceded by a longer and drier autumn, and followed by an earlier, though often equally cold spring, the east winds at that period blowing almost as constantly and keenly as on any part of the coast west of the Foreland Point, and constituting here in the months of March, April, and too often in May, the "blackthorn winter," our truest

many species common in the south and south-east of England fail to reach the northern counties or Scotland, and even become rare or extinct in the west of England and Ireland on the same parallel; and that, therefore, because a plant does not evince itself indubitably wild in the northern, western and even midland parts of Britain, we cannot safely predicate the same of it in the southern and eastern counties, but must be guided by what we see of its condition there in settling the question of spontaneity, without allowing our opinion to

season of that name, as till then we have seldom any cold worth speaking of, and snow has been for several years of very rare occurrence. But the cold winds of spring are not so injurious to vegetation here as farther north, because not accompanied by so much moisture, and because the longer and warmer summer ripens the wood of tender trees and shrubs, enabling them to resist their ungenial influence. Hence we see, in the Isle of Wight and along the opposite coast of Hants, the myrtle and the fig luxuriant as standards in the gardens even of the cottagers, the former ripening its berries abundantly, and the latter growing to trees of great stature and girth, and producing most abundant crops of large and luscious fruit every season. Noble fig trees, as large as most I have seen in Italy, and bearing figs fully equal in size, but perhaps somewhat less saccharine in general, to those grown abroad, may be seen about Portsmouth and elsewhere along the coast, as well as in this island. St. John's garden, near Ryde, is full of old standard fig trees, most prolific bearers, that yield a good return to the proprietor yearly at the fig season (August, September) for the trouble of gathering, as this tree needs no pruning or attention, and indeed thrives best when most neglected. I have never known the fig suffer from our severest winters; even in the extraordinary one of 1838-9 the trees here escaped without the slightest injury, but at any considerable distance inland the ends of the branches are liable to suffer from the spring frosts, and the protection of a wall becomes advisable to ensure a crop of fruit. The varieties of the fig grown at Ryde are the brown Ischia, purple Ischia, white Genoa, and a large, green, late fig, the name of which I cannot learn, and which often fails to ripen in this climate. Figs of three quarters of a pound weight have been gathered at St. John's, and fruit weighing half a pound is not uncommon, but the average is under this last amount. Although abundantly cultivated all over the county, in every garden and against almost every farm-house and cottage, the vine succeeds but indifferently in the Isle of Wight and along the coast line in ordinary years, as, although clusters of large size are frequently and copiously produced, they do not arrive at proper maturity before the damp weather of autumn sets in and spoils the grapes. More inland, however, the vine comes oftener to maturity, and even in this island well-ripened and heavy crops of grapes are procured at intervals of about three or four years at furthest. This last autumn, I remarked the vines in most places along the south coast from Arundel westward to Christchurch, loaded with fine well-grown clusters of black and white grapes, which, although of full size and well coloured, in few instances had their proper flavour. The vine succeeds better and more constantly in our dry eastern counties, at some distance from the sea, as in Kent, Cambridgeshire and the western parts of Suffolk.

be warped by prior and partial observations (Phytol. iii. 381). If there is any principle on which the exclusionists take their stand, it seems to be that of cultivation : they appear to hold it as almost an established axiom, that no plant in general and extensive cultivation for economic or ornamental uses can be free from well-founded suspicion of foreign descent,—such at least is the only conclusion I am able to arrive at in attempting to discover the *reasons* for so much doubt and demur on the side of our British authorities, when the indigenous origin of our plants comes to be mooted. I much wish that some one or more of these doubting gentlemen would step forward and state their objections to the native origin of the Hop and the other disputed vegetables, on some broad intelligible basis, conducting the argument in the same philosophic and logical way as in the controversy between Daines Barrington and Dr. Ducarel on the right of the chestnut (*Castanea vesca*) to be held a native of England. The fact is, the Hop is more properly a plant of northern than of southern countries, the “*vitis septentrionalium*,” as it has been called by ancient authors, widely dispersed over the greater part of the temperate zone, being abundantly distributed in Europe, the north of Asia and America, and admitting of successful cultivation only in cool and even boreal latitudes.

† *Ulmus campestris*, Sm. &c. (non Linn.) Small-leaved Elm. In woods? and hedges; rare? Not found in the Isle of Wight. In various places about Lymington, and between Lymington and Boldre, also near Christchurch, both which places I find are given by Goodyer, in Gerarde (em. p. 1478), as the “*narrow-leaved Elme*,” with a very fair figure, and the following account: “This tree is like the other (the common Elme, *U. suberosa*), but much lesser and lower,” &c. &c. “This kinde I have seen growing but once, and that in the hedges by the highway, as I rode betweene Christchurch and Lymington in the New Forrest, in Hampshire, about the middle of September, 1624.” Goodyer, like myself, was a native of Hampshire, and botanized much in the county: his testimony confirms my belief that this elm, which is the true *U. campestris* of Smith’s ‘English Flora’ and the common elm of Norfolk, is a scarce species with us. I believe it to be a mere variety of *U. suberosa*, with no more appearance of being indigenous than that has.

†—— *suberosa*. In thickets, groves, borders of woods and fields, and especially in hedgerows; profusely abundant throughout the entire county and Isle of Wight; by far the most common hedgerow timber tree with us, not excepting the oak itself; yet it is, I think, very questionable if it be really indigenous. Never seen on the abo-

riginal forest ground, and seldom in woods or copses, excepting around their borders or a short distance within them, where it has crept from the enclosing hedge-fence, by means of the stools or suckers which this species so abundantly sends up, and which are the great instruments of its propagation, the seed being seldom perfected here, though plentifully enough produced. True it is, that it may sometimes be seen forming woods by itself, but such woods are for the most part narrow slips, or small angular patches of copse between hedgerows, called here *rews* (quasi rows), the elms in which were either originally planted, or have arisen from the stools of the trees standing in the hedges without. Such is the origin apparently of the Elm Close Copse, by St. John's, Ryde; Woods near Park farm, Nettlestone; Breaches Copse, behind Whitecliff Bay; Bush Rew, by Mottistown, betwixt the church and the sea; all of which are mainly composed of *U. suberosa*. Abundant along the crest of the rocky precipice overhanging Cowpit Cliff and Hatchet Close woods, where it has more of an indigenous aspect than I have anywhere seen it besides. The samara in all the specimens I have examined is perfectly smooth on the margin, or destitute of cilia. The Dutch elm (*U. major* of Smith) sometimes seen in parks and pleasure-grounds, seems to me a variety of *U. suberosa*, with larger leaves. The bark in old trees of *U. suberosa* is very deeply chapped or rifted, and in young ones the branches are winged with a corky excrescence, as in the field Maple (*Acer campestre*). A tree sometimes of enormous magnitude, of which in this island—not remarkable for the size of the timber it grows—many very fine specimens may be seen at Quarr, Nettlestone, &c.

Ulmus glabra. In woods, hedges and copses, occasionally; truly wild, but scarcely more, probably, than a variety of the following.

Var. α . Leaves lanceolate, smoothish and shining above, quite glabrous beneath. A large tree near the entrance of Centurion's Copse, by Brading.

Var. β . Branches upright; leaves ovato-lanceolate, evenly downy beneath, pubescent but not rough above, and somewhat shining. In Bloodstone Copse, near Ashey farm; plentiful.

Var. γ . (*latifolia*, Bab. Man.?). Leaves large, remarkably smooth and shining; branches drooping. In the farmyard of Apse, near Shanklin, a noble tree, but whether wild or planted I know not. The fruit smaller than in *U. montana*, nearly circular and cloven almost to the seed. This is, I have no doubt, the *U. glabra* γ . *latifolia* of Lind-

ley and Babington, which I have only seen with us in the above locality.

In α . the clusters of fruit are as dense, and the samara nearly as large, as in *U. montana*, of which they have the suborbicular form, and are, as in that, cloven to the seed. This was pronounced by the late Mr. E. Forster to belong to *U. glabra*, as he understood that species.

In β . the fruit is smaller and obovate, smooth and deeply cloven, as laid down for *U. glabra*; but the leaves by their greater breadth, and in configuration, approach nearer than in α . to *U. montana*, of which I am convinced both these varieties are but forms, with smaller, narrower and less scabrous leaves.

Ulmus montana (*U. campestris*, Linn., non Sm. et auct. Brit.). In woods, coppices and hedges throughout the county, but not very universally or abundantly, although truly indigenous. In several parts of the Isle of Wight, but not general. In Qnarr Copse, Binstead, not uncommon, and where there are some tolerably fine specimens. With *Tilia parvifolia* in a small wood betwixt Yarmouth and Tapnel. Common in Hatchet Close and Cowpit Cliff woods, near Shanklin. Rocky woods at Eastend, Luccombe. In Westridge Copse, near Shorwell, and in other parts of the island occasionally, mostly here and on the main in upland situations, and from being usually cut with the brush, not often to be seen of timber-like dimensions. Common in the high woods about Petersfield, at Stoner Hill, Bordean, Froxfield, &c. Woods at Selborne. About Hambledon, and betwixt Clanfield and East Meon. Hedges along the Winchester road, near Whitway or Whiteway, a hamlet just outside of Highclere Park, and where, about a mile or less south of the village on the same road, I find a handsome tree, in the hedges, answering in some degree to the characters of *U. glabra*, except that the large, oblong, cuspidate leaves are considerably rough on the upper side; the branches are quite smooth and drooping, but the fruit I have not seen. Whether these trees are wild or planted I am unable to say, but I have no reason to suppose them not indigenous in that locality where *U. montana* is frequent and certainly native.

An inspection of the Linnean herbarium and careful comparison of the descriptions and synonyms of Swedish authors, had long led me to conclude, with Mr. Borrer, that our *U. montana* is the true *U. campestris* of Linneus, and assuredly not *U. suberosa* or its variety, with smaller leaves, to which the name *campestris* was given by Smith, and adopted by subsequent British authors. The very brief

character given in the 'Flora Suecica,' the best authority for Linnean species natives of Sweden, is insufficient to settle the point; nor does that of the 'Species Plantarum' assist us more, as being only a transcript from the former work; whilst the reference in the latter to the 'Hortus Cliffortianus,' together with the specimen in the Linnean herbarium, incontestably show that our *U. montana* in its typical form (the *U. folio latissimo scabro* of Tournefort) was what Linneus meant by his *U. campestris*, under which, however, he included as varieties our *U. glabra* and another, which may be intended for *U. suberosa* or some of its forms. It being evident from the 'Hortus Cliffortianus' that Linneus considered our Wych Elm (*U. montana*) as the typical state or primary form, α , of his *U. campestris*, we must so consider it; for although Linneus seems to have thought all the remaining European elms, however different in aspect (*varietates longe plures hujus speciei distinctas*), as forming but one species, his having applied the name *campestris* primarily to a well-recognized and distinct elm, it ought not to be discarded, much less transferred, to another species (*U. campestris*, *Sm.*) not indigenous to Sweden. If this last must still be held distinct from *U. suberosa*, some other name should be substituted for its present one, and that of *campestris* restored to our Wych elm, α . being the true species so denominated by Linneus, and understood as such by Swedish botanists. The figure of *U. campestris*, *L.*, in *Fl. Danica*, tab. 632, bad as it is, unquestionably represents our *U. montana*,* which, with *U. effusa*, distinguished by its stalked flowers and ciliated samara, are the only species of elm found wild in the north of Europe. Wahlenberg cites the figure and synonym of *U. montana* in *E. B.* for *U. effusa*, in his 'Flora Suecica,' although the fruit in the former is not ciliated. It appears from the 'Manual' that the samara of *U. suberosa* is occasionally ciliated: may not this character be inconstant, and, if so, may not *U. montana* and *U. effusa* be varieties of a single species? No dependance can be placed in this genus on the number of the stamens, which varies from four or five to six and eight, according to the divisions of the perianth. Thus in *U. suberosa* I find four or five (usually but four); in *U. glabra* five, with an hexandrous flower intermixed occasionally; in *U. montana*, five to seven or eight. I have been at much pains to find

* The much superior figure of *U. campestris* in *Svensk Botanik*. i. t. 13, and which may well be accounted authority, is equally our *U. montana*, as is likewise the excellent plate of *U. campestris* in Guimpel and Hayne *Abbild. der Deutsch. Holzarten*, i. t. 27.

constant characters between our Hampshire elms, and I am glad to see that Mr. Babington coincides in the opinion I arrived at some years ago, that all our British species of this genus may without risk of error be reduced to two, as shown above—namely, *U. suberosa* and *U. montana* (*U. campestris*, *L.*)—the former with all its varieties marked by a disposition to emit suckers or stools from the root, and even from the trunk, to a considerable height from the ground, and by which it is mainly propagated, the seed, perhaps from this cause, seldom coming to perfection, but dropping whilst yet green, the bark in all the forms deeply cracked or rifted, and the younger branches often winged or corky. In *U. montana* and its varieties, *U. glabra* &c., the bark is smoother, and the tree produces few or no suckers, being increased by the fruit, which ripens perfectly. The late Mr. Knight, of Downton Castle, as I learn from Mr. Bentham, raised several of the supposed species of elm from the seed of one kind alone. An elm with erect or ascending branches, and fastigate growth like a black poplar, very small, narrow, firm, subsistent and shining leaves, grows about St. John's and at Brooklands, near Ryde, which I take to be the *U. stricta* (Cornish Elm) of Lindley, but is not indigenous, and I hold it to be a form of *U. suberosa* allied to Smith's *campestris*.

A remarkable fact in the natural history of the elm is the occasional partial or total suppression of the flowers at their season for appearing. In the spring of 1839, scarcely a tree could be found in bloom, either of *U. suberosa* or *montana*, in this island and elsewhere in England,* although the year before the branches were loaded with flowers, which were again tolerably profuse in 1840. The largest Wych Elm in Quarr Copse, standing amongst many free flowerers of its own species, although perfectly vigorous, has never shown any disposition to blossom since I have known it. The Wych Elm, like the Sycamore maple (*Acer Pseudo-platanus*), is far from attaining the gigantic proportions in this county it reaches more to the north, and in the west of England, the climate of the south-east being rather too warm and dry for both these trees to reach their highest perfection, but *U. suberosa* is in Hampshire and other southern counties the successful rival of the oak in girth, and commonly far surpasses it in altitude; the wood, though commonly made subservient to the coarser purposes of the wheelwright and undertaker, shows a good grain when

* As about London and in Essex, as I learned from the late Mr. E. Forster, and probably all over the kingdom.

polished and worked up into furniture. The White Elm of North America (*U. americana*) comes very near our Wych Elm in character, attains a greater bulk, and exceeds it in the graceful contour of its fine recurved branches, being in fact one of the most magnificent trees of that continent, and deserving much more attention from our arboriculturists than it has hitherto received. It is the pride of the beautiful village towns of western Massachusetts and Connecticut, such as Newhaven, Springfield and Northampton, above whose rural streets and gay tenements its huge massive trunks rise like magnificent columns, supporting a canopy of deepest shade and verdure. It would doubtless flourish as well with us in England as our *U. suberosa* in America, where, at Boston, are many fine specimens in and around that most English looking, thinking and speaking city.

The following list of Hampshire Willows must doubtless seem a very meagre one to those who have directed their attention to this, the most difficult and perplexing genus perhaps in the whole range of botany, not excepting the Brambles and their graceful first-cousins the Roses. Some years ago I set to work *con amore* to collect and describe such of the willows of this island as looked *really* indigenous, eschewing all acquaintance with the pliant denizens of osier grounds,* which custom has strangely permitted to pass as habitats for the species of this genus, with about as much propriety as if the garden or shrubbery were held to be genuine stations from whence to draw the materials for a British flora. Anticipating great trouble and little satisfaction in the execution of my task, I was not sorry to find Nature herself in a mood to lighten my labours and abridge their duration by giving me but scanty materials to work upon, yet somewhat chagrined at her parsimony in withholding from the Vectian flora the more beautiful of the willow tribe, leaving us little else than the comparatively worthless and uninteresting family of sallows to call truly our own. For the mainland section of the county I have no additional species to record on personal observation, though many more, real or fictitious, must be supposed to exist in so well watered and well wooded a region as Hampshire. This deficiency I shall endeavour to make up in future, which before my attention was turned to the

* The term "withy bed" sometimes made use of by me is not always synonymous with "osier bed," "willow plot," "willow ground," implying a piece of land *planted* with osiers for the basket-makers, but simply a boggy tract covered with willows (usually of the sallow tribe) of spontaneous growth, of which we have many in the Isle of Wight, occupying the little valleys or hollows between the hills, and filled with such truly native kinds as *S. caprea*, *aquatica*, *aurita*, &c.

botany of the larger section of the county I had no means of effecting. I am convinced that hybridity is at the root of a vast deal of the difficulty and obscurity that envelope the study of the willows. The peculiarly exposed position of the ovaries in the pistillate catkins, the copiousness of the pollen in the staminate ones, and the facility with which the fertilizing globules are conveyed by bees from the latter to the former, or wafted thither by the wind, are strong arguments in favour of this hypothesis. In the subjoined list the range, frequency and localities of the species are mostly omitted, to avoid giving erroneous information where my knowledge on these points is as defective as that regarding the plants themselves.

The beautiful and fragrant *S. pentandra*, mostly confined to the north of England and Scotland, may nevertheless be found in Hants, as Mr. Watson is disposed to hold it indigenous to Surrey, and perhaps to Sussex and Devon.

Salix decipiens. Near Fontley Iron mills (Fareham); Mr. W. L. Notcutt!

— *fragilis*. Wet meadows, banks of streams, &c.; I believe frequent in the Isle of Wight. Some very large trees by a pool in a pasture field near Nunwell answered to the description of *S. Russeliana*, but of this, having seen only staminate plants, I am not well assured. Is it really distinct from *S. fragilis*?

— *alba*. Very common in a planted state along ditches in moist meadows, &c.; less so in its natural localities of wet woods, pastures and sides of streams. A noble tree in many parts of the county and island. *γ. vitellina*, *S. vitellina*, *Auct. Anglican*. Wet thickets, &c., occasionally. Westridge, Ashey, Yaverland. Fontley (near Fareham); Mr. W. L. Notcutt.

— *triandra*. In wet thickets, by stream-sides, &c.; apparently native and not unfrequent in several parts of the island; more frequently still in a planted condition. The staminate plant is far more common here than the pistillate.

— *undulata*. Titchfield Bridge; Mr. W. L. Notcutt!

S. Helix and *purpurea* most likely exist in the county, but I have not seen any willow belonging to this section (*purpureæ*) wild in the Isle of Wight. Mr. Notcutt in his list of plants of the neighbourhood of Fareham (*Phytol.* ii. 212) gives *S. rubra* as growing at Titchfield Common.

— *viminialis*. In low swampy woods and thickets; not, I think, unfrequent in its wild state, though more usually seen in cultivation.

— *Smithiana*. Wet woods; rare? In a wet bushy part of the

wood nearly opposite the entrance gate to Roughborough farm, betwixt Ryde and Brading; Dr. Bell Salter !!! By the bridge that crosses the road near Shanklin Church, on the left hand side; *Id.* My only specimens of this are flowering ones of both sexes; the leaves I have not yet seen. I adopt this species as a native on Dr. Salter's authority, who has paid some attention to the willows in times past, and speaks with confidence on the correctness of the one before us.

Salix acuminata. In damp hedges and thickets, &c.; I believe not very uncommon in this island In Northwood Park; Dr. Salter and Miss G. E. Kilderbee. In a low wet meadow nearly opposite Red-hill farm, Appuldurcombe, 1843. I have only seen the pistillate plant of this species here as yet. An apparently well marked willow. Between the tunnel and Fontley; Mr. W. L. Notcutt.

— *cinerea.* Very frequent, at least its now constituted var. β . *aquatica*, in wet woods, thickets, hedges, and other damp situations. About Ryde, by a little pond near Westridge farm, &c. Titchfield Common; Mr. W. L. Notcutt.

— *aurita.* In wet woods, thickets and bogs; in various parts of the Isle of Wight, most abundantly. Plentiful in New Copse, between Ryde and Wootton Bridge. Abundant on the Wilderness; Undercliff, not uncommon. Between the tunnel and Fontley; Mr. W. L. Notcutt. As Sir Wm. Hooker remarks, "One of the least equivocal species, although its leaves vary in length and roundness."

— *caprea.* In woods, hedges, thickets and bushy pastures, &c., everywhere; the most abundant of all our willows.

Dr. Salter found some years ago what he considers *S. Forsteriana*, in Northwood Park, W. Cowes. As this appears to be quite a northern species, and only a single tree was detected, it was most probably introduced by some accident into the plantations there, in which willows of several kinds have been propagated.

— *laurina.* Woods, &c. By a little pool close to Newtown, on the right of the road from Shalfleet, between the town-hall and Fretlands farm, pointed out to me as this species by Mr. Borrer, a few years ago.

— *fusca.* In sandy, heathy, or moory ground, both moist and dry, in various parts of the island. Abundant along the road-side and heathy ground adjoining it on the northern skirt of Parkhurst Forest. Var. δ . *ascendens*, *S. parvifolia*, *Sm.*, E. B. t. 1961. Moist thicket near Ryde, towards Newport. Other forms of this variable

little shrub doubtless occur here, but I am not yet prepared to state them.

†*Populus alba*. In damp woods, hedges, moist meadows, and on the banks of rivers in various parts of the county and Isle of Wight, but in most cases I find myself unable to distinguish it with certainty from the following, of which I am strongly disposed to regard it as a cultivated variety, being, indeed, unable to cite a single station for this tree in its most characteristic and best marked form, where it has an undeniably wild appearance.

——— *canescens*. In similar places with the last, also on hilly, heathy, and dry situations, as commons, &c.; not very frequent, but perhaps truly indigenous to the county. Very common about Pagham farm in hedges, and in a small wet wood near the same, plentifully. In Barton or Bucket's Copse, and in the wet hollow or valley just outside of it, betwixt that wood and Osborne House, are some large and old, as well as many young trees, apparently indigenous. Hedges about Great Park farm, two miles W. of Newport, a rather dubious station; more wild to appearance in a lane leading down to the Wilderness from the high road between Newport and Niton, a little beyond the Star Inn, but sparingly. I have noticed it also near the northern side of Briddlesford Heath, in copses, as well as in several other places in the island, but where it would be scarcely possible to pronounce whether native or introduced. Noble trees of this species grow in a field hedge near Landguard farm, by Shanklin, but pretty evidently, I think, planted, as this and *P. alba* certainly often are with us on newly made hedge-banks and along fences. There is a magnificent tree of the gray poplar a few miles south of Newport, near a farm, but the name has escaped my memory. Hedges in Hayling Island. About King's Worthy, near Winchester. In Durley Wood, near Bishop's Waltham, by the millstream, and splendid specimens around the great pond at New Alresford, of vast size and height, but I am not certain that the trees (which some might call *P. alba*) are truly wild in either place. These two species, if they be really distinct, are given in all our leading floras, both local and general, as if unquestionably indigenous, at least to England. Neither Smith, Hooker or Babington hint a suspicion to the contrary. Watson says of the Abele, "*P. alba* is clearly indigenous to the southern provinces of England" (Cyb. Brit. ii. p. 383). Ray (Hist. Plant. and Synopsis), Gerarde and Parkinson* cast no doubt on its nativity, but

* "The smaller leaved white Poplar tree" of Parkinson (Theat. Bot. p. 1410, fig. 2) accords with my idea of *P. canescens*, as does his fig. 1, same page, "The white

speak of the Abele as somewhat rarer in their time than our other species; it is plain, however, from their figures of each, that our gray and white poplar were well known and even discriminated by those old herbalists. Turner, whose Herbal was published in 1568, has these words, "As touching the whyte Aspe, I remember not that I ever saw it in any place of England. If it be found in England, it may be called a whyte Asp or a whyte Popler, because the underside of the lefe is as white as any paper," (Herb. black letter edit. Cologne, 1568, part 2, p. 99). From this we may gather that *P. alba* and *canescens* must at least have been very rare when Turner wrote, which, though not conclusive on the question, makes in some measure against the aboriginality of these trees in Britain, for Turner was a very careful observer of our native plants, and seems to have travelled much over his own country as well as abroad. I do not question the opinion of those botanists who receive as indigenous the white and gray poplars, because my own doubts are but slight, and my experience probably less than theirs; but as far as my opportunities have gone, I could never perfectly satisfy myself that these trees, especially the Abele, were unequivocally wild in any station in which I have yet seen them in Hants or elsewhere in Britain. It has never happened to me to see either these or the black poplar occupying the recesses of our marshy woods, or fringing the banks of a woodland or forest stream, at great distances from the cultivated enclosed country, accompanying the aspen (*P. tremula*) into its sylvan wildernesses. On the contrary, I seldom see the Abele but along the streams and ditches intersecting water-meadows, the margins of ponds, and in hedgerows contiguous to houses, whilst the gray poplar wanders into wet thickets, copses and hedges, keeping about the borders chiefly of small woods, and open, damp, or heathy pastures, but I cannot call to mind having met with either this or the Abele on any of our forest bogs or streams, where it might be supposed likely to grow if they were really natives to the soil. Perhaps some who read this can point out such unexceptionable stations for one or both of these species. Again, *P. alba* and *canescens* are very commonly planted in all the places I have described; their roots creep to an amazing distance, and throw up suckers in every direction from the parent trees, and in

Poplar tree," with my conception of the true Abele in its most characteristic *cultivated* form.

this way convert a low meadow or pasture into a poplar grove. That such is the origin of many of our gray and white poplars in this island I cannot doubt; but as the trees would have the same tendency to increase by suckers from the widely-creeping roots, whether aboriginal or not, this mode of propagation affords no argument one way or the other, excepting so far as it readily accounts for the spreading of the species in spots where it has been certainly introduced. With regard to *P. nigra*, I confess to doubts somewhat more decided; no station in which I have ever seen the black poplar appeared to my eyes above suspicion.

The question now comes to be considered, are *P. alba* and *P. canescens* distinct, or are they varieties of one and the same species? My own opinion inclines strongly to the belief of their being identical, and that the former is but a state of the latter originating from cultivation or quality of soil inducing a greater development in the leaves; that they are in fact analogous to *Tilia europæa* and *T. parvifolia*, which are pretty generally admitted to differ only in the size of their leaves and a few minor points of no specific importance. Hence both these poplars may grow equally wild, but the Abele will oftener be seen in suspicious stations than the gray aspen, and this accords with observation. What lends countenance to the opinion just expressed is, that I find people not always agreed as to what is *P. alba* or what *P. canescens*, and in fact I am sometimes at a loss how to name certain individuals of these species, so nearly intermediate betwixt both do they present themselves occasionally. By *P. alba* or Abele I understand a great tree very common in plantations about houses, or in water-meadows, having large triangular or trowel-shaped leaves, *all* deeply and conspicuously angular, toothed and lobed, the under surface snow-white; by *P. canescens* a tree sometimes of equal height and bulk with the Abele, but with usually smaller leaves, for the most part of a roundish rather than triangular figure, much less deeply angular, and mostly obscurely lobed, excepting those on the youngest trees or the suckers, which are hardly distinguishable from the leaves of the Abele in size or shape, and pretty clearly prove how much an excess of moisture or nourishment has to do with determining these differences in the foliage. The leaves, indeed, of *P. canescens* are extremely variable in form on the same tree, and in general approach those of the common aspen (*P. tremula*) in outline, that is, they are often rounded and but slightly pointed at the apex, and instead of being angular and lobed are merely sinuate, or sinuate-dentate. Underneath, the leaves of *P. canescens* are as white sometimes as in *P. alba*,

in general they are less hoary, excepting, as we have just seen, in the suckers or very young seedlings, they are even sometimes smooth and glabrous, as above, or hoary in patches, as if with mildew. Such a glabrous form, of which I find a moderately large but perfectly barren tree in a heathy pasture near Pagham farm, in this island, I suppose may be the *P. canescens*, var. *β. intermedia* of Mérat (Nouv. Fl. des Env. de Paris, p. 400), and which he thought, not improbably, might be a hybrid of this species with *P. tremula*,* but like myself, the fructification was unknown to him. Lejeune (Fl. de Spa, p. 260) thinks it more allied to *P. tremula* than to *P. canescens*, and although believing it to be a variety of the aspen, makes it a species (*P. intermedia*, *Mer.*), in order, as he says, to draw attention to its characters; a bad principle to go upon in botany as in ethics. It is also, according to Gaudin (Fl. Helv. vi. p. 289), the *P. alba*, *γ. denudata* of Spenner, Fl. Frib. ii. p. 274, and I think it probable to be likewise the *P. hybrida* of M. Bieberstein, Fl. Tau. Caucas. ii. p. 422, as drawn at least by Reichenbach (Icones Fl. Germ. tab. 615), for the description of Bieberstein does not quite agree with the figure. For my own part, not having seen fructification, I know not whether to look on the Pagham tree as a hybrid or a subglabrous variety or rather state of *P. canescens*, but am more disposed to the latter opinion.

The next point to be considered is the alleged difference in the form and number of the stigmas in our two poplars, and here I am unfortunately not in a condition to offer any opinion from personal research, having hitherto failed in all my efforts to obtain pistillate catkins of *P. alba* and *P. canescens*. These trees do not flower here till they have reached a very considerable height, when the catkins are for the most part quite out of reach, and produced chiefly on the highest boughs. The few catkins of *P. alba* I have been able to procure have been staminate ones, and I suspect the pistillate plants are much rarer than those of the other sex, as I think is the case with *P. tremula* as well. I can therefore at present only collect the observations of others, and consult plates of the species, from which, and from what I have seen of the same organs in *P. tremula*, I am forced to infer that no reliance can be placed on the number or even shape

* The great affinity in structure between *Salix* and *Populus* renders it highly probable that hybrids are occasionally produced betwixt species belonging to the latter genus, but the stigmas in *Populus* are less exposed and the pollen less attractive to bees than in the willows, mules would therefore naturally be less common amongst the poplars than the willows.

of the stigmas in any of our British poplars. In Guimpel and Hayne's 'Abbildung der Deutschen Holtzarten,' ii. t. 201, 202, are good figures of *P. alba* and *canescens*, the branch of the latter apparently from a young tree or shoot; in this the stigmas are drawn as small, upright, green, decurrent, and apparently two-cleft (seen in perspective), not as in E. B., large, spreading, reddish, and palmately four-cleft (nor as eight separate stigmas, as Smith assigns the species). In Fl. Danica the figures of these species in vol. xiii. t. 2182—83, though finely engraved, represent the stigmas as precisely the same in each, namely, four, simple, filiform and spreading; the former plate intending to represent *P. alba*, so far agreeing with the character laid down by Smith, but the leafy branch is more like what I should have called *P. canescens*, having roundish, sinuate, unlobed leaves, of small size, and like those of *P. tremula* in t. 2184. The plate 2183, professing to give the true *canescens*, has leaves of a very ambiguous character, quite deltoid or triangular, like the smaller ones of *P. alba*, but the stigmas, as before stated, are the same in both, and quite unlike those in E. Botany or in the German work just quoted. This remarkable discrepancy in the form of the stigmas in three works of such repute for accuracy, coupled with my own observations on the same organ in *P. tremula*, to be noticed presently, lead to the inference that the stigmas are liable to great variation in size, shape and colour, and therefore cannot be safely trusted as discriminative of the species in this genus. From all that has been said I think it more than probable that *P. alba* and *canescens* are but forms of one species,* of which *P. canescens* may be considered as the typical state, as oftenest found wild, and *P. alba* as a variety with larger leaves, resulting from cultivation or a moister and richer soil.

Populus tremula. In low, damp, also in dry upland woods and thickets, especially on stiff clay soils; a truly, and perhaps the only really, indigenous poplar in this county and island. Abundant in Quarr Copse, and on the wet, slipped land along the shore betwixt Ryde and the Priory, &c. In Shanklin Chine. Frequent in woods about Cowes. In Stapler's Copse, Nunswood Copse and elsewhere about Yarmouth, abundantly. In Barton or Bucket's Copse, between Osborne and Barton farm (the property of her Majesty) are some very fine aspens of great height and size. Woods at Selborne and in

* Les caractères du *P. canescens* se nuancent tellement avec ceux de *P. alba*, qu'il serait peut-être plus avantageux de les réunir. — Lestiboudois Botanog. Belgique, ii. p. 460.

other parts of mainland Hants, but having omitted to note down the stations, I forbear to give them from memory merely. Stigmas four, bright crimson, nearly erect, slightly diverging only in two pairs; each (in all the specimens I can collect in this island) expanded into a broad, irregular, waved and crenate lobe, in shape resembling a cock's comb, or the fleshy inflorescence of *Celosia cristata*. The great differences in the shape of the stigmas, as I find from that given them in *E. Botany* and the authors quoted under the two preceding species, only prove how variable are these organs as regards form and perhaps number also. In my specimens the stigmas are constantly four, but in place of being linear or awl-shaped, as Smith describes and Sowerby figures them, they are invariably lobed and notched in the manner above stated. In the plate of this species in '*Flora Danica*' (t. 2184) the stigmas approach those of my specimens in form, but are much more simple or regular, widely spreading, or even reflexed, scarcely at all lobed, and much smaller, nor are they, any more than in mine, furnished with a basal auricle, as mentioned by Smith, and so drawn in *E. Botany*.* Guimpel and Hayne (*Abbild. der Deutsch. Holtzart. ii. t. 203*) come much nearer in their delineation of the stigmas to my own examples in size, shape and colour, from whence I conclude these organs vary according to age and development, if not in each individual from other causes. I found in a staminate catkin from Bucket's Copse in 1843, several hermaphrodite flowers, the stigmas of which were fully formed and of the usual size. I have remarked the brown, glutinous flower-buds of the Aspen to smell strongly of malt.

† *Populus nigra*. In wet woods, meadows and by river-sides, &c.; a very doubtful native, I fear, of Hants, and rarely seen with us in any apparently wild situation. On Watchouse Point, near the Priory, probably planted, and on wet slipped clay along the shore between Sea View and the mouth of Brading harbour. Near Steephill, apparently wild, and a tree or two betwixt Ninham farm and the Newport road, in the wooded ground along the brook, as also on wet land near the shore a little west of Cowes. A tree or two near Medham, and three or four in a wood near Cliff farm, by Shanklin, but very doubtfully indigenous, as I found a solitary Horse-chestnut in the same wood. I have sometimes thought that exotic tree occasionally propagates itself spontaneously in this country, as I believe I remember

* In this last work the floral bracts (scales) are in the separate figure represented as glabrous, doubtless through omission of the engraver.

to have heard Mr. Borrer say it frequently does in Sussex. My reasons for thinking the black poplar not indigenous with us are the same as those given under *P. alba* and *canescens*, namely, its absence in the heart of remote woodlands or on our old forest ground, and stream-sides that flow through them, as well as from its rare and sporadic occurrence in all those localities least open to suspicion of its having been purposely introduced thereto. It is, however, to all appearance so far naturalized in Hampshire, that a place could not consistently be refused it in the county flora, without excluding some other plants whose pretensions are no better than its own.

Myrica Gale. In wet thickets, bogs and on moory ground. In several parts of the Isle of Wight, abundantly. In boggy, peaty meadows along the Medina (above Newport) and East Yar, in many places abundant, as about Rookley Wilderness, &c. Plentiful in Apse Heath withy bed, also at the upper end of Sandown Level, and on the boggy skirts of Lake and Blackpan commons. At the foot of Hill Heath or Hill-side, and in Bordwood Lynch, both near Newchurch. Willow thickets by Budbridge farm, and profusely on a tract of peat bog not half a mile north of Godshill, a little beyond Munsley Hill. Sometimes in this island rising to a height of six feet. A profusely abundant plant in mainland Hants, particularly in the forest districts, where it covers acres of moorland bog. In various parts of the New Forest, as remarked by Mr. J. S. Mill (*Phytol.* i. 92). Abundant in a bog below Boldre church; near the Roman camp called Buckbarrow Rings, and elsewhere in the parish. Bog on the right hand below the road about three miles from Lymington towards Brockenhurst. Abundant along the line of railway between Brockenhurst and Ringwood. In the moory ground about Sowley Pond and on its boggy margins, in the utmost profusion. At Bournemouth and near the Christchurch Station. Abundant on the boggy parts of Titchfield Common and in the marshes near Grange farm, by Alverstoke. Parley Heath; Mr. Curtis in *litt.* and *Brit. Entom.* xvii. t. 763 (*ex loca*). I think I have seen it in plenty on Wolmer Forest, near Bishopstoke and elsewhere, but find no notes to that effect, nor have I any station as yet to record for it in North Hants, although I believe it to be very generally distributed over the county. This shrub is called, in the Isle of Wight, Golden Withy, Sweet Withy, Golden Osier, and is, if I remember rightly, used by our forest population as fuel, being from its resinous nature highly inflammable. The delightful fragrance of the leaves partakes of the combined aroma of cloves and ginger.

Betula alba. In low wet or boggy, and in elevated sandy, heathy or turfy, woods; frequent throughout the county and Isle of Wight. Marvel Wood, near Newport, is mainly composed of this tree. At Apse Castle, plentiful. Common in the New Forest, where the trees reach a very respectable height, but greatly inferior to the magnitude the species attains in the north of Britain. Boggy parts of Wolmer Forest, as well as in upland woods in most parts of Hampshire. I do not know if we have both the species or varieties (*B. alba* and *B. glutinosa*) given in the 'Manual.'

Alnus glutinosa. Common in wet swampy ground, water meadows, banks of rivers, streams, &c. throughout Hampshire. Often forming groves or thickets by itself, called Alder swamps or Alder cars, as at Alverstton and elsewhere in this island.

Fagus sylvatica. In dry, and more especially steep upland woods; less abundant in the low flat grounds or along the sea coast; profusely on almost all the chalk ridges of the mainland, on the precipitous flanks of which it constitutes vast natural woods, called in the county "*hangers*," sometimes composed solely of beeches without any undergrowth whatever, at other times filled up with a dense thicket of brush, or intermixed with yew, ash, oak and other forest trees. The profound silence and solitude of these woods, standing betwixt converging hills, which they clothe to their summits, and descend on their opposite side into valleys as lonely and devoid of life and sound,—where the eye cannot pierce the interminable vista of tall, straight and smooth boles shooting up high over head ere they expand into the leafy canopy that half excludes the day, shedding a twilight gloom on the pale brown flowerless ground, bestrewn with many generations of fallen leaves, crisp and crackling under the tread of the sylvan wanderer,—inspire a strange feeling of awe, half akin to fear, and the words of Dante in the opening canto of the '*Inferno*' unconsciously recur to memory:—

E quanto a dir qual era è cosa dura
Questa selva selvaggia, ed aspra e forte,
Che nel pensier rinuova la paura!
Tanto è amara che poco è più morte.

Such is the character of our beech woods in their inmost recesses and in their most exclusively unmixed features, but on the sunny slopes of the chalk hills, where the beeches stand detached and interspersed with other trees and a rich undergrowth of shrubs, beauty and verdure take the place of gloom and monotony. In the dark deep valleys or

ravines before alluded to, an occasional holly, yew or juniper, rising betwixt the bare trunks, breaks with its black melancholy green the sombre continuity of shade, only to make it more sombre and lifeless still; but on emerging from these pent-in valleys, and gaining the outer escarpments, a scene of sylvan softness and variety succeeds, and the beechen woodland, now open to the light of day and animated with the song of birds and the hum of insects, no longer oppresses the mind with a sense of loneliness and desertion as before. The steepness of these hangers is such as in some places hardly to afford footing to the explorer, and down the angles formed between the smaller crests and ridges, the rains plough gullies in the chalky ground called in the county "slidders," from their excessive slipperiness, and which it behoves him to descend with caution should he choose them for his path to the plain below. These beechen uplands abound with a variety of interesting plants and shrubs, some of them rare and local, others common to them and the low country, as *Monotropa Hypopitys*, *Cephalanthera grandiflora* and *ensifolia*, *Hermidium Monorchis*, *Helleborus viridis* and *fœtidus*, *Daphne Laureola* and *Mezereum*, *Pyrus Aria*, *Aquilegia vulgaris*, *Listera Nidus-Avis*, *Convallaria multiflora*, *Ophrys apifera* and *muscifera*, *Epilobium angustifolium*, *Taxus baccata*, *Rhamnus catharticus*, &c.

In the Isle of Wight the beech is far less abundant than on the mainland near the coast, and the beautiful hanging woods of this tree that form the pride of Hants and the adjoining counties of Surrey, Wilts and Dorset, are quite wanting on our side of the Solent. Here the beech occurs sporadically, and I have sometimes even thought it might not be aboriginal in the island; it appears, however, as if quite wild in some of our rocky woods, as in Cowpit Cliff Wood, near Shanklin, and elsewhere, but rarely, and never attains here to any remarkable size except where it has been planted, as in Appuldurcombe Park, which abounds with fine beech timber. In the New Forest the beech grows detached and intermixed with oak, birch and holly in open glades, and although attaining a large size, seldom, if ever, forms woods of itself in the lower flat country, but only on the hills.

I shall not here enter upon the discussion of the question that has been raised by a few of those classical objectors who measure every opinion by the standard of antiquity, and who would rather think wrong with the ancients than be set right by Nature; namely, that the beech cannot be an aboriginal native of Britain, because Julius Cæsar tells us he found neither pine nor beech in this country at his

invasion of these islands. I have elsewhere in this paper remarked on the absurdity of pinning one's faith to any ancient text, with all its liability to corruption or misconstruction from time and the ignorance or carelessness of transcribers, before printing gave thought power to fly about the world on a hundred wings in unimpaired originality of expression as of conception. I suppose a botanist could scarcely be found at the present day hardy enough to risk being laughed at for quoting Cæsar's 'Commentaries' to prove that the beech was no true Briton: the *prestige* of classical authority, like the Aristotelian philosophy once and so long paramount in the schools, has vanished before the practical and inquiring spirit of our age, and we learn to know Nature by her own teachings, not from the dicta of her disciples or the wording of a musty record. Yet I confess, the objections that have been taken against admitting the nativity of several British plants whose claims have been discussed in these Notes, appear to myself not a whit more reasonable than in the case we have been just considering, since we have here the sanction at least of a great *name* of antiquity, be its authority in botanical matters what it may; in the other instances we have little but bare conjecture or unproved assertion as the foundation of doubt. I have often, like Mr. Watson, felt desirous to ascertain the real or natural limits of the beech in Britain, which we may hope to see accomplished through careful observations by northern botanists. On the continent of Europe this tree ranges to a latitude as high as the extreme north of Scotland, but there can be no doubt it fails in Britain several degrees lower than in Sweden, the southern part of which country is quite within the true beech region, which occupies the greater part of central and western Europe, in the plains or at moderate elevations. It is rare or wanting in the extreme eastern countries of the continent, as Poland and Russia, being comparatively a tender tree, and according to Fischer (*Versuch einer Naturgeschichte von Livland*, 2te Auflage, s. 631) apt to suffer from the cold of winter at Riga, lat. $56^{\circ} 57'$, when not sheltered by its neighbours of a hardier kind.

†*Castanea vesca*. In woods and hedges; not uncommon in the Isle of Wight and county generally; perhaps really naturalized in the strictest sense by spontaneous dissemination in many places, but rarely; more frequently planted, and certainly, I conceive, very doubtfully indigenous to any part of this realm. In Lorden Copse, near Shorwell, are several trees of considerable girth and evidently great age, which in certain seasons produce small but well-flavoured

fruit, as I learn from the country people, whilst in other years the nuts do not fill in the shell. Climate, however, would seem not to be the cause of failure in the fruit of the chestnut in this part of England, since even that of the beech is apt to be abortive in a similar manner, becoming as it were atrophied by absorption, the nuts appearing to the eye as large and well filled as usual, but on being broken are found to be hollow, with no trace of any part of the seed visible excepting the hairy funiculus. The practice of planting young chestnuts in the copses, amongst the brushwood, is so frequent with us on account of the value of the wood of a few years' growth for hop poles, that it is next to impossible to say where this tree is of spontaneous origin: I am inclined to believe that the few old chestnuts that are to be found scattered here and there in our woods and hill-side copses may be of Nature's planting, in so far as they were seedlings from trees originally introduced. I have found the chestnut apparently wild in this sporadic condition near Petersfield and elsewhere, both here and on the mainland, but have never remarked it in any considerable numbers where I could persuade myself that it was not introduced by human agency. Compared with the beech its power of occupancy with us is very feeble, which is not the case in those countries where the chestnut is truly indigenous, as few trees are more gregarious than both this and the beech where the climate and soil are suitable; witness the vast chestnut groves that clothe the lower mountain ranges in the south of Europe. Mr. Watson (Cyb. Brit. ii. p. 377) very justly remarks that the chestnut "does not spontaneously spread and multiply so as to obtain a hold over the wastes and neglected places, after the manner in which we see the *Quercus* or the *Pinus* establish itself without human agency, or even in defiance of human processes which oppose and impede the natural tendency to spontaneous increase." True it is, that such power of occupancy is not in all cases needed to prove a tree indigenous, as some species are in their nature sporadic, and enter but sparingly into the general constituents of the forest, as *Pyrus torminalis*, *Ulmus montana*, *Prunus avium*, &c. Neither is the tendency to spread and multiply abroad and take possession of the waste places of the earth confined to such trees as are aboriginal to the soil they usurp, a notable instance of which I shall soon have to bring before the reader ere dismissing the Dicotyledonous plants of the county. But we may well expect to see trees that are naturally gregarious equally social, or nearly so, in all climates fitted for their spontaneous growth, and unless we find them obviously multiplying by seed and maintain-

ing their position with unquestioned natives, may reasonably entertain distrust of their aboriginality. As regards the chestnut, I cannot actually prove its spontaneous dissemination in our woods by natural means, although disposed to admit the fact from certain appearances which favour the conclusion; my objections to receive it as a native tree are founded, however, upon other considerations, of which the principal is its geographical distribution. From careful comparison of the accounts given by botanical investigators in both hemispheres, I come to the conclusion that the chestnut ceases to grow wild in Asia, Europe and America on or about the 44th degree of latitude, although in Europe at least it may be carried much further north by cultivation, and may even continue to propagate itself spontaneously in favourable situations in France, Switzerland, Germany and England. It has indeed been doubted whether the chestnut be aboriginal to any part of western Europe, even the most southerly, because its name in all European languages comes from one root, and intimates its alleged dispersion over our continent from *Castanea*, a city of Thessaly.* Without entering on the discussion of the truth of such

* Many of the plants in common cultivation in the south of Europe for use or ornament, as the Vine, the Fig, the Olive and the Judas-tree, have been supposed of Asiatic origin, and to have been introduced into our quarter of the globe as civilization advanced westward. Having myself seen all these plants in places where they had a perfectly native aspect, I am grown very sceptical on this point, and believe that *Vitis vinifera*, *Olea europæa*, and *Cercis Siliquastrum* are the truly indigenous representatives in Europe of their corresponding genera in the New World, where under similar latitudes or nearly so *Cercis Siliquastrum* is replaced by *C. canadensis*, *Olea europæa* by *O. caroliniana*, and *Vitis vinifera* by *V. Labrusca* and its congeners, it often happening that a genus of which there exists but a solitary European species has two or more American representatives under the same parallel of latitude in both hemispheres. The great similarity of type in the vegetation of Europe and America strongly favours this idea of community of genera and even of species, so that as regards the chestnut, since it is an acknowledged native of the Old World, its absence from the flora of Europe up to the parallel it attains in the New would rather be a matter of surprise, considering how extremely common it is in the latter, and that the species differs little or nothing as it presents itself in either hemisphere. Lindley has indeed gone so far as to rob the "*littora myrtetis lætissima*" of Italy of their chiefest glory, for he tells us in his "*Vegetable Kingdom*" (second edition, p. 736) "*Myrtus communis*, the most northern species of the order (*Myrtaceæ*), is a native of (Persia, but has become naturalized in) the south of Europe." I am not aware from what source the Doctor got this information: the introduction of the myrtle into our quarter of the world from Asia must have been from the remotest antiquity, which in itself would be a reasonable cause for doubting the fact, did not the vast profusion and wide dispersion of the myrtle over every part of the Mediterranean shores and much of the Atlantic coasts of Spain and Portugal pretty plainly refute that tradition.

refined speculative reasoning (to be always admitted with caution when opposed to the evidences which nature presents), I may remark that probability is very greatly against the chestnut being indigenous to any part of Europe north of the Alps, or (with perhaps some partial inflections) beyond 44 or 45 degrees of latitude. It is wanting over the greater part of Germany, and only occurs in a cultivated condition in Hungary, Lower Austria and the Tyrol. It is unknown in Russia proper, and first appears in the conquered Caucasian provinces of that empire according to Pallas and M. von Bieberstein. Koch says of it (Syn. Fl. Germ. et Helv. 2nd edit. p. 736), "*Colitur, et in regionibus calidioribus sylvas format solâ culturâ ortas.*" Such I have little doubt was the origin of the chestnut woods that formerly existed in the south of England, as the gigantic trees of this species still in being prove it to have been introduced at a very early period into Britain. Turner, writing in 1568, says, "Chestnut trees grow plentuously in Kent abroad in the fieldes and in manye gardins in England," (Herb. p. 114). Gerarde still later affirms, "There be sundry woods of Chestnuts in England, as a mile and a half from Feursham in Kent, and in sundry other places." I believe these old woods are now destroyed, but the tree is abundantly cultivated in the present day for hop-poles, a use it could not have been put to in Turner's time, since hops were not then grown in England, as we have seen under that plant. In America the beech and the chestnut flourish together at the sea level; I found them so growing in Canada West as far north as the parallel of Niagara or lat. 43° 27', where it is still very common in the woods.* In the south of Europe below the limits assigned as the true natural boundary of the chestnut, this and the beech inhabit zones of different elevation, and are seldom, if ever, seen associated, though both very gregarious by nature, showing clearly that a different climate and temperature is required for each. Now since the beech finds, even in the south of England, a climate

* The American beech, *F. ferruginea*, although long regarded as a variety of the European *F. sylvatica*, is unquestionably a most distinct species, and much the handsomer tree of the two, the leaves greatly larger, distinctly serrated, and so nearly approaching those of the chestnut as in very young trees to be scarcely distinguishable from them at first sight. *F. ferruginea* grows wild sporadically in the low country of Carolina and Georgia. I have seen it in the forests near Savannah in company with *Magnolia grandiflora*, *Gordonia lesianthus* and *Palmettos* under a mean temperature of 66 Fah. and 32 degrees of latitude. In the south of Europe *F. sylvatica* is never found spontaneous at the sea level or descending on the mountains into or below the region of the chestnut.

congenial to its spontaneous growth at very slight elevations above the sea, or at the level of the ocean itself, is it likely that the same temperature so appropriate to the well being of the beech would equally suit the chestnut, which on the mountains of Italy and Spain is always found inhabiting a zone of elevation quite distinct from and subordinate to that occupied by the beech? The proper region of these trees is essentially different, and furnishes, I think, a good additional argument for rejecting the claim of the chestnut to aboriginality in Britain.

WM. A. BROMFIELD.

Eastmount, Ryde, Isle of Wight.

(To be continued.)

On the Locality for Tulipa sylvestris at Bitton, Gloucestershire.

By T. B. FLOWER, Esq., F.L.S.

I THINK it necessary to mention in the pages of this journal, that the locality given for *Tulipa sylvestris* at Bitton, on the authority of the Rev. H. T. Ellacombe, is an error, as I have been informed by that gentleman,—the plant having been traced from his garden into the meadows near the church. The locality being now destroyed, but mentioned in the last edition of Withering's 'Arrangement of British Plants,' I have been induced to send the present communication, for scarcely a season passes without some botanist being disappointed in not finding it, and also to prevent the propagation of the error.

T. B. FLOWER.

Seend, Melksham, Wilts,

March 6, 1850.

Contents of the 'Botanical Gazette,' No. 15, March, 1850.

On Proliferous Heads of *Trifolium repens*. By Robert C. Austen, Esq. With a lithographic plate.

Description of a New Botanical Drying Apparatus. By T. Twining, Jun., Esq. [A sort of trellis-work or open railing is substituted in place of the usual boards, both externally and between the strata of paper internally; thus insuring a free circulation of air; although at the sacrifice of that more complete uniformity of pressure which is

A Catalogue of the Plants growing wild in Hampshire, with occasional Notes and Observations on some of the more remarkable Species. By WILLIAM ARNOLD BROMFIELD, M.D., F.L.S., &c.

(Continued from page 854).

Quercus Robur. In woods, thickets, copses and hedges throughout the county and Isle of Wight; most abundantly. This is the common oak, not only in Hants, but I believe in most of the southern and eastern parts of England.

— *sessiliflora.* In similar places with the last, but much more rarely, although I fear scarcely distinct as a species from the foregoing. In the sandy soil of Bordwood Copse, near Newchurch, where it was pointed out to me by Mr. Borrer during an excursion with that gentleman and Dr. T. Bell Salter, in August, 1844, growing with *Q. Robur* in about equal proportion. Since observed by myself in other parts of this island. A tree or two on the margin of Quarr Copse, by the side of the Newport road. In East Standen Copse, near Newport. A very fine round-topped tree in Elm Copse, betwixt Calbourne and Shalfleet. In a small hilly wood of scrubby oak bushes belonging apparently for the most part to *Q. sessiliflora*, close to Fareham, on the north side, overlooking the town, and where I also found *Pyrus torminalis*, but not in any abundance, July, 1849. Observed near Empshot, and in other parts of the county this year. Var. β . Leaves downy underneath. Durmast (*quasi* dunmast) oak, the acorns being sometimes of a reddish or dun colour, as I have found them in this island near Shalfleet. In the New Forest; Martyn. A puzzling species, if such it be, not always very well marked, but distinguishable in its most defined form from *Q. Robur* by its usually larger and broader, flatter and more regularly spreading or imbricated leaves, which are distinctly petiolate (the petioles yellowish or reddish), in general of a brighter, more shining green, sometimes, however, dark green, for the most part obovate rather than oblong, more regularly and evenly sinuate, the sinuses more exactly opposite and inclined to acuteness at bottom rather than to be rounded or obtuse; by a greater massiveness of foliage and compactness of the whole tree, which is, I think, more disposed than *Q. Robur* to assume a rounded head; by its more horizontally spreading, less tortuous branches and spray, larger-sized leaf-buds, and essentially by bearing acorns that are either quite sessile, or wholly or in part on short, erect, stout peduncles, and in general more numerously clus-

tered. The bark is thought to be lighter coloured, and the leaves more apt to be persistent through the winter; I think I have remarked the former to be smoother on young trees, at least than in *Q. Robur*.* The acorns of the present species are rather ovoid than oblong, the cup approaching to one half the entire length of the gland; they are stated, moreover, when ripe, to have very generally a red or pinkish colour. All these characters are liable to great exception, fluctuating so variously between those laid down for the two species as fairly to induce suspicion of their being really distinct as such. Still, as Mr. Bree (*Loud. Arbor. Brit.* iii. p. 1738) truly observes, "though there are sessile oaks bearing fruit on peduncles, and pedunculated oaks bearing almost sessile fruit, there is yet a certain indescribable something about the trees, by means of which I can always distinguish each, without minutely examining either the acorns or the leaf-stalks." The present is undoubtedly the handsomer tree of the two, with a certain approach to the sweet or Spanish Chestnut in aspect, and it is said in the grain and quality of the wood likewise, having, it would appear, been commonly mistaken for that of the chestnut in some of our oldest edifices. This species approaches in the regularity of its growth, flatness and even sinuation of the leaves to the American White Oak (*Q. alba*), the nearest representative on that continent of our British oak, and scarcely inferior to it in the value of the timber it yields. The characters distinguishing *Q. sessiliflora* which I have found most constant, are those of the fruit and leaf-stalks; for although the acorns are often elevated on a very distinct peduncle, I have never seen the latter anything like so slender and elongated as in *Q. Robur*, notwithstanding that this last sometimes bears its acorns on an abbreviated stalk, very similar to the occasional one of *Q. sessiliflora*. The leaves in *Q. Robur* are most commonly very unequal at the base, with so deep a notch or sinus on one or both sides of the petiole as to appear auricled; in *Q. sessiliflora* the base of the leaf is more equal, and the notch, if any exists, very shallow. The leaves in *Q. Robur* usually lie in planes variously inclined to one another, and this, together with their wavy surface, convexity, and irregular sinuation, combine to give an air of scrubbi-

* The woodmen here talk of two kinds of oak, which they call the black and the white oak, but the only intelligible difference I could extract from their accounts is, that the twigs of one float, whilst those of the other sink, when thrown into water! Some of the more observant, however, amongst them distinguish more clearly our two species, the *Q. sessiliflora* they call White Oak and Maiden Oak, as I have repeatedly ascertained.

ness to the foliage as contrasted with the neater appearance in this respect of *Q. sessiliflora*, in which the leaves are remarkably flat, radiating, and lying over each other in a horizontal position and in parallel planes, by which it may be distinguished at a great distance from its congener. Whether *Q. Robur* and *Q. sessiliflora* be accounted distinct or not, I can by no means agree with Fries (Corp. Flor. Provin. Suec. p. 144) in thinking that the differences between the two are owing to poverty of soil, as he confidently affirms.* From what we know of the mutability of character in *Tilia* and *Ulmus*, as also in *Salix*, *Populus* and other *Amentiferæ*,† we should be cautious in admitting to specific distinction a tree which in many of its states does not always present very definite limits to the marks separating it from *Q. Robur*.

* *Q. sessiliflora* seems to abound most in the hilly districts of the north of England and in Wales, and there to reach its fullest dimensions. At Boultonbrook, near Presteign, Radnorshire, the seat of Sir H. J. Brydges, Bart., are the finest, most characteristic trees of the sessile oak I have ever seen, almost rivaling the Spanish Chestnut in beauty of foliage, and of noble magnitude and height.

† The word *Amentaceæ* employed to designate the natural order of ament-bearing plants is manifestly incorrect, and nearly as bad as *Graminaceæ* for *Gramina*. The termination in *aceæ* (which it would be highly desirable, for the sake of that neatness, precision and uniformity, at once useful and ornamental in scientific nomenclature, should be unanimously adopted instead of the vague, arbitrary and often ungrammatically-constructed and mixed terminations of De Candolle, still in partial use amongst botanists) does, or ought to express, the relations which certain groups of plants bear to some typical genus concentrating in itself the leading or most prominent characters distinguishing such groups in the aggregate. Thus, *Violaceæ* implies a group, family or order of *violaceous* or violet-like plants, not violets themselves, but allied to or closely resembling them, having most of the peculiarities of form, structure, appearance, and properties of the genus *Viola*, which serves as a type or standard of comparison to judge all its allies by. But to apply the term *Graminaceæ* to designate the order or family of Grasses, or *Palmaceæ* that of Palms, as has been inconsiderately done in some instances, at once destroys the entire force and meaning of the Latin adjective termination in *aceæ*, which has a comparing efficacy, that an incorrect application of it wholly stultifies. For as there is no such genus as *Gramen* or *Palma*, these two natural orders represent themselves, and are not typified by any one genus of Grasses or Palms, to which all the remaining genera composing these orders may be referred as a standard of comparison. To compare a thing to itself is obviously absurd, because every comparison necessitates the existence of two objects to be compared; to call the Grasses and Palms, therefore, *Graminaceæ* and *Palmaceæ*, is only to declare them to be grass-like and palm-like plants, or in other words, like themselves, that is, Grasses and Palms, which is in fact a comparison only in sound. The proper designation of these orders should be *Gramina* and *Palmæ*; for *Gramineæ* (*plantæ gramineæ*) and *Palmeæ* (*plantæ palmeæ*) are only preferable to *Graminaceæ* and *Palmaceæ* as being better Latinity. In like manner *Amentaceæ* is highly objec-

Corylus Avellana. In woods, copses and hedges everywhere most abundantly; often constituting the main part of the undergrowth in our hilly copses, flowering here usually in February and sometimes in January.

?*Carpinus Betulus.* In woods, thickets and hedges, mostly in damp clay soils; very rare? Not found wild in the Isle of Wight, where it is only seen in plantations. In a wood abutting on Titchfield Common and in a copse by Down Lane, near Fareham; Mr. W. L. Notcutt. I can hardly believe the Hornbeam not indigenous in Hants, although I have as yet only the above stations to record for it in the county, and regarding which Mr. Notcutt speaks with some hesitation in a letter I lately had from him. The tree abounds in some parts of Sussex, as near Hurstperpoint, and in woods at the Old Roar, near Hastings. Its absence as a native production in this island is not explicable on the ground of deficiency of suitable soil, as we abound with the stiff clay in which it delights. It will probably be found in several parts of the county if searched for in damp, tenacious ground.

Taxus baccata. In woods, hedges, rocky places, borders of fields, and on open chalky downs, very abundantly over a great part of mainland Hants, mostly in elevated situations in the interior; rarer in the lower and flatter country or along the coast. Scarcely indigenous to the Isle of Wight. A few small trees occur on the slope of the down

tionable, inasmuch as it implies an order of plants like aments or catkins, which is equally far from the truth and the sense intended to be conveyed in the word, whereas Amentiferæ at once declares its own meaning and the true nature of the order, which is composed of ament or catkin-bearing plants, just as Coniferæ is of trees bearing cones. In adopting Amentiferæ, too, we secure correctness and uniformity at the same time, as the termination now accords with Coniferæ, Cruciferæ and Umbelliferæ, which, had consistency anything to do with the barbarous, mixed nomenclature of the natural orders still used by many, should have been Amentaceæ, Conaceæ, Cruciaceæ! Umbellaceæ, or Amentææ, Conææ, Crucieæ, Umbelleæ! words, it must be owned, that would have been a disgrace to botany. But the fact is, that the termination in *aceæ* adapts itself with singular felicity to all the natural orders deriving their names from a typical genus, whilst to the few that take their appellations from the form or structure of certain parts, the ending in *feræ*, implying bearing or producing, attaches with equal gracefulness and perspicuity. Rigid grammatical correctness is not to be expected in modern scientific nomenclature, but the uniform adoption (with the above exceptions) of the ordinal termination in *aceæ* would secure it oftener than the arbitrary and capricious substitution of the endings in *ææ*, *niæ*, &c., which are only a burden on the memory to recollect, and are often wholly unsuited to the structure of the root to which they are attached, as *Violariæ*, where the *r* is quite out of place and extraneous.

above Nunwell, the only spot in the island where I have seen the yew even apparently in a state of nature, but I suspect from their limited number and vicinity to the house that they were planted there long ago. Everywhere for miles around Winchester, on the downs and in woods, at Compton, Hursley, Farley, &c. Extremely common on the high downs along the London and Portsmouth road. Very frequent in Froxfield Hangers and other elevated and steep woods about Petersfield, with its common associate the beech. Very large trees, some evidently of high antiquity, occur in the woods and chalky slopes about Hambledon. Extremely frequent in most of the northern parts of the county, but I think much less so, if not decidedly rare, in the south-western part, in the New Forest, and Christchurch hundreds. The yew is a tree so frequent as to be a beautiful and distinguishing feature in the upland scenery of Hants, and some of the adjacent counties, as Sussex, Surrey and Wilts, its deep green, nearly black foliage finely contrasting with the brighter verdure of the beech, oak, and other deciduous trees, whilst in the picturesque form of its wide-spreading, depressed head, and short, gnarled, sturdy, cinnamon-red trunk, it may vie with the cedar of Lebanon itself. The yew is commonly seen with us as single trees, irregularly dotting the landscape, sprinkled over the open downs, or rising amid the hedge-rows or from the precipitous face of some hanging wood, but it occasionally forms groves by itself of small extent, the most remarkable of which that I am acquainted with is the yew wood at Kingley Bottom, near Chichester, much resorted to in the summer by parties of pleasure for its picturesque beauty and singularity. The yews on our downs and in the woods are mostly permitted to flourish unscathed by the axe, notwithstanding the value of the timber to the cabinet maker, and hence many noble specimens may be seen in the wild state, whilst on the main land of the county there is hardly a parish church of ancient date without its venerable yew in front of the door or porch, some of which churchyard trees are of extreme age and colossal dimensions. The great yew in Selborne churchyard, one by no means of very unusual size, was found to measure a year or two back $24\frac{1}{2}$ feet in circumference at four feet from the ground. The very ancient yew in the churchyard of South Hayling, in Hayling Island, is, to the best of my recollection, a still larger tree than the one at Selborne, and doubtless others may be found in the county exceeding both these in dimensions. It is not a little remarkable, that whilst we find a yew planted and religiously preserved in front of nearly every ancient parish church in the county, I cannot call to mind the existence of this

tree in any one of the churchyards belonging to the thirty parishes into which the Isle of Wight is divided. The antiquarian reader may possibly be able to account for this fact.

Juniperus communis. On dry hilly places, chalk downs, also in woods and copses; frequent in various parts of the county, but scarcely wild in the Isle of Wight. I found, March 20th, 1845, a solitary, very dwarf bush of the common juniper on the slope of the down above Nunwell, which, like the yew it accompanies, may possibly be native there, but until discovered elsewhere in greater quantity I do not feel justified in considering it as indigenous to the island on the strength of a single specimen. In Bordean Hanger and about Bordean Hill, where I have found this shrub rising to ten or twelve feet on the chalky slopes. Common on the downs about Petersfield, on Oxenbourne Down, &c. About the Farley (Horse) monument, in Parnell's or Parnholt Wood, and in most woods in that vicinity. Abundant in the higher, more open parts of Froxfield Hangers, and in woods at Hambledon. Plentiful at Highclere, in the park, on Beacon Hill and chalk downs about it. Popham Beacon, near Andover Road station, abundantly; Dr. T. Bell Salter! On Abbotston Down; Mr. J. Forder!!! I find it profusely on that beautiful elevated tract, along with large bushes of *Rhamnus catharticus*, *Ligustrum vulgare*, &c. Warnford; Rev. E. M. Sladen. On the down at Up Hurstbourne; Mr. Wm. Whale. On Danesbury Hill, near Testcombe Bridge, and Forest of Bere; *Id.* Unquestionably in innumerable other places in the county. The absence of this plant and the yew from the Isle of Wight, abounding, as it does, with tracts perfectly similar to those of the mainland, so productive of both these trees, is a singular feature in its flora.

‡*Pinus sylvestris.* Naturalized extensively in the south-west of the county, and probably in other parts, from plantations, chiefly on sandy or boggy heaths and moors. In plantations of immense extent about Ringwood, and betwixt Poole and Christchurch, as at Bourne-mouth, over tens of thousands of acres of moor, heath and bog, so as perfectly to present the aspect of the pine forests of Scotland. The species now maintains itself by self-sown seeds, which come up abundantly everywhere, even in the wettest morasses, and are gradually spreading the trees over the county, so that were the plantations to be left to themselves, and the original firs allowed to die out, the existence of the species would be perpetuated by purely natural means. It seems therefore absurd to ascribe the Scotch fir from the catalogue of *Hampshire* to the Scotch fir from the catalogue of *Hampshire*.

duced at the beginning, the tree is as completely naturalized as any aboriginal of the county, fully as much so as are those species to which we never hesitate assigning a place in our general and local floras, as *Acer Pseudo-platanus*, for example. Besides in the enrolment of the Scotch fir amongst the species of our existing flora, we are perhaps only reinstating a primæval but extinct inhabitant of South Britain in what was once probably its native soil, as North Britain indisputably is at the present day; since I believe trunks and cones of this species have been dug up in the bogs of the south of England, as well as in those of Ireland, the vestiges of anciently existing pine forests.

Pinus Pinaster, Ait.? *P. maritima*, D. C.? Naturalized abundantly with *P. sylvestris* in the dry, sandy soil of Bournemouth, and on the turfy heaths and peaty, boggy moors betwixt Christchurch and Poole. The immediate vicinity of Bournemouth is at this time a perfect pine forest, both species forming in some places on the crests of the sandy cliffs above the beach, low, dense thickets, in others rising into groves of taller trees, exactly recalling to mind the natural pine woods of the European and American continents. There is little doubt that if left to themselves these two trees will establish themselves throughout the heath district of the Poole basin, as it is not only in the immediate vicinity of the original plantations that the species occur spontaneously, but they are beginning to dot the moorlands and bogs with vigorous young pines of both sorts at wider distances from their artificial places of growth. The cones of the pinasters when ripe discharge their seeds elastically with great force, and the seedlings that spring from them are called by the woodman at Bourne "self-setters." The wood, they say, of *P. Pinaster* is inferior to that of the Scotch fir, which in this part of England is used only for temporary railing, fencing, and other coarse purposes. With Mr. Woods (*Phytol.* iii. p. 261) I do not see how a place can be consistently refused to *P. sylvestris* and *P. Pinaster*, whilst many other plants, even less perfectly naturalized, are admitted without hesitation into our British flora. The plantations are of nearly fifty years standing, so that there has been time enough to test the self-propagating and self-preserving power of both these pines. I am not sure that I am correct in quoting *P. maritima*, D. C., as a synonym of *P. Pinaster*, Ait.; if I am, the latter must doubtless have a prior claim to adoption; neither am I certain that our pinaster and the *P. maritima* so abundant in the Landes, or sandy maritime plains betwixt Bordeaux and Bayonne, are the same species, although they appear to me from

recollection of the latter to be identical, but the different species of *Pinus* are very difficult to recognize apart from each other, and there are several long-leaved pines in Europe and America inhabiting the low grounds closely allied to one another. I have heard or read that the maritime pine of the Landes is not indigenous there, but was planted in the first instance for the purpose of binding the loose sand of that singular region, where the peasantry walk about upon stilts, and has since become naturalized. In this part of the south coast we are on the meridian of the Landes, and assuming our pinaster and the *P. maritima* of Bordeaux to be identical, we may well conceive it possible for the tree to be so far able to accommodate itself to a difference of latitude amounting to about six degrees, as to establish itself spontaneously here as there, when introduced into a soil equally adapted to its nature.

Paris quadrifolia. In shady woods and copses; not found in the Isle of Wight, but apparently of frequent occurrence in mainland Hants, at least on the chalk and in the interior of the county; seemingly rare, if found at all, near the sea, which is perhaps the cause of its absence from the island, the climate of which is too maritime for this rather continental or Germanic plant. Wood at Bordean Hill; the Misses Sibley!!! Langrish; Miss G. E. Kilderbee!!! Parnell or Parnholt Wood, near Farley, a few miles from Winton; Miss A. Yonge and Dr. A. D. White!!! Abundantly in woods on the chalk, as about West Meon, Winchester, &c.; Mr. Wm. Pamplin. Wherwell Wood, near Andover; Mr. Wm. Whale! Wonston; Miss L. Legge! Henwood, W. Meon, and wood near Rotherfield; Miss L. Sibley. In the Church-litten Coppice, Selborne; Rev. G. White. In the sloping wood nearly facing the church, at Appleshaw, in which *Lonicera Caprifolium* grows; W. A. B. Very many more stations doubtless exist for the *Paris* besides these just enumerated. With us this plant rather affects the uplands than the lower flat country, and where it sometimes has the wild Columbine (*Aquilegia vulgaris*) for its associate in the more elevated of its localities.

Tamus communis. In woods, groves, thickets, hedges and borders of fields, extremely common throughout the county. Abundant in the Isle of Wight, and in nearly all parts of mainland Hants, but I think of diminished frequency in the south-western or New-Forest district, as about Lymington, Lyndhurst, Ringwood, Christchurch, &c., owing, perhaps, to the nature of the soil, which is chiefly the diluvial of the Poole basin, on which some other species, as *Acer*

campestre and *Bryonia dioica* become comparatively unfrequent.* Assuredly one of the most beautiful and graceful of British plants, looking like some tender native of a warmer clime that has wandered to our less genial shores courting their colder breezes. Most of the devotees of Flora confess to an exclusive partiality for some one production of her creative hand indigenous to the country of their birth. Linnæus was fascinated with the symmetry (mother of all beauty as he styles it) ever present to his vivid perception of loveliness in form, in the blossoms of the little northern *Trientalis*, that "*flos gratissimus*" whose praises he has celebrated (I had nearly said sung) in his truly poetical work the '*Lapland Flora*.'† Smith describes the Water Avens (*Geum rivale*) in terms of glowing admiration, which lead me to conclude that pretty plant to have been a prime favourite with the amiable editor of '*English Botany*': and if it be allowable in the author of these humble Notes to avow a predilection felt by such master minds for one native plant above the rest, he would point to the Tamus as the object of his especial preference. No other indigenous vegetable comes up, I think, in elegance of habit to the Black Bryony, as it displays itself on many a tall hedge-row, or along the margin of some way-side thicket; its twining stems concealed beneath the closely overlapping, prone directed or shelving, brightly varnished leaves of firm texture and translucent green, their long, tapering points, wavy margins and finely rounded bases, seeming to undulate and curl and glide upon each other with simulated motion, as of a swift and eddying stream descending in an easy, graceful curve from

* In this part of England the Tamus is commonly called Bryony, sometimes Isle-of-Wight Vine, and confounded with the true and almost equally abundant plant of that name, *Bryonia dioica*, whilst to many it is a nameless, though familiar object. Its pretty designation of Our Lady's Seal, given it in a more poetic age, has become universally obsolete except in books, and was perhaps never a vernacular one in this land, nor can we, in these matter-of-fact, prosaic times, hope to see that name revived, or a bard arise to give it currency in song. Possessing neither fragrance nor the florid charm of colouring, the simplicity of its starry flowers and the grace and elegance of its polished foliage, unrivalled by that of any other native plant, can win the admiration of such alone for whom form has equal or superior attractions over scent or brilliancy of hue. My friend the dowager Lady Erskine tells me that the Black Bryony is called in Wales Afal Adda, that is, serpent's meat, and that it is a prevalent idea in the principality that those reptiles are always lurking near the spot where the plant grows.

† "*Nescio, quænam gratia floris (Trient. europ.) adeo percellat oculos, ut fere effascinare videatur visu contemplatorem suum; forte a symmetria, pulchritudinis omnis matre!*" Fl. Lappon. p. 104.

its source, and widening by degrees along its downward course. From the great beauty of the broad, rich green foliage, which, being slightly fleshy or succulent, has a peculiarly cool, refreshing effect, few plants are better suited for trellis-work or covering arbours than *Tamus communis*, as it climbs to a considerable length, and affords a good shade. The staminate plant, as being more elegant in flower, should be chosen in preference to the pistillate, or both grown together for variety, and were it not a native, and therefore despised and disregarded, it would probably have been long since as much a favourite in British gardens as its near relative the Hottentot Bread (*Testudinaria elephantipes*, *Tamus elephant*. L'Her.) of the Cape, is in our conservatories, since it is quite as handsome as that, with the additional advantage of being perfectly hardy. I once recollect to have seen in America, in a part of that continent where the species was *not* found wild, our common Bittersweet (*Solanum Dulcamara*) used for covering a dead wall, and very gracefully it fulfilled the commission imposed on it by the planter. Were this species not to be seen in almost every hedge, and had it but come to us like the Box-thorn (*Lycium barbarum*), absurdly called Tea tree, from a foreign land, it would have supplanted that formal shrub, to which it is so closely allied, by the greater freedom of its growth and much handsomer foliage.

The order Tamaceæ is quite superfluous, not admissible even as a sub-order or tribe (Tameæ) of Dioscoreaceæ. *Tamus* is in fact an intermediate genus connecting the latter order with Smilaceæ, but more closely allied to the yams than to the Sarsaparillas, differing from Dioscorea chiefly in its baccate fruit, and globose, not compressed seeds destitute of a wing or border. But *Testudinaria*, which has the most intimate relation possible to *Tamus*, and was even once referred to that genus, has the fructification of Dioscorea; and the pulpy pericarp of *Tamus* covers a thin membranous capsule of three cells with, imperfect dissepiments from the middle of each cell, quite unconnected, or but very slightly attached to the pericarp, from which it may readily be squeezed out entire when ripe, or dissected out when green. Our *Tamus* might indeed be properly called wild or English yam (for to the Bryony it has no botanical relation whatever), so much does it resemble that tropical esculent in its root, leaves, and general structure, and I have every reason to believe in its edible and nutritive qualities were they fairly put to the test of experiment. The root is very large and thick, consisting, like the yam, of irregular fusiform or digitate tubers, beset with wiry fibres; externally light brown

Sedum anglicum. Plentiful on Craig Diganwy, indeed general on the rocks of the Welsh Coast.

— *rupestre*. On Little Orme's Head, but not abundant.

— *reflexum*. A favourite adjunct to cottages in Wales, and at Aber whole roofs were mantled with it most singularly, but I have never noticed it wild in such a luxuriant state.

Cotyledon Umbilicus. On Craig Diganwy, but rather sparingly. "Stone walls at Llandudno."

Apium graveolens. On the coast near Gogarth Abbey.

Crithmum maritimum. Great and Little Orme's Heads.

Torilis nodosa. Side of the new road to Conway.

Smyrnum Olusatrum. One of those "domestic plants," which, whether first carried by man or not, mark where his feet have trod, and pertinaciously linger there. At Gogarth Abbey, and most abundant among the shattered ruins on the top of Craig Diganwy, said to be an ancient palace of the Welsh princes, and where Hugh Lupus, Earl of Chester, afterwards built a castle, at last taken and ruined, and not again occupied after the building of Conway Castle by Edward I. This fortress well deserves a visit from the botanist who can take it on foot on his route from Conway to Llandudno.

Rubia peregrina. Rioting in the hedges about Gogarth.

Sambucus Ebulus. At Pont Dolgarrog, on the Llanrwst road.

Inula Conyza. About Bryn Maelgwn and Gloddaeth.

Achillea Millefolium. A pretty dwarf variety only two or three inches high, the leaves, stem, and even the scales of the involucre covered with long, woolly hairs, occurred on the singular trappoid hill of Bryn Gosol, north of Diganwy. If varieties are to be noted, this deserves equal mention with the variety *Cambrica* of *Solidago Virgaurea*.

Antennaria dioica. Plentiful on turf of the limestone ridges above Tydraw farm, south of the Cotoneaster ledge.

Senecio viscosus. Among stones on the beach between Llandudno and the Little Orme's Head. I only observed it in one spot where there were many plants truly characteristic from their viscosity, being so encrusted with sand and black mould blown upon them by the winds, that they seemed at first view like some strange African Mesembryanthemum, the florets spreading out and much more specious than in *S. sylvaticus*. This is not mentioned by Davies in his 'Plants of Anglesea.'

Carduus tenuiflorus. Covering the embankment by the Conway road, close to Llandudno, in the greatest profusion. It generally oc-

curs as a weak, unbranched plant, but here it had assumed a height and magnitude rivalling that of *Onopordum Acanthium*. Equally plentiful and luxuriant on the side of the road between Conway and Aber, parallel with the railway. In both cases doubtless seeds lying dormant beneath the ground had been turned up by the road operations, and on the fresh, rank soil had grown gigantic accordingly.

Silybum marianum. A colony of the "holy thistle," tall and rank, was flourishing on the rubbish of the lower abandoned mine at Llandudno ; one of those gypsey plants that never stay long in a place.

Cychorium Intybus. On the borders of new cultivated ground excessively abundant at Llandudno, but not, I think, indicating a limestone soil, as Mr. Bennett suggests, for on the limestone itself I did not observe a single plant.

Tragopogon minor. On the turf near the beach ; and I notice this to remark that the *pratensis*, as characterized, does not occur.

Helminthia echinoides. Plentiful about Eglwys Rhos.

Lactuca muralis. On the shady side of Cadir-y-Nain. Unnoticed by Davies.

Hieracium boreale. In a moist dingle of the Orme's Head, and more plentiful in a deep lane leading from Bryn Gosol farm.

Ligustrum vulgare. On the same limestone ledges as the *Cotoneaster*. Mr. Babington in his Manual only gives "Thickets in the south of England," as if its range was thus restricted ; but I have observed it as generally occurring on the sea cliffs both of North and South Wales. Yet, like other berried shrubs, it is no doubt much dispersed by birds.

Chlora perfoliata. More abundant than I ever before observed it all about the sides and base of Bryn Maelgwyn, where the limestone is disturbed by the intrusion of igneous rocks. Not in Anglesea.

Erythræa pulchella and *latifolia*. The former both at Llandudno and Barmouth, the latter at Barmouth only.

Gentiana Amarella. Abundant on the declivities of the Orme's Head and Bryn Maelgwyn. Equally plentiful at Barmouth. Yet Davies says "very rare" in Anglesea.

Convolvulus Soldanella. Shores of Conway Bay.

Echium vulgare. Excessively abundant on the edge of Llandudno beach.

Solanum Dulcamara. Shore of the Conway—perhaps the *γ. maritimum* referred to in Mr. Babington's Manual.

Hyoscyamus niger. Plentiful about the base of the Little Orme's Head. Phillips told me he had gathered quantities of it here for a

Conway druggist in former years, but the demand for it was not so great now.

Orobanche Hederæ? On a patch of ivy midway up an inaccessible cliff on the north side of the Head, I observed some tall specimens of an *Orobanche* very conspicuous, certainly this or *O. minor*; but though I summoned the garrison, and both Phillips and myself cannonaded the fort from above and below, not without risk to ourselves, it was all in vain. We indeed disabled a few prominent individuals, but could make no prisoners. A friend, however, showed me from Conway Castle what appeared to be *O. barbata* of E. B. S., and now considered by Babington the same as *O. Hederæ*, and this was most probably the plant among the ivy on the cliff. This same *barbata* I have gathered from among ivy on St. Catherine's Isle, Tenby, and (however the nomenclature may be at last) it occurs generally throughout North and South Wales and Monmouthshire, especially among ivied ruins. The list in the 'Guide' mentions *O. minor* (?) as growing on the ruins of Conway, Diganwy and Marl.

Digitalis purpurea. I mention this to remark the partiality some plants evince to certain soils, and their repugnance to others. Not a specimen of *Digitalis* appeared anywhere on the limestone hills or about their bases; but when I began to ascend the trappoid rock of Diganwy, there at once appeared my old friend, reminding me of its similar position on the sides of the eruptive Malvern Hills.

Veronica spicata. On the Orme's Head sparingly, but especially plentiful on the limestone ridges extending from the Little Orme's Head to beyond Bodscallan, opposite Conway, including Cadr-y-nain and Bryn Maelgwyn. A portion of these heights is included within Mr. Mostyn's Park, and thus protected is "intensely blue" with the *Veronica*.

Salvia verbenaca. Rather numerous on the declivities about Llandudno.

Origanum vulgare. Abundant everywhere on the limestone.

Calamintha officinalis. On dry banks about the Lower Mine.

Scutellaria galericulata. In Conway Marsh.

Marrubium vulgare. On the dry declivities of Great and Little Orme's Head.

Verbena officinalis. Another of those dogged plants that can hardly be said to be wild at all, so closely do they stick to the skirts of mankind, as if determined to be domesticated. This has druidical fame, and here it still stops on the slopes below the stone of power. But it is yet valued medicinally, and I possess a pamphlet detailing

hosts of cures of various diseases from the alleged wonderful properties of the vervain.

Primula veris. I mention this as plentiful in various places on the Orme's Head, where no primrose was apparent, and I have noticed the same thing on St. David's Head, in Pembrokeshire.

Samolus Valerandi. In watery ditches on Llandudno Common. Abundant near Barmouth, towards Cors Gochno.

Statice spathulata. Plentiful on the shore of the Conway river.

Polygonum Raii. On the sands below Craig Diganwy.

Mercurialis annua. Dr. Bromfield, in his interesting remarks on the Hampshire plants, suggests this as "more deserving of the asterisk" than many others that have it. I have noticed it, however, on various parts of the coast both of North and South Wales. At Barmouth, Merionethshire, it is plentiful on the sands edging the marshes inland in spots where no gardens could ever have been, and where it is unlikely it could have been introduced any more than the other littoral weeds with which it grows. Certainly, like *Solanum nigrum*, with which it is often in company, it is fond of intruding, if it can, upon olitory ground.

Parietaria officinalis. Excessively plentiful about the Orme's Head at present, but I would not feel certain that it was always so; as pellitory-of-the-wall, time-honoured still, was one of the category that the herbalist would have been sorry not to have had easily within reach.

Salix fusca, var. *argentea*. In one place on the Orme's Head, where, in a broken ravine, a spring lazily weeps down among masses of *Eupatorium cannabinum*, and other rank aquatics, to the sea.

Taxus baccata. An indigenous mass on Bryn Maelgwyn, and numerous isolated trees pushed obliquely by the wind from the sea about Eglws Rhos.

Juniperus communis. On many of the rocks of the Orme's Head to the very summit westward, but procumbent on the limestone, the boisterous gales not permitting it to rise upward. Yet as most of the roots are large and of great age, it is easy to imagine that the now "white pow" of the promontory had in earlier times a more verdant if not grove-like aspect. The original upright junipers have evidently been cut down, but when scattered in verdant masses, as in druidical times, must have rendered the upper stories and stone circles on the cliffs far more sheltered places of observation than they are at present. On "my Grandmother's Chair," an isolated limestone hill near Gloddaeth, some upright clumps of juniper still remain on the

N.E. side, rising to a considerable height. Davies could find no juniper in Anglesea when his Catalogue of the plants of that island was published in 1813, and he only says "I venture this as *once* an inhabitant, from the name of a place, *Cefn-y-Terywen*, the juniper bank."

Tamus communis. At Bodscallan, near Eglwys Rhos, but by no means of common occurrence in North Wales.

Orchis pyramidalis. In Gloddaeth Wood, among bushes within Mr. Mostyn's grounds, not far from the statue of Hercules.

Spiranthes autumnalis. Quite profuse in the moist sand edging the inland marshes at Barmouth, loading the morning air with fragrance.

Epipactis ovalis, Bab. In crevices of the limestone rocks above Tydraw, on the Orme's Head, southward of the Cotoneaster ledges; also under similar circumstances in the cracks of "my Grandmother's Chair," near Gloddaeth. Some of the plants were hardly more than four inches in height, and many scorched and abortive from their peculiarly exposed position on the bare rocks, but rooting very deeply, and the withered stems of former years still remaining. Stem, germen and bases of the bracts excessively scaly.

I must here close my list, as I was rather too late in the summer to be able to attend much to the grasses, and merely remarked that *Triodia decumbens* formed a great portion of the turf on the declivities of the Head, while *Avena pubescens* appeared on almost every rock. I observed *Arundo Epigejos*, too, very abundant and fine in Gloddaeth Woods. Of ferns, except *Asplenium Trichomanes* and *A. Ruta-muraria*, I really saw none on the Orme's Head, and the only *Equisetum* that occurred was *E. palustre*, β . *polystachion*, growing among masses of *Rubus cæsius* on the Conway sands.

If in the above enumeration I have duplicated observations already made, or noticed plants of frequent occurrence or supposed to be so, that the rarity-hunting botanist would pass with disdain, still I hope that in so remote a corner, which in general botanists only dash across in their summer cometic career, the mention of what I saw growing at the time I was there in residence may not be quite useless. Indeed, it appears to me that a periodical report of the present existence of plants in a remarkable locality, like the peninsula of the Great Orme's Head, is advantageous in a referential point of view. Could my record be compared with one made a century ago, I doubt not that some plants would be found to have disappeared, and some in my list would appear as new inhabitants. Hence trustworthy record of plants within allotted bounds and seen at particular periods, must

be ever useful. In fact, just at the time I was at Llandudno great changes were making in the neighbourhood, and further contemplated. The whole of the marshy flat called Llandudno Common was being enclosed and drained, pools dried up, deep ditches made, piles of turf were burning, and at night the long lines of lurid flame gave the idea of an hostile army ravaging the country. And truly it was so as regarded the botanist. Phillips told me that the bog-bean (*Menyanthes trifoliata*), that he had so often gathered for medicinal purposes, was gone, and every marsh plant had got notice to quit. One solitary *Osmunda regalis* I saw, and that appeared to be the last remnant of boggish times. Nature was being sternly expelled at the fork's point, and if the threatened crescent should rise on the sands, and young Liverpool crown the old Head with villas, perhaps at last even the fennel, the vervain and the wormwood may disappear with the old houses and Celtic inhabitants.

EDWIN LEES.

Henwick, near Worcester,
April 10, 1850.

Curious Species of Cypripedium.

AT the March Meeting of the Horticultural Society, Mrs. Lawrence exhibited a specimen of *Cypripedium caudatum*, the first that had flowered in cultivation. The colour of the flower is a sickly yellow, but the lateral petals are brown and enormously elongated, forming a long narrow pendant tail on each side: from the first opening of the flower these tails had continually and rapidly increased in length, and no opinion can be formed as to the length they will ultimately acquire: at the time of exhibition they were eighteen inches long. Professor Lindley remarked that other species of Orchidaceæ possessed similar appendages, and that those of a species found on the Cordilleras, near Lake Maracaybo, were still longer than in *C. caudatum*.

A Catalogue of the Plants growing wild in Hampshire, with occasional Notes and Observations on some of the more remarkable Species. By WILLIAM ARNOLD BROMFIELD, M.D., F.L.S., &c.

(Continued from page 854).

Quercus Robur. In woods, thickets, copses and hedges throughout the county and Isle of Wight; most abundantly. This is the common oak, not only in Hants, but I believe in most of the southern and eastern parts of England.

——— *sessiliflora.* In similar places with the last, but much more rarely, although I fear scarcely distinct as a species from the foregoing. In the sandy soil of Bordwood Copse, near Newchurch, where it was pointed out to me by Mr. Borrer during an excursion with that gentleman and Dr. T. Bell Salter, in August, 1844, growing with *Q. Robur* in about equal proportion. Since observed by myself in other parts of this island. A tree or two on the margin of Quarr Copse, by the side of the Newport road. In East Standen Copse, near Newport. A very fine round-topped tree in Elm Copse, betwixt Calbourne and Shalfleet. In a small hilly wood of scrubby oak bushes belonging apparently for the most part to *Q. sessiliflora*, close to Fareham, on the north side, overlooking the town, and where I also found *Pyrus torminalis*, but not in any abundance, July, 1849. Observed near Empshot, and in other parts of the county this year. Var. β . Leaves downy underneath. Durmast (*quasi* dunmast) oak, the acorns being sometimes of a reddish or dun colour, as I have found them in this island near Shalfleet. In the New Forest; Martyn. A puzzling species, if such it be, not always very well marked, but distinguishable in its most defined form from *Q. Robur* by its usually larger and broader, flatter and more regularly spreading or imbricated leaves, which are distinctly petiolate (the petioles yellowish or reddish), in general of a brighter, more shining green, sometimes, however, dark green, for the most part obovate rather than oblong, more regularly and evenly sinuate, the sinuses more exactly opposite and inclined to acuteness at bottom rather than to be rounded or obtuse; by a greater massiveness of foliage and compactness of the whole tree, which is, I think, more disposed than *Q. Robur* to assume a rounded head; by its more horizontally spreading, less tortuous branches and spray, larger-sized leaf-buds, and essentially by bearing acorns that are either quite sessile, or wholly or in part on short, erect, stout peduncles, and in general more numerously clus-

tered. The bark is thought to be lighter coloured, and the leaves more apt to be persistent through the winter; I think I have remarked the former to be smoother on young trees, at least than in *Q. Robur*.* The acorns of the present species are rather ovoid than oblong, the cup approaching to one half the entire length of the gland; they are stated, moreover, when ripe, to have very generally a red or pinkish colour. All these characters are liable to great exception, fluctuating so variously between those laid down for the two species as fairly to induce suspicion of their being really distinct as such. Still, as Mr. Bree (Loud. Arbor. Brit. iii. p. 1738) truly observes, "though there are sessile oaks bearing fruit on peduncles, and pedunculated oaks bearing almost sessile fruit, there is yet a certain indescribable something about the trees, by means of which I can always distinguish each, without minutely examining either the acorns or the leaf-stalks." The present is undoubtedly the handsomer tree of the two, with a certain approach to the sweet or Spanish Chestnut in aspect, and it is said in the grain and quality of the wood likewise, having, it would appear, been commonly mistaken for that of the chestnut in some of our oldest edifices. This species approaches in the regularity of its growth, flatness and even sinuation of the leaves to the American White Oak (*Q. alba*), the nearest representative on that continent of our British oak, and scarcely inferior to it in the value of the timber it yields. The characters distinguishing *Q. sessiliflora* which I have found most constant, are those of the fruit and leaf-stalks; for although the acorns are often elevated on a very distinct peduncle, I have never seen the latter anything like so slender and elongated as in *Q. Robur*, notwithstanding that this last sometimes bears its acorns on an abbreviated stalk, very similar to the occasional one of *Q. sessiliflora*. The leaves in *Q. Robur* are most commonly very unequal at the base, with so deep a notch or sinus on one or both sides of the petiole as to appear auricled; in *Q. sessiliflora* the base of the leaf is more equal, and the notch, if any exists, very shallow. The leaves in *Q. Robur* usually lie in planes variously inclined to one another, and this, together with their wavy surface, convexity, and irregular sinuation, combine to give an air of scrubbi-

*The woodmen here talk of two kinds of oak, which they call the black and the white oak, but the only intelligible difference I could extract from their accounts is, that the twigs of one float, whilst those of the other sink, when thrown into water! Some of the more observant, however, amongst them distinguish more clearly our two species, the *Q. sessiliflora* they call White Oak and Maiden Oak, as I have repeatedly ascertained.

ness to the foliage as contrasted with the neater appearance in this respect of *Q. sessiliflora*, in which the leaves are remarkably flat, radiating, and lying over each other in a horizontal position and in parallel planes, by which it may be distinguished at a great distance from its congener. Whether *Q. Robur* and *Q. sessiliflora* be accounted distinct or not, I can by no means agree with Fries (Corp. Flor. Provin. Suec. p. 144) in thinking that the differences between the two are owing to poverty of soil, as he confidently affirms.* From what we know of the mutability of character in *Tilia* and *Ulmus*, as also in *Salix*, *Populus* and other *Amentiferæ*,† we should be cautious in admitting to specific distinction a tree which in many of its states does not always present very definite limits to the marks separating it from *Q. Robur*.

* *Q. sessiliflora* seems to abound most in the hilly districts of the north of England and in Wales, and there to reach its fullest dimensions. At Boultonbrook, near Presteign, Radnorshire, the seat of Sir H. J. Brydges, Bart., are the finest, most characteristic trees of the sessile oak I have ever seen, almost rivalling the Spanish Chestnut in beauty of foliage, and of noble magnitude and height.

† The word *Amentaceæ* employed to designate the natural order of ament-bearing plants is manifestly incorrect, and nearly as bad as *Graminaceæ* for *Gramina*. The termination in *aceæ* (which it would be highly desirable, for the sake of that neatness, precision and uniformity, at once useful and ornamental in scientific nomenclature, should be unanimously adopted instead of the vague, arbitrary and often ungrammatically-constructed and mixed terminations of De Candolle, still in partial use amongst botanists) does, or ought to express, the relations which certain groups of plants bear to some typical genus concentrating in itself the leading or most prominent characters distinguishing such groups in the aggregate. Thus, *Violaceæ* implies a group, family or order of *violaceous* or violet-like plants, not violets themselves, but allied to or closely resembling them, having most of the peculiarities of form, structure, appearance, and properties of the genus *Viola*, which serves as a type or standard of comparison to judge all its allies by. But to apply the term *Graminaceæ* to designate the order or family of Grasses, or *Palmaceæ* that of Palms, as has been inconsiderately done in some instances, at once destroys the entire force and meaning of the Latin adjective termination in *aceæ*, which has a comparing efficacy, that an incorrect application of it wholly stultifies. For as there is no such genus as *Gramen* or *Palma*, these two natural orders represent themselves, and are not typified by any one genus of Grasses or Palms, to which all the remaining genera composing these orders may be referred as a standard of comparison. To compare a thing to itself is obviously absurd, because every comparison necessitates the existence of two objects to be compared; to call the Grasses and Palms, therefore, *Graminaceæ* and *Palmaceæ*, is only to declare them to be grass-like and palm-like plants, or in other words, like themselves, that is, Grasses and Palms, which is in fact a comparison only in sound. The proper designation of these orders should be *Gramina* and *Palmæ*; for *Gramineæ* (plantæ *gramineæ*) and *Palmæ* (plantæ *palmæ*) are only preferable to *Graminaceæ* and *Palmaceæ* as being better Latinity. In like manner *Amentaceæ* is highly objec-

Corylus Avellana. In woods, copses and hedges everywhere most abundantly; often constituting the main part of the undergrowth in our hilly copses, flowering here usually in February and sometimes in January.

? *Carpinus Betulus*. In woods, thickets and hedges, mostly in damp clay soils; very rare? Not found wild in the Isle of Wight, where it is only seen in plantations. In a wood abutting on Titchfield Common and in a copse by Down Lane, near Fareham; Mr. W. L. Notcutt. I can hardly believe the Hornbeam not indigenous in Hants, although I have as yet only the above stations to record for it in the county, and regarding which Mr. Notcutt speaks with some hesitation in a letter I lately had from him. The tree abounds in some parts of Sussex, as near Hurstperpoint, and in woods at the Old Roar, near Hastings. Its absence as a native production in this island is not explicable on the ground of deficiency of suitable soil, as we abound with the stiff clay in which it delights. It will probably be found in several parts of the county if searched for in damp, tenacious ground.

Taxus baccata. In woods, hedges, rocky places, borders of fields, and on open chalky downs, very abundantly over a great part of mainland Hants, mostly in elevated situations in the interior; rarer in the lower and flatter country or along the coast. Scarcely indigenous to the Isle of Wight. A few small trees occur on the slope of the down

tionable, inasmuch as it implies an order of plants like aments or catkins, which is equally far from the truth and the sense intended to be conveyed in the word, whereas Amentiferæ at once declares its own meaning and the true nature of the order, which is composed of ament or catkin-bearing plants, just as Coniferæ is of trees bearing cones. In adopting Amentiferæ, too, we secure correctness and uniformity at the same time, as the termination now accords with Coniferæ, Cruciferæ and Umbelliferæ, which, had consistency anything to do with the barbarous, mixed nomenclature of the natural orders still used by many, should have been Amentaceæ, Conaceæ, Cruciacæ! Umbellaceæ, or Amentæ, Conæ, Crucieæ, Umbelleæ! words, it must be owned, that would have been a disgrace to botany. But the fact is, that the termination in *aceæ* adapts itself with singular felicity to all the natural orders deriving their names from a typical genus, whilst to the few that take their appellations from the form or structure of certain parts, the ending in *feræ*, implying bearing or producing, attaches with equal gracefulness and perspicuity. Rigid grammatical correctness is not to be expected in modern scientific nomenclature, but the uniform adoption (with the above exceptions) of the ordinal termination in *aceæ* would secure it oftener than the arbitrary and capricious substitution of the endings in *æ*, *niæ*, &c., which are only a burden on the memory to recollect, and are often wholly unsuited to the structure of the root to which they are attached, as *Violariæ*, where the *r* is quite out of place and extraneous.

above Nunwell, the only spot in the island where I have seen the yew even apparently in a state of nature, but I suspect from their limited number and vicinity to the house that they were planted there long ago. Everywhere for miles around Winchester, on the downs and in woods, at Compton, Hursley, Farley, &c. Extremely common on the high downs along the London and Portsmouth road. Very frequent in Froxfield Hangers and other elevated and steep woods about Petersfield, with its common associate the beech. Very large trees, some evidently of high antiquity, occur in the woods and chalky slopes about Hambledon. Extremely frequent in most of the northern parts of the county, but I think much less so, if not decidedly rare, in the south-western part, in the New Forest, and Christchurch hundreds. The yew is a tree so frequent as to be a beautiful and distinguishing feature in the upland scenery of Hants, and some of the adjacent counties, as Sussex, Surrey and Wilts, its deep green, nearly black foliage finely contrasting with the brighter verdure of the beech, oak, and other deciduous trees, whilst in the picturesque form of its wide-spreading, depressed head, and short, gnarled, sturdy, cinnamon-red trunk, it may vie with the cedar of Lebanon itself. The yew is commonly seen with us as single trees, irregularly dotting the landscape, sprinkled over the open downs, or rising amid the hedge-rows or from the precipitous face of some hanging wood, but it occasionally forms groves by itself of small extent, the most remarkable of which that I am acquainted with is the yew wood at Kingley Bottom, near Chichester, much resorted to in the summer by parties of pleasure for its picturesque beauty and singularity. The yews on our downs and in the woods are mostly permitted to flourish unscathed by the axe, notwithstanding the value of the timber to the cabinet maker, and hence many noble specimens may be seen in the wild state, whilst on the main land of the county there is hardly a parish church of ancient date without its venerable yew in front of the door or porch, some of which churchyard trees are of extreme age and colossal dimensions. The great yew in Selborne churchyard, one by no means of very unusual size, was found to measure a year or two back $24\frac{1}{2}$ feet in circumference at four feet from the ground. The very ancient yew in the churchyard of South Hayling, in Hayling Island, is, to the best of my recollection, a still larger tree than the one at Selborne, and doubtless others may be found in the county exceeding both these in dimensions. It is not a little remarkable, that whilst we find a yew planted and religiously preserved in front of nearly every ancient parish church in the county, I cannot call to mind the existence of this

tree in any one of the churchyards belonging to the thirty parishes into which the Isle of Wight is divided. The antiquarian reader may possibly be able to account for this fact.

Juniperus communis. On dry hilly places, chalk downs, also in woods and copses; frequent in various parts of the county, but scarcely wild in the Isle of Wight. I found, March 20th, 1845, a solitary, very dwarf bush of the common juniper on the slope of the down above Nunwell, which, like the yew it accompanies, may possibly be native there, but until discovered elsewhere in greater quantity I do not feel justified in considering it as indigenous to the island on the strength of a single specimen. In Bordean Hanger and about Bordean Hill, where I have found this shrub rising to ten or twelve feet on the chalky slopes. Common on the downs about Petersfield, on Oxenbourne Down, &c. About the Farley (Horse) monument, in Parnell's or Parnholt Wood, and in most woods in that vicinity. Abundant in the higher, more open parts of Froxfield Hangers, and in woods at Hambledon. Plentiful at Highclere, in the park, on Beacon Hill and chalk downs about it. Popham Beacon, near Andover Road station, abundantly; Dr. T. Bell Salter! On Abbotston Down; Mr. J. Forder!!! I find it profusely on that beautiful elevated tract, along with large bushes of *Rhamnus catharticus*, *Ligustrum vulgare*, &c. Warnford; Rev. E. M. Sladen. On the down at Up Hurstbourne; Mr. Wm. Whale. On Danesbury Hill, near Testcombe Bridge, and Forest of Bere; *Id.* Unquestionably in innumerable other places in the county. The absence of this plant and the yew from the Isle of Wight, abounding, as it does, with tracts perfectly similar to those of the mainland, so productive of both these trees, is a singular feature in its flora.

‡*Pinus sylvestris.* Naturalized extensively in the south-west of the county, and probably in other parts, from plantations, chiefly on sandy or boggy heaths and moors. In plantations of immense extent about Ringwood, and betwixt Poole and Christchurch, as at Bourne-mouth, over tens of thousands of acres of moor, heath and bog, so as perfectly to present the aspect of the pine forests of Scotland. The species now maintains itself by self-sown seeds, which come up abundantly everywhere, even in the wettest morasses, and are gradually spreading the trees over the county, so that were the plantations to be left to themselves, and the original firs allowed to die out, the existence of the species would be perpetuated by purely natural means. It seems therefore absurd any longer to exclude the Scotch fir from the catalogue of Hampshire plants, as, although unquestionably intro-

duced at the beginning, the tree is as completely naturalized as any aboriginal of the county, fully as much so as are those species to which we never hesitate assigning a place in our general and local floras, as *Acer Pseudo-platanus*, for example. Besides in the enrolment of the Scotch fir amongst the species of our existing flora, we are perhaps only reinstating a primæval but extinct inhabitant of South Britain in what was once probably its native soil, as North Britain indisputably is at the present day; since I believe trunks and cones of this species have been dug up in the bogs of the south of England, as well as in those of Ireland, the vestiges of anciently existing pine forests.

Pinus Pinaster, Ait.? *P. maritima*, D. C.? Naturalized abundantly with *P. sylvestris* in the dry, sandy soil of Bournemouth, and on the turfy heaths and peaty, boggy moors betwixt Christchurch and Poole. The immediate vicinity of Bournemouth is at this time a perfect pine forest, both species forming in some places on the crests of the sandy cliffs above the beach, low, dense thickets, in others rising into groves of taller trees, exactly recalling to mind the natural pine woods of the European and American continents. There is little doubt that if left to themselves these two trees will establish themselves throughout the heath district of the Poole basin, as it is not only in the immediate vicinity of the original plantations that the species occur spontaneously, but they are beginning to dot the moorlands and bogs with vigorous young pines of both sorts at wider distances from their artificial places of growth. The cones of the pinasters when ripe discharge their seeds elastically with great force, and the seedlings that spring from them are called by the woodman at Bourne "self-setters." The wood, they say, of *P. Pinaster* is inferior to that of the Scotch fir, which in this part of England is used only for temporary railing, fencing, and other coarse purposes. With Mr. Woods (*Phytol.* iii. p. 261) I do not see how a place can be consistently refused to *P. sylvestris* and *P. Pinaster*, whilst many other plants, even less perfectly naturalized, are admitted without hesitation into our British flora. The plantations are of nearly fifty years standing, so that there has been time enough to test the self-propagating and self-preserving power of both these pines. I am not sure that I am correct in quoting *P. maritima*, D. C., as a synonym of *P. Pinaster*, Ait.; if I am, the latter must doubtless have a prior claim to adoption; neither am I certain that our pinaster and the *P. maritima* so abundant in the Landes, or sandy maritime plains betwixt Bordeaux and Bayonne, are the same species, although they appear to me from

recollection of the latter to be identical, but the different species of *Pinus* are very difficult to recognize apart from each other, and there are several long-leaved pines in Europe and America inhabiting the low grounds closely allied to one another. I have heard or read that the maritime pine of the Landes is not indigenous there, but was planted in the first instance for the purpose of binding the loose sand of that singular region, where the peasantry walk about upon stilts, and has since become naturalized. In this part of the south coast we are on the meridian of the Landes, and assuming our pinaster and the *P. maritima* of Bordeaux to be identical, we may well conceive it possible for the tree to be so far able to accommodate itself to a difference of latitude amounting to about six degrees, as to establish itself spontaneously here as there, when introduced into a soil equally adapted to its nature.

Paris quadrifolia. In shady woods and copses; not found in the Isle of Wight, but apparently of frequent occurrence in mainland Hants, at least on the chalk and in the interior of the county; seemingly rare, if found at all, near the sea, which is perhaps the cause of its absence from the island, the climate of which is too maritime for this rather continental or Germanic plant. Wood at Bordean Hill; the Misses Sibley!!! Langrish; Miss G. E. Kilderbee!!! Parnell or Parnholt Wood, near Farley, a few miles from Winton; Miss A. Yonge and Dr. A. D. White!!! Abundantly in woods on the chalk, as about West Meon, Winchester, &c.; Mr. Wm. Pamplin. Wherwell Wood, near Andover; Mr. Wm. Whale! Wonston; Miss L. Legge! Henwood, W. Meon, and wood near Rotherfield; Miss L. Sibley. In the Church-litten Coppice, Selborne; Rev. G. White. In the sloping wood nearly facing the church, at Appleshaw, in which *Lonicera Caprifolium* grows; W. A. B. Very many more stations doubtless exist for the *Paris* besides these just enumerated. With us this plant rather affects the uplands than the lower flat country, and where it sometimes has the wild Columbine (*Aquilegia vulgaris*) for its associate in the more elevated of its localities.

Tamus communis. In woods, groves, thickets, hedges and borders of fields, extremely common throughout the county. Abundant in the Isle of Wight, and in nearly all parts of mainland Hants, but I think of diminished frequency in the south-western or New-Forest district, as about Lymington, Lyndhurst, Ringwood, Christchurch, &c., owing, perhaps, to the nature of the soil, which is chiefly the diluvial of the Poole basin, on which some other species, as *Acer*

campestre and *Bryonia dioica* become comparatively unfrequent.* Assuredly one of the most beautiful and graceful of British plants, looking like some tender native of a warmer clime that has wandered to our less genial shores courting their colder breezes. Most of the devotees of Flora confess to an exclusive partiality for some one production of her creative hand indigenous to the country of their birth. Linnæus was fascinated with the symmetry (mother of all beauty as he styles it) ever present to his vivid perception of loveliness in form, in the blossoms of the little northern *Trientalis*, that "*flos gratissimus*" whose praises he has celebrated (I had nearly said sung) in his truly poetical work the '*Lapland Flora*.'† Smith describes the Water Avens (*Geum rivale*) in terms of glowing admiration, which lead me to conclude that pretty plant to have been a prime favourite with the amiable editor of '*English Botany*': and if it be allowable in the author of these humble Notes to avow a predilection felt by such master minds for one native plant above the rest, he would point to the *Tamus* as the object of his especial preference. No other indigenous vegetable comes up, I think, in elegance of habit to the Black Bryony, as it displays itself on many a tall hedge-row, or along the margin of some way-side thicket; its twining stems concealed beneath the closely overlapping, prone directed or shelving, brightly varnished leaves of firm texture and translucent green, their long, tapering points, wavy margins and finely rounded bases, seeming to undulate and curl and glide upon each other with simulated motion, as of a swift and eddying stream descending in an easy, graceful curve from

* In this part of England the *Tamus* is commonly called Bryony, sometimes Isle-of-Wight Vine, and confounded with the true and almost equally abundant plant of that name, *Bryonia dioica*, whilst to many it is a nameless, though familiar object. Its pretty designation of Our Lady's Seal, given it in a more poetic age, has become universally obsolete except in books, and was perhaps never a vernacular one in this land, nor can we, in these matter-of-fact, prosaic times, hope to see that name revived, or a bard arise to give it currency in song. Possessing neither fragrance nor the florid charm of colouring, the simplicity of its starry flowers and the grace and elegance of its polished foliage, unrivalled by that of any other native plant, can win the admiration of such alone for whom form has equal or superior attractions over scent or brilliancy of hue. My friend the dowager Lady Erskine tells me that the Black Bryony is called in Wales *Afal Adda*, that is, serpent's meat, and that it is a prevalent idea in the principality that those reptiles are always lurking near the spot where the plant grows.

† "*Nescio, quænam gratia floris (Trient. europ.) adeo percellat oculos, ut fere effascinare videatur visu contemplatorem suum; forte a symmetria, pulchritudinis omnis matre!*" Fl. Lapon. p. 104.

its source, and widening by degrees along its downward course. From the great beauty of the broad, rich green foliage, which, being slightly fleshy or succulent, has a peculiarly cool, refreshing effect, few plants are better suited for trellis-work or covering arbours than *Tamus communis*, as it climbs to a considerable length, and affords a good shade. The staminate plant, as being more elegant in flower, should be chosen in preference to the pistillate, or both grown together for variety, and were it not a native, and therefore despised and disregarded, it would probably have been long since as much a favourite in British gardens as its near relative the Hottentot Bread (*Testudinaria elephantipes*, *Tamus elephant*. L'Her.) of the Cape, is in our conservatories, since it is quite as handsome as that, with the additional advantage of being perfectly hardy. I once recollect to have seen in America, in a part of that continent where the species was *not* found wild, our common Bittersweet (*Solanum Dulcamara*) used for covering a dead wall, and very gracefully it fulfilled the commission imposed on it by the planter. Were this species not to be seen in almost every hedge, and had it but come to us like the Boxthorn (*Lycium barbarum*), absurdly called Tea tree, from a foreign land, it would have supplanted that formal shrub, to which it is so closely allied, by the greater freedom of its growth and much handsomer foliage.

The order Tamaceæ is quite superfluous, not admissible even as a sub-order or tribe (Tameæ) of Dioscoreaceæ. *Tamus* is in fact an intermediate genus connecting the latter order with Smilaceæ, but more closely allied to the yams than to the Sarsaparillas, differing from *Dioscorea* chiefly in its baccate fruit, and globose, not compressed seeds destitute of a wing or border. But *Testudinaria*, which has the most intimate relation possible to *Tamus*, and was even once referred to that genus, has the fructification of *Dioscorea*; and the pulpy pericarp of *Tamus* covers a thin membranous capsule of three cells with, imperfect dissepiments from the middle of each cell, quite unconnected, or but very slightly attached to the pericarp, from which it may readily be squeezed out entire when ripe, or dissected out when green. Our *Tamus* might indeed be properly called wild or English yam (for to the Bryony it has no botanical relation whatever), so much does it resemble that tropical esculent in its root, leaves, and general structure, and I have every reason to believe in its edible and nutritive qualities were they fairly put to the test of experiment. The root is very large and thick, consisting, like the yam, of irregular fusiform or digitate tubers, beset with wiry fibres; externally light brown

or ash-gray and wrinkled, very white, soft and fleshy within, as easily sliced as a turnip, and abounding with an acrid, clammy juice. Apart from this acrimony, which cannot compare for intensity with that of Cassava and the various esculent Araceæ, the root has neither bitterness nor any other unpleasant taste, nor, though so large and enduring, is it at all tough, woody or stringy in texture, being apparently purely farinaceous, and composed chiefly of starch, with probably a portion of gluten. I have the best reason for believing that were the roots dressed like yams, by roasting them in hot wood-ashes a sufficient time to dissipate their acrimony, as in the latter, they would prove no way inferior to that vegetable.* Had I the facilities for trying the experiment I should certainly do so, but partial failures must be anticipated before the exact degree and duration of heat to be applied could be ascertained, and the experience necessary to ensure uniform success in the operation acquired. That there is reason in roasting a yam as well as an egg there can be no doubt, and we all know how much the simple process of boiling potatoes demands for its successful issue some exercise of man's noblest attribute. The tubers of the *Tamus* dug up from the hedge-rows in autumn, when the berries are ripening, would probably furnish as good yams as if cultivated expressly for use, because in the West Indies the "ruinate yams," or those that have become wild on old forsaken or ruined plantations, are esteemed the best.

The beautiful large scarlet berries, hanging in festoons on the bushes, ripen too late (with the decaying leaves) to add much to the ornamental aspect of the plant in autumn, yet are not without their use. These berries abound with a nearly insipid, watery juice, which

* On turning over several old authors to learn what may have been said by them on the subject, I find by reference to Matthiolus that my idea of converting Black Bryony roots into home-grown yams is not altogether a new one. That learned commentator on Dioscorides tells us, on the authority of one Martin Guidotti, a perfumer (myropola) of Trent, and a most diligent herbalist, that the roots of *Tamus* roasted in hot ashes are no contemptible dish (*haud ingratum sit edulium*), *Matth. edit. Valgr. 1565, p. 1287*. It is, however, but fair to add that Guidotti attributes medical virtues (probably imaginary) to these yams, which would make them unfit food for some temperaments. It is well known that the young shoots of the Black Bryony when they first appear above ground in the spring are eaten in some countries like asparagus, although by no means devoid of active properties, which it requires long boiling to render inert; why, therefore, should the root be less susceptible of conversion into good and wholesome aliment? Matthiolus's figure of his *Vitis nigra* is one of *Smilax aspera*, but his description applies to *Tamus*, which was the true *Vitis nigra* of ancient authors.

leaves a scarcely perceptible sense of acrimony behind on the tongue and fauces when swallowed ; but on being rubbed in a fresh state upon any sensible part of the surface, as the back of the hand, they raise, in less than a quarter of an hour, a faint cuticular eruption, attended with a slight itching and pricking, that soon subsides, leaving the part as before. Hence an embrocation prepared by steeping "murrain berries," as they are here called, in gin or brandy, is a sovereign remedy with the peasantry of the island for chilblains, and I believe a most efficacious one ; the ripe berries alone, without the spirit, will answer nearly as well, but the latter is employed chiefly to preserve them in for use during the winter. Mr. Borrer lately told me that when a boy he became aware of the rubefacient property of black bryony berries, but had not heard of their application for the infantine complaint above mentioned.

The geographical distribution of *Tamus communis* in this country and on the continent has something worthy of remark. From the contiguous parts of Asia it advances through Europe in a line gradually ascending from south-east to north-west, appearing in the Crimea, and keeping nearly on the parallel of 45° — 46° , through Transylvania and the southernmost provinces of Austria into Switzerland, where it rises northward, following the course of the Rhine into Germany as far as Carlsruhe and Strasburg, thence spreading over the whole of France, it reaches Belgium, where, however, it is rare and local ; then crossing the Channel it disperses itself throughout England nearly to its northernmost extremity, advancing to $55\frac{1}{2}^{\circ}$ of latitude, many degrees beyond its polar limits on the continent, and abounding over all the southern and midland counties in equal proportion on the eastern and western sides of the island. Yet with this marked tendency to a north-west progression, and with as much of the Atlantic as the Germanic distribution, it is not a little singular that the Black Bryony should never have been found passing over into either Scotland or Ireland, although these countries are both within its limitrophe parallels in England. With such strongly-marked western distribution, one might in theory have confidently predicated its occurrence in nearly every part of the sister island, and have reasonably looked for it in the Scottish counties of Dumfries, Kirkcudbright and Wigtown, where it may yet possibly be discovered, since these counties all lie due west of its natural localities in Durham and Northumberland. As *Tamus communis* belongs to a decidedly southern and indeed mostly tropical natural order, we may plausibly ac-

count for the great deflexion of its line of distribution in a south-easterly course, by supposing the root unable to resist the winters of eastern Europe above a certain parallel, whilst its sudden and total suppression westward in Scotland and Ireland may be owing to its not finding there the requisite degree of summer heat for its spontaneous maintenance. The common Butcher's-broom (*Ruscus aculeatus*) has a very similar distribution with *Tamus*, and like it, is not a species of even central Europe, excepting towards the west of our continent, where the winters are not too rigorous for it. Like *Tamus*, it fails totally or is doubtfully wild in Ireland, but advances a little beyond the former towards the north-west, being found in several parts of Scotland.

After all, should not *Tamus communis* have the * or at least the † appended to it? I wonder its claim has never before been called in question! We have just seen that it is quite a southern plant, unknown over the greater part of Europe under British parallels; of eminently exotic aspect and relationship, and has no one well ascertained British or Saxon name, for that of Our Lady's Seal must have been given it in catholic times, and as before remarked, seems never to have been its popular one with us; indeed Parkinson expressly tells it was only called so abroad by the apothecaries of France, Italy and Germany.* As to the name of Bryony, which it shares with the true plant so denominated, that word is altogether Greek, and therefore quite sufficient to implicate both species in the suspicion of foreign descent. Moreover, both *Tamus* and *Bryonia* are known solely as "wild vines" to a great proportion of our rustic population; a phrase very redolent this of the sunny south from whence it *must* have come with the plants themselves; nay, further, the *Tamus* is sometimes called here Black Vine, in contradistinction to the *Bryonia*, which is occasionally termed White Vine, from its paler colour. Here we actually have the genuine classical names of antiquity for the *Tamus*, the *vitis nigra* and *αμπελος μελαινα* of the Greeks and Romans, done into English for the benefit of country bumpkins; what more can be needed to prove both the plants foreigners? No, depend upon it that *Tamus*, like the *Arbutus*, the Hop, the Cherry, the Lime and the Beech, is a convicted alien; who knows but it might have been introduced by the *monks* in the train of the pious missionary St. Augustine, to rub their chilblains with, a complaint to which

* Theatrum Bot. pp. 180, 181.

those holy fathers were probably martyrs, if to nothing worse, for the first few winters after their arrival on our heathenish shores in the sixth century.*

In the garden at St. John's, Ryde, is a plant of *Smilax aspera*, which was originally found by Mr. John Laurence, the gardener, growing under one of the ruined walls of Quarr Abbey, about a mile from the town. I presume it must have been set there by some one wishing to try whether this native of south and south-eastern Europe could be naturalized in the island, and acquit the good Cistercians in this instance at all events of having had anything to do with its introduction within their ancient precincts.

Hydrocharis Morsus-ranæ. In pools, ditches, drains, and other still water; apparently rare, or at least not common in Hants, although probably much more frequent than I have the means of showing it to be at present. Not indigenous to the Isle of Wight, but abundant in a naturalized state in a small pool at Barretts, about two miles from Ryde, on the Brading road, introduced there a few years since with *Stratiotes aloides* and *Villarsia nymphæoides* by Dr. Salter!!! On the shallow margin of Sowley Pond, at its south-west end, in two places, September 26th, 1849. "Grows, I believe, at Christchurch, in the water bordering the lower road to Ringwood;" Mr. James Hussey in litt.!!! Plentiful at Sopley on the Avon; Pul-

* Under the heads of *Ligustrum* and *Taxus* I should have been tempted, had I known them at the time, to have inserted the two following passages from Pulteney's Catalogue of the rarer Plants of Dorsetshire in his remarks on those species, as further exemplifying the ridiculous tendency to doubt the native origin of almost every tree and shrub of British growth, which it has been my unceasing endeavour in these "Notes" to expose and combat in each instance that has presented itself for discussion. In his remarks on the privet, Pulteney shows that he himself was not uninfected with the gratuitous scepticism so often animadverted on in these contributions, for he observes, "From the oriental (*i. e.* specious or exotic) habit of this shrub, such as indulge in speculations relating to the distinction between the *native* and *naturalized* vegetables of England, might be allowed to suppose that the Privet was introduced into this island during the crusades, or at some remoter period of time." Admirable supposition! and quite on a par with that which would impute to our Holly a Japanese origin (*Phytol.* ii. p. 518, note). But there is no end to such vagaries, venial, perhaps, in Pulteney's time, but inexcusable in botanists of our own day, some of whom, nevertheless, hold opinions quite as absurd and gratuitous on the same subject. When he comes to speak of the Yew, however, Pulteney defends its claim to nativity against his fellow sceptics. "The title of this tree to the appellation of a *native* has been much disputed. Such as have denied it would probably hesitate in their opinion on seeing the scattered and unequivocal manner in which it is seen growing in Dorset, Wilts and Hants."



teney's Cat. of the rarer Plants of Dorset. I found it in October last extremely abundant in ditches and pools on the road out of Christchurch towards Sopley and Ringwood, beginning a short distance from Christchurch, and continuing nearly to Winkton; some of the ditches and drains in that low-lying and swampy district being quite filled with it. I may take this occasion to mention that I found *Stellaria glauca* (a plant I had down on hearsay only in the Hampshire catalogue till then), growing abundantly in marshy ground on the same road, on the left hand going towards Sopley, a short mile out of Christchurch, and still very partially in flower, October 6th, 1849. I have never remarked the Frog-bit in any other quarter of Hants, but can scarcely doubt of its occurrence in various parts of the county, as it is frequent in Sussex in the levels, on low grounds along the coast, as at Eastbourne, Pevensey, Arundel, &c.

The curious Water Aloe or Water Soldier (*Stratiotes aloides*) may be found in Hants, although for the most part restricted in its genuine wild state to the easternmost midland counties of England. It is naturalized in this island, as above mentioned, and it is only a wonder it is not more generally dispersed over the realm, since, when thrown into almost any pond or ditch, it seldom fails to take entire possession, hardly permitting a rival to flourish in peace by its side.

† ? *Udora canadensis* (*Anacharis Alsinastrum*, Bab. Man.). In rivers, streams, and stagnant waters; very rare, and possibly not indigenous to the only Hampshire station yet known for this plant. In an artificial piece of water in Leigh Park, near Havant, the seat of Sir George Staunton, Bart.; Mr. Borrer, 1847 !! Mr. B. informs me that the species was remarked by the gardener at Leigh Park only within a year or two of the above date, and after the introduction to the pond of some American aquatics, with which it was concluded to have been conveyed thither. The same year, a very similar, if not identical plant, was discovered growing abundantly in the reservoirs at Foxton Locks, near Market Harborough, Leicestershire, by Miss Kirby, and since then it has been detected in a multitude of most unexceptionable localities (rivers and streams) in England and Scotland, placing its indigenous origin beyond all doubt; although as usual its claim to nativity was immediately questioned, it must be allowed with far more reason than is commonly brought forward in excuse for scepticism on like occasions. For being known exclusively till that time as a transatlantic plant (unless the Lithuanian species be the same), there was ground for demurring to its reception amongst our true natives, so long as the stations it was found in partook of an

artificial character ; but now that it is ascertained to inhabit abundantly many of our natural waters, continuance of disbelief in its aboriginality would be ridiculous. Nevertheless, our only known Hampshire station is still open to suspicion in no trifling degree, inasmuch as the circumstances of the plant's appearance at Leigh Park strongly favours the probability of its having been imported with *Nymphæa odorata* direct from America. I say a probability only, because there is no direct proof of its introduction to the pond at Leigh Park beyond its having been unnoticed previous to planting the said aquatics, for I understand the pond in which it grows was an artificial enlargement merely of a natural spring or basin, in which the *Udora* may have pre-existed and have escaped observation, as it must have done in so many of its subsequently detected habitats. I am indebted to my friend Dr. T. Bell Salter for living specimens from Leigh Park, but these have not yet flowered with me, nor have I visited the station, deterred, as I was, from doing so, by the impression that the *Udora* had no real claim to insertion in the Hampshire flora. The subsequent discovery of this plant in so many distant and truly natural localities in England and Scotland has considerably lessened my unwillingness to receive it into the Hampshire Catalogue, and has induced me no longer to withhold from it the benefit of the doubt, which may fairly be raised as well in its favour as against it. But this reluctance to admit its claim to enrolment amongst our county plants, has hitherto prevented me from examining its characters and ascertaining its undoubted identity with the American *Udora canadensis*. Yet feeling pretty well satisfied that this is the case, I here enter it provisionally as such, until future observations on the Leigh Park plant by myself or others shall confirm or disprove the fact. The very highly curious and closely-related *Vallisneria spiralis*, found in similar places with our *Udora* nearly throughout Europe, will one day probably occupy a place in the British Flora, together with *Najas marina* and *Caulinia fragilis*, plants allied to the two former in habit, but belonging to another, though not very widely remote natural order.

Orchis Morio. In dry meadows and short turf or heathy pastures; very common throughout the county and Isle of Wight, being, in fact, the most abundant of the Orchidaceæ in spring and early summer with us. Fields at Quarr Abbey and elsewhere about Ryde. Abundant about Cowes, Newport, Yarmouth, and most other parts of the island. Occurs here occasionally, though rarely, with pure white flowers ; and in May, 1845, I noticed in a meadow betwixt Pigslegs

and Rosemary Lane Copses, the following varieties : *α*. Flowers delicate pink, verging on flesh red. *β*. Lip white, destitute of spots ; sepals and superior petals violet without, greenish white within. *γ*. Flowers violet ; disk of lip whitish, shading off into violet on the margin, its centre thickly dotted. This is certainly one of the most beautiful of British Orchises, whether we consider the soft lustre of its deep purple blossoms, emulating the richest velvet, or the diversity of shades and variegated colours they assume. The character of having single nerved bracts, which is made the foundation for a sectional division in the Manual, applies only to the highest in the spike, if even always to them, for the lower and middle bracts in all the specimens of *O. Morio* I have examined, are from 3 to 5 or even 7-nerved, but the lateral nerves are often obscure, at least in the living plant, for in the dried state they are extremely conspicuous.

Orchis mascula. Very common in most parts of the county and Isle of Wight in moist woods, meadows, pastures, and other damp and shaded situations. Var. *β*. Flowers pure white. I have gathered it at St. John's and near Appuldurcombe. Near Ryde ; Miss Lucas!!! Near Westridge ; Mr. Robert Hudson ! The long spikes of bright purple flowers and finely spotted leaves of the "Kettlecases," by which unintelligible name they are called in this island, are hailed with delight by young and old in April's fickle prime,

"When wheat is green and hawthorn buds appear."

This species begins to flower a little in advance of the last, which is always in blossom with us in the earlier half of May, and usually partially so at the close of April. *O. fusca*, *militaris* and *macra* are all or severally not unlikely to enrich the Hampshire Flora. The first has, according to Mr. Watson, been found by the Rev. G. E. Smith in west Sussex, the two last occur in the conterminous county of Berks and the not much more distant ones of Oxon and Bucks ; hence these species may be expected along our northern and eastern boundary.

—— *ustulata*. On dry chalky hills, downs, banks and pastures ; mostly in elevated situations, not very frequent, though I believe widely diffused over the county. Tolerably abundant on St. Boniface Down, between Ventnor and the Pulpit Rock, and in chalky meadows at Bonchurch occasionally. Steeplehill ; Mr. Albert Ham-borough ! Freshwater, near the cliff (on High Down, &c.) ; Mr.

Dawson Turner in Snooke's Fl. Vect. !!!* Plentiful on the sloping sides of the valley by Calbourne New Barn ; the late Lady Simeon !!! Sloping pasture at Apes Down ; Mr. Charles D. Snooke. Littleton or Flower Down, near Winton ; Rev. Messrs. Garnier and Poulter in Hamp. Repos. and Dr. A. D. White !!! Pinks Hill (near Warnford) ; Rev. E. M. Sladen. Bordean ; Miss L. Sibley. Hardly to be met with in the lower and level country. The name of *ustulata* is very appropriate to the burned or singed aspect given to the summit of the spike by the purple brown colour of the flower-buds.

OBS. *Orchis laxiflora*, a species common in the Channel Islands and on the continent of Europe, will probably ere long be discovered in Britain.† Dr. Salter found June 5th, 1845, at Spring Vale, near Ryde, a variety of *O. Morio* "with the upper (lateral) sepals reflexed in the advanced flowers." The specimens he kindly gave me are taller than is usual in this species, and have many (3—5) nerved bracts, but so, we have seen, has *O. Morio*, from which they differ in no other particular than that above stated. I should guess the figure of *O. laxiflora* in E. B. to be an indifferent one, and it looks much as if drawn and coloured from a dried specimen.

—— *maculata*. In dry or damp, and even wet meadows, woods, thickets, pastures, and on heaths ; abundantly throughout Hants. Assuredly very closely allied to *O. latifolia*, but distinguished by its (always ?) solid, not hollow stem,‡ pyramidal, somewhat acute spike, by the much smaller and shorter bracts, more slender and pointed spur, and by the broader and shorter lip, the central lobe of which is about equal to the two lateral lobes, that are notched on their margins, and usually, but not invariably, flat or spreading, sometimes deflexed. The plant is commonly shorter and far less robust than *O. latifolia*, but is extremely variable in the colour and markings of the flowers and in the form and proportions of the lip. "A variety with blood-red flowers was found in this island by the Rev. R. Price, of Lyminge, Kent, and is now growing in his garden." Rev. G. E. Smith (in litt.).

* Several stations for plants were communicated to Mr. S. by that accomplished botanist and antiquary.

† Mr. Borrer informs me that *O. palustris* is reported to have occurred in the Isle of Wight ; what this may be I do not know, since I am told it is not the same thing as *O. laxiflora*, to which the *O. palustris* of Jacquin is referred as a synonym in Steudel's Nomenclator, in which work no other species is mentioned bearing the latter name.

‡ The cavity in the stem is filled up with loose cellular tissue, but is not truly solid.

Orchis latifolia. In low, damp pastures, wet or boggy meadows and thickets, rarely in dry and elevated situations; pretty frequent, though much less common than the last. In Sandown marshes, near Shanklin and Appuldurcombe. Very fine at Colwell Bay; common in meadows at Thorley and in boggy ground below Calbourne Mill. Abundant in boggy meadows at Easton, Freshwater Gate. Common in the great fir and beech plantation on the down above Westover. Wet meadows about Newchurch, &c. Wet meadow betwixt West Mill and Carisbrook; Mr. Charles D. Snooke. Var. *β. incarnata*, Bab. Man. p. 310. Boggy ground by the Wilderness, June, 1844. I happen not to have made any notes of the occurrence of this species in mainland Hants, but feel convinced of having seen it there, and cannot suppose it to be less common in that part of the county than in this or in other parts of England. Distinguished from *O. maculata* by its much stouter habit, hollow stem, cylindrical and rather obtuse than acute spike of flowers, by the much smaller middle segment of the 3-lobed lip, which is distinctly produced beyond the two lateral, rounded, nearly entire or slightly crenate lobes, that are deflexed, not plane or spreading, as in the other; by the less attenuated, subcylindrical or conical, bluntish spur, always much shorter than the germen, and lastly, by the much larger, longer, more conspicuous bracts. Leaves not usually spotted; flowers here sometimes white.

—— *pyramidalis.* In dry, and particularly hilly meadows, pastures, and in grassy woods on the chalk, as also on argillaceous soils containing any notable proportion of calcareous earth; growing at a lower elevation than *O. ustulata*, even at the sea-level, but more commonly in the higher grounds. In many parts of the Isle of Wight abundantly. Not common about Ryde. Plentiful in Binstead stone-pits; and in the fields by the road from that village to Ryde, sparingly. Plentiful in grass fields at Egypt, by West Cowes (the extremest north point of the island), and on the slipped land along the shore to the westward of Cowes. More common on the chalk downs than elsewhere. Abundant on the down (High Down) W. of Freshwater Gate; near Compton farm and near Yarmouth. Down above the Culver Cliff. Abundant on Carisbrooke Castle Hill, but of small size. Common on grassy slopes at Ventnor. In Calbourne New Barn Hummet, and in the great fir and beech wood along the flank of the down above Westover. On Bembridge Down and in various other places. Some plants gathered in the chalk-pit opposite

the Mountjoy bastion (Carisbrook Castle) had the protuberances of the lip much elongated and leaf-like, July 18th, 1849; Mr. Charles D. Snooke (in litt.). I presume this species to be frequent over the county, but I have few data for showing its distribution on the main land, not happening to have noticed it there myself, excepting, if I remember right, about Bordean Hill. Otterbourne; Miss A. M. Yonge. Bordean; Miss L. Sibley, and (with white flowers) Rev. Messrs. Garnier and Poulter in Hamp. Repos. Maindell chalk-pit (Fareham); Mr. W. L. Notcutt. The flowers of this beautiful species vary with us from the deepest rose red to white.

The Lizard Orchis (*Satyrium hircinum*), it is far from improbable may eventually be found in Hants, since it grows in the adjoining county of Surrey, if not now extirpated by the rapacity of botanical collectors and the cupidity of orchis-rearing nursery-men. In our more retired and less explored county it might long vegetate unnoticed and undisturbed, and should be looked for on dry, bushy, chalky banks and hills. It has lately been found (a single specimen I believe only) at Great Glenham, in Suffolk, and although not indicated as a native of Ireland in the Manual, is mentioned as such in the 'Plantæ Rariores Hiberniæ' of Dr. Wade; and when last in Dublin Mr. D. Moore, of the Glasnevin Botanic Garden, told me he had himself met with it in that country, and communicated the rediscovery of this rare species to Dr. J. T. Mackay, in whose 'Flora Hibernica,' however, it does not appear. It is clear, therefore, that *O. hircina* has a very wide distribution in Britain, but is extremely local, and usually very sporadic; and since we are here but little removed from the part of England where it occurs with greatest frequency, the prospect is the fairer of ultimately detecting it within the limits of this county.

Gymnadenia conopsea. In dry heathy or chalky pastures, or in wet, peaty, boggy or clayey ground, not common, though found in several parts of the county and Isle of Wight. Extremely fine and plentiful on very wet banks of slipped clay in Colwell Bay, Freshwater, and in boggy ground at the upper end of Colwell Heath; first remarked there by the Rev. G. E. Smith, who justly observes that the plant has a mixed odour of the hyacinth with that more proper to the species, which much resembles the fragrance of the clove pink. On Freshwater Down; common, 1841. On chalky slopes at Apes Down, June, 1846. Bank opposite Madeira Villa, Ventnor; Miss Hadfield!! (it grows also in the Chicken pits and elsewhere in that place). Carisbrook Castle, S. and E. moats and ramparts, and heath

between Staplers and Briddlesford; Mr. Charles D. Snooke. It seems not less frequent on mainland Hants. About Petersfield, West Meon, &c., not rare; Miss L. Sibley!!! Otterbourne; Miss A. M. Yonge (in litt.). Plantation behind Wheely Cottage (near Warnford); Oliver's Battery, near Winton; Rev. E. M. Sladen. Abundant on Littleton or Flower Down, near Winton; Dr. A. D. White. Probably in very many other parts of the county; most likely frequent in the forest tracts, as I think it is in Sussex. The plant as it grows on bog at Colwell is often very large, eighteen to twenty inches high or upwards, with very densely-flowered spikes, and leaves an inch or nearly so in width, but sometimes in equally wet soil extremely narrow and erect. This form may possibly be the *G. densiflora* of Dietrich's 'Flora Marchica,' p. 164, whilst another variety with excessively narrow leaves, and a somewhat lax or open spike, and of humbler stature, growing on dry chalk soil at Ventnor, may be what he intends by the true *G. conopsea* of that work, and which I supposed might prove identical with the true *G. odoratissima*, *Rich.* (*Orchis odoratissima*, *Linn.*), but that species, if it be not a mere variety of *G. conopsea*, is distinguished by its much shorter spur, and narrower, cylindrical, not conical spikes of very minute flowers. The delightful fragrance of this plant is most powerful towards evening, and in those plants that grow in damp situations, for on dry soils it is nearly inodorous. *G. albida* (*Habenaria albida*, *R. Br.*) is reported in 'Cybele Britannica' as found in Hants on the authority of the Rev. S. Palmer, and has indubitably occurred in one locality in Sussex.* I have never seen Hampshire specimens of this rather northern than southern and mountain-loving species, but there is good ground for hoping it will some day reward the investigator of our county flora on hilly heaths. The curious Green Man Orchis (*Aceras anthropophora*) is a still more likely plant to occur, and I have indeed heard from Miss E. Sibley that it has been found at East Woodhay, in the north of the county, which, although on unconfirmed and anonymous authority, is very probably correct, seeing that it grows abundantly in certain parts of Surrey and in Berks, and may therefore be expected with the greatest reason in such districts of Hants at least as adjoin on those two counties.

Habenaria viridis. In hilly, heathy and grassy pastures, or in low meadows; very rare in the Isle of Wight, and not at all common in the rest of the county. A single specimen picked in a rough pasture

* Jenner's Fl. of Tunbridge Wells, p. 45.

field at the end of the fir plantation by Long Lane, near Newport, 1841; Mr. R. G. Kirkpatrick! A second specimen gathered in June of the same year by Miss Woodroffe, of Calbourne, near the "high summer-house" at Swainston! both which examples I possess through the kindness of the finders, and are the only ones I have seen from this island, where it has not once occurred to myself in more than twelve years' investigation of its floral productions. On Beacon Hill, near Highclere, in tolerable plenty, and still in flower, August 9th, 1849. I have received it from Miss Lovell, 1848, gathered, I believe, at Catherington, near Clanfield! Searjeant's Meadow, Warnford; Mr. Vickery. Field by the Winchester road, near Cheriton; Miss L. Sibley. Flower Down, near Winton; Miss L. Legge! Near Lodge Bere Forest; Messrs. Garnier and Poulter in Hamp. Repos. A more frequent species in the north than in the south of England, but Mr. G. E. Smith tells me it is not uncommon in Sussex in damp meadows at the foot of the downs.

Habenaria bifolia. In woods, copses, and in open, heathy places; rare in the Isle of Wight, and not yet seen or received by me from mainland Hants, where it must doubtless grow in many of the forest districts, &c.* In Stroud Wood, near Aldermoor, by Ryde, not sparingly, June 11th, 1838. Two specimens picked on Colwell Heath, June, 1841. In the former station it may, I believe, be found yearly in considerable plenty. Heath between Staplers and Briddlesford, near Newport; Mr. C. D. Snooke. This is rather a puzzling plant, about the value of which as a species apart from *H. chlorantha* I have ever entertained considerable doubt. It unquestionably presents some good and apparently permanent characters, and has long been distinguished by Ray and other of the earlier botanists at home and abroad from the larger and commoner *H. chlorantha*, yet I think the differences betwixt them are such as might be inferred to result from soil and situation. It must be allowed, however, that their distribution is different, *H. bifolia* being the plant of Sweden, Denmark, and other boreal countries of Europe, as is evident from the figures and descriptions of the northern botanists, whilst *H. chlorantha* inhabits central and southern Europe, and is infinitely more abundant in this part of England than the smaller species. The differences between them have been ably illustrated by Mr. Babington, in the 17th volume of

* Whether the *H. bifolia* of Mr. W. L. Notcutt's 'List of Fareham Plants' (Phytol. ii. p. 213) be this species or not, I am uncertain; if it be the true plant, then is Titchfield Common a mainland station, and a very likely one for the lesser Butterfly Orchis.

the 'Linnean Transactions,' and in the Supplement to E. B., and who was the first to disentangle them from the neglect and confusion into which they had fallen in Britain, although sufficiently recognized on the continent. Besides the figure in E. B. Supplement, t. 2806, I may cite for *H. bifolia* that of Fl. Danica, ii. t. 235, as good, and the beautiful one of Mr. Curtis in 'British Entomology,' v. t. 233, as still better. The figures of *H. (Platanthera) solstitialis*, *Drejer*, Fl. Dan. fasc. xl. t. 20360, and t. 20361, are excellent representations of our *H. bifolia*.

The great characteristic of the plant before us is the parallelism of the anther-cells, more closely approximated at their base, than those of *H. chlorantha* at the summit of theirs; hence the flowers of *H. bifolia* are much narrower than in *H. chlorantha*, and far less handsome and conspicuous. The anther is shorter, the petals narrower, the two lateral connivent petals, with the lip, spur and summit of the anthers, are of a greenish or herbaceous colour, scarcely observable in the almost pure white flowers of *H. chlorantha*; the spur is more slender, filiform and cylindrical, being scarcely at all compressed as in *H. chlorantha*, neither is it sensibly enlarged or clavate at the extremity as is so remarkably the case in the latter, and is hardly thicker than a packthread throughout, besides which it is usually straighter, and often horizontally porrected as well as prone or deflexed. I observed in all my specimens of *H. bifolia* from Stroud Wood that the lateral sepals are simply spreading, and rather curved forwards or slightly connivent than reflexed, which is their general tendency in *H. chlorantha* when fully expanded. The scent of the lesser and greater Butterfly Orchis is highly and delicately fragrant, particularly towards evening and at night. To myself the odour is like that of the Tuberose (*Polianthes tuberosa*), to others like that of orange flowers or scented soap. It is to be regretted that the confusion in which the synonyms of these two presumed species were so long involved should have settled the name *chlorantha* (greenish yellow flower) upon the species the least meriting the appellation. The concluding remarks of Sir James Smith on *Orchis bifolia* in his 'English Flora' evince the very little attention he paid to our present plant even as a variety, distinctly noticed by so many of the older botanists.

Habenaria chlorantha. In moist open places in woods, thickets, groves, and on grassy slopes; very frequent in the Isle of Wight, particularly on stiff clay soils. Very common about Ryde, at St. John's, in Quarr Copse, woods at Sea Grove, the Priory, Westridge, &c. Abundant in the grounds at Norris Castle, and in Mrs. Good-

win's grounds at West Cowes. Woods and pastures about Combley, Duxmore, and all that vicinity, frequent. Woods on the west side of the Wootton River, at its mouth, plentifully. Common in woods about Swainston, Calbourne, Thorley and various other places. Having accidentally omitted to observe and record the stations for this species in mainland Hants, I can only state my belief that it is in all probability equally frequent there as in the island. Var. β . Flowers regular, without a spur. Grounds at Norris Castle, very rare. This beautiful and fragrant species is well distinguished from the last, by its generally greater height (often eighteen to twenty inches) and robustness; much larger and broader leaves, of a purer white; thicker, more compressed and somewhat club-shaped spur; and especially by the great divergence of the anther-cells, whose bases are so far apart, that were the apex of each cell produced till they met, a nearly equilateral triangle would be described by their union. The variety, or rather monstrosity, β . is very remarkable, as having flowers in five nearly equal divisions, quite scentless and tinged with green, the lateral petals not connivent but spreading, lower one or lip, broad, plane, and the spur entirely wanting. Of this monstrosity I had previously seen a dried specimen from the same station, in the possession of Miss E. Kilderbee, and was at a loss what to consider it. Mr. D. Stock, of Bungay, has remarked a similar alteration of structure in the flowers of *Orchis pyramidalis*.

Besides the figure of *H. chlorantha* in E. B. i. t. 22 (*Orchis bifolia*), and the elegant full length one of Curtis, Fl. Londin., ii. fasc. 6, t. 65, that in 'Flora Danica,' fasc. 40, t. 20362, is hardly inferior to the others as a representation of our common greater Butterfly Orchis. Reichenbach's three figures, Iconogr. Bot. ix. Nos. 1143, 1144 and 1145, are, like too many more of that hair-splitting author's, exaggerated portraits in form and colouring of *H. bifolia* and its varieties, *H. brachyglossa* and *chlorantha*. I have never found *H. bifolia* with such ell-long spurs, nor *H. chlorantha* so outrageously green, and cannot but suspect the figures of each were made from dried specimens, and coloured from the ideal examples of a vivid imagination or perhaps a treacherous memory. However that may be, they are not, I am convinced, normal states of the species they profess to represent, and unworthy of citation in the room of the elegant and faithful delineations in the 'Flora Londinensis' and 'Flora Danica' lately adverted to. Justice, nevertheless, requires that due praise be given to the many correct and sometimes admirable figures in the Iconographia of Reichenbach; a work which, with all its faults of perplexed

arrangement and minute specific divisions, is still a most valuable and sumptuous repertory of botanical illustrations.

Ophrys apifera. In dry meadows, pastures, woods and thickets, on chalky banks, downs, and on wet slipped land, mostly on loamy or limestone soils, or where calcareous earth is a principal constituent; by no means uncommon, and in particular years even abundant, over a great part of the Isle of Wight and mainland Hants. Being extremely uncertain and capricious in its habitats, often appearing abundantly one season where it was scarce or failed altogether to show itself the year before, it is unnecessary to give more than a general view of its distribution, without recording its almost numberless special localities. Sometimes quite common about Ryde, at Quarr, Binstead, in Pelham fields, &c. About Cowes, at Egypt, Norris Castle, &c., and about Yarmouth. About Newport, at Carisbrooke (on the castle hill, &c.), Calbourne and elsewhere. Frequent on most of the downs about Freshwater, often in great abundance, as it was last year (1849). At Bonchurch, Ventnor, Steephill, Blackgang and most other parts of the Undercliff, on the chalky banks and pastures, often plentifully. In Bembridge Island, about the Culver Cliff, Whitecliff Bay, &c. On the banks of slipped land (green sand and clay) under the cliffs at Shankin. Abundantly on Kennerley Heath, near Godshell, in sandy loam amongst the furze, and very fine; June, 1843, in which year it was very universal in the island: but it is needless multiplying stations for this ubiquitous but not always plentiful species, as it may be found in most parts of the island and in most years by a little seeking, especially on the chalk and slopes of the downs. A specimen with the flowers nearly white, the lip only being greenish, was found by Mrs. Martin at Ventnor some years ago. On the mainland of the county *O. apifera* is about equally frequent. At West Meon in various places; the Miss Sibleys: and where a variety with white flowers has occurred, and a similar one is recorded by the authors of the catalogue in the 'Hampshire Repository' as having been found at Bordean. Warnford; Mr. Vickery. Bullington; Rev. D. Cockerton. Beacon Hill, Highclere Park; Cat. of Plants of Newbury!!! Nore Hill and Selbourne Park; Professor Bell. This beautiful and singular plant is well known here as the Bee-flower, and although no uncommon species over a great part of England, is made as much account of as though it were a great rarity, and the Isle of Wight had the exclusive happiness of producing it. The Bee-flower figures in all the guide-books, flourishes on the vegetation of the island, and is a staple article in every enumeration of Vectic memorabilia

and amenities. In certain but indeterminate seasons it may be gathered in quantities, and sometimes attains here a height of two feet. Reichenbach's figure (Iconogr. ix. no. 1159) is very indifferent, and if representing this species at all, depicts a variety such as I have never met with. The exquisite one of Curtis in the 'Flora Londinensis' perfectly exhibits the species in its normal condition with us.

Ophrys aranifera. In chalky, clayey or limestone pastures; very rare? The var. *β. fucifera* (*O. fucifera*, *Sm.*) is the only form yet collected in Hants, and the Isle of Wight the only part of the county where it is certainly known to grow. First found May 10, 1841, by Albert Hambrough, Esq., on St. Boniface Down, above St. Boniface Cottage (several specimens). Behind Upper Mount, Bonchurch; Miss Dick and J. Saxby, Esq.!!! Several specimens gathered in Luccombe Landslip, by the side of the main path, May, 1843, by a servant of Miss Roper, of Ventnor!! On a sloping bank on the left hand side of the Cowleaze going from Ventnor to Bonchurch, just below the Madeira Vale Villas, May, 1843; Mrs. Clarkson!!! Gathered in this last station by Miss Thompson in 1846, and since by Mr. A. Hambrough and myself in 1848-49, at the end of April and beginning of May, in tolerable plenty. It has not been discovered elsewhere in the island, but will probably be found on the chalk in other parts of it if carefully sought for at the proper season; but being a smaller, and from its colour less conspicuous and attractive plant than *O. apifera*, and flowering many weeks sooner than that species, it may elude observation at any time. Bullington, abundantly; Rev. D. Cockerton: is this correct, and, if so, what form does the species put on? Our Hants stations are interesting, as being the most westerly ones known for this eminently eastern *Ophrys*, and furnish another proof of the assertion before made, that the floras of the east and west of England become fused into each other in this county. Smith quotes the beautiful figure of Curtis, Fl. Lond. ii. fasc. 6, t. 67, for his *O. aranifera*; to me that plate decidedly represents our variety, the *O. fucifera* of the 'English Flora,' and very admirably too. It is possible that *O. arachnites*, the only British species of the genus wanting to our county, may hereafter be detected in Hants.

—— *muscifera*. In chalky or clayey, usually hilly pastures, woods and thickets; less frequent than *O. apifera*, but far from uncommon in the Isle of Wight and county generally, although, like the Bee-flower, uncertain in its stations and variable in quantity in different years; flowering with us from the commencement of May to the beginning or even the middle of July. At the farther part of Cal-

bourne New Barn Hummet, plentifully; May 9, 1846: and since gathered in some abundance in the same wood, of which it seems to be a pretty constant inhabitant. Plentifully on a rough, sloping, stony field nearly at the back of the Tolt Copse, Gatcombe, June 10, 1846. In the great fir and beech plantation on the down near Westover, several specimens upwards of two feet high, July 3, 1843. In a chalky hollow on the north side of Messly or Mersley Down, sparingly; May 28, 1844. Quarr Copse, in some plenty; Miss Theodora Price, June, 1838 !!! Field at Egypt, W. Cowes; Rev. Mr. Mann. Cliff above Gurnet Bay; Miss G. E. Kilderbee! Shady lane under Carisbrook Castle, and on the borders of a lane leading from Roughborough farm up the down; Mr. G. Kirkpatrick. At Norris Castle; Id. In considerable abundance in the copse of low brushwood (chiefly hazel) on the down at the top of Alvington chalk-pit, about half a mile from Carisbrooke, on the Yarmouth road; Miss Dennett (vidi icon). Solitary specimens I have picked in several other places, and it occurs sporadically, I think, in nearly all parts of the island, but I hardly know if it be found on the green sand. Woods, &c., about W. Meon, as Hall Place, Westbury, Warnford, Chappets and elsewhere, common; the Miss Sibleys. Bordean Hill, frequent; Id. !!! Bordean Hill, Hambledon; Rev. Messrs. Garnier and Poulter in Hamp. Repos. Parnell or Parholt Wood, near Farley, by Winton; Miss A. M. Yonge !!! Highclere; Dr. A. D. White. Highclere Park and Barton's Copse, by Sidmonton House; Cat. of Plants of Newbury. Nore Hill, Selborne; Professor Bell! Doubtless widely and generally dispersed throughout the county, but probably rare in the western or New-Forest district. Its geographical distribution is remarkable, as, although found in Norway at least as far north as Trondiem (Drontheim) in lat. $63\frac{1}{2}$, and, it is said, in the Loffoden Islands $68-69^{\circ}$, it scarcely enters Scotland in lat. $55-56^{\circ}$. The same sudden termination far to the south of its polar limit on the continent holds true of the next plant.

Herminium Monorchis. On chalky banks and pastures, rare? and not yet observed in the Isle of Wight. Bordean Hill; Rev. Messrs. Garnier and Poulter in Hamp. Repos. !!! I am indebted to Miss L. Sibley for pointing out to me the station for this little plant, which is on short pasture ground on the way to the ascent of the hill from Langrish, on the right hand near the lime-kilns. Miss G. E. Kilderbee has kindly supplied me with numerous fine specimens gathered there in July last. Fir plantation under Wheely Down, near Warnford; Mr. Vickery. These are the only stations I find recorded for

the Musk Orchis, but a plant so slender and inconspicuous may well be supposed far less rare than it appears to be.

Spiranthes autumnalis. On dry, open, turf pastures, lawns and heaths; by no means unfrequent in the Isle of Wight, nor, as I believe, throughout the county, but scarcer in some years than in others. So generally dispersed, and withal so uncertain in its stations, that a long enumeration of special localities would be unnecessary and often lead to disappointment, since it is continually making its appearance abundantly in new or unobserved habitats and disappearing as suddenly in old ones. Sometimes plentiful about Ryde and places in the vicinity, as at St. John's, Seagrove, Nettlestone, St. Helen's, &c. Fields and pastures in various places along the Undercliff, frequent. Near Hardingshoot farm, and on the turf near Sandown Fort. Fields about Chale; Miss Lucas. Northwood Park; Miss G. E. Kilderbee. Mount Cleve, Niton; the Miss Sims's!!! Near Carisbrook Castle, Colwell and Freshwater, Sir Nash Grose's (the Priory) grounds, near Ryde; Mr. W. D. Snooke. On St. George's Down (near Newport). Field opposite Alverton farm, Whippingham parish. Pastures west of Fishbourne Creek, through which a new road (leading nowhere) has been lately made; Mr. Charles D. Snooke. Occurs here and there in most other parts of the island. Picked in Hayling Island, September, 1849. In great abundance in Cranbury Park, near Winton; Miss A. M. Yonge (in litt.). Wheely Down, Old Winchester Hill (near Petersfield); Rev. E. M. Sladen. In the Long Lith, and towards the south corner of the (Selborne) Common; Rev. G. White. Woodcote, Sutton Common, near Alton; Miss L. Sibley. Lawn at Mr. Osborne's (Fareham); Mr. W. L. Notcutt. Magdalene Hill, St. Giles's Hill, grass plats in the warden's garden (Winton); Dr. A. D. White. To the majority of persons this plant smells delightfully fragrant, but to myself it is nearly inodorous, as is also the following, and all the exotic species, as *S. gracilis*, *tortilis*, &c., I have gathered in other countries.

——— *estivalis.* In boggy places, by streams and ponds; very rare. Discovered just ten years ago by Mr. Branch* in the New Forest, along a stream on a small tract of sphagnous bog close by the high road, about two miles and a half from Lyndhurst, towards Christchurch, and where it was gathered by Mr. Borrer and myself in considerable plenty, August 6th and 7th, 1841, growing with *Myrica*, *Narthecium*, *Drosera longifolia* and *Rhynchospora alba*, &c.

* Or by ~~Mr. Branch~~ to Watson, Cyb. Brit. ii. p. 414.

The only station yet known for this fine species in Britain (excluding, of course, the Jersey locality), but it will probably be soon detected in other parts of the county and beyond its limits.* Some of my specimens are a foot in height. Dr. Gray seems to consider the *S. latifolia* of Torrey as identical with our *S. æstivalis*, but the former I do not remember ever to have seen. I have gathered a species very like our own in the mountains of Jamaica. Richard's generic name *Spiranthes* is admirably characteristic of the twisted or spiral arrangement of the flowers, and would have been worthy of adoption had not still stronger reasons called for its employment in place of *Neottia*, now restricted to the true Bird's-nest, *N. Nidus-avis*, originally so named by Linnaeus.

Listera ovata. In dampish woods, thickets, copses and under trees in shady pastures; very frequent in the Isle of Wight, and I believe throughout Hampshire. Plentiful in Quarr Copse, Apley Wood, and most other woods about Ryde. Woods about Cowes. Abundant in Tolt Copse, Gatcombe. In Appuldurcombe Park. About Carisbrooke Castle, and in woods and shady places in most other parts of the island. Pasture field at Boldre Hill. Frequent in the beech woods of the mainland. Maindell chalk-pit (Fareham); Mr. W. L. Notcutt. Betwixt Hursley and Otterbourne; Dr. A. D. White. N. B.—*Listera cordata*, a species frequent in the north of England, has been found near Culbone, in Devonshire, and in Somersetshire, and may possibly be some day discovered on our highest Hampshire Hills.

Neottia Nidus-avis. Mostly sporadical in moist shady woods and copses, usually amongst dead leaves; not very common, although pretty generally dispersed over the island and county. In Quarr Copse occasionally, where I have repeatedly found it in a hollow (old stone pit), on the left of the entrance at Binstead, as well as in other parts of the wood, but rarely. Wood near East Cowes Castle. Hungerberry Copse, near Shanklin. Swainston Woods. Calbourne New Barn Hummet. Cleveland Wood, Appuldurcombe. Woods at the Priory, occasionally. Cothey bottom Copse, by Westridge. Several specimens in the large plantation of Scotch fir in Bordwood Copse, June 1st, 1845. In Northlands Copse, Yaverland, July, 1848. At Fernhill, but not seen there of late; Mrs. Sanders. In great Whitcomb Wood, near Gatcombe; Mr. G. Kirkpatrick! A speci-

* I learn from Mr. Borrer that it is found in other spots in the neighbourhood of Lyndhurst, and that it is still abundant in the original station (March, 1850).

men found on the lawn at St. John's, Ryde, June, 1843, by Mr. J. Lawrence, jun. Equally, if not more frequent on mainland Hants, so far as my observation has extended. Hampnage Wood, Avington, near Winton, 1848. In a high wood at Bordean, apparently frequent, July, 1848. Akenden Wood, near Alton, 1849. Westbury, Brookwood, Selborne; Miss E. Sibley!!! About West Meon, Beacon Hill Wood; Rev. E. M. Sladen. Holt and Wickham Woods; Rev. Messrs. Garnier and Poulter in Hamp. Repos. Selborne, "in the Long Lith, under the shady beeches amongst the dead leaves; in Great Dorton, among the bushes, and on the Hanger plentifully; Rev. G. White and Professor Bell!!! Highclere Park; Cat. of Pls. of Newbury. This plant is readily detected at all seasons, as the dry stems and firm subligneous capsules are persistent in the woods for a year or two after flowering. To myself the flowers of this singular species have the odour of *Adoxa Moschatellina* mingled with that of primroses, but fainter. From the researches of the late Hon. and very Rev. W. Herbert, there is no reason for holding this plant to be parasitical, much as its structure and habit appear to countenance such a propensity. The singular leafless *Limodorum abortivum* I conceive extremely likely to be discovered in England eventually, as it appears to be by no means very rare in the northern departments of France, and is also native to Belgium and other parts of central Europe.

Epipactis latifolia. In moist, shady and rocky woods and thickets, not confined to hilly places, but found at the sea level both on the chalk and clay, as well as on the uplands. By no means uncommon either in the Isle of Wight or on the mainland of the county, but rarely in any great plenty. All the plants found by me in the island are, I think, referrible to the true *E. latifolia* of the Manual, and to no other, at least I could never distinguish satisfactorily any form exactly corresponding to the *E. media* of Fries, although the leaves vary much in shape and breadth with us. In Quarr Copse, Binstead, here and there, but sparingly. Quite frequent, it may almost be called plentiful, in the wooded ground skirting the shore betwixt Ryde and Binstead, exactly the *E. latifolia* of the Manual, the flowers here variously suffused with purple, sometimes wholly of a pale green. Not unfrequent in the rocky, woody landslip between Luccombe and Bonchurch. Woods at Swainston occasionally, Kingston Copse, Tolt Copse, near Gatcombe. Rather plentiful in the great plantation on the down above Westover. A single specimen in a wood at Rowledge, and another seen in Sluccombe Copse, 1845. Westwood, and in

teney's Cat. of the rarer Plants of Dorset. I found it in October last extremely abundant in ditches and pools on the road out of Christchurch towards Sopley and Ringwood, beginning a short distance from Christchurch, and continuing nearly to Winkton; some of the ditches and drains in that low-lying and swampy district being quite filled with it. I may take this occasion to mention that I found *Stellaria glauca* (a plant I had down on hearsay only in the Hampshire catalogue till then), growing abundantly in marshy ground on the same road, on the left hand going towards Sopley, a short mile out of Christchurch, and still very partially in flower, October 6th, 1849. I have never remarked the Frog-bit in any other quarter of Hants, but can scarcely doubt of its occurrence in various parts of the county, as it is frequent in Sussex in the levels, on low grounds along the coast, as at Eastbourne, Pevensey, Arundel, &c.

The curious Water Aloe or Water Soldier (*Stratiotes aloides*) may be found in Hants, although for the most part restricted in its genuine wild state to the easternmost midland counties of England. It is naturalized in this island, as above mentioned, and it is only a wonder it is not more generally dispersed over the realm, since, when thrown into almost any pond or ditch, it seldom fails to take entire possession, hardly permitting a rival to flourish in peace by its side.

† ? *Udora canadensis* (*Anacharis Alsinastrum*, Bab. Man.). In rivers, streams, and stagnant waters; very rare, and possibly not indigenous to the only Hampshire station yet known for this plant. In an artificial piece of water in Leigh Park, near Havant, the seat of Sir George Staunton, Bart.; Mr. Borrer, 1847 !! Mr. B. informs me that the species was remarked by the gardener at Leigh Park only within a year or two of the above date, and after the introduction to the pond of some American aquatics, with which it was concluded to have been conveyed thither. The same year, a very similar, if not identical plant, was discovered growing abundantly in the reservoirs at Foxton Locks, near Market Harborough, Leicestershire, by Miss Kirby, and since then it has been detected in a multitude of most unexceptionable localities (rivers and streams) in England and Scotland, placing its indigenous origin beyond all doubt; although as usual its claim to nativity was immediately questioned, it must be allowed with far more reason than is commonly brought forward in excuse for scepticism on like occasions. For being known exclusively till that time as a transatlantic plant (unless the Lithuanian species be the same), there was ground for demurring to its reception amongst our true natives, so long as the stations it was found in partook of an

artificial character; but now that it is ascertained to inhabit abundantly many of our natural waters, continuance of disbelief in its aboriginality would be ridiculous. Nevertheless, our only known Hampshire station is still open to suspicion in no trifling degree, inasmuch as the circumstances of the plant's appearance at Leigh Park strongly favours the probability of its having been imported with *Nymphæa odorata* direct from America. I say a probability only, because there is no direct proof of its introduction to the pond at Leigh Park beyond its having been unnoticed previous to planting the said aquatics, for I understand the pond in which it grows was an artificial enlargement merely of a natural spring or basin, in which the *Udora* may have pre-existed and have escaped observation, as it must have done in so many of its subsequently detected habitats: I am indebted to my friend Dr. T. Bell Salter for living specimens from Leigh Park, but these have not yet flowered with me, nor have I visited the station, deterred, as I was, from doing so, by the impression that the *Udora* had no real claim to insertion in the Hampshire flora. The subsequent discovery of this plant in so many distant and truly natural localities in England and Scotland has considerably lessened my unwillingness to receive it into the Hampshire Catalogue, and has induced me no longer to withhold from it the benefit of the doubt, which may fairly be raised as well in its favour as against it. But this reluctance to admit its claim to enrolment amongst our county plants, has hitherto prevented me from examining its characters and ascertaining its undoubted identity with the American *Udora canadensis*. Yet feeling pretty well satisfied that this is the case, I here enter it provisionally as such, until future observations on the Leigh Park plant by myself or others shall confirm or disprove the fact. The very highly curious and closely-related *Vallisneria spiralis*, found in similar places with our *Udora* nearly throughout Europe, will one day probably occupy a place in the British Flora, together with *Najas marina* and *Caulinia fragilis*, plants allied to the two former in habit, but belonging to another, though not very widely remote natural order.

Orchis Morio. In dry meadows and short turfy or heathy pastures; very common throughout the county and Isle of Wight, being, in fact, the most abundant of the Orchidaceæ in spring and early summer with us. Fields at Quarr Abbey and elsewhere about Ryde. Abundant about Cowes, Newport, Yarmouth, and most other parts of the island. Occurs here occasionally, though rarely, with pure white flowers; and in May, 1845, I noticed in a meadow betwixt Pigslegs

above Nunwell, the only spot in the island where I have seen the yew even apparently in a state of nature, but I suspect from their limited number and vicinity to the house that they were planted there long ago. Everywhere for miles around Winchester, on the downs and in woods, at Compton, Hursley, Farley, &c. Extremely common on the high downs along the London and Portsmouth road. Very frequent in Froxfield Hangers and other elevated and steep woods about Petersfield, with its common associate the beech. Very large trees, some evidently of high antiquity, occur in the woods and chalky slopes about Hambledon. Extremely frequent in most of the northern parts of the county, but I think much less so, if not decidedly rare, in the south-western part, in the New Forest, and Christchurch hundreds. The yew is a tree so frequent as to be a beautiful and distinguishing feature in the upland scenery of Hants, and some of the adjacent counties, as Sussex, Surrey and Wilts, its deep green, nearly black foliage finely contrasting with the brighter verdure of the beech, oak, and other deciduous trees, whilst in the picturesque form of its wide-spreading, depressed head, and short, gnarled, sturdy, cinnamon-red trunk, it may vie with the cedar of Lebanon itself. The yew is commonly seen with us as single trees, irregularly dotting the landscape, sprinkled over the open downs, or rising amid the hedge-rows or from the precipitous face of some hanging wood, but it occasionally forms groves by itself of small extent, the most remarkable of which that I am acquainted with is the yew wood at Kingley Bottom, near Chichester, much resorted to in the summer by parties of pleasure for its picturesque beauty and singularity. The yews on our downs and in the woods are mostly permitted to flourish unscathed by the axe, notwithstanding the value of the timber to the cabinet maker, and hence many noble specimens may be seen in the wild state, whilst on the main land of the county there is hardly a parish church of ancient date without its venerable yew in front of the door or porch, some of which churchyard trees are of extreme age and colossal dimensions. The great yew in Selborne churchyard, one by no means of very unusual size, was found to measure a year or two back $24\frac{1}{2}$ feet in circumference at four feet from the ground. The very ancient yew in the churchyard of South Hayling, in Hayling Island, is, to the best of my recollection, a still larger tree than the one at Selborne, and doubtless others may be found in the county exceeding both these in dimensions. It is not a little remarkable, that whilst we find a yew planted and religiously preserved in front of nearly every ancient parish church in the county, I cannot call to mind the existence of this

tree in any one of the churchyards belonging to the thirty parishes into which the Isle of Wight is divided. The antiquarian reader may possibly be able to account for this fact.

Juniperus communis. On dry hilly places, chalk downs, also in woods and copses; frequent in various parts of the county, but scarcely wild in the Isle of Wight. I found, March 20th, 1845, a solitary, very dwarf bush of the common juniper on the slope of the down above Nunwell, which, like the yew it accompanies, may possibly be native there, but until discovered elsewhere in greater quantity I do not feel justified in considering it as indigenous to the island on the strength of a single specimen. In Bordean Hanger and about Bordean Hill, where I have found this shrub rising to ten or twelve feet on the chalky slopes. Common on the downs about Petersfield, on Oxenbourne Down, &c. About the Farley (Horse) monument, in Parnell's or Parnholt Wood, and in most woods in that vicinity. Abundant in the higher, more open parts of Froxfield Hangers, and in woods at Hambledon. Plentiful at Highclere, in the park, on Beacon Hill and chalk downs about it. Popham Beacon, near Andover Road station, abundantly; Dr. T. Bell Salter! On Abbotston Down; Mr. J. Forder!!! I find it profusely on that beautiful elevated tract, along with large bushes of *Rhamnus catharticus*, *Ligustrum vulgare*, &c. Warnford; Rev. E. M. Sladen. On the down at Up Hurstbourne; Mr. Wm. Whale. On Danesbury Hill, near Testcombe Bridge, and Forest of Bere; *Id.* Unquestionably in innumerable other places in the county. The absence of this plant and the yew from the Isle of Wight, abounding, as it does, with tracts perfectly similar to those of the mainland, so productive of both these trees, is a singular feature in its flora.

†*Pinus sylvestris.* Naturalized extensively in the south-west of the county, and probably in other parts, from plantations, chiefly on sandy or boggy heaths and moors. In plantations of immense extent about Ringwood, and betwixt Poole and Christchurch, as at Bourne-mouth, over tens of thousands of acres of moor, heath and bog, so as perfectly to present the aspect of the pine forests of Scotland. The species now maintains itself by self-sown seeds, which come up abundantly everywhere, even in the wettest morasses, and are gradually spreading the trees over the county, so that were the plantations to be left to themselves, and the original firs allowed to die out, the existence of the species would be perpetuated by purely natural means. It seems therefore absurd any longer to exclude the Scotch fir from the catalogue of Hampshire plants, as, although unquestionably intro-

duced at the beginning, the tree is as completely naturalized as any aboriginal of the county, fully as much so as are those species to which we never hesitate assigning a place in our general and local floras, as *Acer Pseudo-platanus*, for example. Besides in the enrolment of the Scotch fir amongst the species of our existing flora, we are perhaps only reinstating a primæval but extinct inhabitant of South Britain in what was once probably its native soil, as North Britain indisputably is at the present day; since I believe trunks and cones of this species have been dug up in the bogs of the south of England, as well as in those of Ireland, the vestiges of anciently existing pine forests.

Pinus Pinaster, Ait.? *P. maritima*, D. C.? Naturalized abundantly with *P. sylvestris* in the dry, sandy soil of Bournemouth, and on the turfy heaths and peaty, boggy moors betwixt Christchurch and Poole. The immediate vicinity of Bournemouth is at this time a perfect pine forest, both species forming in some places on the crests of the sandy cliffs above the beach, low, dense thickets, in others rising into groves of taller trees, exactly recalling to mind the natural pine woods of the European and American continents. There is little doubt that if left to themselves these two trees will establish themselves throughout the heath district of the Poole basin, as it is not only in the immediate vicinity of the original plantations that the species occur spontaneously, but they are beginning to dot the moorlands and bogs with vigorous young pines of both sorts at wider distances from their artificial places of growth. The cones of the pinasters when ripe discharge their seeds elastically with great force, and the seedlings that spring from them are called by the woodman at Bourne "self-setters." The wood, they say, of *P. Pinaster* is inferior to that of the Scotch fir, which in this part of England is used only for temporary railing, fencing, and other coarse purposes. With Mr. Woods (*Phytol.* iii. p. 261) I do not see how a place can be consistently refused to *P. sylvestris* and *P. Pinaster*, whilst many other plants, even less perfectly naturalized, are admitted without hesitation into our British flora. The plantations are of nearly fifty years standing, so that there has been time enough to test the self-propagating and self-preserving power of both these pines. I am not sure that I am correct in quoting *P. maritima*, D. C., as a synonym of *P. Pinaster*, Ait.; if I am, the latter must doubtless have a prior claim to adoption; neither am I certain that our pinaster and the *P. maritima* so abundant in the Landes, or sandy maritime plains betwixt Bordeaux and Bayonne, are the same species, although they appear to me from

recollection of the latter to be identical, but the different species of *Pinus* are very difficult to recognize apart from each other, and there are several long-leaved pines in Europe and America inhabiting the low grounds closely allied to one another. I have heard or read that the maritime pine of the Landes is not indigenous there, but was planted in the first instance for the purpose of binding the loose sand of that singular region, where the peasantry walk about upon stilts, and has since become naturalized. In this part of the south coast we are on the meridian of the Landes, and assuming our pinaster and the *P. maritima* of Bordeaux to be identical, we may well conceive it possible for the tree to be so far able to accommodate itself to a difference of latitude amounting to about six degrees, as to establish itself spontaneously here as there, when introduced into a soil equally adapted to its nature.

Paris quadrifolia. In shady woods and copses; not found in the Isle of Wight, but apparently of frequent occurrence in mainland Hants, at least on the chalk and in the interior of the county; seemingly rare, if found at all, near the sea, which is perhaps the cause of its absence from the island, the climate of which is too maritime for this rather continental or Germanic plant. Wood at Bordean Hill; the Misses Sibley!!! Langrish; Miss G. E. Kilderbee!!! Parnell or Parnholt Wood, near Farley, a few miles from Winton; Miss A. Yonge and Dr. A. D. White!!! Abundantly in woods on the chalk, as about West Meon, Winchester, &c.; Mr. Wm. Pamplin. Wherwell Wood, near Andover; Mr. Wm. Whale! Wonston; Miss L. Legge! Henwood, W. Meon, and wood near Rotherfield; Miss L. Sibley. In the Church-litten Coppice, Selborne; Rev. G. White. In the sloping wood nearly facing the church, at Appleshaw, in which *Lonicera Caprifolium* grows; W. A. B. Very many more stations doubtless exist for the *Paris* besides these just enumerated. With us this plant rather affects the uplands than the lower flat country, and where it sometimes has the wild Columbine (*Aquilegia vulgaris*) for its associate in the more elevated of its localities.

Tamus communis. In woods, groves, thickets, hedges and borders of fields, extremely common throughout the county. Abundant in the Isle of Wight, and in nearly all parts of mainland Hants, but I think of diminished frequency in the south-western or New-Forest district, as about Lymington, Lyndhurst, Ringwood, Christchurch, &c., owing, perhaps, to the nature of the soil, which is chiefly the diluvial of the Poole basin, on which some other species, as *Acer*

campestre and *Bryonia dioica* become comparatively unfrequent.* Assuredly one of the most beautiful and graceful of British plants, looking like some tender native of a warmer clime that has wandered to our less genial shores courting their colder breezes. Most of the devotees of Flora confess to an exclusive partiality for some one production of her creative hand indigenous to the country of their birth. Linnæus was fascinated with the symmetry (mother of all beauty as he styles it) ever present to his vivid perception of loveliness in form, in the blossoms of the little northern *Trientalis*, that "*flos gratissimus*" whose praises he has celebrated (I had nearly said sung) in his truly poetical work the '*Lapland Flora*.'† Smith describes the Water Avens (*Geum rivale*) in terms of glowing admiration, which lead me to conclude that pretty plant to have been a prime favourite with the amiable editor of '*English Botany*': and if it be allowable in the author of these humble Notes to avow a predilection felt by such master minds for one native plant above the rest, he would point to the *Tamus* as the object of his especial preference. No other indigenous vegetable comes up, I think, in elegance of habit to the Black Bryony, as it displays itself on many a tall hedge-row, or along the margin of some way-side thicket; its twining stems concealed beneath the closely overlapping, prone directed or shelving, brightly varnished leaves of firm texture and translucent green, their long, tapering points, wavy margins and finely rounded bases, seeming to undulate and curl and glide upon each other with simulated motion, as of a swift and eddying stream descending in an easy, graceful curve from

* In this part of England the *Tamus* is commonly called Bryony, sometimes Isle-of-Wight Vine, and confounded with the true and almost equally abundant plant of that name, *Bryonia dioica*, whilst to many it is a nameless, though familiar object. Its pretty designation of Our Lady's Seal, given it in a more poetic age, has become universally obsolete except in books, and was perhaps never a vernacular one in this land, nor can we, in these matter-of-fact, prosaic times, hope to see that name revived, or a bard arise to give it currency in song. Possessing neither fragrance nor the florid charm of colouring, the simplicity of its starry flowers and the grace and elegance of its polished foliage, unrivalled by that of any other native plant, can win the admiration of such alone for whom form has equal or superior attractions over scent or brilliancy of hue. My friend the dowager Lady Erskine tells me that the Black Bryony is called in Wales Afal Adda, that is, serpent's meat, and that it is a prevalent idea in the principality that those reptiles are always lurking near the spot where the plant grows.

† "Nescio, quænam gratia floris (Trient. europ.) adeo percellat oculos, ut fere effascinare videatur visu contemplatorem suum; forte a symmetria, pulchritudinis omnis matre!" Fl. Lappon. p. 104.

its source, and widening by degrees along its downward course. From the great beauty of the broad, rich green foliage, which, being slightly fleshy or succulent, has a peculiarly cool, refreshing effect, few plants are better suited for trellis-work or covering arbours than *Tamus communis*, as it climbs to a considerable length, and affords a good shade. The staminate plant, as being more elegant in flower, should be chosen in preference to the pistillate, or both grown together for variety, and were it not a native, and therefore despised and disregarded, it would probably have been long since as much a favourite in British gardens as its near relative the Hottentot Bread (*Testudinaria elephantipes*, *Tamus elephant*, L'Her. of the Cape), is in our conservatories, since it is quite as handsome as that with the additional advantage of being perfectly hardy. I once recollect to have seen in America, in a part of that continent where the species was not found wild, our common Bittersweet *Solanum Dulcamara* used for covering a dead wall, and very gracefully it fulfilled the commission imposed on it by the planter. Were this species not to be seen in almost every hedge, and had it but come to us like the Box-thorn (*Lycium barbarum*), absurdly called Tea tree, from a foreign land, it would have supplanted that formal shrub, to which it is so closely allied, by the greater freedom of its growth and much handsomer foliage.

The order Tamaceæ is quite superfluous, not admissible even as a sub-order or tribe (Tameæ) of Dioscoreaceæ. *Tamus* is in fact an intermediate genus connecting the latter order with Smilacææ, but more closely allied to the yams than to the Sarsaparillas, differing from *Dioscorea* chiefly in its baccate fruit, and globose, not compressed seeds destitute of a wing or border. But *Testudinaria*, which has the most intimate relation possible to *Tamus*, and was even once referred to that genus, has the fructification of *Dioscorea*; and the pulpy pericarp of *Tamus* covers a thin membranous capsule of three cells with, imperfect dissepiments from the middle of each cell, quite unconnected, or but very slightly attached to the pericarp, from which it may readily be squeezed out entire when ripe, or dissected out when green. Our *Tamus* might indeed be properly called wild or English yam (for to the Bryony it has no botanical relation whatever), so much does it resemble that tropical esculent in its root, leaves, and general structure, and I have every reason to believe in its edible and nutritive qualities were they fairly put to the test of experiment. The root is very large and thick, consisting, like the yam, of irregular fusiform or digitate tubers, beset with wiry fibres; externally

or ash-gray and wrinkled, very white, soft and fleshy within, as easily sliced as a turnip, and abounding with an acrid, clammy juice. Apart from this acrimony, which cannot compare for intensity with that of Cassava and the various esculent Araceæ, the root has neither bitterness nor any other unpleasant taste, nor, though so large and enduring, is it at all tough, woody or stringy in texture, being apparently purely farinaceous, and composed chiefly of starch, with probably a portion of gluten. I have the best reason for believing that were the roots dressed like yams, by roasting them in hot wood-ashes a sufficient time to dissipate their acrimony, as in the latter, they would prove no way inferior to that vegetable.* Had I the facilities for trying the experiment I should certainly do so, but partial failures must be anticipated before the exact degree and duration of heat to be applied could be ascertained, and the experience necessary to ensure uniform success in the operation acquired. That there is reason in roasting a yam as well as an egg there can be no doubt, and we all know how much the simple process of boiling potatoes demands for its successful issue some exercise of man's noblest attribute. The tubers of the *Tamus* dug up from the hedge-rows in autumn, when the berries are ripening, would probably furnish as good yams as if cultivated expressly for use, because in the West Indies the "ruinate yams," or those that have become wild on old forsaken or ruined plantations, are esteemed the best.

The beautiful large scarlet berries, hanging in festoons on the bushes, ripen too late (with the decaying leaves) to add much to the ornamental aspect of the plant in autumn, yet are not without their use. These berries abound with a nearly insipid, watery juice, which

* On turning over several old authors to learn what may have been said by them on the subject, I find by reference to Matthiolus that my idea of converting Black Bryony roots into home-grown yams is not altogether a new one. That learned commentator on Dioscorides tells us, on the authority of one Martin Guidotti, a perfumer (myropola) of Trent, and a most diligent herbalist, that the roots of *Tamus* roasted in hot ashes are no contemptible dish (*haud ingratum sit edulium*), Matth. edit. Valgr. 1565, p. 1287. It is, however, but fair to add that Guidotti attributes medical virtues (probably imaginary) to these yams, which would make them unfit food for some temperaments. It is well known that the young shoots of the Black Bryony when they first appear above ground in the spring are eaten in some countries like asparagus, although by no means devoid of active properties, which it requires long boiling to render inert; why, therefore, should the root be less susceptible of conversion into good and wholesome aliment? Matthiolus's figure of his *Vitis nigra* is one of *Smilax aspera*, but his description applies to *Tamus*, which was the true *Vitis nigra* of ancient authors.

leaves a scarcely perceptible sense of acrimony behind on the tongue and fauces when swallowed ; but on being rubbed in a fresh state upon any sensible part of the surface, as the back of the hand, they raise, in less than a quarter of an hour, a faint cuticular eruption, attended with a slight itching and pricking, that soon subsides, leaving the part as before. Hence an embrocation prepared by steeping "murrain berries," as they are here called, in gin or brandy, is a sovereign remedy with the peasantry of the island for chilblains, and I believe a most efficacious one ; the ripe berries alone, without the spirit, will answer nearly as well, but the latter is employed chiefly to preserve them in for use during the winter. Mr. Borrer lately told me that when a boy he became aware of the rubefacient property of black bryony berries, but had not heard of their application for the infantine complaint above mentioned.

The geographical distribution of *Tamus communis* in this country and on the continent has something worthy of remark. From the contiguous parts of Asia it advances through Europe in a line gradually ascending from south-east to north-west, appearing in the Crimea, and keeping nearly on the parallel of 45° — 46° , through Transylvania and the southernmost provinces of Austria into Switzerland, where it rises northward, following the course of the Rhine into Germany as far as Carlsruhe and Strasburg, thence spreading over the whole of France, it reaches Belgium, where, however, it is rare and local ; then crossing the Channel it disperses itself throughout England nearly to its northernmost extremity, advancing to $55\frac{1}{2}^{\circ}$ of latitude, many degrees beyond its polar limits on the continent, and abounding over all the southern and midland counties in equal proportion on the eastern and western sides of the island. Yet with this marked tendency to a north-west progression, and with as much of the Atlantic as the Germanic distribution, it is not a little singular that the Black Bryony should never have been found passing over into either Scotland or Ireland, although these countries are both within its limitrophe parallels in England. With such strongly-marked western distribution, one might in theory have confidently predicated its occurrence in nearly every part of the sister island, and have reasonably looked for it in the Scottish counties of Dumfries, Kirkcudbright and Wigtown, where it may yet possibly be discovered, since these counties all lie due west of its natural localities in Durham and Northumberland. As *Tamus communis* belongs to a decidedly southern and indeed mostly tropical natural order, we may plausibly ac-

count for the great deflexion of its line of distribution in a south-easterly course, by supposing the root unable to resist the winters of eastern Europe above a certain parallel, whilst its sudden and total suppression westward in Scotland and Ireland may be owing to its not finding there the requisite degree of summer heat for its spontaneous maintenance. The common Butcher's-broom (*Ruscus aculeatus*) has a very similar distribution with *Tamus*, and like it, is not a species of even central Europe, excepting towards the west of our continent, where the winters are not too rigorous for it. Like *Tamus*, it fails totally or is doubtfully wild in Ireland, but advances a little beyond the former towards the north-west, being found in several parts of Scotland.

After all, should not *Tamus communis* have the * or at least the † appended to it? I wonder its claim has never before been called in question! We have just seen that it is quite a southern plant, unknown over the greater part of Europe under British parallels; of eminently exotic aspect and relationship, and has no one well ascertained British or Saxon name, for that of Our Lady's Seal must have been given it in catholic times, and as before remarked, seems never to have been its popular one with us; indeed Parkinson expressly tells it was only called so abroad by the apothecaries of France, Italy and Germany.* As to the name of Bryony, which it shares with the true plant so denominated, that word is altogether Greek, and therefore quite sufficient to implicate both species in the suspicion of foreign descent. Moreover, both *Tamus* and *Bryonia* are known solely as "wild vines" to a great proportion of our rustic population; a phrase very redolent this of the sunny south from whence it *must* have come with the plants themselves; nay, further, the *Tamus* is sometimes called here Black Vine, in contradistinction to the *Bryonia*, which is occasionally termed White Vine, from its paler colour. Here we actually have the genuine classical names of antiquity for the *Tamus*, the *vitis nigra* and *αμπελος μελαινα* of the Greeks and Romans, done into English for the benefit of country bumpkins; what more can be needed to prove both the plants foreigners? No, depend upon it that *Tamus*, like the *Arbutus*, the *Hop*, the *Cherry*, the *Lime* and the *Beech*, is a convicted alien; who knows but it might have been introduced by the *monks* in the train of the pious missionary St. Augustine, to rub their chilblains with, a complaint to which

* *Theatrum Bot.* pp. 180, 181.

those holy fathers were probably martyrs, if to nothing worse, for the first few winters after their arrival on our heathenish shores in the sixth century.*

In the garden at St. John's, Ryde, is a plant of *Smilax aspera*, which was originally found by Mr. John Laurence, the gardener, growing under one of the ruined walls of Quarr Abbey, about a mile from the town. I presume it must have been set there by some one wishing to try whether this native of south and south-eastern Europe could be naturalized in the island, and acquit the good Cistercians in this instance at all events of having had anything to do with its introduction within their ancient precincts.

Hydrocharis Morsus-ranæ. In pools, ditches, drains, and other still water; apparently rare, or at least not common in Hants, although probably much more frequent than I have the means of showing it to be at present. Not indigenous to the Isle of Wight, but abundant in a naturalized state in a small pool at Barretts, about two miles from Ryde, on the Brading road, introduced there a few years since with *Stratiotes aloides* and *Villarsia nymphæoides* by Dr. Salter!!! On the shallow margin of Sowley Pond, at its south-west end, in two places, September 26th, 1849. "Grows, I believe, at Christchurch, in the water bordering the lower road to Ringwood;" Mr. James Hussey in litt.!!! Plentiful at Sopley on the Avon; Pul-

* Under the heads of *Ligustrum* and *Taxus* I should have been tempted, had I known them at the time, to have inserted the two following passages from Pulteney's Catalogue of the rarer Plants of Dorsetshire in his remarks on those species, as further exemplifying the ridiculous tendency to doubt the native origin of almost every tree and shrub of British growth, which it has been my unceasing endeavour in these "Notes" to expose and combat in each instance that has presented itself for discussion. In his remarks on the privet, Pulteney shows that he himself was not uninfected with the gratuitous scepticism so often animadverted on in these contributions, for he observes, "From the oriental (*i. e.* specious or exotic) habit of this shrub, such as indulge in speculations relating to the distinction between the *native* and *naturalized* vegetables of England, might be allowed to suppose that the Privet was introduced into this island during the crusades, or at some remoter period of time." Admirable supposition! and quite on a par with that which would impute to our Holly a Japanese origin (*Phytol.* ii. p. 518, note). But there is no end to such vagaries, venial, perhaps, in Pulteney's time, but inexcusable in botanists of our own day, some of whom, nevertheless, hold opinions quite as absurd and gratuitous on the same subject. When he comes to speak of the Yew, however, Pulteney defends its claim to nativity against his fellow sceptics. "The title of this tree to the appellation of a *native* has been much disputed. Such as have denied it would probably hesitate in their opinion on seeing the scattered and unequivocal manner in which it is seen growing in Dorset, Wilts and Hants."



teney's Cat. of the rarer Plants of Dorset. I found it in October last extremely abundant in ditches and pools on the road out of Christchurch towards Sopley and Ringwood, beginning a short distance from Christchurch, and continuing nearly to Winkton; some of the ditches and drains in that low-lying and swampy district being quite filled with it. I may take this occasion to mention that I found *Stellaria glauca* (a plant I had down on hearsay only in the Hampshire catalogue till then), growing abundantly in marshy ground on the same road, on the left hand going towards Sopley, a short mile out of Christchurch, and still very partially in flower, October 6th, 1849. I have never remarked the Frog-bit in any other quarter of Hants, but can scarcely doubt of its occurrence in various parts of the county, as it is frequent in Sussex in the levels, on low grounds along the coast, as at Eastbourne, Pevensey, Arundel, &c.

The curious Water Aloe or Water Soldier (*Stratiotes aloides*) may be found in Hants, although for the most part restricted in its genuine wild state to the easternmost midland counties of England. It is naturalized in this island, as above mentioned, and it is only a wonder it is not more generally dispersed over the realm, since, when thrown into almost any pond or ditch, it seldom fails to take entire possession, hardly permitting a rival to flourish in peace by its side.

†? *Udora canadensis* (*Anacharis Alsinastrum*, Bab. Man.). In rivers, streams, and stagnant waters; very rare, and possibly not indigenous to the only Hampshire station yet known for this plant. In an artificial piece of water in Leigh Park, near Havant, the seat of Sir George Staunton, Bart.; Mr. Borrer, 1847!! Mr. B. informs me that the species was remarked by the gardener at Leigh Park only within a year or two of the above date, and after the introduction to the pond of some American aquatics, with which it was concluded to have been conveyed thither. The same year, a very similar, if not identical plant, was discovered growing abundantly in the reservoirs at Foxton Locks, near Market Harborough, Leicestershire, by Miss Kirby, and since then it has been detected in a multitude of most unexceptionable localities (rivers and streams) in England and Scotland, placing its indigenous origin beyond all doubt; although as usual its claim to nativity was immediately questioned, it must be allowed with far more reason than is commonly brought forward in excuse for scepticism on like occasions. For being known exclusively till that time as a transatlantic plant (unless the Lithuanian species be the same), there was ground for demurring to its reception amongst our true natives, so long as the stations it was found in partook of an

artificial character ; but now that it is ascertained to inhabit abundantly many of our natural waters, continuance of disbelief in its aboriginality would be ridiculous. Nevertheless, our only known Hampshire station is still open to suspicion in no trifling degree, inasmuch as the circumstances of the plant's appearance at Leigh Park strongly favours the probability of its having been imported with *Nymphæa odorata* direct from America. I say a probability only, because there is no direct proof of its introduction to the pond at Leigh Park beyond its having been unnoticed previous to planting the said aquatics, for I understand the pond in which it grows was an artificial enlargement merely of a natural spring or basin, in which the *Udora* may have pre-existed and have escaped observation, as it must have done in so many of its subsequently detected habitats. I am indebted to my friend Dr. T. Bell Salter for living specimens from Leigh Park, but these have not yet flowered with me, nor have I visited the station, deterred, as I was, from doing so, by the impression that the *Udora* had no real claim to insertion in the Hampshire flora. The subsequent discovery of this plant in so many distant and truly natural localities in England and Scotland has considerably lessened my unwillingness to receive it into the Hampshire Catalogue, and has induced me no longer to withhold from it the benefit of the doubt, which may fairly be raised as well in its favour as against it. But this reluctance to admit its claim to enrolment amongst our county plants, has hitherto prevented me from examining its characters and ascertaining its undoubted identity with the American *Udora canadensis*. Yet feeling pretty well satisfied that this is the case, I here enter it provisionally as such, until future observations on the Leigh Park plant by myself or others shall confirm or disprove the fact. The very highly curious and closely-related *Vallisneria spiralis*, found in similar places with our *Udora* nearly throughout Europe, will one day probably occupy a place in the British Flora, together with *Najas marina* and *Caulinia fragilis*, plants allied to the two former in habit, but belonging to another, though not very widely remote natural order.

Orchis Morio. In dry meadows and short turfy or heathy pastures; very common throughout the county and Isle of Wight, being, in fact, the most abundant of the Orchidaceæ in spring and early summer with us. Fields at Quarr Abbey and elsewhere about Ryde. Abundant about Cowes, Newport, Yarmouth, and most other parts of the island. Occurs here occasionally, though rarely, with pure white flowers ; and in May, 1845, I noticed in a meadow betwixt Pigslegs

and Rosemary Lane Copses, the following varieties : *α*. Flowers delicate pink, verging on flesh red. *β*. Lip white, destitute of spots ; sepals and superior petals violet without, greenish white within. *γ*. Flowers violet ; disk of lip whitish, shading off into violet on the margin, its centre thickly dotted. This is certainly one of the most beautiful of British Orchises, whether we consider the soft lustre of its deep purple blossoms, emulating the richest velvet, or the diversity of shades and variegated colours they assume. The character of having single nerved bracts, which is made the foundation for a sectional division in the Manual, applies only to the highest in the spike, if even always to them, for the lower and middle bracts in all the specimens of *O. Morio* I have examined, are from 3 to 5 or even 7-nerved, but the lateral nerves are often obscure, at least in the living plant, for in the dried state they are extremely conspicuous.

Orchis mascula. Very common in most parts of the county and Isle of Wight in moist woods, meadows, pastures, and other damp and shaded situations. Var. *β*. Flowers pure white. I have gathered it at St. John's and near Appuldurcombe. Near Ryde; Miss Lucas!!! Near Westridge; Mr. Robert Hudson! The long spikes of bright purple flowers and finely spotted leaves of the "Kettlecases," by which unintelligible name they are called in this island, are hailed with delight by young and old in April's fickle prime,

"When wheat is green and hawthorn buds appear."

This species begins to flower a little in advance of the last, which is always in blossom with us in the earlier half of May, and usually partially so at the close of April. *O. fusca*, *militaris* and *macra* are all or severally not unlikely to enrich the Hampshire Flora. The first has, according to Mr. Watson, been found by the Rev. G. E. Smith in west Sussex, the two last occur in the conterminous county of Berks and the not much more distant ones of Oxon and Bucks; hence these species may be expected along our northern and eastern boundary.

—— *ustulata*. On dry chalky hills, downs, banks and pastures; mostly in elevated situations, not very frequent, though I believe widely diffused over the county. Tolerably abundant on St. Boniface Down, between Ventnor and the Pulpit Rock, and in chalky meadows at Bonchurch occasionally. Steephill; Mr. Albert Hamborough! Freshwater, near the cliff (on High Down, &c.); Mr.

Dawson Turner in Snooke's Fl. Vect. !!!* Plentiful on the sloping sides of the valley by Calbourne New Barn; the late Lady Simeon!!! Sloping pasture at Apes Down; Mr. Charles D. Snooke. Littleton or Flower Down, near Winton; Rev. Messrs. Garnier and Poulter in Hamp. Repos. and Dr. A. D. White!!! Pinks Hill (near Warnford); Rev. E. M. Sladen. Bordean; Miss L. Sibley. Hardly to be met with in the lower and level country. The name of *ustulata* is very appropriate to the burned or singed aspect given to the summit of the spike by the purple brown colour of the flower-buds.

OBS. *Orchis laxiflora*, a species common in the Channel Islands and on the continent of Europe, will probably ere long be discovered in Britain.† Dr. Salter found June 5th, 1845, at Spring Vale, near Ryde, a variety of *O. Morio* "with the upper (lateral) sepals reflexed in the advanced flowers." The specimens he kindly gave me are taller than is usual in this species, and have many (3—5) nerved bracts, but so, we have seen, has *O. Morio*, from which they differ in no other particular than that above stated. I should guess the figure of *O. laxiflora* in E. B. to be an indifferent one, and it looks much as if drawn and coloured from a dried specimen.

—— *maculata*. In dry or damp, and even wet meadows, woods, thickets, pastures, and on heaths; abundantly throughout Hants. Assuredly very closely allied to *O. latifolia*, but distinguished by its (always?) solid, not hollow stem,‡ pyramidal, somewhat acute spike, by the much smaller and shorter bracts, more slender and pointed spur, and by the broader and shorter lip, the central lobe of which is about equal to the two lateral lobes, that are notched on their margins, and usually, but not invariably, flat or spreading, sometimes deflexed. The plant is commonly shorter and far less robust than *O. latifolia*, but is extremely variable in the colour and markings of the flowers and in the form and proportions of the lip. "A variety with blood-red flowers was found in this island by the Rev. R. Price, of Lyminge, Kent, and is now growing in his garden." Rev. G. E. Smith (in litt.).

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Orchis latifolia. In low, damp pastures, wet or boggy meadows and thickets, rarely in dry and elevated situations; pretty frequent, though much less common than the last. In Sandown marshes, near Shanklin and Appuldurcombe. Very fine at Colwell Bay; common in meadows at Thorley and in boggy ground below Calbourne Mill. Abundant in boggy meadows at Easton, Freshwater Gate. Common in the great fir and beech plantation on the down above Westover. Wet meadows about Newchurch, &c. Wet meadow betwixt West Mill and Carisbrook; Mr. Charles D. Snooke. Var. *β. incarnata*, Bab. Man. p. 310. Boggy ground by the Wilderness, June, 1844. I happen not to have made any notes of the occurrence of this species in mainland Hants, but feel convinced of having seen it there, and cannot suppose it to be less common in that part of the county than in this or in other parts of England. Distinguished from *O. maculata* by its much stouter habit, hollow stem, cylindrical and rather obtuse than acute spike of flowers, by the much smaller middle segment of the 3-lobed lip, which is distinctly produced beyond the two lateral, rounded, nearly entire or slightly crenate lobes, that are deflexed, not plane or spreading, as in the other; by the less attenuated, subcylindrical or conical, bluntish spur, always much shorter than the germen, and lastly, by the much larger, longer, more conspicuous bracts. Leaves not usually spotted; flowers here sometimes white.

——— *pyramidalis.* In dry, and particularly hilly meadows, pastures, and in grassy woods on the chalk, as also on argillaceous soils containing any notable proportion of calcareous earth; growing at a lower elevation than *O. ustulata*, even at the sea-level, but more commonly in the higher grounds. In many parts of the Isle of Wight abundantly. Not common about Ryde. Plentiful in Binstead stone-pits; and in the fields by the road from that village to Ryde, sparingly. Plentiful in grass fields at Egypt, by West Cowes (the extremest north point of the island), and on the slipped land along the shore to the westward of Cowes. More common on the chalk downs than elsewhere. Abundant on the down (High Down) W. of Freshwater Gate; near Compton farm and near Yarmouth. Down above the Culver Cliff. Abundant on Carisbrooke Castle Hill, but of small size. Common on grassy slopes at Ventnor. In Calbourne New Barn Hummet, and in the great fir and beech wood along the flank of the down above Westover. On Bembridge Down and in various other places. Some plants gathered in the chalk-pit opposite

the Mountjoy bastion (Carisbrook Castle) had the protuberances of the lip much elongated and leaf-like, July 18th, 1849; Mr. Charles D. Snooke (in litt.). I presume this species to be frequent over the county, but I have few data for showing its distribution on the main land, not happening to have noticed it there myself, excepting, if I remember right, about Bordean Hill. Otterbourne; Miss A. M. Yonge. Bordean; Miss L. Sibley, and (with white flowers) Rev. Messrs. Garnier and Poulter in Hamp. Repos. Maindell chalk-pit (Fareham); Mr. W. L. Notcutt. The flowers of this beautiful species vary with us from the deepest rose red to white.

The Lizard Orchis (*Satyrium hircinum*), it is far from improbable may eventually be found in Hants, since it grows in the adjoining county of Surrey, if not now extirpated by the rapacity of botanical collectors and the cupidity of orchis-rearing nursery-men. In our more retired and less explored county it might long vegetate unnoticed and undisturbed, and should be looked for on dry, bushy, chalky banks and hills. It has lately been found (a single specimen I believe only) at Great Glenham, in Suffolk, and although not indicated as a native of Ireland in the Manual, is mentioned as such in the 'Plantæ Rariores Hiberniæ' of Dr. Wade; and when last in Dublin Mr. D. Moore, of the Glasnevin Botanic Garden, told me he had himself met with it in that country, and communicated the rediscovery of this rare species to Dr. J. T. Mackay, in whose 'Flora Hibernica,' however, it does not appear. It is clear, therefore, that *O. hircina* has a very wide distribution in Britain, but is extremely local, and usually very sporadic; and since we are here but little removed from the part of England where it occurs with greatest frequency, the prospect is the fairer of ultimately detecting it within the limits of this county.

Gymnadenia conopsea. In dry heathy or chalky pastures, or in wet, peaty, boggy or clayey ground, not common, though found in several parts of the county and Isle of Wight. Extremely fine and plentiful on very wet banks of slipped clay in Colwell Bay, Freshwater, and in boggy ground at the upper end of Colwell Heath; first remarked there by the Rev. G. E. Smith, who justly observes that the plant has a mixed odour of the hyacinth with that more proper to the species, which much resembles the fragrance of the clove pink. On Freshwater Down; common, 1841. On chalky hills, 1845. On Freshwater Down, June, 1846. Bank opposite Madeira 't' Hadfield!! (it grows also in the Chicken pits place). Carisbrook Castle, S. and E. moats and

between Staplers and Briddlesford; Mr. Charles D. Snooke. It seems not less frequent on mainland Hants. About Petersfield, West Meon, &c., not rare; Miss L. Sibley!!! Otterbourne; Miss A. M. Yonge (in litt.). Plantation behind Wheely Cottage (near Warnford); Oliver's Battery, near Winton; Rev. E. M. Sladen. Abundant on Littleton or Flower Down, near Winton; Dr. A. D. White. Probably in very many other parts of the county; most likely frequent in the forest tracts, as I think it is in Sussex. The plant as it grows on bog at Colwell is often very large, eighteen to twenty inches high or upwards, with very densely-flowered spikes, and leaves an inch or nearly so in width, but sometimes in equally wet soil extremely narrow and erect. This form may possibly be the *G. densiflora* of Dietrich's 'Flora Marchica,' p. 164, whilst another variety with excessively narrow leaves, and a somewhat lax or open spike, and of humbler stature, growing on dry chalk soil at Ventnor, may be what he intends by the true *G. conopsea* of that work, and which I supposed might prove identical with the true *G. odoratissima*, *Rich.* (*Orchis odoratissima*, *Linn.*), but that species, if it be not a mere variety of *G. conopsea*, is distinguished by its much shorter spur, and narrower, cylindrical, not conical spikes of very minute flowers. The delightful fragrance of this plant is most powerful towards evening, and in those plants that grow in damp situations, for on dry soils it is nearly inodorous. *G. albida* (*Habenaria albida*, *R. Br.*) is reported in 'Cybele Britannica' as found in Hants on the authority of the Rev. S. Palmer, and has indubitably occurred in one locality in Sussex.* I have never seen Hampshire specimens of this rather northern than southern and mountain-loving species, but there is good ground for hoping it will some day reward the investigator of our county flora on hilly heaths. The curious Green Man Orchis (*Aceras anthropophora*) is a still more likely plant to occur, and I have indeed heard from Miss E. Sibley that it has been found at East Woodhay, in the north of the county, which, although on unconfirmed and anonymous authority, is very probably correct, seeing that it grows abundantly in certain parts of Surrey and in Berks, and may therefore be expected with the greatest reason in such districts of Hants at least as adjoin on those two counties.

Habenaria viridis. In hilly, heathy and grassy pastures, or in low meadows; very rare in the Isle of Wight, and not at all common in the rest of the county. A single specimen picked in a rough pasture

* Jenner's Fl. of Tunbridge Wells, p. 45.

field at the end of the fir plantation by Long Lane, near Newport, 1841; Mr. R. G. Kirkpatrick! A second specimen gathered in June of the same year by Miss Woodroffe, of Calbourne, near the "high summer-house" at Swainston! both which examples I possess through the kindness of the finders, and are the only ones I have seen from this island, where it has not once occurred to myself in more than twelve years' investigation of its floral productions. On Beacon Hill, near Highclere, in tolerable plenty, and still in flower, August 9th, 1849. I have received it from Miss Lovell, 1848, gathered, I believe, at Catherington, near Clanfield! Searjeant's Meadow, Warnford; Mr. Vickery. Field by the Winchester road, near Cheriton; Miss L. Sibley. Flower Down, near Winton; Miss L. Legge! Near Lodge Bere Forest; Messrs. Garnier and Poulter in Hamp. Repos. A more frequent species in the north than in the south of England, but Mr. G. E. Smith tells me it is not uncommon in Sussex in damp meadows at the foot of the downs.

Habenaria bifolia. In woods, copses, and in open, heathy places; rare in the Isle of Wight, and not yet seen or received by me from mainland Hants, where it must doubtless grow in many of the forest districts, &c.* In Stroud Wood, near Aldermoor, by Ryde, not sparingly, June 11th, 1838. Two specimens picked on Colwell Heath, June, 1841. In the former station it may, I believe, be found yearly in considerable plenty. Heath between Staplers and Briddlesford, near Newport; Mr. C. D. Snooke. This is rather a puzzling plant, about the value of which as a species apart from *H. chlorantha* I have ever entertained considerable doubt. It unquestionably presents some good and apparently permanent characters, and has long been distinguished by Ray and other of the earlier botanists at home and abroad from the larger and commoner *H. chlorantha*, yet I think the differences betwixt them are such as might be inferred to result from soil and situation. It must be allowed, however, that their distribution is different, *H. bifolia* being the plant of Sweden, Denmark, and other boreal countries of Europe, as is evident from the figures and descriptions of the northern botanists, whilst *H. chlorantha* inhabits central and southern Europe, and is infinitely more abundant in this part of England than the smaller species. The differences between them have been ably illustrated by Mr. Babington, in the 17th volume of

* Whether the *H. bifolia* of Mr. W. L. Notcutt's 'List of Fareham Plants' (Phytol. ii. p. 213) be this species or not, I am uncertain; if it be the true plant, then is Titchfield Common a mainland station, and a very likely one for the lesser Butterfly Orchis.

the 'Linnean Transactions,' and in the Supplement to E. B., and who was the first to disentangle them from the neglect and confusion into which they had fallen in Britain, although sufficiently recognized on the continent. Besides the figure in E. B. Supplement, t. 2806, I may cite for *H. bifolia* that of Fl. Danica, ii. t. 235, as good, and the beautiful one of Mr. Curtis in 'British Entomology,' v. t. 233, as still better. The figures of *H. (Platanthera) solstitialis*, *Drejer*, Fl. Dan. fasc. xl. t. 20360, and t. 20361, are excellent representations of our *H. bifolia*.

The great characteristic of the plant before us is the parallelism of the anther-cells, more closely approximated at their base, than those of *H. chlorantha* at the summit of theirs; hence the flowers of *H. bifolia* are much narrower than in *H. chlorantha*, and far less handsome and conspicuous. The anther is shorter, the petals narrower, the two lateral connivent petals, with the lip, spur and summit of the anthers, are of a greenish or herbaceous colour, scarcely observable in the almost pure white flowers of *H. chlorantha*; the spur is more slender, filiform and cylindrical, being scarcely at all compressed as in *H. chlorantha*, neither is it sensibly enlarged or clavate at the extremity as is so remarkably the case in the latter, and is hardly thicker than a packthread throughout, besides which it is usually straighter, and often horizontally porrected as well as prone or deflexed. I observed in all my specimens of *H. bifolia* from Stroud Wood that the lateral sepals are simply spreading, and rather curved forwards or slightly connivent than reflexed, which is their general tendency in *H. chlorantha* when fully expanded. The scent of the lesser and greater Butterfly Orchis is highly and delicately fragrant, particularly towards evening and at night. To myself the odour is like that of the Tuberose (*Polianthes tuberosa*), to others like that of orange flowers or scented soap. It is to be regretted that the confusion in which the synonyms of these two presumed species were so long involved should have settled the name *chlorantha* (greenish yellow flower) upon the species the least meriting the appellation. The concluding remarks of Sir James Smith on *Orchis bifolia* in his 'English Flora' evince the very little attention he paid to our present plant even as a variety, distinctly noticed by so many of the older botanists.

Habenaria chlorantha. In moist open places in woods, thickets, groves, and on grassy slopes; very frequent in the Isle of Wight, particularly on stiff clay soils. Very common about Ryde, at St. John's, in Quarr Copse, woods at Sea Grove, the Priory, Westridge, &c. Abundant in the grounds at Norris Castle, and in Mrs. Good-

win's grounds at West Cōwes. Woods and pastures about Combley, Duxmore, and all that vicinity, frequent. Woods on the west side of the Wootton River, at its mouth, plentifully. Common in woods about Swainston, Calbourne, Thorley and various other places. Having accidentally omitted to observe and record the stations for this species in mainland Hants, I can only state my belief that it is in all probability equally frequent there as in the island. Var. β . Flowers regular, without a spur. Grounds at Norris Castle, very rare. This beautiful and fragrant species is well distinguished from the last, by its generally greater height (often eighteen to twenty inches) and robustness; much larger and broader leaves, of a purer white; thicker, more compressed and somewhat club-shaped spur; and especially by the great divergence of the anther-cells, whose bases are so far apart, that were the apex of each cell produced till they met, a nearly equilateral triangle would be described by their union. The variety, or rather monstrosity, β . is very remarkable, as having flowers in five nearly equal divisions, quite scentless and tinged with green, the lateral petals not connivent but spreading, lower one or lip, broad, plane, and the spur entirely wanting. Of this monstrosity I had previously seen a dried specimen from the same station, in the possession of Miss E. Kilderbee, and was at a loss what to consider it. Mr. D. Stock, of Bungay, has remarked a similar alteration of structure in the flowers of *Orchis pyramidalis*.

Besides the figure of *H. chlorantha* in E. B. i. t. 22 (*Orchis bifolia*), and the elegant full length one of Curtis, Fl. Londin., ii. fasc. 6, t. 65, that in 'Flora Danica,' fasc. 40, t. 20362, is hardly inferior to the others as a representation of our common greater Butterfly Orchis. Reichenbach's three figures, Iconogr. Bot. ix. Nos. 1143, 1144 and 1145, are, like too many more of that hair-splitting author's, exaggerated portraits in form and colouring of *H. bifolia* and its varieties, *H. brachyglossa* and *chlorantha*. I have never found *H. bifolia* with such ell-long spurs, nor *H. chlorantha* so outrageously green, and cannot but suspect the figures of each were made from dried specimens, and coloured from the ideal examples of a vivid imagination or perhaps a treacherous memory. However that may be, they are not, I am convinced, normal states of the species they profess to represent, and unworthy of citation in the room of the elegant and faithful delineations in the 'Flora Londinensis' and 'Flora Danica' lately adverted to. Justice, nevertheless, requires that due praise be given to the many correct and sometimes admirable figures in the Iconographia of Reichenbach; a work which, with all its faults of per-

arrangement and minute specific divisions, is still a most valuable and sumptuous repertory of botanical illustrations.

Ophrys apifera. In dry meadows, pastures, woods and thickets, on chalky banks, downs, and on wet slipped land, mostly on loamy or limestone soils, or where calcareous earth is a principal constituent; by no means uncommon, and in particular years even abundant, over a great part of the Isle of Wight and mainland Hants. Being extremely uncertain and capricious in its habitats, often appearing abundantly one season where it was scarce or failed altogether to show itself the year before, it is unnecessary to give more than a general view of its distribution, without recording its almost numberless special localities. Sometimes quite common about Ryde, at Quarr, Binstead, in Pelham fields, &c. About Cowes, at Egypt, Norris Castle, &c., and about Yarmouth. About Newport, at Carisbrooke (on the castle hill, &c.), Calbourne and elsewhere. Frequent on most of the downs about Freshwater, often in great abundance, as it was last year (1849). At Bonchurch, Ventnor, Steephill, Blackgang and most other parts of the Undercliff, on the chalky banks and pastures, often plentifully. In Bembridge Island, about the Culver Cliff, Whitecliff Bay, &c. On the banks of slipped land (green sand and clay) under the cliffs at Shankin. Abundantly on Kennerley Heath, near Godshill, in sandy loam amongst the furze, and very fine; June, 1843, in which year it was very universal in the island: but it is needless multiplying stations for this ubiquitous but not always plentiful species, as it may be found in most parts of the island and in most years by a little seeking, especially on the chalk and slopes of the downs. A specimen with the flowers nearly white, the lip only being greenish, was found by Mrs. Martin at Ventnor some years ago. On the mainland of the county O. apifera is about equally frequent. At West Meon in various places; the Miss Sibleys: and where a variety with white flowers has occurred, and a similar one is recorded by the authors of the catalogue in the 'Hampshire Repository' as having been found at Bordean. Warnford; Mr. Vickery. Bullington; Rev. D. Cockerton. Beacon Hill, Highclere Park; Cat. of Plants of Newbury!!! Nore Hill and Selbourne Park; Professor Bell. This beautiful and singular plant is well known here as the Bee-flower, and although no uncommon species over a great part of England, is made as much account of as though it were a great rarity, and the Isle of Wight had the exclusive happiness of producing it. The Bee-flower figures in all the guide-books, flourishes on the vegetation of the island, and is a staple article in every enumeration of Vectic memorabilia

and amenities. In certain but indeterminate seasons it may be gathered in quantities, and sometimes attains here a height of two feet. Reichenbach's figure (Iconogr. ix. no. 1159) is very indifferent, and if representing this species at all, depicts a variety such as I have never met with. The exquisite one of Curtis in the 'Flora Londinensis' perfectly exhibits the species in its normal condition with us.

Ophrys aranifera. In chalky, clayey or limestone pastures; very rare? The var. *β. fucifera* (*O. fucifera*, *Sm.*) is the only form yet collected in Hants, and the Isle of Wight the only part of the county where it is certainly known to grow. First found May 10, 1841, by Albert Hambrough, Esq., on St. Boniface Down, above St. Boniface Cottage (several specimens). Behind Upper Mount, Bonchurch; Miss Dick and J. Saxby, Esq. !!! Several specimens gathered in Luccombe Landslip, by the side of the main path, May, 1843, by a servant of Miss Roper, of Ventnor !! On a sloping bank on the left hand side of the Cowleaze going from Ventnor to Bonchurch, just below the Madeira Vale Villas, May, 1843; Mrs. Clarkson !!! Gathered in this last station by Miss Thompson in 1846, and since by Mr. A. Hambrough and myself in 1848-49, at the end of April and beginning of May, in tolerable plenty. It has not been discovered elsewhere in the island, but will probably be found on the chalk in other parts of it if carefully sought for at the proper season; but being a smaller, and from its colour less conspicuous and attractive plant than *O. apifera*, and flowering many weeks sooner than that species, it may elude observation at any time. Bullington, abundantly; Rev. D. Cockerton: is this correct, and, if so, what form does the species put on? Our Hants stations are interesting, as being the most westerly ones known for this eminently eastern *Ophrys*, and furnish another proof of the assertion before made, that the floras of the east and west of England become fused into each other in this county. Smith quotes the beautiful figure of Curtis, Fl. Lond. ii. fasc. 6, t. 67, for his *O. aranifera*; to me that plate decidedly represents our variety, the *O. fucifera* of the 'English Flora,' and very admirably too. It is possible that *O. arachnites*, the only British species of the genus wanting to our county, may hereafter be detected in Hants.

—— *muscifera*. In chalky or clayey, usually hilly pastures, woods and thickets; less frequent than *O. apifera*, but far from uncommon in the Isle of Wight and county generally, although, like the Bee-flower, uncertain in its stations and variable in quantity in different years; flowering with us from the commencement of May to the beginning or even the middle of July. At the farther part of Cal-



teney's Cat. of the rarer Plants of Dorset. I found it in October last extremely abundant in ditches and pools on the road out of Christchurch towards Sopley and Ringwood, beginning a short distance from Christchurch, and continuing nearly to Winkton; some of the ditches and drains in that low-lying and swampy district being quite filled with it. I may take this occasion to mention that I found *Stellaria glauca* (a plant I had down on hearsay only in the Hampshire catalogue till then), growing abundantly in marshy ground on the same road, on the left hand going towards Sopley, a short mile out of Christchurch, and still very partially in flower, October 6th, 1849. I have never remarked the Frog-bit in any other quarter of Hants, but can scarcely doubt of its occurrence in various parts of the county, as it is frequent in Sussex in the levels, on low grounds along the coast, as at Eastbourne, Pevensey, Arundel, &c.

The curious Water Aloe or Water Soldier (*Stratiotes aloides*) may be found in Hants, although for the most part restricted in its genuine wild state to the easternmost midland counties of England. It is naturalized in this island, as above mentioned, and it is only a wonder it is not more generally dispersed over the realm, since, when thrown into almost any pond or ditch, it seldom fails to take entire possession, hardly permitting a rival to flourish in peace by its side.

†? *Udora canadensis* (*Anacharis Alsinastrum*, Bab. Man.). In rivers, streams, and stagnant waters; very rare, and possibly not indigenous to the only Hampshire station yet known for this plant. In an artificial piece of water in Leigh Park, near Havant, the seat of Sir George Staunton, Bart.; Mr. Borrer, 1847!! Mr. B. informs me that the species was remarked by the gardener at Leigh Park only within a year or two of the above date, and after the introduction to the pond of some American aquatics, with which it was concluded to have been conveyed thither. The same year, a very similar, if not identical plant, was discovered growing abundantly in the reservoirs at Foxton Locks, near Market Harborough, Leicestershire, by Miss Kirby, and since then it has been detected in a multitude of most unexceptionable localities (rivers and streams) in England and Scotland, placing its indigenous origin beyond all doubt; although as usual its claim to nativity was immediately questioned, it must be allowed with far more reason than is commonly brought forward in excuse for scepticism on like occasions. For being known exclusively till that time as a transatlantic plant (unless the Lithuanian species be the same), there was ground for demurring to its reception amongst our true natives, so long as the stations it was found in partook of an

artificial character ; but now that it is ascertained to inhabit abundantly many of our natural waters, continuance of disbelief in its aboriginality would be ridiculous. Nevertheless, our only known Hampshire station is still open to suspicion in no trifling degree, inasmuch as the circumstances of the plant's appearance at Leigh Park strongly favours the probability of its having been imported with *Nymphæa odorata* direct from America. I say a probability only, because there is no direct proof of its introduction to the pond at Leigh Park beyond its having been unnoticed previous to planting the said aquatics, for I understand the pond in which it grows was an artificial enlargement merely of a natural spring or basin, in which the *Udora* may have pre-existed and have escaped observation, as it must have done in so many of its subsequently detected habitats. I am indebted to my friend Dr. T. Bell Salter for living specimens from Leigh Park, but these have not yet flowered with me, nor have I visited the station, deterred, as I was, from doing so, by the impression that the *Udora* had no real claim to insertion in the Hampshire flora. The subsequent discovery of this plant in so many distant and truly natural localities in England and Scotland has considerably lessened my unwillingness to receive it into the Hampshire Catalogue, and has induced me no longer to withhold from it the benefit of the doubt, which may fairly be raised as well in its favour as against it. But this reluctance to admit its claim to enrolment amongst our county plants, has hitherto prevented me from examining its characters and ascertaining its undoubted identity with the American *Udora canadensis*. Yet feeling pretty well satisfied that this is the case, I here enter it provisionally as such, until future observations on the Leigh Park plant by myself or others shall confirm or disprove the fact. The very highly curious and closely-related *Vallisneria spiralis*, found in similar places with our *Udora* nearly throughout Europe, will one day probably occupy a place in the British Flora, together with *Najas marina* and *Caulinia fragilis*, plants allied to the two former in habit, but belonging to another, though not very widely remote natural order.

Orchis Morio. In dry meadows and short turfy or heathy pastures; very common throughout the county and Isle of Wight, being, in fact, the most abundant of the Orchidaceæ in spring and early summer with us. Fields at Quarr Abbey and elsewhere about Ryde. Abundant about Cowes, Newport, Yarmouth, and most other parts of the island. Occurs here occasionally, though rarely, with pure white flowers ; and in May, 1845, I noticed in a meadow betwixt Pigslegs

and Rosemary Lane Copses, the following varieties : *α*. Flowers delicate pink, verging on flesh red. *β*. Lip white, destitute of spots ; sepals and superior petals violet without, greenish white within. *γ*. Flowers violet ; disk of lip whitish, shading off into violet on the margin, its centre thickly dotted. This is certainly one of the most beautiful of British Orchises, whether we consider the soft lustre of its deep purple blossoms, emulating the richest velvet, or the diversity of shades and variegated colours they assume. The character of having single nerved bracts, which is made the foundation for a sectional division in the Manual, applies only to the highest in the spike, if even always to them, for the lower and middle bracts in all the specimens of *O. Morio* I have examined, are from 3 to 5 or even 7-nerved, but the lateral nerves are often obscure, at least in the living plant, for in the dried state they are extremely conspicuous.

Orchis mascula. Very common in most parts of the county and Isle of Wight in moist woods, meadows, pastures, and other damp and shaded situations. Var. *β*. Flowers pure white. I have gathered it at St. John's and near Appuldurcombe. Near Ryde ; Miss Lucas!!! Near Westridge ; Mr. Robert Hudson ! The long spikes of bright purple flowers and finely spotted leaves of the "Kettlecases," by which unintelligible name they are called in this island, are hailed with delight by young and old in April's fickle prime,

" When wheat is green and hawthorn buds appear."

This species begins to flower a little in advance of the last, which is always in blossom with us in the earlier half of May, and usually partially so at the close of April. *O. fusca*, *militaris* and *macra* are all or severally not unlikely to enrich the Hampshire Flora. The first has, according to Mr. Watson, been found by the Rev. G. E. Smith in west Sussex, the two last occur in the conterminous county of Berks and the not much more distant ones of Oxon and Bucks ; hence these species may be expected along our northern and eastern boundary.

—— *ustulata*. On dry chalky hills, downs, banks and pastures ; mostly in elevated situations, not very frequent, though I believe widely diffused over the county. Tolerably abundant on St. Boniface Down, between Ventnor and the Pulpit Rock, and in chalky meadows at Bonchurch occasionally. Steeple ; Mr. Albert Ham-borough ! Freshwater, near the cliff (on High Down, &c.) ; Mr.

Dawson Turner in Snooke's Fl. Vect. !!!* Plentiful on the sloping sides of the valley by Calbourne New Barn; the late Lady Simeon!!! Sloping pasture at Apes Down; Mr. Charles D. Snooke. Littleton or Flower Down, near Winton; Rev. Messrs. Garnier and Poulter in Hamp. Repos. and Dr. A. D. White!!! Pinks Hill (near Warnford); Rev. E. M. Sladen. Bordean; Miss L. Sibley. Hardly to be met with in the lower and level country. The name of *ustulata* is very appropriate to the burned or singed aspect given to the summit of the spike by the purple brown colour of the flower-buds.

OBS. *Orchislaxiflora*, a species common in the Channel Islands and on the continent of Europe, will probably ere long be discovered in Britain.† Dr. Salter found June 5th, 1845, at Spring Vale, near Ryde, a variety of *O. Morio* "with the upper (lateral) sepals reflexed in the advanced flowers." The specimens he kindly gave me are taller than is usual in this species, and have many (3—5) nerved bracts, but so, we have seen, has *O. Morio*, from which they differ in no other particular than that above stated. I should guess the figure of *O. laxiflora* in E. B. to be an indifferent one, and it looks much as if drawn and coloured from a dried specimen.

——— *maculata*. In dry or damp, and even wet meadows, woods, thickets, pastures, and on heaths; abundantly throughout Hants. Assuredly very closely allied to *O. latifolia*, but distinguished by its (always?) solid, not hollow stem,‡ pyramidal, somewhat acute spike, by the much smaller and shorter bracts, more slender and pointed spur, and by the broader and shorter lip, the central lobe of which is about equal to the two lateral lobes, that are notched on their margins, and usually, but not invariably, flat or spreading, sometimes deflexed. The plant is commonly shorter and far less robust than *O. latifolia*, but is extremely variable in the colour and markings of the flowers and in the form and proportions of the lip. "A variety with blood-red flowers was found in this island by the Rev. R. Price, of Lyminge, Kent, and is now growing in his garden." Rev. G. E. Smith (in litt.).

* Several stations for plants were communicated to Mr. S. by that accomplished botanist and antiquary.

† Mr. Borrer informs me that *O. palustris* is reported to have occurred in the Isle of Wight; what this may be I do not know, since I am told it is not the same thing as *O. laxiflora*, to which the *O. palustris* of Jacquin is referred as a synonym in Steudel's Nomenclator, in which work no other species is mentioned bearing the latter name.

‡ The cavity in the stem is filled up with loose cellular tissue, but is not truly solid.

campestre and *Bryonia dioica* become comparatively unfrequent.* Assuredly one of the most beautiful and graceful of British plants, looking like some tender native of a warmer clime that has wandered to our less genial shores courting their colder breezes. Most of the devotees of Flora confess to an exclusive partiality for some one production of her creative hand indigenous to the country of their birth. Linnæus was fascinated with the symmetry (mother of all beauty as he styles it) ever present to his vivid perception of loveliness in form, in the blossoms of the little northern *Trientalis*, that "*flos gratissimus*" whose praises he has celebrated (I had nearly said sung) in his truly poetical work the '*Lapland Flora*.'† Smith describes the Water Avens (*Geum rivale*) in terms of glowing admiration, which lead me to conclude that pretty plant to have been a prime favourite with the amiable editor of '*English Botany*': and if it be allowable in the author of these humble Notes to avow a predilection felt by such master minds for one native plant above the rest, he would point to the *Tamus* as the object of his especial preference. No other indigenous vegetable comes up, I think, in elegance of habit to the Black Bryony, as it displays itself on many a tall hedge-row, or along the margin of some way-side thicket; its twining stems concealed beneath the closely overlapping, prone directed or shelving, brightly varnished leaves of firm texture and translucent green, their long, tapering points, wavy margins and finely rounded bases, seeming to undulate and curl and glide upon each other with simulated motion, as of a swift and eddying stream descending in an easy, graceful curve from

* In this part of England the *Tamus* is commonly called Bryony, sometimes Isle-of-Wight Vine, and confounded with the true and almost equally abundant plant of that name, *Bryonia dioica*, whilst to many it is a nameless, though familiar object. Its pretty designation of Our Lady's Seal, given it in a more poetic age, has become universally obsolete except in books, and was perhaps never a vernacular one in this land, nor can we, in these matter-of-fact, prosaic times, hope to see that name revived, or a bard arise to give it currency in song. Possessing neither fragrance nor the florid charm of colouring, the simplicity of its starry flowers and the grace and elegance of its polished foliage, unrivalled by that of any other native plant, can win the admiration of such alone for whom form has equal or superior attractions over scent or brilliancy of hue. My friend the dowager Lady Erskine tells me that the Black Bryony is called in Wales *Afal Adda*, that is, serpent's meat, and that it is a prevalent idea in the principality that those reptiles are always lurking near the spot where the plant grows.

† "*Nescio, quænam gratia floris (Trient. europ.) adeo percellat oculos, ut fere effascinare videatur visu contemplatorem suum; forte a symmetria, pulchritudinis omnis matre!*" Fl. Lappon. p. 104.

its source, and widening by degrees along its downward course. From the great beauty of the broad, rich green foliage, which, being slightly fleshy or succulent, has a peculiarly cool, refreshing effect, few plants are better suited for trellis-work or covering arbours than *Tamus communis*, as it climbs to a considerable length, and affords a good shade. The staminate plant, as being more elegant in flower, should be chosen in preference to the pistillate, or both grown together for variety, and were it not a native, and therefore despised and disregarded, it would probably have been long since as much a favourite in British gardens as its near relative the Hottentot Bread (*Testudinaria elephantipes*, *Tamus elephant*. L'Her.) of the Cape, is in our conservatories, since it is quite as handsome as that, with the additional advantage of being perfectly hardy. I once recollect to have seen in America, in a part of that continent where the species was *not* found wild, our common Bittersweet (*Solanum Dulcamara*) used for covering a dead wall, and very gracefully it fulfilled the commission imposed on it by the planter. Were this species not to be seen in almost every hedge, and had it but come to us like the Box-thorn (*Lycium barbarum*), absurdly called Tea tree, from a foreign land, it would have supplanted that formal shrub, to which it is so closely allied, by the greater freedom of its growth and much handsomer foliage.

The order Tamaceæ is quite superfluous, not admissible even as a sub-order or tribe (Tameæ) of Dioscoreaceæ. *Tamus* is in fact an intermediate genus connecting the latter order with Smilaceæ, but more closely allied to the yams than to the Sarsaparillas, differing from Dioscorea chiefly in its baccate fruit, and globose, not compressed seeds destitute of a wing or border. But *Testudinaria*, which has the most intimate relation possible to *Tamus*, and was even once referred to that genus, has the fructification of Dioscorea; and the pulpy pericarp of *Tamus* covers a thin membranous capsule of three cells with, imperfect dissepiments from the middle of each cell, quite unconnected, or but very slightly attached to the pericarp, from which it may readily be squeezed out entire when ripe, or dissected out when green. Our *Tamus* might indeed be properly called wild or English yam (for to the Bryony it has no botanical relation whatever), so much does it resemble that tropical esculent in its root, leaves, and general structure, and I have every reason to believe in its edible and nutritive qualities were they fairly put to the test of experiment. The root is very large and thick, consisting, like the yam, of irregular fusiform or digitate tubers, beset with wiry fibres; externally light brown

or ash-gray and wrinkled, very white, soft and fleshy within, as easily sliced as a turnip, and abounding with an acrid, clammy juice. Apart from this acrimony, which cannot compare for intensity with that of Cassava and the various esculent Araceæ, the root has neither bitterness nor any other unpleasant taste, nor, though so large and enduring, is it at all tough, woody or stringy in texture, being apparently purely farinaceous, and composed chiefly of starch, with probably a portion of gluten. I have the best reason for believing that were the roots dressed like yams, by roasting them in hot wood-ashes a sufficient time to dissipate their acrimony, as in the latter, they would prove no way inferior to that vegetable.* Had I the facilities for trying the experiment I should certainly do so, but partial failures must be anticipated before the exact degree and duration of heat to be applied could be ascertained, and the experience necessary to ensure uniform success in the operation acquired. That there is reason in roasting a yam as well as an egg there can be no doubt, and we all know how much the simple process of boiling potatoes demands for its successful issue some exercise of man's noblest attribute. The tubers of the *Tamus* dug up from the hedge-rows in autumn, when the berries are ripening, would probably furnish as good yams as if cultivated expressly for use, because in the West Indies the "ruinate yams," or those that have become wild on old forsaken or ruined plantations, are esteemed the best.

The beautiful large scarlet berries, hanging in festoons on the bushes, ripen too late (with the decaying leaves) to add much to the ornamental aspect of the plant in autumn, yet are not without their use. These berries abound with a nearly insipid, watery juice, which

* On turning over several old authors to learn what may have been said by them on the subject, I find by reference to Matthiolus that my idea of converting Black Bryony roots into home-grown yams is not altogether a new one. That learned commentator on Dioscorides tells us, on the authority of one Martin Guidotti, a perfumer (myropola) of Trent, and a most diligent herbalist, that the roots of *Tamus* roasted in hot ashes are no contemptible dish (*haud ingratum sit edulium*), *Matth. edit. Valgr. 1565, p. 1287*. It is, however, but fair to add that Guidotti attributes medical virtues (probably imaginary) to these yams, which would make them unfit food for some temperaments. It is well known that the young shoots of the Black Bryony when they first appear above ground in the spring are eaten in some countries like asparagus, although by no means devoid of active properties, which it requires long boiling to render inert; why, therefore, should the root be less susceptible of conversion into good and wholesome aliment? Matthiolus's figure of his *Vitis nigra* is one of *Smilax aspera*, but his description applies to *Tamus*, which was the true *Vitis nigra* of ancient authors.

leaves a scarcely perceptible sense of acrimony behind on the tongue and fauces when swallowed ; but on being rubbed in a fresh state upon any sensible part of the surface, as the back of the hand, they raise, in less than a quarter of an hour, a faint cuticular eruption, attended with a slight itching and pricking, that soon subsides, leaving the part as before. Hence an embrocation prepared by steeping "murrain berries," as they are here called, in gin or brandy, is a sovereign remedy with the peasantry of the island for chilblains, and I believe a most efficacious one ; the ripe berries alone, without the spirit, will answer nearly as well, but the latter is employed chiefly to preserve them in for use during the winter. Mr. Borrer lately told me that when a boy he became aware of the rubefacient property of black bryony berries, but had not heard of their application for the infantine complaint above mentioned.

The geographical distribution of *Tamus communis* in this country and on the continent has something worthy of remark. From the contiguous parts of Asia it advances through Europe in a line gradually ascending from south-east to north-west, appearing in the Crimea, and keeping nearly on the parallel of 45° — 46° , through Transylvania and the southernmost provinces of Austria into Switzerland, where it rises northward, following the course of the Rhine into Germany as far as Carlsruhe and Strasburg, thence spreading over the whole of France, it reaches Belgium, where, however, it is rare and local ; then crossing the Channel it disperses itself throughout England nearly to its northernmost extremity, advancing to $55\frac{1}{2}^{\circ}$ of latitude, many degrees beyond its polar limits on the continent, and abounding over all the southern and midland counties in equal proportion on the eastern and western sides of the island. Yet with this marked tendency to a north-west progression, and with as much of the Atlantic as the Germanic distribution, it is not a little singular that the Black Bryony should never have been found passing over into either Scotland or Ireland, although these countries are both within its limitrophe parallels in England. With such strongly-marked western distribution, one might in theory have confidently predicated its occurrence in nearly every part of the sister island, and have reasonably looked for it in the Scottish counties of Dumfries, Kirkcudbright and Wigtown, where it may yet possibly be discovered, since these counties all lie due west of its natural localities in Durham and Northumberland. As *Tamus communis* belongs to a decidedly southern and indeed mostly tropical natural order, we may plausibly ac-

count for the great deflexion of its line of distribution in a southeasterly course, by supposing the root unable to resist the winters of eastern Europe above a certain parallel, whilst its sudden and total suppression westward in Scotland and Ireland may be owing to its not finding there the requisite degree of summer heat for its spontaneous maintenance. The common Butcher's-broom (*Ruscus aculeatus*) has a very similar distribution with *Tamus*, and like it, is not a species of even central Europe, excepting towards the west of our continent, where the winters are not too rigorous for it. Like *Tamus*, it fails totally or is doubtfully wild in Ireland, but advances a little beyond the former towards the north-west, being found in several parts of Scotland.

After all, should not *Tamus communis* have the * or at least the † appended to it? I wonder its claim has never before been called in question! We have just seen that it is quite a southern plant, unknown over the greater part of Europe under British parallels; of eminently exotic aspect and relationship, and has no one well ascertained British or Saxon name, for that of Our Lady's Seal must have been given it in catholic times, and as before remarked, seems never to have been its popular one with us; indeed Parkinson expressly tells it was only called so abroad by the apothecaries of France, Italy and Germany.* As to the name of Bryony, which it shares with the true plant so denominated, that word is altogether Greek, and therefore quite sufficient to implicate both species in the suspicion of foreign descent. Moreover, both *Tamus* and *Bryonia* are known solely as "wild vines" to a great proportion of our rustic population; a phrase very redolent this of the sunny south from whence it *must* have come with the plants themselves; nay, further, the *Tamus* is sometimes called here Black Vine, in contradistinction to the *Bryonia*, which is occasionally termed White Vine, from its paler colour. Here we actually have the genuine classical names of antiquity for the *Tamus*, the *vitis nigra* and *αμπελος μελαινα* of the Greeks and Romans, done into English for the benefit of country bumpkins; what more can be needed to prove both the plants foreigners? No, depend upon it that *Tamus*, like the *Arbutus*, the Hop, the Cherry, the Lime and the Beech, is a convicted alien; who knows but it might have been introduced by the *monks* in the train of the pious missionary St. Augustine, to rub their chilblains with, a complaint to which

* *Theatrum Bot.* pp. 180, 181.

those holy fathers were probably martyrs, if to nothing worse, for the first few winters after their arrival on our heathenish shores in the sixth century.*

In the garden at St. John's, Ryde, is a plant of *Smilax aspera*, which was originally found by Mr. John Laurence, the gardener, growing under one of the ruined walls of Quarr Abbey, about a mile from the town. I presume it must have been set there by some one wishing to try whether this native of south and south-eastern Europe could be naturalized in the island, and acquit the good Cistercians in this instance at all events of having had anything to do with its introduction within their ancient precincts.

Hydrocharis Morsus-ranæ. In pools, ditches, drains, and other still water; apparently rare, or at least not common in Hants, although probably much more frequent than I have the means of showing it to be at present. Not indigenous to the Isle of Wight, but abundant in a naturalized state in a small pool at Barretts, about two miles from Ryde, on the Brading road, introduced there a few years since with *Stratiotes aloides* and *Villarsia nymphæoides* by Dr. Salter!!! On the shallow margin of Sowley Pond, at its south-west end, in two places, September 26th, 1849. "Grows, I believe, at Christchurch, in the water bordering the lower road to Ringwood;" Mr. James Hussey in litt.!!! Plentiful at Sopley on the Avon; Pul-

* Under the heads of *Ligustrum* and *Taxus* I should have been tempted, had I known them at the time, to have inserted the two following passages from Pulteney's Catalogue of the rarer Plants of Dorsetshire in his remarks on those species, as further exemplifying the ridiculous tendency to doubt the native origin of almost every tree and shrub of British growth, which it has been my unceasing endeavour in these "Notes" to expose and combat in each instance that has presented itself for discussion. In his remarks on the privet, Pulteney shows that he himself was not uninfected with the gratuitous scepticism so often animadverted on in these contributions, for he observes, "From the oriental (*i. e.* specious or exotic) habit of this shrub, such as indulge in speculations relating to the distinction between the *native* and *naturalized* vegetables of England, might be allowed to suppose that the Privet was introduced into this island during the crusades, or at some remoter period of time." Admirable supposition! and quite on a par with that which would impute to our Holly a Japanese origin (*Phytol.* ii. p. 518, note). But there is no end to such vagaries, venial, perhaps, in Pulteney's time, but inexcusable in botanists of our own day, some of whom, nevertheless, hold opinions quite as absurd and gratuitous on the same subject. When he comes to speak of the Yew, however, Pulteney defends its claim to nativity against his fellow sceptics. "The title of this tree to the appellation of a *native* has been much disputed. Such as have denied it would probably hesitate in their opinion on seeing the scattered and unequivocal manner in which it is seen growing in Dorset, Wilts and Hants."

Orchis latifolia. In low, damp pastures, wet or boggy meadows and thickets, rarely in dry and elevated situations; pretty frequent, though much less common than the last. In Sandown marshes, near Shanklin and Appuldurcombe. Very fine at Colwell Bay; common in meadows at Thorley and in boggy ground below Calbourne Mill. Abundant in boggy meadows at Easton, Freshwater Gate. Common in the great fir and beech plantation on the down above Westover. Wet meadows about Newchurch, &c. Wet meadow betwixt West Mill and Carisbrook; Mr. Charles D. Snooke. Var. *β. incarnata*, Bab. Man. p. 310. Boggy ground by the Wilderness, June, 1844. I happen not to have made any notes of the occurrence of this species in mainland Hants, but feel convinced of having seen it there, and cannot suppose it to be less common in that part of the county than in this or in other parts of England. Distinguished from *O. maculata* by its much stouter habit, hollow stem, cylindrical and rather obtuse than acute spike of flowers, by the much smaller middle segment of the 3-lobed lip, which is distinctly produced beyond the two lateral, rounded, nearly entire or slightly crenate lobes, that are deflexed, not plane or spreading, as in the other; by the less attenuated, subcylindrical or conical, bluntish spur, always much shorter than the germen, and lastly, by the much larger, longer, more conspicuous bracts. Leaves not usually spotted; flowers here sometimes white.

—— *pyramidalis*. In dry, and particularly hilly meadows, pastures, and in grassy woods on the chalk, as also on argillaceous soils containing any notable proportion of calcareous earth; growing at a lower elevation than *O. ustulata*, even at the sea-level, but more commonly in the higher grounds. In many parts of the Isle of Wight abundantly. Not common about Ryde. Plentiful in Binstead stone-pits; and in the fields by the road from that village to Ryde, sparingly. Plentiful in grass fields at Egypt, by West Cowes (the extremest north point of the island), and on the slipped land along the shore to the westward of Cowes. More common on the chalk downs than elsewhere. Abundant on the down (High Down) W. of Freshwater Gate; near Compton farm and near Yarmouth. Down above the Culver Cliff. Abundant on Carisbrooke Castle Hill, but of small size. Common on grassy slopes at Ventnor. In Calbourne New Barn Hummet, and in the great fir and beech wood along the flank of the down above Westover. On Bembridge Down and in various other places. Some plants gathered in the chalk-pit opposite

the Mountjoy bastion (Carisbrook Castle) had the protuberances of the lip much elongated and leaf-like, July 18th, 1849; Mr. Charles D. Snooke (in litt.). I presume this species to be frequent over the county, but I have few data for showing its distribution on the main land, not happening to have noticed it there myself, excepting, if I remember right, about Bordean Hill. Otterbourne; Miss A. M. Yonge. Bordean; Miss L. Sibley, and (with white flowers) Rev. Messrs. Garnier and Poulter in Hamp. Repos. Maindell chalk-pit (Fareham); Mr. W. L. Notcutt. The flowers of this beautiful species vary with us from the deepest rose red to white.

The Lizard Orchis (*Satyrium hircinum*), it is far from improbable may eventually be found in Hants, since it grows in the adjoining county of Surrey, if not now extirpated by the rapacity of botanical collectors and the cupidity of orchis-rearing nursery-men. In our more retired and less explored county it might long vegetate unnoticed and undisturbed, and should be looked for on dry, bushy, chalky banks and hills. It has lately been found (a single specimen I believe only) at Great Glenham, in Suffolk, and although not indicated as a native of Ireland in the Manual, is mentioned as such in the 'Plantæ Rariores Hiberniæ' of Dr. Wade; and when last in Dublin Mr. D. Moore, of the Glasnevin Botanic Garden, told me he had himself met with it in that country, and communicated the rediscovery of this rare species to Dr. J. T. Mackay, in whose 'Flora Hibernica,' however, it does not appear. It is clear, therefore, that *O. hircina* has a very wide distribution in Britain, but is extremely local, and usually very sporadic; and since we are here but little removed from the part of England where it occurs with greatest frequency, the prospect is the fairer of ultimately detecting it within the limits of this county.

Gymnadenia conopsea. In dry heathy or chalky pastures, or in wet, peaty, boggy or clayey ground, not common, though found in several parts of the county and Isle of Wight. Extremely fine and plentiful on very wet banks of slipped clay in Colwell Bay, Freshwater, and in boggy ground at the upper end of Colwell Heath; first remarked there by the Rev. G. E. Smith, who justly observes that the plant has a mixed odour of the hyacinth with that more proper to the species, which much resembles the fragrance of the clove pink. On Freshwater Down; common, 1841. On chalky slopes at Apes Down, June, 1846. Bank opposite Madeira Villa, Ventnor; Miss Hadfield!! (it grows also in the Chicken pits and elsewhere in that place). Carisbrook Castle, S. and E. moats and ramparts, and heath

between Staplers and Briddlesford; Mr. Charles D. Snooke. It seems not less frequent on mainland Hants. About Petersfield, West Meon, &c., not rare; Miss L. Sibley!!! Otterbourne; Miss A. M. Yonge (in litt.). Plantation behind Wheely Cottage (near Warnford); Oliver's Battery, near Winton; Rev. E. M. Sladen. Abundant on Littleton or Flower Down, near Winton; Dr. A. D. White. Probably in very many other parts of the county; most likely frequent in the forest tracts, as I think it is in Sussex. The plant as it grows on bog at Colwell is often very large, eighteen to twenty inches high or upwards, with very densely-flowered spikes, and leaves an inch or nearly so in width, but sometimes in equally wet soil extremely narrow and erect. This form may possibly be the *G. densiflora* of Dietrich's 'Flora Marchica,' p. 164, whilst another variety with excessively narrow leaves, and a somewhat lax or open spike, and of humbler stature, growing on dry chalk soil at Ventnor, may be what he intends by the true *G. conopsea* of that work, and which I supposed might prove identical with the true *G. odoratissima*, *Rich.* (*Orchis odoratissima*, *Linn.*), but that species, if it be not a mere variety of *G. conopsea*, is distinguished by its much shorter spur, and narrower, cylindrical, not conical spikes of very minute flowers. The delightful fragrance of this plant is most powerful towards evening, and in those plants that grow in damp situations, for on dry soils it is nearly inodorous. *G. albida* (*Habenaria albida*, *R. Br.*) is reported in 'Cybele Britannica' as found in Hants on the authority of the Rev. S. Palmer, and has indubitably occurred in one locality in Sussex.* I have never seen Hampshire specimens of this rather northern than southern and mountain-loving species, but there is good ground for hoping it will some day reward the investigator of our county flora on hilly heaths. The curious Green Man Orchis (*Aceras anthropophora*) is a still more likely plant to occur, and I have indeed heard from Miss E. Sibley that it has been found at East Woodhay, in the north of the county, which, although on unconfirmed and anonymous authority, is very probably correct, seeing that it grows abundantly in certain parts of Surrey and in Berks, and may therefore be expected with the greatest reason in such districts of Hants at least as adjoin on those two counties.

Habenaria viridis. In hilly, heathy and grassy pastures, or in low meadows; very rare in the Isle of Wight, and not at all common in the rest of the county. A single specimen picked in a rough pasture

* Jenner's Fl. of Tunbridge Wells, p. 45.

field at the end of the fir plantation by Long Lane, near Newport, 1841; Mr. R. G. Kirkpatrick! A second specimen gathered in June of the same year by Miss Woodroffe, of Calbourne, near the "high summer-house" at Swainston! both which examples I possess through the kindness of the finders, and are the only ones I have seen from this island, where it has not once occurred to myself in more than twelve years' investigation of its floral productions. On Beacon Hill, near Highclere, in tolerable plenty, and still in flower, August 9th, 1849. I have received it from Miss Lovell, 1848, gathered, I believe, at Catherington, near Clanfield! Searjeant's Meadow, Warnford; Mr. Vickery. Field by the Winchester road, near Cheriton; Miss L. Sibley. Flower Down, near Winton; Miss L. Legge! Near Lodge Bere Forest; Messrs. Garnier and Poulter in Hamp. Repos. A more frequent species in the north than in the south of England, but Mr. G. E. Smith tells me it is not uncommon in Sussex in damp meadows at the foot of the downs.

Habenaria bifolia. In woods, copses, and in open, heathy places; rare in the Isle of Wight, and not yet seen or received by me from mainland Hants, where it must doubtless grow in many of the forest districts, &c.* In Stroud Wood, near Aldermoor, by Ryde, not sparingly, June 11th, 1838. Two specimens picked on Colwell Heath, June, 1841. In the former station it may, I believe, be found yearly in considerable plenty. Heath between Staplers and Briddlesford, near Newport; Mr. C. D. Snooke. This is rather a puzzling plant, about the value of which as a species apart from *H. chlorantha* I have ever entertained considerable doubt. It unquestionably presents some good and apparently permanent characters, and has long been distinguished by Ray and other of the earlier botanists at home and abroad from the larger and commoner *H. chlorantha*, yet I think the differences betwixt them are such as might be inferred to result from soil and situation. It must be allowed, however, that their distribution is different, *H. bifolia* being the plant of Sweden, Denmark, and other boreal countries of Europe, as is evident from the figures and descriptions of the northern botanists, whilst *H. chlorantha* inhabits central and southern Europe, and is infinitely more abundant in this part of England than the smaller species. The differences between them have been ably illustrated by Mr. Babington, in the 17th volume of

* Whether the *H. bifolia* of Mr. W. L. Notcutt's 'List of Fareham Plants' (Phytol. ii. p. 213) be this species or not, I am uncertain; if it be the true plant, then is Titchfield Common a mainland station, and a very likely one for the lesser Butterfly Orchis.

the 'Linnean Transactions,' and in the Supplement to E. B., and who was the first to disentangle them from the neglect and confusion into which they had fallen in Britain, although sufficiently recognized on the continent. Besides the figure in E. B. Supplement, t. 2806, I may cite for *H. bifolia* that of Fl. Danica, ii. t. 235, as good, and the beautiful one of Mr. Curtis in 'British Entomology,' v. t. 233, as still better. The figures of *H. (Platanthera) solstitialis*, *Drejer*, Fl. Dan. fasc. xl. t. 20360, and t. 20361, are excellent representations of our *H. bifolia*.

The great characteristic of the plant before us is the parallelism of the anther-cells, more closely approximated at their base, than those of *H. chlorantha* at the summit of theirs; hence the flowers of *H. bifolia* are much narrower than in *H. chlorantha*, and far less handsome and conspicuous. The anther is shorter, the petals narrower, the two lateral connivent petals, with the lip, spur and summit of the anthers, are of a greenish or herbaceous colour, scarcely observable in the almost pure white flowers of *H. chlorantha*; the spur is more slender, filiform and cylindrical, being scarcely at all compressed as in *H. chlorantha*, neither is it sensibly enlarged or clavate at the extremity as is so remarkably the case in the latter, and is hardly thicker than a packthread throughout, besides which it is usually straighter, and often horizontally porrected as well as prone or deflexed. I observed in all my specimens of *H. bifolia* from Stroud Wood that the lateral sepals are simply spreading, and rather curved forwards or slightly connivent than reflexed, which is their general tendency in *H. chlorantha* when fully expanded. The scent of the lesser and greater Butterfly Orchis is highly and delicately fragrant, particularly towards evening and at night. To myself the odour is like that of the Tuberose (*Polianthes tuberosa*), to others like that of orange flowers or scented soap. It is to be regretted that the confusion in which the synonyms of these two presumed species were so long involved should have settled the name *chlorantha* (greenish yellow flower) upon the species the least meriting the appellation. The concluding remarks of Sir James Smith on *Orchis bifolia* in his 'English Flora' evince the very little attention he paid to our present plant even as a variety, distinctly noticed by so many of the older botanists.

Habenaria chlorantha. In moist open places in woods, thickets, groves, and on grassy slopes; very frequent in the Isle of Wight, particularly on stiff clay soils. Very common about Ryde, at St. John's, in Quarr Copse, woods at Sea Grove, the Priory, Westridge, &c. Abundant in the grounds at Norris Castle, and in Mrs. Good-

win's grounds at West Cowes. Woods and pastures about Combley, Duxmore, and all that vicinity, frequent. Woods on the west side of the Wootton River, at its mouth, plentifully. Common in woods about Swainston, Calbourne, Thorley and various other places. Having accidentally omitted to observe and record the stations for this species in mainland Hants, I can only state my belief that it is in all probability equally frequent there as in the island. Var. β . Flowers regular, without a spur. Grounds at Norris Castle, very rare. This beautiful and fragrant species is well distinguished from the last, by its generally greater height (often eighteen to twenty inches) and robustness; much larger and broader leaves, of a purer white; thicker, more compressed and somewhat club-shaped spur; and especially by the great divergence of the anther-cells, whose bases are so far apart, that were the apex of each cell produced till they met, a nearly equilateral triangle would be described by their union. The variety, or rather monstrosity, β . is very remarkable, as having flowers in five nearly equal divisions, quite scentless and tinged with green, the lateral petals not connivent but spreading, lower one or lip, broad, plane, and the spur entirely wanting. Of this monstrosity I had previously seen a dried specimen from the same station, in the possession of Miss E. Kilderbee, and was at a loss what to consider it. Mr. D. Stock, of Bungay, has remarked a similar alteration of structure in the flowers of *Orchis pyramidalis*.

Besides the figure of *H. chlorantha* in E. B. i. t. 22 (*Orchis bifolia*), and the elegant full length one of Curtis, Fl. Londin. ii. fasc. 6, t. 65, that in 'Flora Danica,' fasc. 40, t. 20362, is hardly inferior to the others as a representation of our common greater Butterfly Orchis. Reichenbach's three figures, Iconogr. Bot. ix. Nos. 1143, 1144 and 1145, are, like too many more of that hair-splitting author's, exaggerated portraits in form and colouring of *H. bifolia* and its varieties, *H. brachyglossa* and *chlorantha*. I have never found *H. bifolia* with such ell-long spurs, nor *H. chlorantha* so outrageously green, and cannot but suspect the figures of each were made from dried specimens, and coloured from the ideal examples of a vivid imagination or perhaps a treacherous memory. However that may be, they are not, I am convinced, normal states of the species they profess to represent, and unworthy of citation in the room of the elegant and faithful delineations in the 'Flora Londinensis' and 'Flora Danica' lately adverted to. Justice, nevertheless, requires that due praise be given to the many correct and sometimes admirable figures in the Iconographia of Reichenbach; a work which, with all its faults of perplexed

arrangement and minute specific divisions, is still a most valuable and sumptuous repertory of botanical illustrations.

Ophrys apifera. In dry meadows, pastures, woods and thickets, on chalky banks, downs, and on wet slipped land, mostly on loamy or limestone soils, or where calcareous earth is a principal constituent; by no means uncommon, and in particular years even abundant, over a great part of the Isle of Wight and mainland Hants. Being extremely uncertain and capricious in its habitats, often appearing abundantly one season where it was scarce or failed altogether to show itself the year before, it is unnecessary to give more than a general view of its distribution, without recording its almost numberless special localities. Sometimes quite common about Ryde, at Quarr, Binstead, in Pelham fields, &c. About Cowes, at Egypt, Norris Castle, &c., and about Yarmouth. About Newport, at Carisbrooke (on the castle hill, &c.), Calbourne and elsewhere. Frequent on most of the downs about Freshwater, often in great abundance, as it was last year (1849). At Bonchurch, Ventnor, Steephill, Blackgang and most other parts of the Undercliff, on the chalky banks and pastures, often plentifully. In Bembridge Island, about the Culver Cliff, Whitecliff Bay, &c. On the banks of slipped land (green sand and clay) under the cliffs at Shankin. Abundantly on Kennerley Heath, near Godshill, in sandy loam amongst the furze, and very fine; June, 1843, in which year it was very universal in the island: but it is needless multiplying stations for this ubiquitous but not always plentiful species, as it may be found in most parts of the island and in most years by a little seeking, especially on the chalk and slopes of the downs. A specimen with the flowers nearly white, the lip only being greenish, was found by Mrs. Martin at Ventnor some years ago. On the mainland of the county *O. apifera* is about equally frequent. At West Meon in various places; the Miss Sibleys: and where a variety with white flowers has occurred, and a similar one is recorded by the authors of the catalogue in the 'Hampshire Repository' as having been found at Bordean. Warnford; Mr. Vickery. Bullington; Rev. D. Cockerton. Beacon Hill, Highclere Park; Cat. of Plants of Newbury !!! Nore Hill and Selbourne Park; Professor Bell. This beautiful and singular plant is well known here as the Bee-flower, and although no uncommon species over a great part of England, is made as much account of as though it were a great rarity, and the Isle of Wight had the exclusive happiness of producing it. The Bee-flower figures in all the guide-books, flourishes on the vegetation of the island, and is a staple article in every enumeration of Vectic memorabilia

and amenities. In certain but indeterminate seasons it may be gathered in quantities, and sometimes attains here a height of two feet. Reichenbach's figure (Iconogr. ix. no. 1159) is very indifferent, and if representing this species at all, depicts a variety such as I have never met with. The exquisite one of Curtis in the 'Flora Londinensis' perfectly exhibits the species in its normal condition with us.

Ophrys aranifera. In chalky, clayey or limestone pastures; very rare? The var. *β. fucifera* (*O. fucifera*, *Sm.*) is the only form yet collected in Hants, and the Isle of Wight the only part of the county where it is certainly known to grow. First found May 10, 1841, by Albert Hambrough, Esq., on St. Boniface Down, above St. Boniface Cottage (several specimens). Behind Upper Mount, Bonchurch; Miss Dick and J. Saxby, Esq.!!! Several specimens gathered in Luccombe Landslip, by the side of the main path, May, 1843, by a servant of Miss Roper, of Ventnor!! On a sloping bank on the left hand side of the Cowleaze going from Ventnor to Bonchurch, just below the Madeira Vale Villas, May, 1843; Mrs. Clarkson!!! Gathered in this last station by Miss Thompson in 1846, and since by Mr. A. Hambrough and myself in 1848-49, at the end of April and beginning of May, in tolerable plenty. It has not been discovered elsewhere in the island, but will probably be found on the chalk in other parts of it if carefully sought for at the proper season; but being a smaller, and from its colour less conspicuous and attractive plant than *O. apifera*, and flowering many weeks sooner than that species, it may elude observation at any time. Bullington, abundantly; Rev. D. Cockerton: is this correct, and, if so, what form does the species put on? Our Hants stations are interesting, as being the most westerly ones known for this eminently eastern *Ophrys*, and furnish another proof of the assertion before made, that the floras of the east and west of England become fused into each other in this county. Smith quotes the beautiful figure of Curtis, Fl. Lond. ii. fasc. 6, t. 67, for his *O. aranifera*; to me that plate decidedly represents our variety, the *O. fucifera* of the 'English Flora,' and very admirably too. It is possible that *O. arachnites*, the only British species of the genus wanting to our county, may hereafter be detected in Hants.

—— *muscifera*. In chalky or clayey, usually hilly pastures, woods and thickets; less frequent than *O. apifera*, but far from uncommon in the Isle of Wight and county generally, although, like the Bee-flower, uncertain in its stations and variable in quantity in different years; flowering with us from the commencement of May to the beginning or even the middle of July. At the farther part of Cal-

bourne New Barn Hummet, plentifully; May 9, 1846: and since gathered in some abundance in the same wood, of which it seems to be a pretty constant inhabitant. Plentifully on a rough, sloping, stony field nearly at the back of the Tolt Copse, Gatcombe, June 10, 1846. In the great fir and beech plantation on the down near Westover, several specimens upwards of two feet high, July 3, 1843. In a chalky hollow on the north side of Messly or Mersley Down, sparingly; May 28, 1844. Quarr Copse, in some plenty; Miss Theodora Price, June, 1838 !!! Field at Egypt, W. Cowes; Rev. Mr. Mann. Cliff above Gurnet Bay; Miss G. E. Kilderbee! Shady lane under Carisbrook Castle, and on the borders of a lane leading from Roughborough farm up the down; Mr. G. Kirkpatrick. At Norris Castle; Id. In considerable abundance in the copse of low brushwood (chiefly hazel) on the down at the top of Alvington chalk-pit, about half a mile from Carisbrooke, on the Yarmouth road; Miss Dennett (vidi icon). Solitary specimens I have picked in several other places, and it occurs sporadically, I think, in nearly all parts of the island, but I hardly know if it be found on the green sand. Woods, &c., about W. Meon, as Hall Place, Westbury, Warnford, Chappets and elsewhere, common; the Miss Sibleys. Bordean Hill, frequent; Id. !!! Bordean Hill, Hambledon; Rev. Messrs. Garnier and Poulter in Hamp. Repos. Parnell or Parholt Wood, near Farley, by Winton; Miss A. M. Yonge !!! Highclere; Dr. A. D. White. Highclere Park and Barton's Copse, by Sidmonton House; Cat. of Plants of Newbury. Nore Hill, Selborne; Professor Bell! Doubtless widely and generally dispersed throughout the county, but probably rare in the western or New-Forest district. Its geographical distribution is remarkable, as, although found in Norway at least as far north as Trondiem (Drontheim) in lat. $63\frac{1}{2}$, and, it is said, in the Loffoden Islands $68-69^{\circ}$, it scarcely enters Scotland in lat. $55-56^{\circ}$. The same sudden termination far to the south of its polar limit on the continent holds true of the next plant.

Herminium Monorchis. On chalky banks and pastures, rare? and not yet observed in the Isle of Wight. Bordean Hill; Rev. Messrs. Garnier and Poulter in Hamp. Repos. !!! I am indebted to Miss L. Sibley for pointing out to me the station for this little plant, which is on short pasture ground on the way to the ascent of the hill from Langrish, on the right hand near the lime-kilns. Miss G. E. Kilderbee has kindly supplied me with numerous fine specimens gathered there in July last. Fir plantation under Wheely Down, near Warnford; Mr. Vickery. These are the only stations I find recorded for

the Musk Orchis, but a plant so slender and inconspicuous may well be supposed far less rare than it appears to be.

Spiranthes autumnalis. On dry, open, turf pastures, lawns and heaths; by no means unfrequent in the Isle of Wight, nor, as I believe, throughout the county, but scarcer in some years than in others. So generally dispersed, and withal so uncertain in its stations, that a long enumeration of special localities would be unnecessary and often lead to disappointment, since it is continually making its appearance abundantly in new or unobserved habitats and disappearing as suddenly in old ones. Sometimes plentiful about Ryde and places in the vicinity, as at St. John's, Seagrove, Nettlestone, St. Helen's, &c. Fields and pastures in various places along the Undercliff, frequent. Near Hardingshoot farm, and on the turf near Sandown Fort. Fields about Chale; Miss Lucas. Northwood Park; Miss G. E. Kilderbee. Mount Cleve, Niton; the Miss Sims's!!! Near Carisbrook Castle, Colwell and Freshwater, Sir Nash Grose's (the Priory) grounds, near Ryde; Mr. W. D. Snooke. On St. George's Down (near Newport). Field opposite Alverton farm, Whippingham parish. Pastures west of Fishbourne Creek, through which a new road (leading nowhere) has been lately made; Mr. Charles D. Snooke. Occurs here and there in most other parts of the island. Picked in Hayling Island, September, 1849. In great abundance in Cranbury Park, near Winton; Miss A. M. Yonge (in litt.). Wheely Down, Old Winchester Hill (near Petersfield); Rev. E. M. Sladen. In the Long Lith, and towards the south corner of the (Selborne) Common; Rev. G. White. Woodcote, Sutton Common, near Alton; Miss L. Sibley. Lawn at Mr. Osborne's (Fareham); Mr. W. L. Notcutt. Magdalene Hill, St. Giles's Hill, grass plats in the warden's garden (Winton); Dr. A. D. White. To the majority of persons this plant smells delightfully fragrant, but to myself it is nearly inodorous, as is also the following, and all the exotic species, as *S. gracilis*, *tortilis*, &c., I have gathered in other countries.

——— *æstivalis.* In boggy places, by streams and ponds; very rare. Discovered just ten years ago by Mr. Branch* in the New Forest, along a stream on a small tract of sphagnous bog close by the high road, about two miles and a half from Lyndhurst, towards Christchurch, and where it was gathered by Mr. Borrer and myself in considerable plenty, August 6th and 7th, 1841, growing with *Myrica*, *Narthecium*, *Drosera longifolia* and *Rhynchospora alba*, &c.

* Or by Mr. Jansen, according to Watson, Cyb. Brit. ii. p. 414.

The only station yet known for this fine species in Britain (excluding, of course, the Jersey locality), but it will probably be soon detected in other parts of the county and beyond its limits.* Some of my specimens are a foot in height. Dr. Gray seems to consider the *S. latifolia* of Torrey as identical with our *S. æstivalis*, but the former I do not remember ever to have seen. I have gathered a species very like our own in the mountains of Jamaica. Richard's generic name *Spiranthes* is admirably characteristic of the twisted or spiral arrangement of the flowers, and would have been worthy of adoption had not still stronger reasons called for its employment in place of *Neottia*, now restricted to the true Bird's-nest, *N. Nidus-avis*, originally so named by Linnæus.

Listera ovata. In dampish woods, thickets, copses and under trees in shady pastures; very frequent in the Isle of Wight, and I believe throughout Hampshire. Plentiful in Quarr Copse, Apley Wood, and most other woods about Ryde. Woods about Cowes. Abundant in Tolt Copse, Gatcombe. In Appuldurcombe Park. About Carisbrooke Castle, and in woods and shady places in most other parts of the island. Pasture field at Boldre Hill. Frequent in the beech woods of the mainland. Maindell chalk-pit (Fareham); Mr. W. L. Notcutt. Betwixt Hursley and Otterbourne; Dr. A. D. White. N. B.—*Listera cordata*, a species frequent in the north of England, has been found near Culbone, in Devonshire, and in Somersetshire, and may possibly be some day discovered on our highest Hampshire Hills.

Neottia Nidus-avis. Mostly sporadical in moist shady woods and copses, usually amongst dead leaves; not very common, although pretty generally dispersed over the island and county. In Quarr Copse occasionally, where I have repeatedly found it in a hollow (old stone pit), on the left of the entrance at Binstead, as well as in other parts of the wood, but rarely. Wood near East Cowes Castle. Hungerberry Copse, near Shanklin. Swainston Woods. Calbourne New Barn Hummet. Cleveland Wood, Appuldurcombe. Woods at the Priory, occasionally. Cothey bottom Copse, by Westridge. Several specimens in the large plantation of Scotch fir in Bordwood Copse, June 1st, 1845. In Northlands Copse, Yaverland, July, 1848. At Fernhill, but not seen there of late; Mrs. Sanders. In great Whitcomb Wood, near Gatcombe; Mr. G. Kirkpatrick! A speci-

* I learn from Mr. Borrer that it is found in the neighbourhood of Aldhurst, and that it is still abundant in the (March, 1850).

men found on the lawn at St. John's, Ryde, June, 1843, by Mr. J. Lawrence, jun. Equally, if not more frequent on mainland Hants, so far as my observation has extended. Hampnage Wood, Avington, near Winton, 1848. In a high wood at Bordean, apparently frequent, July, 1848. Akenden Wood, near Alton, 1849. Westbury, Brookwood, Selborne; Miss E. Sibley!!! About West Meon, Beacon Hill Wood; Rev. E. M. Sladen. Holt and Wickham Woods; Rev. Messrs. Garnier and Poulter in Hamp. Repos. Selborne, "in the Long Lith, under the shady beeches amongst the dead leaves; in Great Dorton, among the bushes, and on the Hanger plentifully; Rev. G. White and Professor Bell!!! Highclere Park; Cat. of Pls. of Newbury. This plant is readily detected at all seasons, as the dry stems and firm subligneous capsules are persistent in the woods for a year or two after flowering. To myself the flowers of this singular species have the odour of *Adoxa Moschatellina* mingled with that of primroses, but fainter. From the researches of the late Hon. and very Rev. W. Herbert, there is no reason for holding this plant to be parasitical, much as its structure and habit appear to countenance such a propensity. The singular leafless *Limodorum abortivum* I conceive extremely likely to be discovered in England eventually, as it appears to be by no means very rare in the northern departments of France, and is also native to Belgium and other parts of central Europe.

Epipactis latifolia. In moist, shady and rocky woods and thickets, not confined to hilly places, but found at the sea level both on the chalk and clay, as well as on the uplands. By no means uncommon either in the Isle of Wight or on the mainland of the county, but rarely in any great plenty. All the plants found by me in the island are, I think, referrible to the true *E. latifolia* of the Manual, and to no other, at least I could never distinguish satisfactorily any form exactly corresponding to the *E. media* of Fries, although the leaves vary much in shape and breadth with us. In Quarr Copse, Binstead, here and there, but sparingly. Quite frequent, it may almost be called plentiful, in the wooded ground skirting the shore betwixt Ryde and Binstead, exactly the *E. latifolia* of the Manual, the flowers here variously suffused with purple, sometimes wholly of a pale green. Not unfrequent in the rocky, woody landslip between Luccombe and Bonchurch. Woods at Swainston occasionally, Kingston Copse, Tolt Copse, near Gatcombe. Rather plentiful in the great plantation on the down above Westover. A single specimen in a wood at Rowledge, and another seen in Slucombe Copse, 1845. Westwood, and in

other woods about W. Meon; the Miss Sibleys!!! Abundantly in Selborne Hanger,* and in the High wood under the shady beeches; Rev. G. White!!! I am quite unable to say to which of the three supposed species or varieties of the original *E. latifolia* the plants from these stations are to be referred. Wood at Brookwood; Miss L. Legge! Under the firs on the downy slope of the hill S. of Chilcombe (near Winton); Dr. A. D. White. Otterbourne; Miss A. M. Yonge. Woods about Bordean, West Meon, shady parts of Froxfield Hangers, frequent; common about Selborne; W. A. B., 1849.

The upper edge of the anterior face of the stigma bears a small, porrected gland, secreting a frothy globule of an extremely viscid, milky fluid. This fluid, which is perfectly distinct from the nectariferous secretion of the stigmatic disk, has apparently for its object the retention of the pollen masses on their falling forward upon the posterior hollow of the stigma, and which masses, being destitute of the adhesive glands common to other genera of Orchidaceæ, could scarcely without such a provision be retained long enough on that organ to effect the fertilizing process. In the present genus the form of the anther-cells and pollen masses is reversed, the smaller ends of both being uppermost; in this inverted condition the usual appendages of stalks and glands could serve no other purpose than to keep the pollen masses suspended *over* but not in *contact* with the stigma, as by the above simple contrivance they most effectually are.

Epipactis media? My friend Professor Bell finds occasionally in Selborne Park and in the Hanger, a plant which he believes to accord with the description of this species in Babington's Manual; the flowers are very small and remarkably distant, the leaves much narrower than in *E. latifolia*, and gradually passing into the very attenuated bracts. I have seen only a single dried specimen, and cannot, therefore, venture to pronounce an opinion on its identity with the above presumed, but I fear problematical species. *E. ovalis* of Babington seems to possess far better pretensions to specific distinction, but is perhaps an unlikely plant to be found in this county.

——— *palustris*. In low marshy or boggy meadows, on wet slipped land and in other watery situations, but not common. Very plentiful on the banks of slipped land in Colwell Bay, associated with *Gymnadenia conopsea*, and at the upper end of Colwell Heath. Marshy meadows at Easton; frequent. Shore about Chine Head, and in various places in the landslip between Luccombe and Compton-church. Abundant in the half dried up clay pits near C near Ningwood, with *Sparganium natans* and *Typha*.
July 14th, 1844. Marsh near Compton; Mr. W. I

Vect.). Between Shanklin and Godshill? Mr. J. Woods, jun. in Bot. Guide, but whether this plant be intended or rather *E. (Cephalanthera) grandiflora* or *E. ensifolia*, all of which have successively borne the name of *Serapis longifolia*, under which it is there mentioned, I am unable to say. Sowley Pond, near Lymington; Mr. R. Jefford!! Otterborne, in plenty; Miss A. M. Yonge. Warnford Moor; Rev. E. M. Sladen. These are the only stations known to me as yet for this very pretty species in our county.

Cephalanthera grandiflora (Epipactis grandiflora). Common in woods, groves, and bushy, shady places, in various parts of the hilly and chalky districts of mainland Hants, in the eastern and central portion of the county; extremely rare in the Isle of Wight. A solitary specimen in flower, June 8th, 1844, in the thickest part of the wood called the Hummet, at Calborne New Barn; all attempts to find more have been fruitless, though often made since. Several specimens found in full flower, June 8th, 1848, under hazels and beeches in a small hollow or ravine on the east side of Carisbrooke Castle Hill; Miss Dennett!!! This fine species doubtless exists in other parts of the island, but must still be, like *Habenaria viridis*, an extremely rare inhabitant here. In Bordean Hanger, with the following, in considerable plenty, and in woods about Langrish and Bordean generally. Abundant in Avington Woods (in the long southern ride, &c.). Murdon Woods, as well as in other woods in that vicinity (Winton); Dr. A. D. White!!! who tells me it is common in the great belts and clumps of fir plantation so frequent on the downs around Winchester. Wood near Upham (by Bishop's Waltham) with *C. ensifolia*; *Id.* and Miss L. Minchin. Warnford; Rev. E. M. Sladen. Holt Wood; Rev. Messrs. Garnier and Poulter in Hamp. Repos. (*Serapis grandiflora*). Highclere Park; Anon. Cat. of the Pls. of Newbury. Woods at the Grange, near Ringwood; Mr. Ingram. Selborne Hanger and Selborne Park, common in the latter; Professor Bell!!! In great abundance and of magnificent growth in a young plantation at Westbury House, West Meon; the Miss Sibbels; some of the specimens here are nearly two feet in height, forming clumps, many stems springing from one root (a rare thing in British Orchidaceæ), making a beautiful appearance!!! I found it apparently frequent in Parnell or Parnholt Wood, near Farley, May 26th, 1849. Miss G. E. Kilderbee finds the flowers of this and *C. ensifolia* powerfully fragrant, like tuberose.* I once thought I per-

* Sir J. E. Smith says they are "perfectly inodorous at all times."—Engl. Fl. iv.

ceived some such odour in a large number of specimens of each enclosed in a tin box at night, but could never be made sensible of it in individual plants, any more than in *Spiranthes autumnalis*, so grateful to many people, or in *Linaria repens*, odorous to some, although quite as sensible as the generality of persons to the perfume of *Gymnadenia conopsea*, *Habenaria chlorantha*, violets, roses, and other garden scents.

Cephalanthera ensifolia. In precisely similar places with the last, of which it is often the associate, but much less general than that. Not certainly known to inhabit the Isle of Wight, unless the *Serapias longifolia* of Mr. J. Woods, jun., in B. G. were this species and not *Epipactis palustris*.* Abundant at Westbury in the same place, and intermixed with *C. grandiflora*; the Miss Sibleys!!! Plentiful in Bordean Hanger; Miss G. E. Kilderbee!!! Stoner Hill; Mr. Borrer. Wood near Upham (by Bishop's Waltham); Dr. A. D. White and Miss L. Minchin. Pink's Hill, near Warnford; Rev. E. M. Sladen. Wonston; Miss Legge! In the long southern ride in Avington Wood; Dr. A. D. White.

Mr. Watson (Cyb. Brit. ii. p. 419) intimates a doubt in his mind of the specific identity of *C. grandiflora* and *ensifolia*, but surely few plants can be better marked than these, nor have I ever observed the least disposition in them to intermingle their respective characters. *C. grandiflora* is a taller and far more robust species, often emitting two or several stems from the same root, the flowers larger, more distant, and extremely erect, often very numerous, beginning quite low down on the stem, and constituting a kind of leafy raceme; rather cream-coloured than white; sepals and lateral petals obtuse, the lip very blunt, leaves widely different in shape, far broader, thicker, not acuminate or (in appearance) distichous. *C. ensifolia*, on the other hand, is a smaller, more delicate and slender plant, seldom emitting more than a single stem from the root, with far narrower leaves of a

* The great confusion formerly existing betwixt our two *Cephalantheræ* and *Epipactis palustris*, all of which had *Serapias longifolia* for one of their synonyms, make it impossible to determine which of the three Mr. Woods had in view. Since *C. ensifolia* grows with *C. grandiflora* in the woods of Hampshire, that may possibly have been the species intended by Mr. W. Yet I am inclined to the belief that *C. grandiflora* (called *Serapias longifolia* by Hudson) was rather the plant meant by that gentleman, which is known to inhabit this island, and I conjecture that the station between Shanklin and Godshill was in all likelihood the rocky copses known as Cowpit Cliff and Hatchett Close, where, although I have never seen either kind, these *Helleborines* are both likely to occur.

thinner and drier texture, like those of a grass, which, however, vary much in breadth, the lowermost being sometimes very broadly lanceolate, but the upper always narrower and considerably tapering at the points, and from being in general more closely set, present a sort of distichous arrangement in appearance only. The bracts, even beneath the undermost flowers, are extremely small, short and narrow, and in those at the top of the stem very minute indeed. The flowers are confined to quite the higher portion of the stem, are much closer together or approximate, and are not found in the axils of any but the greatly reduced leaves or bracts, hence they appear subspicate, like those of *Epilobium angustifolium* for example, whereas in *C. grandifolia*, the flowers originate at or even below the middle of the stem, and accompany the larger leaves, whence they assume a sort of racemose arrangement. In *C. ensifolia* the flowers are smaller, of a purer white (not cream-coloured), and less erect, the ovary diverging more or less considerably (sometimes nearly at a right angle) from the stem. The perianth segments do not close so completely over the lip, and the sepals are in this species narrower than the lateral petals, and so acutely pointed as to be almost acuminate. The lateral petals themselves are also slightly pointed, and much broader in proportion than in *C. grandiflora*. Moreover, the anterior margin of the lip is usually slightly triangular and pointed, but this character I find liable to exception. Finally, *C. ensifolia* lasts a shorter time in flower, if it does not begin to flower earlier than *C. grandiflora*, which continues in blossom through a great part of June, whereas the other has all its terminal buds open by the close of May in this part of England, and was beginning to fade and look shabby on the 27th of that month, when my last specimens were collected. Indeed, the flowers of this species, from their more delicate texture, fade with singular rapidity on being gathered, whilst those of *C. grandiflora* merely turn partially brown. The specific characters of these species may be thus stated:

Cephalanthera grandiflora. Leaves ovato-elliptical to elliptic-lanceolate; bracts longer than the glabrous germen; flowers distant, subracemose, sessile, quite erect; sepals and lateral petals obtuse, connivent on the included, very blunt and rounded lip.

————— *ensifolia*. Leaves somewhat two-ranked, the lower lanceolate, the superior very narrow, ensiform; bracts much shorter than the glabrous ovary, the highest extremely minute; flowers approximate, subspicate, sessile, more or less diverging; sepals narrower than the acute lateral petals, subacuminate, connivent; lip included, obtuse or slightly pointed.

C. ensifolia is perhaps more decidedly a plant of hilly elevated woods than the other, and ranges apparently farther to the northward, both in Britain and on the continent. The flowers in each, but more particularly in the larger species, look like buds just about to open, and in form remind one of miniature tulips or the blossoms of *Chelone glabra*. *C. rubra*, a very rare English plant, might nevertheless be found with its congeners in this county.

Malaxis paludosa. In spongy bogs (parasitic ?), on *Sphagnum* and other mosses; rare. The present Dean of Winchester, the very Rev. Dr. Garnier, told me he believed he once found the *Malaxis* in this island, and it is included in a short anonymous list of Isle-of-Wight plants found in 1818, sent me by my friend Miss E. Sibley, but the authenticity of which is discredited by the mention therein of *Echinophora spinosa*, *Hieracium* (*Crepis*) *paludosum*, and *Polemonium cæruleum*. We have few places here suited to the production of *Malaxis paludosa*, but the following are those where the search for it would have the fairest chance of success:—The Cranberry swamp in the valley of the Medina, and on Rookly Moors; the marsh at Easton, boggy parts of Colwell Heath, and the bog at Cockleton, near Cowes; also on parts of Blackpan and Lake Commons., Bere Forest, near Wickham; Rev. Messrs. Garnier and Poulter in Hamp. Repos. On bogs betwixt Southampton and Rownam; Merrett. Southwick, behind Portsdown, 1840; Mr. Jansen! Very fine and abundant by a stream in a boggy valley near Bournemouth; Mr. Borrer (in litt.). I searched long and carefully last autumn for this plant in what, from his always accurate and minute directions, I have no doubt was the exact spot intended by my kind friend, but could not find a specimen. Is the *Malaxis* fugacious, or periodical like others of its order? *Sturmia Læselii* (*Liparis*, *Hook. Lindl. &c.*) is coupled doubtfully with *Malaxis paludosa* under the older names of *Ophrys paludosa* and *lilifolia* in the anonymous catalogue above referred to, as found in this island, and the Dean of Winchester has intimated to me a similar report. Although this rare species, yearly becoming rarer by draining, has hitherto been found exclusively in the eastern midland counties, I know not any reason why it should be confined to that part of England. The absence of bogs of any extent in the island certainly militates in some measure against the probability of its occurrence in this division of the county. Miss E. Sibley writes me: “*Cypripedium Calceolus*, I am told, grows at Bordean; I have often looked for it, and doubt its existence.”* My doubts are not less than

* Amongst such plants as *Rosa alpina*, *Veratrum album* and other startling novelties

my friend's as to the truth of the statement, and yet I know not why the discovery of the *Cypripedium* in Hants or any other southern county should be deemed improbable, beyond the fact that it has hitherto occurred only in the north of England. But the species is not essentially a northern one, being sparingly distributed over the greater part of central Europe, in the north of France, Belgium and Germany, chiefly in hilly situations and on calcareous rocks, conditions abundantly fulfilled in this part of the kingdom. The discovery of such plants as *Habenaria albida*, *Listera cordata* and *Campanula latifolia* in the south of England, all of which we have accustomed ourselves to look upon as appertaining to the north of our island alone, should encourage us to hope that many of the plants of Yorkshire, and even of Durham and Northumberland, may eventually be detected in these southerly parts; of course in diminished frequency and abundance. I have before remarked (*Phytol.* ii. 1000) that *Sesleria cærulea*, banished in Britain to the limestone hills of Yorkshire, is found on dry chalk banks at Rouen, and may therefore be reasonably looked for on those of Hants and other counties where the cretaceous system prevails. I may cite *Saxifraga Hirculus* and *Scheuchzeria palustris* amongst species whose equatorial limits in Britain late researches have shown to be less contracted than for a long time they appeared to be: so in like manner we may predicate of many other northern plants a more extended range southward, in accordance with the botanical axiom alluded to in speaking of *Epilobium angustifolium*, at p. 365 of the present volume, that the equatorial boundary of plants is less exactly defined than their polar limits.

WM. A. BROMFIELD.

Eastmount, Ryde, Isle of Wight.

(To be continued.)

to the Hampshire Flora that have been communicated to me from time to time by correspondents, known or unknown, the Dog's-tooth Violet (*Erithronium Dens-canis*) I have been assured grows in certain of our woods, but where, I have at this moment forgotten, and am content to remain in ignorance of the station, until conducted thither and shown the plant *in situ*.

mens, will there not then be a diminution of the aggregate number of parts? Thirdly, Is it a doctrine of morphology that in a species or genus in which all the parts of the flower are normally present, one series of parts may be totally absent and unrepresented?

Clarkia pulchella frequently has the same aberration; and Lindley says that in *Skinnera*, an allied genus, the petals are *always* wanting.

EDWARD NEWMAN.

Devonshire St., City, June, 1850.

A Catalogue of the Plants growing wild in Hampshire, with occasional Notes and Observations on some of the more remarkable Species. By WILLIAM ARNOLD BROMFIELD, M.D., F.L.S., &c.

(Continued from page 917).

Iris Pseud-acorus. By river-sides, in shallow ditches, ponds, and low marshy or moory meadows; abundantly in all parts of the county and Isle of Wight.

— *fœtidissima.* In groves, thickets, pastures, along hedges and borders of fields; extremely common in most parts of the Isle of Wight, but very rare on the mainland, excepting on or near the coast. Everywhere about Ryde, in Quarr Copse, Apse wood, &c. Profusely all over the Undercliff, to the verdant aspect of which in winter the tufts of dark evergreen leaves most materially contribute. Woods, &c., about Cowes, Yarmouth, Freshwater and elsewhere, abundantly. Frequent, if I recollect right, about Southampton, towards Netley, but I have not paid much attention to its distribution in mainland Hants, where it is far less plentiful than on this side the Solent, even on the coast. Not unfrequent in Hayling Island. About Porchester and Porchester Castle. Bitterne (near Southton), Rev. Messrs. Garnier and Poulter in Hamp. Repos. Fontley, Mr. W. L. Notcutt. Extremely rare about Winchester, Dr. A. D. White. In a lane betwixt West Meon and Privet, Miss Sibley. I do not remember to have seen it in the west of the county, as at Lymington, Christchurch, or in any part of the New Forest; nor have I any station to record for the northern or eastern quarters, although doubtless it occurs here and there in all parts of Hants. Var. *β. citrina.* Flowers of a uniform pale yellow. Of this most remarkable variety I met with a few plants in a wood near Yarmouth, in July, 1837, since which time I have never fallen in with it there or elsewhere. I long sup-

posed my specimens to be unique, but the same variety has been found in Dorsetshire by Mr. Joseph Woods the year before last, and in greater plenty (Phytol. iii. 264). In my specimens the flowers were of a uniform lemon yellow, verging upon white on the segments of the perianth, without the least of the usual purple colouring, or any trace of the dark pencilling, except a few faint veins of a somewhat deeper colour than the ground. The still unopened buds were equally pale, but the plant possessed the smell and other characters of the species unaltered. This singular variety much resembled the yellow-flowered one of *I. spuria*, *δ. halophila* of Curtis, Bot. Mag. vol. xlviii. t. 1131. *I. fœtidissima* is a handsome species, less on account of the elegantly pencilled but rather small blossoms, than through the contrast of its rich evergreen leaves, of the deepest verdure, with the brilliant orange or scarlet, globose seeds, that remain very long attached to the widely spreading valves of the capsule, and together constitute a conspicuous ornament of our woods and hedgerows in autumn and early winter. The smell of the bruised leaves has been thought to resemble that of roast beef, and the plant has been complimented accordingly with the name of that national dish; by others the odour has been compared to rancid bacon,—dissimilar ones certainly, and indicative of the ambiguity of impressions received through the weakest and most deceptive of the senses: the fact is, that both are so far analogous as they are animal nidor. To myself the smell is by no means unpleasant, recalling merely that of milk heated till a pellicle has formed on the surface, or has been slightly burnt.

Crocus vernus and *C. nudiflorus* may possibly be found here, as well as in the meadows of central England: I believe from what I have seen of them there, that both are truly indigenous British species.

?†*Narcissus biflorus*. In woods, thickets, meadows and pastures, on hedge-banks and in orchards, on clayey, sandy or chalky soil, in several parts of the Isle of Wight and mainland Hants, but whether indigenous or naturalized I am almost equally at a loss what opinion to form; certainly introduced in some at least of its stations. On clay in a meadow near Hardingshoot farm, in some plenty, along with *N. Pseudo-narcissus* and *Tulipa sylvestris*; fully in flower, May 2, 1849. In fields on the west side of Gurnet Bay, near Cowes, in several places, but particularly about Hornhill Copse, where it grows in very considerable plenty on the grassy banks and borders of the fields, as also in the wood itself; in full flower, April 21, 1846. In several fields betwixt Wootton bridge and the church, but very spar-

ringly scattered, 1842. A single very large tuft in a marsh meadow behind Gurnet Bay, 1843. A solitary plant in a sandy arable field by Marvel Copse, near Newport, 1845. A specimen or two found in Marina Wood at Apley, by Ryde; the late A. T. S. Dodd, Esq.!! In a little copse near Place farm, W. Cowes, May, 1846; Miss G. E. Kilderbee. Field by Debborne farm, W. Cowes, in some plenty; *Ead.*!!!—(a suspicious station). Gurnet Wood, *Ead.*! In a field near Wilmingham, scarcely wild; Rev. James Penfold. On a hedge-bank near Thorley, far from any garden, but in very moderate quantity; *Id.*!!! I understand from Miss Clarke, of Yarmouth, that it grows very abundantly in a small field by the Yar, at the north-east angle of Thorley Copse, opposite Yarmouth Mill, as well as in the copse itself, 1846. Sparingly naturalized in a meadow nearly facing the stables at Steephill, Dr. G. A. Martin!!! On a sandy bank betwixt Rookley and Pidford, Mrs. Jones. In orchards near West Meon, Mr. Wm. Pamplin. In several meadows about Hensting and Owslebury, apparently wild (Mr. Earwaker); *Id.* in New. Bot. Guide.

How far the present species is indigenous to England it is very hard to say. It certainly occurs with us in places where it would be difficult to account for its introduction, and where it has perfectly the appearance of a native plant. The chief objections to receiving it as such are, its usually small quantity in any one station, frequently only two or three, or even a solitary tuft; and secondly, its not producing capsules, at least I have never seen them in any of the localities above recorded. The non-production of seed-vessels may, however, be habitual with this, as with many other plants of its order (*Amaryl-lidaceæ*), and even the following species, although an indubitable native, fails to produce capsules wholly or partially in many of its localities, whilst in others nearly every individual ripens seed. *N. biflorus* is evidently propagated by bulbs, as is seen by the clusters of them of all sizes on digging up the tufts of leaves and flowering stems, whilst the common wild daffodil is but sparingly increased in this way, and hence the plants grow singly or but few together, forming but small clumps or none at all. *Allium vineale* abounds in certain pastures in this island, and its nativity cannot be questioned, yet in no one instance have I been able to find a flowering specimen amongst the thousands bearing heads of bulbs alone. *Tulipa sylvestris*, which I hold to be a true native in many parts of England, rarely flowers even, and still seldomer seeds, if indeed it ever does; and I believe *Fritillaria Meleagris*, although a free flowerer, never, or very rarely, ripens seed in its native meadows. The same happens with

Ornithogalum and various other bulbs, and hence the objection is more apparent than real. The Primrose peerless is a common inhabitant of gardens, and unquestionably often escapes, or is carried out from them with manure or refuse into the fields, where, as might be expected in an indigenous species, it obstinately maintains its ground, but this will not account so well for its appearance in woods and places remote from cultivation, for like the following this is a sylvestral as well as a pratal and septal plant. We may indeed suppose the bulbs to have been *somehow* carried into such sequestered spots, or we may assume such spots to have been the sites of gardens in by-gone times, but in reasoning after this fashion we may refine away the claims of any species we please to consider an alien; such loose and illogical argument has done infinite harm already, being eagerly employed or acquiesced in by indolent or careless minds, that shrink from the labour of collecting and weighing evidence. But whilst we urge every fact that can in fairness be brought forward in support of the right of this or any other plant to be considered indigenous, we are bound honestly to state anything that makes against our advocacy. *N. biflorus* possesses nothing approaching to the power of occupancy in this county displayed by the wild daffodil, neither have I ever seen it like that in our remote woodlands, but only in thickets or copses in the more enclosed or champaign districts, and there, as before observed, for the most part sparingly, never carpeting the ground like the other. These differences may indeed be innate and habitual to the species; still it cannot be denied that they form grounds for objecting, not unreasonably, to the reception of the two-flowered *Narcissus* into the list of our undisputed natives. I think, however, that Mr. Watson has not done well in branding it as an alien in his valuable 'Cybele,' and omitting the comital census, for if not an aboriginal few plants are more thoroughly naturalized than the Primrose peerless, and the rank of *denizen* should at least, I apprehend, have been assigned it as nothing more than its due. Gerarde (em. p. 131) observes, "The common white* daffodil (his Primrose Pearles, No. 7, fig. p. 124) groweth wilde in fields and sides of woods in the west parts of England," as we know it does at present. It is said to abound in meadows around Dublin, and I remember to

* White is printed wilde in the text, evidently by mistake, since the figure referred to is our *N. biflorus*, and is there headed as above, besides which Gerarde alludes to our other native species, *N. Pseudo-narcissus*, further on, as the common yellow daffodil (p. 133, fig. 2), and says (p. 134) it "groweth almost euerie where through England."

have observed the peasant children in Italy, when on my way from Rome to Florence, with large bouquets of this species, as ours might be seen with similar ones of *N. Pseudo-narcissus*. The smell of the Primrose peerless is very powerful, reminding one of the fragrant *Magnolia glauca* or *grandiflora*. The elegant *Narcissus* of the poets (*N. poeticus*) is partially naturalized on grassy slopes in the grounds of Norris Castle, by Cowes, but has been too evidently introduced there to find a place in the Hampshire Flora. It is very questionable whether this species be really native in any part of England; its most truly natural stations are subalpine meadows and pastures in Italy and Switzerland, &c.

Narcissus Pseudo-narcissus. In moist woods, groves, thickets, copses, meadows, pastures, orchards, and on grassy banks; truly indigenous in many parts of the Isle of Wight, and on the mainland. Plentiful in Quarr Copse, especially at the end nearest the abbey and in the area of the abbey walls. Sparingly in Apley (Marina) Wood, and wood along the shore betwixt Ryde and Binstead. With *N. biflorus* in a field near Hardingshoot farm. Abundant in Firestone Copse and Chillingwood Copse. In considerable plenty in one part of Puckett's Copse, between Quarr and Ninham. On this station many of the flowers were concolorous, or having the segments of the perianth coloured like the crown or cup. In very great profusion underneath the rookery at Nunwell Field, by Guildford farm, near Haverstreet; also in a field by Ninham, and another by Coppid Hall. The above stations are all near Ryde, and mostly on stiff clay. Wood near St. Helen's, and covers acres of ground in Centurion's Copse, near Bembridge, which is perfectly carpeted with daffodils in spring. Covers the grassy slope of the mount on which Gadshill church stands on the north and east sides as with a sheet of gold. On bushy banks and slopes at Ventnor, behind the Ventnor Hotel, but not seen of late years. In Gurnard or Gurnet Copse, near Cowes, sparingly. Abundant in a little copse near Woodhouse Farm, Fernhill. Very fine, and in vast profusion* all over a wood chiefly of beech, known as Bottom Wood, occupying a valley between two slopes close to Sandford, near Godshill, on the south side of the village, and in a large pasture-field adjoining; also in several fields about Winson Farm. Hedge-banks and borders of fields along

* Many of the plants here are concolorous or of an uniform golden yellow; the greater part, however, retain the whitish hue of the perianth. This is the *N. Pseudo-narcissus*, β . of Bertoloni, Fl. Ital. iv. p. 18 et 19, or possibly our var. γ .

the road at Sandford and at Appuldurcombe. Plentiful between the second and third milestone out of Newport to Godshill, and at Chil-lerton, Mr. G. Kirkpatrick!!! Near Swainston, Rev. W. Darwin Fox. Near Freshwater, Rev. James Penfold. Occasionally in other parts of the island. I have few localities to give for this plant on mainland Hants, because my correspondents have not furnished me with them, and the species flowers much earlier than I am in the habit of being in that part of the county myself;* I am certain, nevertheless, that it is quite frequent in Hants, perhaps as common over the water as it is here. I have seen it in fields near Southamp-ton, and at Pilley, near Boldre, and found what I have no doubt were the leaves in a meadow at Natley, near Basingstoke, in May last, but the leaves die down so quickly after the flowers that the plant escapes detection by summer herborizers.† Meadows at Highclere and East Woodhay, J. B. in Cat. of Pls. of Newbury. With varieties (what varieties?) between Bishop's Waltham and Botley, left side of the road, within a hedge near a farm-house, Rev. E. M. Sladen (perhaps an es-cape from gardens only). Plentiful by the river-side near Christ-church, Pulteney. Var. β . flowers double or semi-double. N. Pseudo-nar. δ . Bertol. Fl. Ital. iv. p. 18. Here and there occasionally with the common single state, but very rarely, and seldom more than a spe-cimen or two in the same station. A solitary clump in Centurion's Copse, amongst thousands of the single sort, and a very double, but certainly wild specimen on a bank near Yaverland, a few years since. More frequent in meadows and pastures near habitations, escaped from gardens, and then usually of larger size. Field near Bem-bridge Farm, in some abundance. Field at Woodvale, W. Cowes, and elsewhere, naturalized. In this wild double variety the perianth segments are always of a full yellow, like the cup or crown, and in this state I cannot distinguish it from the common great yellow daffo-dil of the gardens, although that is supposed to be a different species, the N. major of the 'Botanical Magazine,' and a native of Spain. The leaves of the garden daffodil are greener or less glaucous in gene-

* In the extraordinary mild season of 1846, the wild daffodil was in full flower near Ryde soon after the middle of February, nearly a month before its accustomed time in this part of England.

† Clusius informs us that in his time N. Pseudo-narcissus "grew in such abun-dance in the meadows close to London, that in that celebrated village (as he calls it) of Ceapside (Cheapside) the countrywomen offered the flowers in profusion for sale in March, when all the taverns might be seen decked out with those blossoms." Rar. Plant. Hist. p. 164.

ral than those of the wild kind, but I think I have remarked considerable difference in this respect between individuals of the latter, and the character is one too slight to lay much stress upon, being probably dependent on circumstances of soil or culture. Var. γ . minor. concolorous, segments of the perianth nearly flat, but little spreading; plant smaller. N. Pseudo-narcissus, Brot. Fl. Lusit. i. p. 549, or N. Pseudo-narcissus, β . Bertol. Fl. Ital. (ut infra)? Plentifully on the high, steep and bushy bank behind Apse Farm, overlooking the garden, in which it also grows plentifully, though appearing rather to have descended to the grass plats beneath, than to have escaped from the garden in which it has not become double. Differs from the common state of the plant in having the perianth segments of almost as deep a yellow as the cup, much less spreading, nearly plane and scarcely at all twisted, narrower, firmer or less membranaceous in texture, rounded or somewhat obtuse, with a minute but very distinct apiculus. The whole plant, although variable in size, is much smaller than the common form, which last is, I have little doubt, the N. bicolor of Brotero, whilst our present variety is the N. Pseudo-narcissus of the same author, and, as the late Professor Don (to whom I showed it) thought, of Linneus also. It almost seems to connect our ordinary wild form with the N. minor of the gardens, but that is a very distinct and well-marked species, which is certainly not the case with the variety we are now considering.

The single wild daffodil, sharing the distrust so absurdly evinced towards almost all our handsomer native flowers, has been supposed of exotic origin, and to have been introduced by the monks in early times, from being so often found near the ruins of monasteries; but it is unquestionably indigenous to the south and middle of England, and to most parts of Europe between the Mediterranean and the Baltic, as far north as 54° , but scarcely higher, being wanting all over Scandinavia and (except in a few suspicious places) in Denmark proper. Here, it occurs profusely in the most sequestered localities, although in earlier ages, when our gardens could boast of but little variety, the more showy productions of our fields and groves would naturally attract attention from the horticulturist, and escaping from his care, be subsequently found established as often in the vicinity of his operations as in their more natural localities. The approaches to Ryde may be seen in early spring bestrewn with the simple yet elegant blossoms of the daffodil, dropped by chance or flung by caprice from the hand of childhood, just as I have seen the streets of Nottingham at the same season sprinkled with the lovely spoils of

the spring crocus, waifs from the empurpled meads below. From their flowering about that time, daffodils are called in Hants and other parts of the country Lenten lilies, corrupted in some places into Lantern lilies. Daffodil, or, as Turner writes it, Affodill, is plainly a mere corruption of Asphodel, Asphodelus, Ασφοδελος, a word applied to many plants belonging to this and allied natural orders, the Coronariæ of Linneus. The flowers of our common wild daffodil are reported to be poisonous; the bulbs, as in most of the plants of the order, are acrimonious, and it is said emetic.

The beautiful summer Snowflake (*Leucojum æstivum*) will very probably be found to inhabit this county. It grows in the adjacent ones of Berks and Dorset; in the former near Reading, and in the latter near Kingston Hall, as I have been informed by its finder, J. C. Dale, Esq. It should be looked for in moist meadows, by streams, &c. I found this species in universal cultivation in the gardens of Charleston (U. S.) as the snowdrop, and had some trouble to persuade the people there that it was not the true plant so called in Europe, which cannot endure even the winter of that sultry climate.

†*Galanthus nivalis*. In meadows and pastures, on banks, amongst brushwood, in groves, thickets, and hedges in close lanes, also (naturalized) in orchards and on grass-plats, &c. In several parts of the Isle of Wight, but scarcely in any where it is quite above suspicion of having escaped from cultivation. In great profusion on the steep wooded banks of Snowdrop Lane, immediately west of Gatcombe Park, between that and Ganson's or Gaskin's Barn; and in almost equal abundance at Gillman's, near Champion's; Mr. G. Kirkpatrick !!! In a little wood by the Yar, near Thorley, and its east bank below Freshwater Mill, in plenty; Rev. James Penfold !!! At King's Quay, *Id.* Banks by the road-side before coming to Chale from Blackgang, in great abundance; Dr. A. G. Martin. Field near Shorwell, Mr. Mark Taylor. I am told it grows in several places about Chillerton, and in various spots adjoining to Gatcombe Park. Naturalized under trees beneath the rookery at Nunwell; Mr. J. Lawrence !!! At the grove by Adgeton, near Brading (naturalized); the late Lady Brenton !! I find few memoranda amongst my notes of any station for the snowdrop on mainland Hants, yet I can scarcely doubt of its growing, either indigenous or naturalized, in many places therein. From its early flowering and quick disappearance afterwards, its haunts are in general known only to the resident, and not to the passing botanist, which in a great degree accounts for my ignorance of its distribution out of the island. Not uncommon ap-

parently about Twyford, near Winchester, but only seen by me there in suspicious places, as in the grove opposite Twyford House, and at Twyford Lodge, also in plenty all along a hedge adjoining the churchyard at Compton. Frequent about Hambledon, Miss L. Minchin. The snowdrop may be truly indigenous in some of its Isle-of-Wight stations, as that of Snowdrop Lane has greatly the aspect of a native locality; nevertheless, I am inclined to hold it rather as an introduced but perfectly naturalized species here, because I have never seen it in sequestered woods like the wild daffodil, or on old virgin turf or pasture land, as in many parts of England, where I believe it to be a genuine aboriginal. The parallels of southern and a great part of central Europe are the true zone of *Galanthus*,* or from 35° to about 55° of latitude, and therefore I do not see any excuse for those who refuse to admit its aboriginality on the score merely of its being a common garden plant, and often an escape from cultivation, as it would the more naturally and frequently be on that very account. In this island the snowdrop forms but does not mature capsules and seeds, at least I have never been able to procure them in a ripe condition: the rapid increase of the plant by bulbs quite accounts for this. The flowers have a faint but delicate fragrance not commonly noticed.

Asparagus officinalis. On sandy sea-shores; rare. On loose sand of the Spit at Norton, Freshwater, not in very great abundance, but much more plentiful now than it was some years back, when there were hardly a dozen plants to be seen. It must, however, have existed there for a great length of time, if it is the same station intended

* It will be necessary for me here to explain what I understand by southern, central and northern Europe, since these divisions have been used in so loose and arbitrary a manner, that Britain is by some held to form part of the second, by others of the third division. The most obvious and natural partition will be to divide the entire latitudinal extent of Europe comprising 36 degrees (including Candia on the south), by 3, which gives us as many regions of 12 degrees each in breadth, which may be thus defined:—

Southern Europe 35° to 47°

Central Europe 47° to 59°

Northern Europe 59° to $71^{\circ} 10'$ N. Cape;

the medial line of the whole continent passing through lat. $53^{\circ} 5'$, or a little to the south of Dublin and Liverpool, which, if we adopt with some but two divisions into north and south Europe, will be the exact parallel of demarcation between the boreal and austral regions of our quarter of the globe, each comprising $18^{\circ} 5'$ of latitude.

by the authors of the Catalogue of Plants in the 'Hampshire Repository' (erroneously attributed to Pulteney) given below. It was subsequently noticed there by Mr. D. Snooke!!! A single plant on the shore at the mouth of the Wootton River, June, 1842. A few plants on the shore west of the houses at Ryde, Mr. W. Wilson Saunders!!! (Probably a garden outcast). At Christchurch and Freshwater, Isle of Wight, Rev. Messrs. Garnier and Poulter, in 'Hampshire Repository.' I remember to have once picked a specimen on the muddy shore near Southampton. Flowers often imperfect, the styles obsolete.

Convallaria Polygonatum. In woods and copses; a doubtful inhabitant of this county. Chawton Park, near Alton, Mr. J. Woods, Jun., in Bot. Guide. In May, 1848, I carefully searched the woods at Chawton for a whole day, but could not meet with this rare species. On applying last year to Mr. Woods for further particulars and directions to the spot, that gentleman stated that he had an indistinct recollection of gathering this species near Chawton, but that at this distance of time he could neither recall the locality to mind, or speak confidently with regard to the plant itself. Woods at Rotherfield Park, Miss Scott. Since, however, this *Convallaria* grows, it is said, in coppices about Alderbury, in the contiguous county of Wilts, (and is found in Kent, Somerset, and other southern counties), there seems no reason why it should not be equally indigenous to Hants. I remarked, whilst looking for the plant about Chawton, that small specimens of *C. multiflora* sometimes put on the aspect of *C. Polygonatum*, the leaves in such examples being broader and more erect (or parallel to the stem) than is usual in the former, where the leaves are commonly reflected in pairs from the stems, and stand conjoined like wings at a considerable angle to it, uncovering the latter throughout. May not this resemblance, which I found very tantalizing, often occasion *C. Polygonatum* to be passed by for the above form, or rather state, of *C. multiflora*, which is far from uncommon? I suspect this last may be the *Polygonatum humile Anglicum* of Ray's Synopsis, found by Mr. Philip Moore, gardener of Gray's Inn, in the woods of Wiltshire, according to Bobart, and by the same person in those of Hampshire, according to Morison (Hist. Plant. iii. p. 537), who says, on a view of specimens received by him from Hants, that it differs from the common Solomon's seal only in its smaller size and stature.

Convallaria multiflora. In woods, copses, groves, thickets, and shady pastures, both on the dry, chalky uplands, and in low, damp

clayey or even wet situations; extremely common over a great part of the county, but with our other British species wholly absent from the Isle of Wight. In West Wood (or Weston Wood?), by Netley Abbey, at Mansbridge and elsewhere about Southampton. Common in woods at Langrish, Bordean Hill, Privet, Tigwell and elsewhere near Petersfield, also in woods about Bishop's Waltham, Alresford, Botley, Fareham, Shidfield, Boarhunt, Alton (Akender Wood and Chawton Park), Winton (at Twyford, Chilcombe, &c.), Pen Wood, Highclere, and Appleshaw. Woods about Bramdean, Withering. Under the walls of Silchester, Mr. Fordon in B. G. Woods by Bramdean, Doody. Generally dispersed, I believe, over the whole of Hants, with the apparent exception of the south-western or New-Forest district, in which I do not remember ever to have noticed it. Gigantic specimens occur here and there in our woods, three feet high, with stems as thick as swan-quills, and leaves and flowers in proportion.

Convallaria majalis. In woods, thickets and moist shady places; not found in the Isle of Wight, and far from common in mainland Hants, although I have good reason to believe that very few of its stations only are known to me. In a large hollow in Churcher's Island, near Wickham, and at Shidfield, Miss Chapman !!! Near Shidfield Common, in a copse east of the parsonage at the upper end nearest the road to Droxford, Miss Hawkins. I suspect this station and the last are the same. Abundant in Parnell or Parnholt Wood, near Farley, Miss A. M. Yonge !!! Dr. A. D. White finds it in more than one spot in this wood, where the flowers have stains of dull red or crimson at the bottom, as noticed by Mr. R. W. Smith, of Winton. Wherwell Wood, near Andover, Mr. Wm. Whale. Lord's Wood, between Southton and Romsey, in plenty, Miss L. Minchin. Pen wood (Highclere Park?), Cat. of Pls. of Newbury. Stony places on the common under Cæsar's Camp, 1844, Mr. W. W. Reeves (in litt.). I am told it grows in a wood near Holywell House, in the vicinity of the first station, called in consequence the Lily Wood, but I am not sure whether this and the two other localities of Wickham and Shidfield are not all one and the same: there is some confusion between them. At Shidfield, about a mile from Wickham, the lily of the valley is abundantly scattered over the copse in a damp sandy loam, but of very small growth, and hardly above one plant in fifty producing flowers. In Parnholt Wood, where it grows chiefly under beeches in dark friable soil, I found it still more shy of flowering, not one in a hundred producing blossom, but Dr. White finds it in abundant

flower in other parts of that most extensive wood !!! Many other stations I have no doubt exist in the county, where,

“Wrapt in verdure, fragrant lilies blow,—
Lilies that love the vale and hide their bells of snow.”

Ruscus aculeatus. In woods, thickets, copses, in bushy, heathy pastures, on hedge-banks and borders of fields; frequent. Very common in many parts of the Isle of Wight; plentiful about Ryde in various places, in Quarr Copse, Apley Wood, Shore Copse, woods along the Wootton River, &c. Very large and abundant in Gurnard Wood, by W. Cowes. Extremely plentiful in dry copses about Newchurch, as at Skinner's Hill, Hill Copse, Alverstoke Lynch, Bordwood, &c. Woods in the Undercliff occasionally, but not very common there, and much more frequent in East than in West Medina, preferring apparently the clay of the eocene or tertiary beds to either the chalk or greensand. Common in some parts of mainland Hants, and I think of universal distribution over the county. Portsea Island, and very common in hedges in Hayling Island. About Clayhall and Alverstoke, near Grange farm, and elsewhere in Stoke's Bay. About Southampton, not uncommon. Sowley and elsewhere in the New Forest; probably abundant in that district. In Anfield Wood (near Winton), near one of the principal drives, Mr. Wm. Whale. Amongst furze near Hasted, by Hursley, and on the Otterbourne road (from Hursley ?), nearly opposite the corner where is the waterfall at the end of Mr. Chamberlayne's park, *Id.* Hurne (near Christchurch), Mr. Curtis in litt. and Brit Entom. xi. t. 489. The Salterns; Puxol lane; Gosport road; Hill Copse, Mr. W. L. Notcutt. Of this plant we have two principal varieties, but connected by intermediate gradations. Var. α . Leaves (or rather phyllodia), narrow, subelliptic-lanceolate. Var. β . Leaves broadly ovato-elliptical. Both these forms are about equally common, and are analogous to similar ones of the common myrtle. I suppose the var. *laxus* of Smith in Linn. Trans. and Engl. Fl. to be some slight deviation from the common narrow-leaved form, α ., with less erect branches than usual, but I find nothing in the station assigned for it (Stoke's Bay) at all differing from the species in its ordinary phases. The flowers of this species are in reality axillary, on peduncles several times their own length, running beneath the epidermis of the flattened branchlet or phyllodium, and appearing as if sessile on the disk of the latter, at or about its centre. Analogy with other species of the genus leads us to regard this subcuticular peduncle as the common stalk of a raceme, of which only

one, or at most a pair, of flowers are developed at a time at its free extremity, the rest expanding as they are successively protruded, as is obvious from their production for a long time together from the same point, as well as from the remains of the pedicels and bracts, not to mention the nascent buds amongst which the later flowers are seated. The flowers are often produced as early as January if the weather be tolerably mild, and the large, cherry-like, bright scarlet and polished berries remain attached through the winter, making a fine appearance in the woods, but readily drop off when handled. Butchers are said to make use of it in some parts of England for driving away, and perhaps impaling on its excessively acute spines, the flies that settle on their meat and chopping-blocks. The more gentle of the craft with us are contented to deck their mighty Christmas sirloins with the berry-bearing sprigs, and it contributes at that season, with holly, misseltoe and other evergreens, to the decoration of our churches and houses. Its common name in this island is Knee Holm. The stems, though so hard and stiff, scarcely, I think, survive beyond the second or third year. The common Butcher's-broom is unable to resist a degree of cold much beyond that of our English winters, and therefore, like *Tamus*, its line of distribution is deflected towards the south-east upon the continent, where it is rather a plant of southern than central Europe.

†*Tulipa sylvestris*. In clayey or chalky meadows and pastures ; very rare, and perhaps not really indigenous, at least to the only Isle-of-Wight station I know for it at present. In a large moist meadow on clay a little south-east of Hardingshoot farm, a few miles from Ryde, Feb. 25, 1846, just coming into flower. The plant here is in very moderate quantity, although apparently quite wild, occurring sparingly scattered over a rather limited area, associated with the single wild daffodil (*Narcissus Pseudo-narcissus*) and tolerable plenty of the Primrose peerless (*N. biflorus*). The meadow is on the (plastic?) clay, but contiguous to the chalk formation at Nunwell, and hence the soil probably contains calcareous earth as a constituent in small proportion. One or two only of the plants flower, I believe, annually. Mr. Wm. Whale showed me at Andover a specimen of the wild tulip, which he had received from a lady who gathered it in the Isle of Wight, but no station was given on the label. It probably lurks undetected in some of our chalky pastures, pits and hollows, from the difficulty of seeing it excepting at a very early season of the year, before the leaves have died away, or the rather uncommon flowers are past. Plentifully in an orchard at Breamore (near Fording-

bridge), Mr. J. Hussey (naturalized probably). This is the only mainland station I have on record, but others less exceptionable will in course of time be discovered. I see no reason to doubt that the wild tulip is indigenous to Britain; in some parts of England it abounds in chalky pastures, and is the species appropriated to western Europe, just as *T. biflora*, *altaica*, &c. are to eastern Europe and Siberia, under our parallels. The sole cause for suspecting the Isle-of-Wight station is the fact of the meadow in which it grows being close to the site of a small farm-house, now many years destroyed, called Little Hardingshoot, but I have no evidence of the spot in which the tulip is found, or any other part of the field, having ever been garden-ground, nor is there the smallest trace of a garden visible at this day. I nevertheless consider it incumbent on me to state, in cases like the present, the remotest suspicion that may arise on the question of the spontaneity of any plant enumerated in our county flora: the ends of science can only be promoted by the unreserved communication of every doubt, however slight, and by holding with strict impartiality the balance of argument in which are weighed the claims of species to be called indigenous, not failing to declare when the beam inclines ever so little against us.

Fries tells us that the wild tulip so abounds in innumerable places in the Swedish province of Scania, as in early spring to cover the ground as if thickly sown with corn (*segetis instar stipata*), but rarely flowering and quickly withering away. He thinks geographical reasons opposed to its being truly aboriginal in that part of Europe (lat. $55\frac{1}{2}$), but that objection does not apply to the south and middle of England, which is quite within the proper zone of *Tulipa sylvestris*, whatever may be the case with Scania. Fries observes that the plant was well known to Linneus a century ago, who, according to him, was disposed to hold it native there (*haud advenam declaravit*), *Corpus Fl. Provin. Suec. Scan.* p. 170. But Linneus appears to me to have held rather the contrary opinion, for he says (*Fl. Suec. edit.* 2, 106) "*ex hortic non pridem aufuga*," an ambiguous wording, since *pridem* means both lately and long ago, but in both senses the escape from gardens is directly asserted by him.

Fritillaria Meleagris. In damp meadows, pastures, woods and thickets; rare. Not found hitherto in the Isle of Wight. Sparingly in a moist meadow belonging to and opposite the residence of J. K. Jonas, Esq., about half a mile out of Bishop's Waltham, on the road to Gosport, Miss L. Minchin !!! Very sparingly in Tangier Park, near Basingstoke, Miss Orde, 1848. In all the woods round Strath-

fieldsaye (the Duke of Wellington's), on the northern limit of the county, but in more abundance in the park, Miss E. Sibley !!! Here the Fritillary grows by tens of thousands in the wet pasture and meadow land, scattered over a vast acreage of the park, but most abundantly towards the north-west end, and in the wet meadows beyond it, on the other side of the road (I believe in Berks, or in an outlying portion of Wilts). The varieties with purple and white flowers occur in pretty nearly equal proportion, and in a swampy thicket at the north end of the park I gathered most luxuriant specimens eighteen or twenty inches high. It has been long known to grow near Reading, in the conterminous county of Berks and only a few miles from Strathfieldsaye, and two other stations are given for it in that county in the 'Catalogue of Newbury Plants' several times referred to in these Notes. I have not ascertained that the species grows in all the woods about Strathfieldsaye, and believe my friend speaks from the report of others, but it certainly does grow in wet thickets there, and from what is recorded of a station further on it would seem to be a sylvestral as well as a pratal plant in Hants. At Bishop's Waltham, Mr. Jonas tells me, the children gather the Fritillary for their May-day garlands, yet, in proof of the incurious nature of the Hampshire peasantry, I could not find any one at Strathfieldsaye who knew its name; some called the plants snowdrops (the white variety), others daffodils, whilst the rest pronounced them to be cowslips! The station at Droxford given in this journal (Phytol. ii. 998) I understand since to be erroneous, or at least doubtful. "Said to grow in Marvel Wood (near Winton?), but I have searched more than once for it without success," Dr. A. D. White (in litt.). So elegant a plant as the Fritillary, and one of so unusual an aspect and comparative rarity, could not of course escape suspicion of being an imported foreigner with that rather numerous class of persons who appear to think Cowper's "fields without a flower"* no poetic amplification of the comparative deficiency of our British soil in the choicer productions of the more favoured climates of France and Spain. But here, as in other instances, their incredulity is founded on misapprehension of the true nature and geographical range of the species. Beauty of form and colour are so inseparably connected in our minds with warmth of climate, because we see both developed in the highest degree where the influence of such climatic condition is greatest, that we are apt to assume the latter to be in all cases indis-

* Task ; the Time-piece.

pensable to the production of the former, and to conclude that every plant, endowed with those attributes of gracefulness of form or richness and variety of hues above its fellows in the field, must have migrated from a climate in which alone we fancy plants so attractive could have originated spontaneously. We may excuse the non-botanical world for making that absolute and unexceptional which as a general proposition holds true in the main, and only smile at their crude speculations and traditions to account for the presence of certain southern types of vegetation which mingle in our flora with the predominant and more northern forms;* but it does seem surprizing to find botanists who have the means of comparing the vegetation of our own with that of adjacent countries continue to suspect or reject, because their forefathers suspected or rejected, plants evidently proper to our zone and climate. Many tropical genera, as *Passiflora*, *Dioscorea*, and even tropical families, as palms, have one or more outlying species that extend far into the temperate zone, and the same holds good with plants having their chief seat in the south of Europe, species of which extend into central or even northern Europe; such are *Narcissus*, *Muscari*, *Gladiolus*, *Iris*, *Daphne* and many more, all of which have representatives in the middle parallels of our continent, and why not equally in Britain? I do not mean to say that every such outlying or northern species when found in Britain must forthwith be set down as indigenous, because its natural limits in other European countries are under a latitude as high as our own, for it is well known that plants have their distribution governed almost as much by longitude as by latitude; but this I do mean to assert, that when a species is discovered in reasonable abundance in this country which is known to inhabit a nearly or equally high latitude on the continent, and occurs here in situations perfectly analogous with those it affects abroad, unless some good cause can be shown why it is not likely to be indigenous, such as the vicinity of gardens, or proof of recent importation, &c., it does strike me as an absurd and needless refinement in scepticism to refuse such species the full

* Many plants common in the south and west of England, such as *Erica ciliaris*, *Agrostis setacea*, *Briza minor*, *Rubia peregrina*, *Gastidium lendigerum* and *Tamus communis*, are in fact more truly southern species than most of those which it is the fashion to suspect as aliens, but then they have not the misfortune, like these, to be objects of cultivation for their beauty or other qualities, as in the case of such really more northern plants as the hop, mezereon, Martagon lily, our two hellebores, columbines, &c., which have all some enemy or other amongst British botanist to invalidate or deny their title to citizenship.

acknowledgement of citizenship. I will give what I consider an instance in point. The starch hyacinth (*Muscari racemosum*) is set down by Mr. Watson in the 'Cybele' as an alien, without a query expressed, and with the omission of the usual comital census. Mr. Babington marks it in the 'Manual' as a doubtful, and Sir Wm. Hooker as a certainly introduced, plant. Now why should this be so?—*Muscari racemosum* is found in sandy fields and grassy places throughout southern and central Europe, in the west as well as the east in Belgium, France, Germany, &c., being the most common and northern species of its genus. I gathered it in April, 1835, in profusion over a great extent of sandy ground, and in fallow-fields at Cavenham (pronounced Canham), eight miles north-west of Bury, in Suffolk, between that town and Mildenhall, where it is certainly native and quite a weed in that neighbourhood, and I was told at Pakenham and Hengrave likewise. See also E. Gillingham's 'Account of Bury,' 1804, p. 288. Now upon what principle do those act who doubt or reject this plant as belonging to the British Flora? Upon none that I can imagine, except that it is rare, or rather very local, in this country; that being a frequent object of cultivation as an ornamental flower in British gardens, it is *assumed* to have become naturalized from that source, and lastly, from a vague, unquestioned opinion that it is a species proper to the south of Europe, and therefore not likely or even possible to be indigenous with us. For my own part, I am fully persuaded *Muscari racemosum* is a genuine native of the east of England, and that the very long known station on the earthy ledge of the old city wall of Norwich is a natural one. As to the objected silence of old authors on this and other modern additions to the British Flora, I have before shown (Phytol. iii. 622) how untenable that argument is and irreconcilable with fact, for once admit it, and what becomes of the claim of such undenied and undeniable British plants as *Lobelia urens*, *Erica ciliaris*, *Briza minor*, *Euphorbia hyberna*, *Trichonema Columnæ*, and many besides, that from their local distribution escaped notice in England up to a late or comparatively late period? I have also shown, under *Campanula* (Phytol. iii. 129), how plants of a continental or eastern distribution become scarce or local in westerly and insular countries, or fail there altogether; but that is no reason why they should not, as we see they do, occur partially and sporadically in such regions, or for our refusing to own them for natives when found. Now let us see how the case stands with the more immediate subject of these remarks, the *Fritillaria Meleagris*. This species needs not so much defence against the sceptics as some others,

being pretty generally recognized as a native at the present day by our leading botanists. Still there are dissentients, or those inclined to be so. Mr. Watson, in 'Cybele Britannica,' wavers somewhat yet. No one, I think, who has seen the Fritillary in many of its English habitats could reasonably doubt its nativity, but we will take up our old position and tower of strength in the geographical distribution of the genus. The Fritillaries have their chief seat in the northern temperate zone, either on high mountains towards the south, or in low plains, at or near the sea level, towards their northern limit: they are, in fact, plants of cool and even cold climates. We find under our own parallels, or between fifty and sixty degrees of latitude, species of the genus appropriated to every part of the world. In Europe we possess *F. Meleagris* all over the west, ranging in Norway and Sweden to about lat. 60°, and eastward to the confines of Asia, where, in Siberia, it is replaced by *F. verticillata* and *F. minor* (Ledeb. Fl. Altaica), and at the furthest eastern extremity of that continent in Kamtschatka, and on the opposite western shores and isles of America by *F. Kamtschatcensis* and *F. lanceolata* (Hook. Fl. Bor. Am.). These species, like our own, inhabit the plains and low grounds, and are strictly the analogues of *F. Meleagris* in their respective countries.

†*Lilium Martagon*. In woods, copses and thickets; very rare. Not known in the Isle of Wight. Discovered about fifty-six years ago by Capt. Charles Robinson, R.N., late of Swanmore Cottage, near Bishop's Waltham, now of Greenwich Hospital, in a wood near Durley. Capt. R. obligingly communicated to me the following particulars in a letter from himself, dated July 26, 1848:—"It is now many years since I discovered the Martagon in some abundance in the large wood on the Durley estate, called Durley Wood, through which a small rivulet passed and ran into the river running (into?) the pond at Bishop's Waltham, opposite or nearly so to Calcot House, then the residence of — Clewer, Esq., of Botley. Many specimens of this plant have since been obtained by others from the same locality; whether there are any at present I really cannot (say), since . . . * it being now full fifty-four years since I first discovered it in the before-mentioned wood." Last summer I searched in Durley Wood for the Martagon lily without success, but time did not then permit of more than an imperfect examination of the wood, which is very considerable in extent and irregular in form: I trust to be able to renew the search for this fine plant, and hope others residing near or visiting Bishop's

* I cannot decypher some few words in Capt. R.'s letter.

Waltham may be induced to assist me in again bringing it to light. Its usual place of growth, amongst thick brushwood, often veils it from the passer-by even when in flower. Whether the Martagon Lily is really indigenous in Durley Wood, or simply naturalized, I cannot pretend to say, but in most parts of that wood, were I to meet with the lily in any quantity, I should judge it a natural locality, disposed, as I am, to contend for its claim to be held a true native of the east and south-east of England. In support of this view, I take the precise line of argument employed in the case of *Daphne Mezereum*, and therefore need not recapitulate all that has been said by me on that and other disputed species. I look on the claims of the *Mezereon* and *Martagon* to be as nearly the same as can be; the sole objection that I have to urge against the admission of both into the list of acknowledged natives, being the failure of each of these plants towards the coast countries of the west of Europe and in the meridians of the British Isles. Otherwise their distribution accords here with their dispersion on the continent, for both inhabit the same parts of central Europe from the western confines of Germany across the entire continent into Siberia. Towards the south, *Lilium Martagon* is an inhabitant, like most of the genus, of subalpine woods, but descends into the plains or to low elevations in the middle parts of Europe and Asia, growing in copses and bushy places precisely as with us. It seems to be absent from Belgium proper and from the north-west of France, but is indicated by Von Hall (Fl. Belg. Sept.) as found in the wood of the Hague, and possibly spontaneous there. Fries (Corp. Fl. Prov. Suec. Scan. p. 169) gives it as abounding in pratal thickets (*dumetis pratensibus*) at the foot of hills in one or two places in Scania, and remarks that in Germany it is truly indigenous wherever there are primitive mountains, nor will he deny the possibility of its being native to Sweden also. *L. Martagon* is indeed the most common and widely diffused species of the genus in Europe, and if not strictly (as, however, I am inclined to believe) an aboriginal Briton, it is yet so thoroughly naturalized, and its stations are now so numerous, that it is deserving of better treatment than to be put upon the alien list, and, as if a casual stray from the garden merely, deprived of its rank of denizen and privilege of comital representation in the 'Cybele Britannica.' This species of lily has been in cultivation universally since the year 1596, and in all probability long before that time. Supposing it to be merely naturalized with us, it is highly improbable that it should have become so only at a later day, and hence it must have existed, as at present, in many of our woods without being

observed, for perhaps a couple of centuries or more. Most of the recorded stations are of very recent date, but it is said to be mentioned as found wild in Yorkshire so long back as 1770, or thereabouts, in Hull's 'British Flora,' a work I have not myself seen. In the Turk's-cap Shaw at Woodmanston, about one mile from Banstead and four from Epsom, in Surrey, where I gathered it in profusion, July 5, 1835, and communicated specimens, from which the beautiful figure in E. B. Suppl. iii. t. 2799, was made, no plant could have a more perfectly indigenous aspect; and it appears, I am told, equally so in other parts of that county, and in Kent and Essex. Gmelin (Fl. Sibirica, i. p. 44) says it abounds throughout Siberia to Ochotsk, lat. $59\frac{1}{2}$, and Kamtschatka. This last peninsula, lying under the same parallels as Great Britain, resembles Newfoundland in its climate, and like that island is infinitely colder at all seasons than England, the summers in both being extremely moist, chilly and variable, snow lying at the sea-level in the harbour of St. Peter and St. Paul very commonly till the middle or end of June.*

Obs.—*Simethis bicolor*, very recently discovered on moory ground about two miles west of Bournemouth towards Poole, but within the Dorsetshire boundary, it can hardly be doubted, will be discovered ere long on the Hampshire side of that vast heathy tract called the Poole Basin, which is as remarkably uniform in its botanical as in its geological features. I visited the station, which is very close on the borders of this county, by Mr. Borrer's directions, in October last, and found the dried remains of the leaves, stems and flower-stalks. Its detection still more recently in Ireland fully confirms it as a genuine native of Britain, and leads us to hope that it will ultimately prove indigenous in many parts of the south-west of England. *Anthericum ramosum* and perhaps *A. Liliago* ought, one would suppose, to grow in England. The former especially is widely spread over Europe, and is frequent in the north of France, and in most countries of the continent to Denmark and Sweden.

* The mean heat of the three summer months at St. John's, Newfoundland (lat. $47^{\circ} 34'$), is below that of Edinburgh (lat. $55^{\circ} 57'$), and the other seasons are colder in a still greater degree. I have myself seen ice in huge masses on the shore of the extreme south point of Newfoundland in the middle of July; and the climate of St. Peter and St. Paul, in Kamtschatka, from its higher latitude ($53^{\circ} 10'$) and extreme eastern position (long. E. $159^{\circ} 30'$) is still worse than in Newfoundland; for although far less rigorous than that of Siberia in winter, it is miserably deficient in positive warmth at all times of the year, like southern Patagonia. Yet does Kamtschatka produce many very fine plants of the natural orders we are now treating of, in *Lilium*,

†? *Ornithogalum umbellatum*. In meadows, pastures and thickets; rare, but I see no great reason to doubt its being truly indigenous in Hampshire, although unquestionably most frequently seen as a garden outcast, or at least in spots open to suspicion. Meadows about Steephill in several places, appearing to be truly wild, Mr. Albert Hamborough and Dr. G. A. Martin !!! A few plants found, June 13, 1845, in Calbourne New Barn, Hummets, apparently quite wild. In a pasture by Afton House, Mr. G. Kirkpatrick (indigenous ?) !! Naturalized on the lawn behind Osborne House, and in all the subjoined stations in a very questionable condition as regards nativity. In Northwood Park, Miss G. E. Kilderbee, but rarely flowering, and too near the shrubbery !!! In an artificial grass field at Newchurch, in tolerable abundance, but on the site, some thirty years ago, of cottage gardens. I have found it in similar unsatisfactory situations elsewhere in the island. "Found at Bullington," Rev. D. Cockerton, the only station I find amongst my notes for this plant on the mainland of the county. Called "Wake-at-noon" in this island. *O. pyrenaicum* probably grows in the woods of this county, since it has been found in the adjacent ones of Sussex, Wilts, Berks (Cat. of Pls. of Newbury), and I think Dorset. In Somersetshire the Miss Sibbels have found *O. pyrenaicum* growing five and six feet high! I have never seen it much exceeding a foot or two in woods at Bath, where, during my residence in that city about sixteen years ago, I have seen the young shoots sold in the market instead of Asparagus. *O. nutans* is likely to be naturalized in some parts, and *Gagea lutea* may occur with us as well as in Oxfordshire.

Scilla autumnalis. In dry sandy or gravelly pastures, and on rocks by the sea; very rare. In great plenty on the sandy pasture-ground of the Spit or neck of land below St. Helen's, that stretches across the entrance of Brading Harbour. Priory, Isle of Wight, Mr. J. Woods, Jun., in Bot. Guide (possibly the same station as the last).

Fritillaria, Ornithogalum, &c., proving that there is no inseparable connexion, as people are apt to suppose, between beauty of form and colouring, and geniality of climate. We should disregard this too prevalent opinion in discussing the indigenous origin of plants, and be guided by the type they present, and the geographical distribution of the orders, genera and species they severally belong to. A most remarkable instance of the prevalence of richly-coloured and extremely tropical forms of vegetation, under a constantly cool and sunless sky, ever dripping with rain or fog, is graphically given by Dr. Hooker in his account of Sikkim Himalaya, in the 'Journal of Botany' for February, 1850, pp. 58, 59.

In the former place it seems to have been first noticed by Mr. W. D. Snooke, and may be found annually, for the most part in plenty, and in some years even profusely. These are the only Hampshire localities I am at present acquainted with for this rare and pretty little Squill. Leaves seldom produced with the flowers or coetaneous, at least not fully developed till the latter are past, and sometimes not even then.

?*Scilla verna*. On rocks, cliffs, pastures and grassy slopes near the sea, but extremely rare, if it was ever found at all in Hants. "Near Newport, Isle of Wight," Rev. Messrs. Garnier and Poulter in Hamp. Repos. Brading, Dr. Bostock in Withering's Bot. Arrang., 7th edit. The authenticity of the latter quotation was kindly confirmed by Dr. Bostock, in answer to an inquiry made on the subject by Dr. T. Bell Salter, in 1839. Dr. B., I believe, exhibited specimens before the Linnean Society, or at least to some of its members, I forget which; still it is possible that between two species so nearly resembling one another a mistake may have been committed. Were it not that the existence of *Scilla verna* as an Isle-of-Wight plant rests on such respectable authority, I should be inclined to exclude it from the Hampshire Flora, having never succeeded on repeated trials in finding it on either station, or heard of its rediscovery by others. Although common enough on many parts of the western and north-western coasts of Britain, from Cornwall to the Shetland Islands, and on a few spots along the north-eastern shores as far south as Northumberland, there are no recorded localities for it on any intermediate point of the extensive coast line between the two English counties just named, unless the unconfirmed stations in this island, and one or more equally doubtful habitats in Devonshire, be excepted. The wide difference in the flowering seasons of these Squills is the chief difficulty in the way of supposing a mistake to have been made between plants otherwise much alike. It may be well to remark, that I do not find *S. autumnalis* on either station assigned to *S. verna*, which lessens in some degree the suspicion of any such error. I should never be surprized to hear that *Scilla bifolia* had been rediscovered in England, but should expect it rather in the eastern than the western parts.

Allium vineale. In meadows, pastures, waste grassy places, and borders of fields; not, I think, uncommon, but often, I imagine, overlooked, from its seldom or never flowering with us, which may induce some doubt at times, even with respect to the species being the same in all the subjoined stations. At Steephill and other parts of Under-

cliff occasionally, as Pelham Woods, &c. Abundantly in Northwood Park, where, in one place, the turf is quite covered with its leaves, but no flowers are produced. Frequent on the east bank of the Medina, below Newport, near Fairlee House, Mr. G. Kirkpatrick !!! Culver Cliffs, Rev. G. E. Smith !!! (see *A. oleraceum*). I have found it occasionally in other parts of the island, but never in flower, and for this reason I have omitted noting down the localities, feeling uncertain whether some other species might not have been mistaken for it by me. We share, of course, in Hants the general poverty of Britain in the species of *Allium*, which are far more numerous in the south and south-east, than in the western parts of central Europe. On the mainland *A. vineale*, or what I guess to be such, abounds on Magdalen Hill, near Winchester, and it is probably only this, and not *A. Schoenoprasum*, which has been indicated to me as Chives, growing in Hayling Island, by the Rev. Charles Hardy. I do not, however, mean to deny the possibility of that very local plant being a native of our county, but I have, as yet, seen no specimens from Hayling.

Allium oleraceum. In similar places with the last, but scarcely well proved to inhabit this county. The Rev. G. E. Smith believes he found this species on the *débris* of the green sandstone in Sandown Bay. I have two specimens of an *Allium* gathered in this bay in 1839, by a servant, and sent to Miss E. Kirkpatrick, the leaves of which are very narrow, with close cylindrical sheaths, and appear to have been plane when fresh; the head of bulbs is very compact and spherical, but the flowers had quite fallen. The crest of the sandstone cliffs near their junction with the chalk of Whitecliff Bay, is fringed for some distance with quantities of an *Allium* which I suppose to be chiefly *A. vineale*, but invariably producing only heads of bulbs without blossoms; but both here and on the banks of *débris* in the bay below, specimens occur with semi-cylindrical leaves grooved above, but not rough as Smith asserts of *A. oleraceum*; the want of flowers puts it out of my power to decide with certainty to what species it belongs, the species of this genus being very difficult of discrimination by their leaves alone.

Allium ursinum. In moist shady woods, groves, thickets, on damp hedge-banks and grassy borders of fields; rarely with us in open meadows and pastures; far too abundant in many parts of the Isle of Wight, and probably not rare in the county generally. Most common in woods over the chalk or on the greensand. Plentiful in Centurion's Copse, near Brading, and in enormous quantity over nearly the whole of Greatwood Copse, near Shanklin, as well as extremely abundant in

all the other woods betwixt Shanklin and Bonchurch, in Hatchet Close and Cowpit Wood, &c. Excessively rank and profuse in the high enclosed wood in Appuldurcombe Park, and equally so about Gatcombe, under the trees in the wilderness or rookery. About Shorwell, as at North Court, in the dell or hollow in which the mausoleum stands; in patches of copse about Cheverton farm, Idlecombe, &c. Most profusely in Lorden, Barkhams and Bakerswood Copses, betwixt Carisbrook and Shorwell, here, as in many other places, perfectly concealing the ground to the utter exclusion of every other plant excepting the no less gregarious and usurping *Mercurialis*. Common in Swainston woods and about Calborne, abundant in woods at Rowledge, and in fact in every patch of copse and thicket on the southern slope and foot of the central chalk range in Westridge, Slucombe, Dewcombe Copses, &c., much too plentifully. Grounds at Norris Castle, and in Barton Copse, near Osborne, abundantly, as well as in other parts of the island occasionally. Either it is less common on the mainland of Hants, or it has escaped my notice from the disappearance of the leaves early in summer, as I have at present only the few following stations to give: Longwood, Miss L. Legge; Warnford, Rev. E. M. Sladen; Near Soberton Mill, Longwood, Rev. Messrs. Garnier and Poulter in Hamps. Repos.; Fontley; bank near Wickham road, Mr. W. L. Notcutt; in Hawkley Hangers, near Selborne, June, 1850.

This plant is an abominable annoyance in our island woods in spring and early summer, soon after which the leaves and scapes die down, and cease to offend the botanical explorer by the rank odour of garlic they exhale. Some of these woods are so completely filled with it, that in looking along the ground, beneath the trees, one beholds only a uniform mantle of its leaves, which are often more than a foot in length and nearly four inches wide, and so effectually exclude the light from the soil below them, that nothing springs up to relieve the rank monotonous exuberance of the repulsive herbage, the odious scent of which, the profuse array of starry blossoms cannot make amends for. In close damp weather an insufferable garlic smell infects the confined air by direct exhalation from the plant, and which is increased as it is trodden down and broken in passing through the almost knee-high foliage. Its presence in woods, however, is innoxious compared with its intrusion upon pasture land, as is too often the case in other parts of England, to the great detriment of all dairy produce from fields so infested. Fortunately for our farmers and graziers, the Bear's Garlic will only thrive here in damp and per-

fectly shaded situations, and is a sylvestral, scarcely a pratal species. Besides Ramsons, it is here called Gipsy Onion, as forming it is said an article in the strong diets of that singular race, whose picturesque encampments, once numerous in this forest country, are now comparatively few. Nearly allied to our Ramsons is the *A. tricoccum* of N. America, but in that species the leaves die off before the flowers are developed, which is not till June or July. The bulb also appears to be ovoid and acuminate, not as in our plant, elliptic oblong, equally thick at both ends. Both exhale the same detestable smell when drying for the herbarium.

Agraphis nutans (*Hyacinthus non-scriptus*). In groves, thickets, copses and on hedge-banks, as well as in damp open grassy places, meadows, &c., most profusely abundant throughout the county and Isle of Wight. Var. β ., flowers white, occurs here and there occasionally as single specimens, but always very sparingly. In Quarr Copse, St. John's Wood and elsewhere about Ryde, now and then. Not unfrequent in woods about Shanklin. An example or two with pink or flesh-coloured flowers has occurred to me in this island, but is extremely rare. This beautiful and familiar plant, more common in Britain than in any other country of Europe, to the western parts of which it is exclusively confined, goes here by the name of Blue-bottle, doubtless from the ventricose form of the flower contracted and reflexed at summit.

Obs. *Muscari racemosum*, the Starch Hyacinth, may be looked for in the sandy fields and pastures of this country with good probability of success. It is reported in the adjoining counties of Dorset, Surrey and Berks; in the last, near Newbury according to Dr. Lamb, a town close upon the Hampshire boundary, and the station may even be within our own limits. The sandy tracts between Petersfield and Farnham, and about Wolmer Forest, are amongst the most likely to yield this species, which I am persuaded is a genuine native of eastern England, as I have lately endeavoured to show, nor should I be surprised to hear that *M. comosum* or *M. botryoides* had been found wild in this country, being both coextensive in their range with the other on the continent.

Colchicum autumnale. In moist woods and thickets, or in low damp meadows; rare? Found some years back by Mr. Daniel Clarke of Newport, in a field by the Medina above Shide Bridge (close to the town on the south), Mr. G. Kirkpatrick; but subsequent research has not confirmed the discovery of the *Colchicum* in that or any other part of the Isle of Wight. In a small wood at Ap-

pleshaw; Mr. Borrer in Bot. Guide. I find it abundant in the large sloping wood nearly facing the church, in which *Lonicera Caprifolium* has been found, and which produces besides *Aquilegia vulgaris* and *Vicia sylvatica*. The *Colchicum* probably grows not uncommonly in the vicinity of the same village, as it has been found abundantly in a meadow there by the Rev. J. W. Reeves. Near Liphook, Mr. H. Barrett in Baxter's Brit. Flow. Pls. In a meadow near Burghclere parsonage, very plentiful, Cat. of Plants of Newbury. These are the only stations I know of at present in Hants for this equally curious and valuable but dangerously active plant. It doubtless grows in other parts of the county, being found in most of the adjacent ones on the west and north.

Narthecium ossifragum. In spongy, turfy or peaty bogs, wet moory heaths and commons; not frequent in the Isle of Wight. In Sandown Marshes on the skirts of Lake Common. Most profusely in Alverstton Lynch, near Newchurch. Abundant on the Wilderness and moors adjoining. On the boggy slope of Bleak Down towards Roud. Moors by Munsley, near Godshill, and Munsley peat-bed. Bog at Blackpan, Dr. T. Bell Salter. Wood near Tinker's Lane (by W. Cowes), Miss G. E. Kilderbee! Freshwater Beach, Isle of Wight, Rev. Messrs. Garnier and Poulter in Hamps. Repos. (where could this plant have grown *then* where all is now sand and shingle?) Far more frequent and abundant in mainland Hants. Boggy parts of Titchfield Common in plenty. Exceedingly abundant on heaths and bogs about Ringwood, and on boggy moors betwixt Christchurch and Poole, at Bournemouth, &c., in profusion. In the bog near Lyndhurst, in which *Spiranthes æstivalis* grows, and indeed common throughout the New Forest and Christchurch hundreds, on the vast moorland tracts of that boggy and swampy district. Bog at East Woodhay. Beautifully in wet ground below, that is south of Shidfield Church, Miss Hawkins (in litt.). In bogs, frequent, as about Botley, &c., Mr. W. Pamplin (in litt.). A frequent plant, I believe I may say, in every part of the county where moors and bogs prevail. The brick-red of the ripe capsules gradually bleaches by keeping in this and *N. Americanum*, which last seems scarcely distinct from our European Bog Asphodel.

Juncus maritimus. About salt-marsh ditches, on sandy or muddy sea-shores, mouths of tide-rivers and salt-inlets, also on moory pasture grounds along the coast; very common. On ditch-banks along the shore between Springfield and Nettlestone Point. Plentifully by creeks of the Medina above West Cowes, and in salt marshes

at Newtown. Profuse in the salt-marshes along the Yar, betwixt Yarmouth and Freshwater Gate. Thorness Bay, in plenty. Norton and Brading Harbour, in abundance, Mr. W. D. Snooke, (in Fl. Vect. !!!) Abundant in salt-marsh and brackish pastures at Emsworth, and thence westward all along the coast. Plentiful in Hayling Island. About Christchurch Harbour, plentifully. The Salterns, Hill Head, Carm (near Fareham), Mr. W. L. Notcutt; and in innumerable other places. The white bases of the scapes are remarkably clammy, and possess a peculiar fragrance, resembling that of cedar-wood, not I believe noticed by any author.

Obs. *J. acutus* grows in tolerable plenty at Emsworth, close to the Hampshire border, but on the Sussex side of Emsworth Creek, which divides the two counties, where it was discovered by Mr. Borrer some years ago. It is there found in a piece of muddy ground, overflowed at high-water, on the eastern side of the creek or harbour, just below the quay or embankment and the mill, looking, at a distance, from its dark green colour and mode of growth, something like low broom-bushes. The station can only be approached at low-water, and then across ooze and slime. Some precaution is necessary in collecting specimens of this plant, for the barren scapes and leaves are as stiff and sharp as porcupines' quills, and as capable of inflicting severe punctures. It grows mixed with *J. maritimus*, from which it may be distinguished from far by its close heads of large, shining, brown capsules, that are very long in ripening, not probably till the second year, by its deeper green, and the somewhat radiated or spreading growth of the scapes and leaves. I searched carefully on the Hants side of the creek, and all along the shore westward beyond Havant, in hopes of securing this rare species to our Flora, which I cannot very honestly or safely contend for its belonging to at present; for, although Emsworth is in Hampshire, and *Juncus acutus* grows at Emsworth, the concluding proposition of the syllogism, that therefore *Juncus acutus* is a Hampshire plant, would be demurred to as illogical, in point of fact, by its worthy discoverer, accompanied, probably, by an awkward demand on me for restitution of what I had unceremoniously filched from his Flora for the adornment of my own. Dr. Salter finds a single tuft of this species on the shores of Poole Harbour, (the *J. acutus* of Pulteney's Cat. of the Pls. of Dorset. is most likely only *J. maritimus*); it may, therefore, reasonably be expected on some intermediate point of the coast-line between these eastern and western stations.

Juncus effusus. Common in most parts of the Isle of Wight

and the rest of the county, on barren, wet, or moory pastures, heaths, &c.

Juncus conglomeratus. With the last, and the more abundant of the two; in sterile, rushy meadows, by road-sides, &c. The var. β . *effusus* is, I think, not uncommon with us. The much darker coloured capsules appear to ripen considerably earlier than those of *J. effusus*.

Juncus glaucus. Less frequent on the whole than the two preceding species, yet very plentiful on poor, wet, sandy, clayey, or heathy pastures, commons and by road-sides. In various places around Ryde. At Quarr Abbey, Springfield, Green Lane, near Ashey, &c.

Juncus diffusus. In similar places with the last, and in the few stations in which I have yet observed it in the county associated with that and *J. conglomeratus*, appearing to myself to be a hybrid or mule between these two rushes; rare? First noticed as a Hants plant by Mr. Borrer, who remarked it growing in 1847 about Hedge Corner, on the south side of Parkhurst Forest, along the road from Newport to Yarmouth!!! I find it here in considerable plenty, together with abundance of *J. glaucus*, *effusus*, and *conglomeratus*, from the two former of which I must own to experiencing a degree of difficulty in at all times distinguishing it, at first sight at least. I have no doubt of its existence in other parts of the island, but excepting when in fruit, its resemblance to some of the greener stemmed states of *J. glaucus* renders its detection less easy. On heathy pasture grounds, with *J. glaucus*, along the road from the "buildings" to the Passage House, Hayling Island, August 7th, 1848.

Juncus capitatus will probably be found ere long in Britain, and perhaps in this county, being frequent on the continent and in some places in Guernsey and Jersey.

Juncus obtusiflorus. In ditches and wet, boggy, or marshy places, often growing in the water, but not very common, either in the Isle of Wight or on the mainland. Ditches in the marsh at Easton (Fresh-water Gate), and where one or two of the low, boggy meadows are quite overrun with it. Near the shore just beyond Norton, towards the preventive station; sparingly. Wet banks of slipped land in Colwell Bay. Between the Needles (Groves's) Hotel and Alum Bay. On wet, slipped land near the Sandrock Spring, abundantly; and in various places betwixt Niton and Blackgang. Plentiful in the Undercliff, at Blackgang, and in Sandown Bay, Rev. G. E. Smith!!! Plentiful in marshy spots by the road-side in Stokes Bay, between Alverstoke and Brown Down, July, 1849. By Tichfield River and

near Hill Head, Mr. W. L. Notcutt. I have no station at any distance from the sea-coast to give for this species, so well marked by its pale flowers and very decomposed and singularly divaricate panicle.

Juncus acutiflorus. In muddy, boggy, or marshy places, on wet heaths, &c.; abundantly. Our low, wet meadows are sometimes quite covered with this rush.

Juncus lamprocarpus. With the last, and perhaps little, if at all, less frequent than that. The specific name is now generally, and very properly, spelt lamprocarpus instead of lampocarpus, as formerly; the allusion being to the shining (*λαμπρος*) aspect of the capsules, and not to any supposed resemblance they bear to a lamp.

Juncus supinus (*J. uliginosus*). In ditches, pools and pits, especially, I think, on a clay soil; also on wet, sandy heaths and commons; frequent. Var. β . Stems procumbent or floating, mostly proliferous.

Juncus subverticillatus. In gravel or clay-pits, &c. In a clay-pit near Bouldner. On Parkhurst Forest, &c.

Juncus squarrosus. On moist, barren, sandy pastures, moors, and heathy places. Quite rare in the Isle of Wight. On several parts of Black Down, abundantly. Moist pastures immediately about the Wilderness and Rookley Farm. Apparently by no means rare in mainland Hants. Most abundantly on Petersfield Heath. Heath near Steep. Short Heath, near Selborne. Most profusely on Wolmer Forest, near the pond, about Holy Water, &c. Profusely on the dry sandy heath about Ringwood and Christchurch, and probably common throughout the Poole basin and on the forest districts and moorlands of the county. I do not know of any distinctive name for this plant in Hants, but Mr. John Laurence tells me that in his native county of Aberdeen, where it abounds on the moors, it is called Bruckles by the country people, which, whatever may be the import of the word, is most expressive of the wire-like hardness and rigidity of the species.

Juncus compressus. Not, I have reason to believe, an uncommon plant in low or marshy meadows, especially near the sea; but all the stations I find amongst my notes relate to *J. Gerardi*, certainly the prevailing species or form along the coast both of the island and main, and which I am disposed to regard as a salt-marsh variety of *J. compressus*.

Juncus Gerardi (*J. cœnosus*). On muddy salt marshes and damp

sandy sea-shores ; frequent. St. Helen's Spit. Plentiful at the mouth of the Wootton River. On the beach a little way out of Yarmouth eastward, and abundant in the first meadow, or that nearest to the sea, at Easton Marsh, Freshwater Gate, where it forms a considerable constituent of the coarse herbage of that half-drained bog—

Limosoque palus obducat pascua junco.

Very common I think in most places along the coast. Profusely on the south side of Portsea Island, near a salt pond by the beach, about half a mile east of Southsea Castle, &c. I forbear giving more localities from memory, as some may belong to *J. compressus*. The Saltens (Fareham), Mr. W. L. Notcutt. *J. tenuis*, *Willd.*, if the Scottish plant be the same, ought to be found in the south of England also, being a native of the plains of central Europe, but there is reason to doubt if the true *J. tenuis* was ever seen in N. Britain.

Juncus bufonius. By the margin of pools ; in half-dried ditches and places where water has stood in winter, in moist sandy or gravelly spots by road-sides, on heaths, &c. ; extremely common in every part of the county. *J. Tenageia*, a species very closely resembling the present, with pale brown, nearly globose capsules, should be looked for in the same localities, as being extremely likely, I conceive, to inhabit the south of England, as it does all the adjacent countries of Europe, both inland and near the coast.

Luzula sylvatica. In dry shady woods, groves, thickets and hilly heathy places amongst bushes, but not general. In woods about Shanklin and Cook's Castle, as in Cowpit Cliff and Hungerberry copses, near Apse farm, &c. Abundantly in one or two spots at Apse Castle. Little Standen Wood, near Newport ; plentifully. In the Parsonage Lynch at Newchurch, abundantly, as well as in another wood, near that village. Not rare, and probably frequent in mainland Hants. In Amfield Wood, near Romsey ; Cranbury Park woods, near Winton, in various places, and in a wood betwixt Otterbourne and the old church. In several parts of Akender Wood, near Alton, but somewhat sporadical, as it often is with us, although usually abundant in its several stations. Winchester Wood, by Rotherfield Park, and elsewhere in the county.

Luzula Forsteri. In woods, thickets, groves, and on shady hedgebanks ; very general over the Isle of Wight, and I believe the rest of the county, where, as in some of the adjacent ones, as Surrey (and Sussex ?), it is even more abundant than *L. pilosa*, frequent as is that

plant with us. Extremely common about Ryde, in Quarr Copse, St. John's, Apley, and in almost every other wood and patch of copse in the neighbourhood. Abundant in the Chine and elsewhere about Shanklin, at Appuldurcombe, and profusely in several parts of Apse Castle, in the dry heathy ground by America, and other spots of that romantic locality. Common about Cowes, in Mrs. Goodwin's grounds, in woods at Osborne, Norris Castle, &c. About Newport, in Little Standen Wood, &c. Abundant in Bordwood Copse, the Parsonage Lynch, and various other places about Newchurch. In the Undercliff, at Steephill, near Swainston, and in innumerable other places in the island, preferring a dry, friable, light soil, but often, as about Ryde, on stiff clay, or rather perhaps on the vegetable mould that lies upon it; it also grows on the chalk, but less commonly. I have not specially observed the distribution of *L. Forsteri* on the mainland, but am convinced it is not uncommon there. In a beech-hanger near Alton. Hedge-bank a little way out of Bishop's Waltham, towards Droxford. Abundant in a wood by the Newbury road from Andover, about a mile beyond Enham. Parnholt or Parnell Wood, near Winton. Copse near Whitedell, Mr. W. L. Notcutt. New Forest, Chas. Lyell, Esq., in Hook. and Graves's *Contin. of Fl. Lond.* Doubtless in many other places, but being, like the rest of the genus, a very early plant, after the flowers and fruit have disappeared in May or June, the species cannot, with that certainty required in giving localities, be distinguished by the foliage alone from some narrow-leaved states of *L. pilosa*, and hence is often overlooked for that species.

A doubt, I believe, exists in the minds of some British botanists who have not seen *L. Forsteri* in a fresh state, but only in the herbarium, as to its distinctness from *L. pilosa*; no one, however, to whom the plant is familiar in its native woods can, I think, reasonably entertain such an idea. Strong as is its general resemblance to *L. pilosa*, and which, when in the dried state and not in seed, may induce a suspicion of its being but a form of that species, there can never be the least difficulty in distinguishing *L. Forsteri* by its seed and capsules from that or any other species of the genus. There is a remarkable conformity in the aspect of the leaves amongst various unquestionably distinct species of *Luzula*, and the form of the perianth, and even the disposition of the panicle, afford characters little apparent or subject to modification; such, too, from my own experience, is the relative proportion in length between the anther and its filament, which is yet so far constant as to furnish a very fair subor-

dinate mark of distinction. Since *L. Forsteri* has not yet been detected in Ireland, and there seems great reason for thinking that some form of *L. pilosa* has been taken for it in Scotland, I may perhaps be doing a service to Scotch and Irish botanists by pointing out the characters of the former more in detail than has been done in the books most in use as field manuals; the more especially as I am unacquainted with any good figure of this plant, the one in 'English Botany' being wretchedly deficient, and the far superior drawing in Hooker and Graves's continuation of the 'Flora Londinensis,' besides that that sumptuous work is in still fewer hands than the other, depicts an extreme narrow-leaved form of *L. Forsteri*, and not the ordinary or normal state of the species, whilst the figures of the seeds and capsules both of this and *L. pilosa* are defective representations of their kind. *L. Forsteri* grows in precisely similar places, and often intermixed with *L. pilosa*, but flowers perhaps rather later than it, or when the latter commences to form capsules. The leaves in both are extremely similar, forming dense tufts, narrower in general in *L. Forsteri* than in *L. pilosa*, occasionally very much more so, at other times nearly as wide, and equally hairy. The panicle of *L. Forsteri* is cymose, of several compound, mostly erect, or rather patent or diverging branches, but of which two or three are usually reflexed or divaricate, especially after flowering, and the base of the panicle is subtended by an erect, sublinear bract, far narrower or less leaf-like than in *L. pilosa*, whatever may be the breadth of the root-leaves themselves. In the height of the stem, there is no constant difference between these plants. Flowers paler in general than those of *L. pilosa*, the segments of the perianth more finely taper-pointed or acuminate, very acute; anthers shorter than the perianth, about as long or rather longer than the compressed, ascending filaments; in *L. pilosa* the anther is above twice the length of the greenish and flattish filament, which proportions are tolerably constant within certain limits in each species. Ovary more acutely trigonate and more gradually tapering into the style than in *L. pilosa*. Capsule reddish-brown and shining, acutely triquetrous, the faces nearly plane, simply acute or acuminate, with no obtuse and conical contraction at the summit, and (including the hard, sharp, mucronate apex) about as long as the nearly erect perianth-segments. In *L. pilosa* the capsule is broadly ovoid, trigonous, obscurely three-lobed, with as many very blunt angles and convex intermediate faces, visibly contracting above into the very rounded and obtuse summit, of a subconical figure, sometimes minutely tipped

with the base of the style, but scarcely mucronate, much longer than the spreading and persistent persianth. Seeds* in *L. Forsteri* roundish, ovoid or nearly globose, bright brown, very smooth, polished and translucent, crested with a large, oblong, obtuse and oblique, but not at all hooked caruncle. The seeds of *L. pilosa* are precisely like those of *L. Forsteri* in form, size, and colour, but furnished with a caruncular appendage of at least twice the length, attenuated into a point and uncinately contorted.† The foregoing remarks will, I trust, enable our northern and western botanists to distinguish these two most indubitably separate, but assuredly closely related species, so long confounded, till the late Mr. E. Forster and Mr. Bichenor pointed out, the former in the panicle, the latter in the seed, characters by which *L. Forsteri* differed from its more common ally. The geographical distribution of the two species is moreover totally different, for whilst *L. pilosa* is dispersed over nearly the whole of Europe, almost to the northernmost extremity of Scandinavia, *L. Forsteri* is strictly a plant of southern and central Europe, even in Germany scarcely found, but in the middle and western part from Switzerland to Baden and Rhenish Prussia, and thence westward over France and a great part of England. I may add that the root of *L. Forsteri* is much less creeping or stoloniferous than in the other, a fact remarked also by Gaudin in his 'Flora Helvetica.'

Luzula pilosa. In rather dry groves, thickets, copses and on bushy banks, often amongst dead leaves; very common over the entire county and Isle of Wight. Profusely in some parts of Apse Castle, with the two preceding species and the following. Extremely, perhaps usually, plentiful in woods by the Newbury road from Andover, a little beyond Enham; in one place associated with *L. Forsteri* and the following enigmatical species, state or variety.

Luzula ——— (nova species?) So long back as April, 1841, I was struck with the appearance of a *Luzula* growing plentifully at Apse Castle, near Shanklin, closely resembling *L. pilosa* in appearance, and having, like it, strongly divaricate and partly deflexed pe-

* The seeds of *Luzula* must be examined when quite recent, as they soon become dull, wrinkled and opaque by keeping, and the crest shrinks and loses its peculiar form and proportions, whilst the form of the capsules cannot be well seen after their dehiscence. From inattention to these points, the figures of the fructification of *L. pilosa* and *L. Forsteri*, in the exquisite supplementary plates of the edition of the 'Flora Londinensis' by Hooker and Graves, are sadly deficient in fidelity, both as to form and colour. These parts in *L. Forsteri* are much better drawn than in *L. pilosa*.

† As much or more bent than the letter S; in other words, doubly hooked.

duncles. A difference in the size and aspect of the plant led me to examine it more carefully, when I found that the seed resembled that of *L. Forsteri* in having the fleshy crest or appendage straight and obtuse, and wholly without the hook-like curvature in which the same appendage terminates in *L. pilosa*. I at once set it down for a remarkable variety of *L. Forsteri* with the panicle of *L. pilosa*, and as such preserved specimens in my herbarium, and sent others dried to Mr. Borrer, who, from not having seen fresh capsules and seed, was induced to pronounce it only *L. pilosa*, an opinion which led me to pay no further attention to the plant at that time, and it was suffered to lie unnoticed and almost forgotten, till last year, when the sight of the dried specimens, and their striking difference of aspect from *L. pilosa* and *Forsteri*, again prompted to a renewed investigation of the plant in its native haunts. The result of a long and laborious examination of some hundreds of specimens, and comparison with as many of the two allied species made on the spot at short intervals of time, and in every stage of their growth, has gone very far towards showing the Apse-Castle *Luzula* to be a species intermediate betwixt *L. pilosa* and *L. Forsteri*, yet sufficiently distinct from either, and for reasons which I shall adduce presently, by no means a mule production.

This curious plant grows very abundantly at Apse Castle,* in two or three places on sloping banks, under brushwood, in a dry, friable sandy mould, sometimes by itself, at other times in company with *L. pilosa* or *L. Forsteri*, or both, but in quantity much exceeding these last.† The following directions will enable any person to find it in one of its two principal stations with ease. Entering Apse Castle by the footway across the fields from Shanklin and Cliff Farm, or passing the gate opening into the dell (Tinker's Hole), keep the left hand green road or turf-walk, and proceed upwards till you come to the plantation of pines, skirting which the road continues, leaving the dell below on your right. Pursuing this walk, perhaps for a couple of hundred yards, a narrow track or footpath emerges from it on the right through the brushwood, which brings you in sight of a sloping pasture-field nearly surrounded by wood, at the foot of which field a brook parts it from the steep, copse-covered bank on its other side.

* For an account of this retired and picturesque spot, see page 534.

† It is worthy of remark, that *L. pilosa* and *Forsteri* abound most on that side of Apse Castle nearest to America, and furthest from the part where our new plant flourishes; yet although the two former grow copiously intermingled, or in patches adjacent to each other, I find none of the third kind there at all.

Crossing this brook, you will find the *Luzula* in plenty all along the foot of the bank and margin of the brook, mingled with a small proportion of *L. Forsteri*, and still less of *L. pilosa*. It also grows plentifully, and in nearly complete isolation, on the slope of the dell, a little below and opposite to the pine plantation before mentioned, under hazel and other shrubs, but the spot is less easy to direct a stranger to than the other. I shall now proceed to detail the characters of this new *Luzula*, if such it be. Plant taller than either *L. pilosa* or *Forsteri*, eighteen or twenty inches high,* very slender. Leaves (root) longer than in *L. pilosa*, and quite as broad, laxer, more drooping or recurved at their extremities from their greater length, otherwise similar, excepting that their colour, viewed in the aggregate, is somewhat brighter green. Panicle resembling that of *L. pilosa*, but by no means the same, the very strongly reflexed and divaricate peduncles fewer and much longer, hence the flowers appear very widely scattered, and the outline of the panicle is quite oblong, not as in *L. pilosa*, roundish. The bract at the base of the panicle is long, narrow, and acuminate as in *L. Forsteri*, and the flowers are, as in that, pale, but with perianth-segments a little broader and less acuminate, or more like the same parts in *L. pilosa*. Stamens similar to those of *L. Forsteri*, but anthers rather longer, and somewhat exceeding the filaments in length. Ovary more obtuse than in *L. Forsteri*, not tapering at the top into the style as in that, with much thicker, blunter angles, each angle with a distinct furrow down its centre. Capsule much smaller than in either *L. pilosa* or *Forsteri*, and greatly shorter than the erect or converging perianth, ovoid, somewhat acute, trigonous, with three thickened, obtuse, furrowed angles. Seed always? abortive, a solitary one here and there apparently well-grown, but never, so far as I can find, acquiring full colour and maturity. The few I have been enabled to examine in this seemingly developed but unripe condition, resemble those of *L. Forsteri*, and like them have a straight, blunt appendage or crest, without a trace of any tendency to become hooked as in *L. pilosa*.† It now remains to be considered whether the Apse-Castle *Luzula* be a hybrid betwixt *L. pilosa* and *L. Forsteri*, or distinct from both. The numerous points

* *L. pilosa* and *L. Forsteri*, when growing near or amongst it, do not exceed their usual size, of about ten to twelve inches.

† Even here there is a doubt, which only perfectly ripened seeds can dispel. I have ascertained that the crest to the seeds of *L. pilosa* is at first straight, and does not elongate and become hooked till they are at least half grown.

of resemblance it bears to each of these species, and the apparently uniform sterility of the seed-vessels, strongly favour the idea of its being a mule production. But to this view of the matter are opposed the great abundance of the plant; its vast predominance in relative quantity over its two congeners, and excess of stature above its supposed parents. Neither are the characters which separate it from them purely intermediate; the panicle, as we have seen, although much like that of *L. pilosa*, is considerably different, and not more like that of *L. Forsteri*, and the shape of the capsule, if it be not modified by the abortion or want of maturity of the imbedded seed, has little resemblance to that of either progenitor. Although its pretensions are in my mind so equally poised, that I incline one day to hold it distinct, on another to regard it as a hybrid, or perhaps a sterile state of *L. pilosa* or *L. Forsteri*, it is hard to say which; I am yet not without hopes of satisfactorily adjusting its claim to specific distinction, but until perfectly ripe seed can be obtained, I hold it expedient to regard its true nature as undetermined. Plants have been forwarded for cultivation to Kew, to Mr. Babington for the Cambridge garden, to Mr. Borrer and Mr. Watson, whilst Dr. Salter and myself have it under our eye in the same state at Ryde. Placed amongst so many observers, and doubtless in a diversity of soil and situations, we may hope, even before this notice of it goes to press, to be enabled to report this enigmatical plant as having thrown off the mask, and shown itself in its true colours; for if not a distinct species, it cannot surely act the dissembler much longer, supposing it to be *L. pilosa* or *L. Forsteri* in disguise. Should it continue sterile under every kind of treatment, and retain its present characters unaltered, the fact of hybridity may be looked upon as fairly established. Mr. Borrer has remarked our *Luzula* in Sussex, near Luggershall, under Black Down; and Mr. Purchas writes me word he has found the same near Ross, in Herefordshire; it is probably not uncommon, therefore, which is greatly in favour of its being, if not distinct, at least no hybrid. As before observed, the foliage and flowers in this genus exhibit a remarkable similarity in nearly related but well defined species, whilst the form, size, colour, &c., of the seeds and capsules, are very discriminative of each kind; if, therefore, these last should be found to preserve their present characters in our Apse-Castle *Luzula* when ripe seeds are obtained, the plant may fairly rank as a species, differing as much as *L. Forsteri* does from *L. pilosa*, and intimately allied to both. Were it a mere sterile form of *L. pilosa*, one would expect to find a solitary

capsule of that species occasionally produced, but such has never once occurred in the almost innumerable tufts I have examined in their native locality.

W. A. BROMFIELD.

(To be continued).

Contents of the 'Botanical Gazette,' No 19, July, 1850.

On the mode of action of Heat upon Plants, and particularly the effect of the Solar Rays. By M. Alphonse De Candolle. [Translation from the Bibliothèque Universelle de Genève, March, 1850.]

Note on *Viola stagnina*. By Charles C. Babington, M.A. [To the other characters by which Mr. B. would distinguish this plant from *V. lactea* of Smith, he adds that "of a slender rhizoma, spreading rather extensively through the peaty soil which the plant inhabits, and sending up at short intervals what have the appearance of being distinct individuals."]

Remarks on *Mentha sativa* and *gentilis* of Linneus. By Dr. C. J. Hartmann. [Translation from the 'Flora' of January 28, 1850. Dr. Hartmann contends that Fries has misapplied the Linnean names of these plants, and that the nomenclature is thus: *M. sativa*, *Linn.* = *M. gentilis*, *Fries.*; *M. gentilis*, *Linn.* = *M. rubra*, *Fries.*; *M. Aghardiana*, *Fries.* = *M. sativa*, *Fries.*]

On *Sagina apetala*, L. and *S. ciliata*, *Fries*, with some remarks on the mode of discriminating species. By Arthur Henfrey, F.L.S., &c. [Mr. Henfrey concludes the latter of these to be a variety of *S. apetala*, not a species permanently distinct from it. His grounds for this conclusion appear to be sound and sufficient, but must be consulted in the original.]

A Monograph of the Hieracia. [Continuation of the abstract from Fries's 'Symbolæ ad Historiam Hieraceorum.']

Literature: Wigand's 'Principles of Vegetable Teratology.' Woods' 'Tourist's Flora.' Contents of various botanical journals.

Proceedings of Societies: Botanical Society of London. Botanical Society of Edinburgh.

Miscellanea: Record of Localities. Woods on the genus *Orobanche*. Itzigsohn on Antheridia in Lichens. Collections of plants for sale.