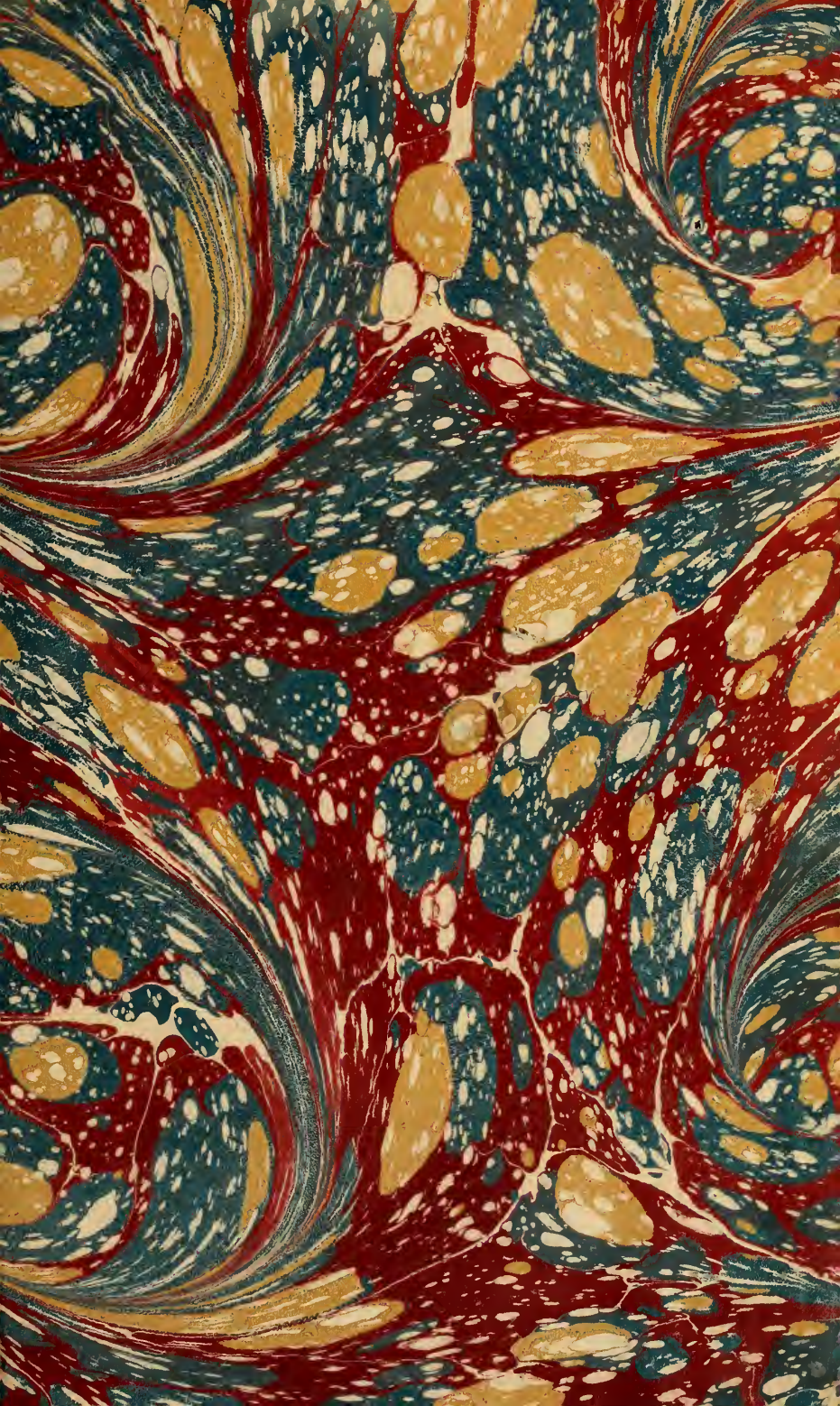


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Edward S. Marshall

1889

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THE
PHYTOLOGIST.

A BOTANICAL JOURNAL.



EDITED BY
ALEXANDER IRVINE,

FELLOW OF THE BOTANICAL SOCIETY OF LONDON.

VOLUME THE FIFTH.

Ὡς ἐμεγαλύνθη τὰ ἔργα σου, Κύριε!—πάντα ἐν σοφίᾳ ἐποίησας.

ΨΑΛΜ. ργ'. 24.

Benedicite universa germinantia in terra Domino; laudate et superexaltate
EUM in secula.—*Hymn. iii Pueror. v. 76.*

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PREFACE.

THE Publisher and the Editor hereby tender their hearty thanks to the buyers and readers of this periodical, and especially to those whose contributions constitute its entire contents.

In this volume there is another instalment of the *Polyonymal Pinax* of the British Plants, and it is believed that there will be room found for the residue during the current months of 1862. An expectation is indulged that the Publisher will be encouraged to reprint it, instead of a new edition of the London Catalogue.

The List of Local Botanists is printed in the June Number.

Chelsea, Jan. 1, 1862.

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THE PHYTOLOGIST.

1861.

ANNUAL ADDRESS.

THE great Christian festival which has lately been celebrated, the Mistletoe and the Holly, the latter of which in some places is called *Christmas*, remind us of the approaching new year, and imposes on the Editor the not ungrateful labour of congratulating the contributors and readers of the 'Phytologist' on the completion of the Fourth Volume of this periodical. His thanks and the thanks of the Publisher are very respectfully tendered to the subscribers, purchasers, and readers of the magazine.

The Editor's efforts to extend the usefulness of the work have been ably supported during the past year by a steady increase in the number and value of the contributions. The readers are referred to the Contents and to the List of Contributors for proof of what is here asserted; and the multifarious and useful papers published during the past twelve months are ample testimony that the labours of the proprietors in procuring efficient support have been successful. For this voluntary, gratuitous, and efficient assistance, of which the last or fourth volume is the result, we beg to offer our sincere and grateful acknowledgments. As one of the results of an increased number of correspondents, we confidently expect a corresponding increase in the variety and value of the forthcoming productions, and a wider extension of our circulation.

We have been reminded in a friendly way, by one of the earliest and firmest patrons of this Series, that we are supported by but few of the original contributors, viz. by few of those who wrote in and for the former Series when it was in a flourishing condition.

It should not be forgotten, while considering the causes of the disappearance of well-known names from our list, that a period of nearly twenty years which have elapsed since the establishment of this journal, produces gaps in all ranks, those of botanists not excepted. Deaths, removals, and the infirmities that follow increasing years, have during the last twenty years materially diminished the number of those who take an interest in local botany and in the collecting and recording of facts relative to the British plants. While we record this with pensive feelings, and live continually in ominous expectancy of the inroads of our last enemy, we announce, with much satisfaction, to all our readers, who will be gratified by this information, that there are bands of hopeful juniors rising up and receiving a course of training from the veterans of science, and are preparing to take our place and fulfil our functions.

Our hope is not lost with the loss of a couple of the earliest and most diffusive writers in the Old Series,—who are alive, and long may they live, if long life will bring late repentance! We know no other wilful deserters but these, who are like the shepherds celebrated in the famous eclogue,—

“Arcades ambo;
Et pugnare pares, et respondere parati.”*

If few of the original subscribers continue to support our undertaking, few have abandoned us; and we have the goodwill of the remainder, if not their active co-operation.

It is known to almost all, if not all, our readers, that at the commencement of a new year, and also of a new volume, an abridgment of what has been accomplished in British botany during the past twelve months is expected in our annual exposition; and it will be our care to make this synopsis as comprehensive, clear, and instructive as we are able.

The Editor also claims the privilege, once in the year, of offering—deferentially, of course—some hints and suggestions to both correspondents and readers, of explaining the past, and expressing

* The learned quoter of the above paragraph might have more appropriately compared the two learned pundits to the two Kings of Brentford, who entered smelling at one rose or nosegay. The two Virgilian shepherds were prepared to banter each other; the two modern representatives of the Brentford monarchy, unlike the shepherds, are celebrated for singing the same song, *Eandem cantilenam canere amabant*.

hopes of the future, and hereby endeavouring to remove hindrances to the enlargement of our knowledge and to the enjoyment of the pleasures of botanical science and correspondence. As we are about to co-operate for another period, we should divest ourselves as much as possible of personal feelings and sectarian tendencies, which are so embarrassing and prejudicial in all undertakings.

In our brief notice of the past year's proceedings, we assign the first place to the few botanical works that have come under our notice. If there be any others which are not here, our apology to our readers is, that the authors did not seek our opinion; and as we believe that counsel is impertinent or intrusive when it is not asked for, we abstain from criticism when we are not desired to exercise this part of our function.

The first book on our list is entitled, 'Sketches of the Natural History of Brighton,' which was reviewed with some detail in our May number. This work, though not exclusively botanical, is an important acquisition to our stock of local botanical literature. The botany was drawn up by one who is well acquainted with the subject, and it may be relied on as a fair contribution to our knowledge. It will be a nucleus for more extensive researches, and it may be amended and enlarged in subsequent editions.

The Rev. T. F. Ravenshaw's work, 'The New List of the Flowering Plants and Ferns growing wild in the county of Devon,' contains several hundred species hitherto to be found only in several detached publications or in private memoranda.

Besides these works, there was published early in this year a complete Flora of the parish of Harrow, in a local newspaper. As a nearly entire reprint of this appeared in our number for April, we need not do more here than merely notice it as the only modern catalogue of Middlesex plants in print, and as a foundation for an entire and complete Flora of the most important of the metropolitan counties.

Another county Flora, by the learned author of the 'Manual of British Botany,' has also been issued since the spring of the past year. A review of this comprehensive work will shortly appear.

The 'Visitor's Guide to the Isle of Wight,' only announced in our pages, contains a succinct account of the botany of the island, drawn up by one of our contributors. A notice of this work is

also in the Editor's possession, and it will be printed as soon as possible.

Another little book on the botany of Dover and its neighbourhood has also been sent us, and a review of this is under consideration.

The paper called the 'Isle of Man and its Flora' is one of the most interesting later additions to local botany. The reverend author of this very graphic sketch of an insular Flora, honoured the 'Phytologist' by presenting his list to us for publication. We expect soon to have the pleasure of submitting to the readers of our journal another insular Flora from the opposite coast.

G. Munby's 'Catalogus Plantarum in Algeria,' Crépin's 'Flore de Belgique,' 'Enumeration of Ceylon Plants,' 'Index Filicum,' 'The Useful Plants of India,' 'Species Filicum,' etc., are omitted in this report, as works which have little or no connection with British Botany.

We have much pleasure in again calling the attention of the readers of the 'Phytologist,' and especially of those who are more or less acquainted with the botany of Essex, to Mr. Gibson's announcement of his forthcoming Flora of this county, and of his desire of further information. A hint has reached us of another county Flora by a well-known botanist; but as there is no direct notice of the forthcoming work from the author himself, we forbear to publish it, though its speedy appearance has been announced on good authority.

The above-named works, either published or in progress, show that British botanists are not hiding their talent in a napkin, nor letting their energies flag. Several of them are making considerable sacrifices of time and labour, if not of money, in order that their contemporaries and posterity may enjoy the fruits of their observation and experience.

A hint is humbly offered to those authors *in futuro*, who are waiting for more information before committing the results of their labours to the press and ultimately to the public. From general experience, and from our own also, it may be pretty confidently predicted that they may wait till the Greek kalends, and wait in vain. How do the Essex botanists, for example, or those who have at some previous period resided and botanized in that county, know what additional information the author wants or wishes? B. may send to A. many facts which A. knows already :

how is B. to know this unless A. and B. have been previously corresponding? The author *in posse* circulates his intentions, his wants, and his wishes. "Give me," he says, "your ideas on the subject: how would you treat it?" And he seldom gets any facts, suggestions, or hints, till the time is past when they can be serviceable, and the disappointed author has frequently to complain that the knowledge came too late. But let A. paint his picture, or lay out his garden, or plant his shrubbery; or let the author *in futuro* write or compile his book, and then B. will be able perchance to offer A. some fresh hint, or give him some original information. A. should not say it is too late. Apelles and Zeuxis exhibited their paintings,—their works, not their intentions,—and listened to the criticisms of cobblers, and used them in the emendation of their celebrated productions. The eminent printers of the sixteenth century stuck up their proof-sheets on the gates of schools and colleges, and challenged the students and scholars to detect an error in their composition; hence the immaculate editions of the Scriptures, classics, and other works issued from the presses of those early and learned typographers.

If an author will venture to publish a county Flora or a Flora of any sort, he will not have to wait long for criticism. Fault-finders, who see blemishes or defects in the best workmanship,—who see motes or spots on the sun,—and good-natured friends with their sage advice, which sometimes comes too late, will flock to the inspection and dissection of his work like bees to a honey-pot.

The German and Italian printers of the olden times stimulated the acumen of the youths to whom they submitted their proofs by offering a reward of a florin or of a crown for every error discovered. A botanical author may get his work corrected and save his pocket; for scores of mistakes will be either courteously or uncourteously brought to his notice. This botanist says he has entered too many plants, that one asserts that he has entered too few. One finds fault because the Beech is called a native, another that *Anchusa* has no star, and that the *Snowdrop* has no dagger. And probably no two botanists in Great Britain will agree about the numbers and limits of species in *Hieracium*, *Salix*, *Rubus*, etc. The author of a Flora will be shown his defects for nothing; and if he be wise, he may learn something from

all his instructors, though they are far from being unanimous ; knowledge, like sorrow, never comes too late. But if he be sentimental, he may well say with the sentimentalist of old, " Grant me patience, just Heaven ! Of all the cants that are canted in this canting world, though the cant of hypocrisy may be the worst, the cant of criticism is the most tormenting."

In the last century, when the botanical public was smaller than it is now, authors were few and far between. The revered names of Hudson, Withering, Relhan, and Sibthorp were representative, and their works embody the history of British Phytology for above half a hundred years. There are now more works published in a season than there were, in not very remote times, issued in three generations. Then the cares and responsibilities of authorship were probably more onerous than they are in our days ; but the rivalry was much less, and the honour much greater.

Authors then were indeed *inter aves rariores* ; like the Phoenix, which appeared after long intervals, and unlike this bird, for they have perished and their works are forgotten ; their *dicta* and opinions were received as oracular, and they themselves were canonized among the celebrities in the annals of science. To have only indicated a shade of doubt about the veracity of their statements, and about the absolute perfection of their works, would have brought upon the unhappy sceptic an avalanche of contradiction, a torrent of reproof, an anathema as sincere if not as formidable as the thunder of the Vatican in its palmyest days.

The times are changed,—*tempora mutantur et nos mutamur in illis*. Authorship is now less esteemed because it is not so uncommon. Authors are known ; formerly they were unknown, except by a select few. In them the old saying was exemplified, "*Omne ignotum pro magifico.*" But reputations are still obtainable even in botany ; there are niches in Flora's temple still unoccupied, but they are not so easily achieved as they were in the days of our forefathers.

The authors of the county Floras, either published or in progress, are respectfully informed that the pages of the 'Phytologist' are freely open to them for the announcement of their intentions and for the publication of their desiderata. The Editor will be most happy to receive and print all suggestions for the improvement of local botany, and enter all additional informa-

tion about recently discovered plants or new localities for previously known rare species.

Since the publication of the Floras of Brighton, Devon, and Harrow, notes have reached the office of the 'Phytologist,' requesting that certain additions should be made to these local lists of plants, and that additional localities for others should be recorded. This will ever be the case. When a list, or county or local Flora is published, all who read it will endeavour to supply its omissions or amend its defects. This cannot be done previously, because the deficiencies or inaccuracies in the knowledge of the author are unknown.

The reverend author of the 'Flora Hertfordiensis,' which is perhaps the most carefully compiled local Flora in Britain, publishes supplementary parts whenever a sufficiency of matter to fill a sheet has accumulated. This plan of publishing supplements has succeeded in the case of larger and more expensive works than county Floras, and it is to be recommended on the score of economy. A new edition mostly supersedes the original work, but that objection does not hang to a supplement.

Several series of new species,—new at least to some readers of the 'Phytologist,'—have been submitted to British Phytologists.* For further particulars of these species, or segregations, as some one pedantically calls them, or *splits* or *chips*, as they are rather irreverently named by others, the readers are referred to vol. iv. pp. 87–89, 121, 138–139.

These real or presumed additions to the British Flora are very plainly and carefully described in the Reports of the Thirsk Natural History Society, and by a correspondent who entitled his articles on this subject, 'Which is *Ranunculus heterophyllus*?'—'Look after *Draba verna*,'—'British *Lepigona*.' It is not necessary to enter here the outlines of these papers, nor even to name the plants.

Whatever may be the opinion of botanists in general about the validity, or genuineness, or permanence of these species, if they be thought worthy of this dignified rank, there can be no

* This double meaning of the term Phytologist is very tantalizing. Properly it is the name of a person, not of a book; as geologist, entomologist, etc. The title of our work should be, 'The Phytological Magazine,' if we wanted to give a learned title to our humble periodical. We hope our readers will not give us the credit of inventing this pedantic, ambiguous name.

question about the moderate views promulgated by their advocates. Their claims have been urged clearly and briefly, in order that their distinctness may be tested by the observation and knowledge of others. Their distinctive characters are contrasted, and the readers or judges are left to draw their own conclusions. All that need be said here is that the pages of the 'Phytologist' are at the service of those who reject or disown these novelties, as they have been open to those who have temperately urged their claims on the attention of our readers.

During the past season a few plants have to be recorded, seen at Wandsworth steam-boat pier, certainly a British station, and if the plants are not British, they grow on British soil, at Battersea, Chelsea, and Parson's Green. These are all importations, whatever be their status in the national Flora of Great Britain.

The first place is given to *Lathyrus tuberosus*, of which only one plant was seen, and was not recognized then, but, as has been stated already in the 'Phytologist,' vol. iv. p. 318, was taken up and replanted in the garden; and when the report of the discovery of the species at Fyfield, near Ongar, in Essex, reached Chelsea, the Wandsworth plant was examined, and it proved to be this interesting species. We expect an historical account of this plant as a *true Briton* for a future number of this journal.

Several other plants have been detected in the above localities, though notices of only a few have as yet appeared. Their non-appearance has been caused rather by want of room than want of material. It is believed to be good policy to prefer contributions from distant correspondents, to editorial communications;—to cause the latter to make way for the former. The Editor is expected to be more tolerant of delay than contributors. But his articles on this subject, though deferred, are not lost; as the French say about an expected pleasure, "Un plaisir différé n'est pas perdu."

The new stations observed for rare plants, and communicated for the first time, during the past year, are numerous and important; they are so many that this part of our report must be epitomized, or it would fill more of our space than can be conveniently spared.

The most important discovery in local botany is that of *Sonchus palustris* in Plumstead marshes. The species is by common consent admitted to be one of the very rarest of rare British

plants; and this station for it is one of the most satisfactory of British stations. It is as remote as it can well be from a centre where the plant could have been cultivated, and it grows here in so great abundance that the herbaria of all the botanists in England might be furnished with specimens without detriment to the locality of the plant. It covers, when in flower, another rare species, *Leucojum aestivum*, a plant for some years lost, in its old station, opposite Blackwall.

Much importance will not be attached to the discovery of *Isatis tinctoria* at the Wandsworth station of the West End Crystal Palace railway. The banks of railways are notable for producing many species which in the phyto-geographic phraseology now current are very properly called suspected aliens. If not aliens to the soil of Britain, they are aliens in these places. Yet it is impossible to define very satisfactorily what are and what are not alien species. Even here, as Mr. Lloyd very justly observed in his notice of the above migratory plant, there are, not a quarter of a mile lower down the contiguous line, three plants which were unknown on Wandsworth Common less than twenty years ago; all of them non-migratory, most impatient of removal and cultivation. How came they to their present locality? Nobody doubts their British birth, though they are new comers to the Wandsworth Common station, like the *Isatis*. If plants are to be discarded *quasi* railway species, we should reject *Drosera*, *Lycopodium*, and *Osmunda*, because we know that they were recently introduced into the station adjoining the railway, where they are now found. One of them, the writer is sorry to tell his readers, is no longer in that artificial swamp. Only a few years ago it was there, but unluckily it attracted the attention of a young Wandsworth botanist, and he, as many others do, made private property of a common plant. The plant still exists, and may be seen by the curious in such matters. This young disciple of Linnæus, who has not before his eyes the fear of Mr. Hewitt Cotterell Watson, the eminent chorographic botanist, intimated, when he was chidden for taking away a rare plant, the only one of the kind there, that he would transfer a bit of the root to its original station. Surely the fact that the Royal Fern can be transplanted will not unsettle its claim as a British species. But even if so, the fact that the *Osmunda regalis* can be transplanted, will not upset the nativity of the re-

maining two plants, the *Drosera* and the *Lycopodium*, which will not bear transplantation.

The most important plant next to *Lathyrus tuberosus* and *Sonchus palustris*, for which a new station has been reported, is *Maianthemum bifolium* (*Convallaria bifolia*, Linn.). The plants wherewith this rich and rare gem of Flora's coronet was associated, are genuine natives (*omnium consensu*) and their station, which is that of the *Maianthemum*, would have increased our list but for their accidental publication in a local guide.

This fact is a weighty proof of the importance of local lists, and an encouragement to those who avail themselves of their utility to give them a wider circulation than that for which they were originally compiled. How many of our readers have seen this Scarborough list, or even heard of the Forge Valley? Still these are facts, whether ignored or admitted* *in certain quarters*. It is true that there is such a place as Scarborough; many of us have seen the town, and "seeing is believing." I believe there is a locality near Scarborough called Forge Valley, because I have been told that there is a place there known by this name. I further believe that in a wood somewhere in Forge Valley, in the neighbourhood of Scarborough, *Maianthemum bifolium* grows, because I was informed of the fact, and received, with the information, a specimen of the plant. This fact was previously unrecorded, and the growth of *Actæa spicata*, *Trientalis europæa*, *Pyrola minor*, etc. (see vol. iv. p. 232), was recorded only in a local list, and these additional facts were probably unknown to two-thirds of the Yorkshire botanists.

Lastrea remota, † discovered some time ago in the latter district, was announced for the first time during the last summer. (See 'Phytologist,' vol. iv. pp. 137, 227.) As its credentials are indorsed by Mr. Thomas Moore, the most eminent of British pteridologists, there is no doubt about the propriety of its admission among the discoveries of the past year.

* We wish our obliging correspondent Mr. Reynolds would take the trouble of writing out a list of the rarer plants about Scarborough, for publication in this periodical.

† Has *Lastrea remota* passed muster as a species and as a British plant? It is suspected that *Chenopodium Botrys* must be put in the same class as the Wandsworth plants. It was collected at Hagley years ago; but, like many other and more valuable things, it did not meet with a famed historian to transmit its claims to posterity. *Sic transit gloria!*

Ornithogalum pyrenaicum has been reported as observed growing abundantly in some of the woods at East Ilsley, in Berkshire. (See vol. iv. 270, and Index.)

The confirmation of a previous discovery, viz. that of *Gentiana Pneumonanthe* near Chobham, in Surrey, and the detection of a new station for *Schœnus nigricans* on Bagshot Heath, appropriately appear as a conclusion to the local botanizing of the season.

The new stations for rare plants recorded by Mr. Sim are, as usual, very numerous, and more than usually important. *Veronica peregrina*, hitherto unknown as a British plant, although previously recorded in the 'Phytologist' as a true Irish species, is among the most important of the new discoveries about Perth. The newly recorded stations, or the confirmations of some hitherto dubious localities, are far too numerous to be entered here. We have only room for the following, viz. *Anchusa sempervirens* in woods near Dunkeld. Our correspondent expresses in strong and unmistakable terms his belief in the nativity of this plant. It was seen by ourselves in Roslin woods, and it appeared to be quite as much at home there as *Myosotis sylvatica* and *Geranium sylvaticum*, only it was not nearly so plentiful as either of these species.

It is believed that Fife is a new station for *Verbascum Lychnitis*; not new in the strict sense of *new*, viz. that the plant never grew there before; but it is believed to be a newly discovered locality, one not known before the visit of our correspondent to the ruins of Lindores Abbey.

Mr. Sim has very recently informed us that the station where he finds *Cynoglossum sylvaticum* is not in the Carse of Gowrie, the station where it was seen by George Don, and reported in Hooker's 'Flora Scotica'; hence he infers that there may be two stations in Perthshire for this rare species.

Our Perth correspondent has discovered, in an island in the river Tay, the noblest of all Scotia's noble rivers, a new station for *Lathyrus sylvestris*. This rare Scottish plant is probably not quite a new discovery to the botanists of Scotland, but none of them have observed it previously so far north. Indeed, like the shepherd, sung so pleasantly by Horace, who wandered far from home, "*Ultra—Terminum curis expeditus*," this fine plant has wantonly transgressed the laws and leaped far over the limits assigned as its legitimate bounds, careless (*curis expedita*) of the disquietude it thereby causes to phyto-geographers.

Some of our readers, perhaps many, have seen an unkind notice of Mr. Sim's discoveries, which we consider of no mean or common order, by one of our readers who is notoriously unfriendly to the 'Phytologist.' The author of the aforementioned notification rather harshly blames our correspondent, and it may be added, the inoffensive humble person with whom Mr. Sim is so kind as to correspond.

Another of our correspondents sent us a rather reprehensive review of the effusion to which only an allusion has been made. This review was declined, for reasons which appeared cogent to us, and it is hoped that they were satisfactory to our correspondent who sent us the article.

We do not, on the present occasion, mean to trouble our readers any further about this offensive paper; though if left altogether unanswered, it might possibly be injurious to us, and it was probably circulated with such an intent; but any of our friends may, on application, have a perusal of this and of several other similar documents.

The Editor trusts that his friends and well-wishers will have patience with him for a *month*,* only a little month, and then he engages to prove to their entire satisfaction, that he is not guilty of printing and publishing false and groundless reports, nor of what is far worse, falsifying his Index to hide his own carelessness. He is as innocent of both those charges as he is of taking improper liberties with the wife of his friend, or of stealing his neighbour's sheep.

The Editor published it, (the reader may say, what?—let him have patience, the whole case shall be laid before him,) as an example and illustration of the physical capabilities of some plants to bear considerable vicissitudes of climate,—as a fact confirmative, not subversive, of Nature's law, viz. that the distribution of plants, or the extent of the earth's surface which they may occupy here and there, is limited strictly by their idiosyncrasies, or, in other words, all other laws, (but those determined by the ability of the plant to bear heat or cold or any atmospheric change whatever,) made and provided for limiting the areas or the altitudes of species are vain illusions, the idle fancies of would-be-thought discoverers of the laws of Nature.

* The whole material necessary for dealing with this case is now in the hands of a correspondent who will treat the affair with justice and moderation.

For the present also we hope our amiable correspondent Mr. Sim will also have patience with us. We do not deny that he has feelings and susceptibilities just like other men, nor that they have been sorely tried. Botanists, like poets, are occasionally liable to fits of irritability. His wrongs shall be rectified, and the saddle put on the right horse. There is a time for everything; but the festive season of Christmas, when our hearts should be overflowing with a grateful sense of the deliverance accomplished for us many centuries ago, and which we now commemorate, is not a fit period for writing angry diatribes against our fellow-mortals and fellow-sinners. The effects of good fare and of cheerful social intercourse naturally indispose us for redressing personal grievances.

The Editor of the 'Phytologist,' however, has the pleasure of bearing a faithful although feeble testimony to the merits of his amiable Perth correspondent, and confidently avers that he does not know a more single-minded, trustworthy, truth-loving, upright man alive. In his short notice of what he saw, and which we published in another part of this journal, he gave no opinion about the origin of the plant, and also refrained from all remarks which could have been offensive to the most sensitive of phyto-geographers.

Our correspondents would soon forsake us if we were not faithful to the principles which we publicly avowed when we undertook the management of this periodical. We are bound by our well-known professions as well as by our private inclinations, to publish all botanical facts, by whomsoever they may be reported. Our readers will see more on this head in a subsequent page of our address.

One or two remonstrances have reached the Editor about the unsatisfactoriness (what a long word!) of anonymous announcements and nameless contributors. Our justification may be stated in the old saw, "Necessity has no law,"* or in a similar well-known and pithy proverb, viz. "We have Hobson's choice, this or none." It is surely well known to all our readers, for it has often been stated, that all contributions are gratuitous. Our contributors know this; some of them by long experience. If the articles were paid for, we might not always have them on *our*

* The sense of the Greek proverb is, "Necessity is the strongest thing, for it conquers all things,"—*κρατει παντων*.

terms ; as they are *unpaid*, we must receive them on the conditions imposed by the contributaries.

But it is a great mistake, and one which has often been corrected, to assert that any article printed in the 'Phytologist' is anonymous. This however has been repeatedly and pertinaciously affirmed, and there is no more truth in it than there is in the equally positive affirmation that the omission of the 192nd page of the third volume of the 'Phytologist,' either before or after the entry of the page where the obnoxious plant, the Balearian *Arenaria*, is entered for the first time as a plant new to Scotland, was a *significant* proof of the *mala fides*, the faithlessness, of the Editor.

The Editor has asserted over and over again that he takes on himself the entire responsibility of every article that is printed in the 'Phytologist.' In order to save himself from the consequences of omissions, blunders, etc., he prints *no facts whatever, however trivial, on anonymous authority*. Although a very few contributions have the appearance of being anonymous, because they are subscribed by a letter or by two letters, sometimes with initials of real names, and sometimes with fictitious names, their authors are all known to the Editor.

As these contributions, which are apparently though not really anonymous, form a considerable portion of the trading stock of the grievance-mongers, and are also, it may be admitted, occasional sources of embarrassment, trouble, and vexation to the Editor, a brief explanation may be here given, and we hope it will convince the convincible that this is one of the encumbrances inseparable from our editorial functions.

By prescriptive right, all reviewers are entitled to the privilege of secret or irresponsible publication. It is sometimes supposed that the Editor writes the reviews, but several of our contributors know that they are not *all* written by the Editor ; but they are all, very properly, anonymous. Many reviews, in modern times, are such milk-and-water messes, such wishywashy affairs, that anybody might write them, and the most timid might subscribe his name at their conclusion. But they are privileged articles. It would be *non selon les règles*,—"contrary to custom,"—for the author of these articles to sign his name as a guarantee for the genuineness of his article.

Again, all communications from the *fair sex* are by universal

consent suffered to appear anonymously, unless *they* happen to be authors by profession. Such a liberty as that of publishing their names, would be resented by their fathers, husbands, brothers, and by a host of male friends, admirers, etc. Would any man be so fool-hardy as to risk the fate of Pentheus by publishing a list of his fair correspondents?

There are a few and only a few of the sterner—I will not call them the braver—sex, who stipulate that their names shall *not* be printed, although their communications are of *bonâ fide* character. These and all others who prefer it have the full sanction of the Editor to withhold or publish their names as they please. To save their feelings from hostile criticism, or their lives from subsequent trouble, or their houses from intrusion, they publish anonymously. Some have one object, some another, and some probably have no object at all, but whim, and the pleasure of mystifying *quidnuncs* (excuse the solecism) or *curiosos impertinentes*.

In all these cases the Editor is responsible for the truth of the facts entered anonymously, or under fictitious names; but he knows the correspondents, and the contributions are sent under the conditions of secrecy. They have confidence in the Editor that he will not bewray them, and he has confidence in them that they will not impose upon him nor send him mare's-nests, and thereby make themselves and him ridiculous. It is not expected that any editor, supposing him to have got much experience by living long, seeing much, and thinking more, can be aware of all the changes which are daily taking place in the relations of plants under many circumstances, and in places far distant from his residence and usual haunts. He therefore necessarily must rely upon the testimony of others who have seen what he cannot see, although well acquainted with the botany of the places where he has resided at various times. *He* does not, while living in London and studying the history and character of plants in books and in herbaria, profess to know what grows in Devon, Wales, and Scotland better than those botanists who are resident in these parts of the kingdom. The Editor of the 'Phytologist' is not gifted with the second sight; he cannot, while botanizing in Surrey, see plants growing on the hills of Kinnoul and Moncrieffe.

No facts are printed, as such, in the 'Phytologist' on any-

mous authority. As Helenus said to the Trojan hero, the mythic founder of the Roman empire, "*repetens iterumque iterumque monebo*," there is no such thing practised. Our correspondents and contributors know in general, and if there be any who do not know it, they are hereby informed, that they may get any further information about any fact or contribution whatever, by privately applying to the Editor, or by stating their requests through the medium of the 'Phytologist.'

In these cases, in modern advertising phraseology, an early application is recommended. The most retentive of memories are sometimes jogged in vain. The circumstances of long-past discoveries are but indistinctly seen through the mist and haze of bygone transactions; memoranda are often mislaid, or, what is as bad, cannot be found when wanted; occasionally they never existed except in the good intentions and slippery recollections of the discoverers. There is a term, well-known in law, called "the Statute of Limitations," or seven years; within which time a claim must be made, otherwise it will be "barred" by the said statute.

Any query about facts published anonymously or undersigned by initials or fictitious names, should be made early, for the reasons above stated; it should not be delayed till, in legal phrase, it is barred by the Statute of Limitations.

It will be a pleasure to the Editor if his correspondents freely take the liberty of consulting him on all occasions, either about plants or contributions. He will heartily and readily afford all the information he possesses, either privately or through the medium of the magazine. But he shrinks from taxing the memory and patience of his friends beyond certain limits, or, in plainer terms, he would demur to ask a contributor for more definite explanation of a fact which had been printed seven years ago, even though it had appeared in the 'Phytologist.' Most persons of experience know how teasing and worrying these explanations of long-past observations become. We have not forgotten the unbecoming squabbles and sharp altercations recorded in the Old Series of this journal, and therefore it is advisable to confine the occasions for controversy within as narrow bounds as practicable, and endeavour to avoid a renewal of the unpleasant reminiscences of the years that are past.

We have another word to say to our correspondents before

taking our leave. Occasionally their kind missives reach us just after the entire copy (notice to contributors and all) has been sent to press. It is not convenient to recast the last page on which these appear, and consequently our friends must wait a month or more before they see the acknowledgment of their contributions. Although connected with the press in one way or other, less or more, for nearly forty years, I have never known any copy or proof lost, through the carelessness of the Post officials, but *one*. Our correspondents therefore need not take the trouble of inquiring about the reception or non-reception of their articles. The ratio of their safe delivery and safe custody is to the probability of their loss as about ten thousand to one.

It is not impossible that we might forget to notice their receipt, but that they have been miscarried or lost, if sent through the post-office or through any of the public accredited means of conveyance, is most improbable.

It is to be regretted that one of the subjects submitted to the consideration of our contributors has hitherto been productive of no results. Perhaps a dozen readers of the *Phytologist* responded to the appeal made for help in compiling as complete a list of English botanists—one as complete as possible—with the sanction of the owners of the names whereof it was to be composed. With one exception the proposal met with much approbation, and it has been asked, and the question is not an unreasonable one, why so good an intention has not been carried out as originally promised and intended. The only reason to be given is to be gleaned from the reply of a Greek paterfamilias, as related by Hierocles, or some other merry Grecian. When the former was asked why he took his little dead son out by a back door or back window to be interred, replied that he was ashamed to bring out so small a child before so large and grand a company, assembled at the front of his residence, to assist in performing the funeral rites. We were ashamed to publish the few names transmitted to us before so many who are doubtless as eager to promote British botany as they were, but who might not choose to publish this to the world. It is hoped that the eminent botanists who consented to have their names entered in the proposed list will accept the above as an excuse for the non-fulfilment of their request.

Every man should be the best judge of the cogency of the

motives which may induce him to embark in, or not to engage in, a specific series of obligations of a voluntary nature. We are not, and do not profess to be, able to adjudicate for any one in such affairs; we only laid before our readers what was suggested to us, and which received our cordial approbation.

We regret, as has been stated, that our good intentions could not be realized for the reasons above stated, but we have not abandoned the project. But on mature reflection we are convinced that a list of the botanists who have authorized us to publish their names for the aforesaid purpose (see our Address for 1860) would be, to use a proverbial simile, like taking coals to Newcastle. The addresses in our possession, viz. those which we have authority to publish, are about as notorious as 45, Frith Street, London, or 28, Upper Manor Street, Chelsea. Surely the merest tyro who has acquired but a smattering of the literature of the science, knows that the author of the 'Manual of British Botany' lives at Cambridge, but who except his most intimate or privileged friends would take the liberty of intruding on his privacy, or of interrupting his scientific and learned labours? The eminent individuals who have consented to assist in this movement are not exactly those who are earnestly and humbly requested to suffer their names and addresses to appear in the 'Phytologist.' If the gentlemen who are anxious to promote the knowledge of the plants of Britain, to ascertain their census, area, habits, peculiarities, etc., are alone to be the subjects of such a catalogue, containing more of detail than a mere list,—for example, addresses, department of botanical science professed, etc., as that originally intended,—we may state that there is one printed and circulated with the annual volume of the 'Phytologist.' Those who possess the four published volumes can draw up for themselves a list of all the distinguished British botanists in the kingdom. Their residences are generally known; and their particular address may be procured by a private application.

The aim of the 'Phytologist,' for the last half-dozen years, has been to introduce botany into the homes and houses of the humbler ranks of society; to encourage a taste for such elevating recreations among those who have fewer objects of gratification, than are within the reach of the so-called favourites of fortune; to afford means of indulgence in the pleasures of research, observation, and comparison, to a class which has been sometimes

considered incapable of the enjoyment of science, and unfitted, by want of education, for adding anything to its resources.

Our object is twofold, viz. to increase the knowledge of plants and of their relations, and to increase the number of those who take an interest in the subject. The science will be expanded by the increased number of observers. We want to widen and deepen the channels of instruction, to procure more information, and to spread it over a wider extent. We wish, parodying the ancient distich,

“That those may read (the Phytologist)
Who never read before,”
And “that those who always read
May now read more” (botanical works).

The ‘Phytologist’ flies at humbler game than the *élite* of the botanists of Britain, thought it does not reject help from any quarter. If the latter class condescend to patronize its well-intentioned efforts, to enlarge the mind by exhibiting science in as attractive a form as possible, it is hoped that we are not ungrateful for their patronage, nor undeserving of such acts of benevolence. But we aspire to the honour of occupying a wider sphere—not offering assistance to those who can help themselves, but being helpful to all who will accept help at our hands; to cater for the *οἱ πολλοί* (the million); to disseminate sound information among as many as can be reached through our means. We know that there are collecting botanists about Manchester, also in North Wales, in Surrey, Hants, etc., and no doubt in several counties and in many towns of the United Kingdom. There are young men, amateurs, who would be very much encouraged as well as enlightened by an occasional intercourse with those who may be denominated veterans in the science. And the benefits of an enlarged communication between the older and the younger members of the confraternity would be mutual. The latter have much physical energy, quick apprehension, and endurance of correction; the former have more experience, tact, and judgment. A list of the *viri obscuri* who are notoriously attached to botanical pursuits, and who are known to our correspondents as persons who would not decline, when they had nothing better to do, to go out as guides to visiting botanists, and who would not think it degraded them to receive compensation for their time, (only what would be adequate remuneration

if at their usual employment,) and who would think it an honour to have their names printed in the 'Phytologist,' is with us a special *desideratum*.

During the time that this Address has been in hand, we have been favoured with more than one communication, convincing us that our humble efforts in the educational line have not been altogether unappreciated, nor totally unproductive. A zealous north-country correspondent, a veteran it is believed, like ourselves, has hunted up his botanical friends on the eastern borders, and has sent us a brace if not a leash to put in our botanical game-bag. What is still more gratifying, we have received from the same district a paper on local botany, drawn up by a youth, who will not be offended to be described as a *tyro*, for he is in the strictest sense *in statu pupillari*; but his knowledge, diction, and good sense, would be creditable to some who are probably older than his grandfather. He has read his 'Phytologist' to good purpose, and the fruits of his reading have appeared after *not many* years.

It is by the united efforts of local botanists alone that the Flora, of even a small kingdom like Britain, can be successfully investigated. The 'Cybele,' which is a collection and condensation of many of the facts known at the times when the several volumes of the series were issued, is also a fair proof that science or knowledge is continually progressive while books remain stationary. There are many facts now well-known about the British plants, their history, area, census, habitats, climatic peculiarities, etc., which were not discovered when the publication of this useful work was begun, and it may be added since its conclusion. A continuous work alone is the proper depository of such discoveries.

No recorder or reporter of fresh facts illustrative of the Phytology of the British Isles will be deterred from communicating his observations and the result of his experience by the superciliousness and repulsiveness of the Editor, nor alienated by his dictatorial demeanour.

It is unquestionable that the 'Phytologist' is the only work that comprehends and *continues* the history of the British species in recent times, and it must be the only source from which the future historians of our Flora can draw their materials, and hence the importance of enlisting into the ranks of its supporters all the active, fresh, youthful botanical energy of the country.

There are, it may be assumed, no naturalists, however humble their acquirements are, and however lowly their rank in society may be, who have not seen some hitherto unobserved facts or phase, or phenomenon of nature. Observations, experiences, and useful inferences are, it may further be assumed, often lost because not recorded at the proper time; this fear of communicating the result of experience often arises from *mauvaise honte*, an excess of modesty which indisposes its possessor to seek publicity, lest ridicule and contempt should be the reward of his humble attempts to enlighten others, or to direct them to a source of gratification which has never disappointed him.

We are far from advising young persons, or indeed any persons not pretty well aware of the difficulties and dangers of literary composition, to seek "the bubble reputation" either "at the cannon's mouth" or at the typographer's press. It will assuredly be more for their own ease and comfort if they rather shun than seek notoriety, till they have something to write about which nobody knows but they themselves, and which nobody can tell so well as they can. And even when they have got the materials for composition, if their grammar or their logic fails them, they will find more to laugh at their mistakes than to help them, or to sympathize with them in their disappointment. These need not have the slightest fear when they entrust their hoarded scraps and stores of knowledge about plants and their associations to the Editor of the 'Phytologist.' They may freely expatiate on the feelings of delight and joy which they experience when they discover a plant formerly to them unknown; and they may communicate the notice of their simple rational pleasures to one who has still as keen a relish for these pursuits as he had in bygone times. If he cannot participate in *their* enjoyment, he can sympathize with them and encourage them. He has not forgotten the good effects on himself of encouragement judiciously bestowed. The contributions made by those who may very properly be called *tyros* in botany, will be as safe in his custody as the confession of the penitent in the bosom of the confessor, or as the affairs of a client are in the hands of his legal adviser. There is no blabbing of secrets which are committed to us. We do not print the letters of our private correspondents without so much as saying, 'With your leave'!

Our readers, it is hoped, will tolerate another word, which

indeed does not concern all of them, nor the major part of them, but only such of them as criticize what they read. We rather encourage this propensity in all our readers. We are critics, and nothing unless critical; and we only want to regulate this bias of humanity, not to forbid its manifestation. There are, and always have been, fault-finders, who complain of the fare furnished them as deficient in quality, or in quantity, or in both.

These readers and contributors also, for they sustain both characters, are reminded, *not for the first time*, that the 'Phytologist' is at their service for bringing their complaints before the readers in general. In our pages they have the opportunity of propounding all sorts of proper and answerable questions, and a place where they may state, temperately of course, their opinions about any paper or article, or controvert any fact printed in the magazine; to offer *their views omnibus de rebus et quibusdam aliis*.

If any misstatement appears, or any real or fancied grievance is discovered in any article, the discoverer or the complainant is respectfully invited to send his plaint or his discovery to the Editor immediately for publication. He begs leave to suggest that correspondents need not take the trouble of writing to him privately on the subject; a short note in the 'Phytologist' may generally be sufficient to answer the requirements of the case.

The Editor will of course exercise his privilege of modifying such strictures and remarks as might be offensive to the author of the article which may become the subject of censure; but he would rather not be made the medium of conveying animadversion privately. He is a censor only in his public capacity as a critic and an Editor.

This is confessedly the courteous mode of proceeding in all such cases; and it is not only the most useful course, it is also the common practice of journalism. It is but fair to give every writer the opportunity of meeting the charge urged against *his facts* or his views, that he may either defend, retract, or modify his previous convictions.

Of course the Editor cannot vouch for the perfect immaculacy of every article which he commits to the press. He must rely on the fidelity and accuracy of his correspondents: but he professes entire impartiality on all botanical subjects, and endeavours to deal fairly with all who contribute to the miscellany.

We conclude this subject by repeating that every correspondent is desired to express fully and freely his opinions on all matters connected with botany, or the management of this magazine; to offer his counsels, or suggestions, or hints with manly independence, as a promoter of science, and not as a partisan, and without troubling himself about the possibility of his views being either pleasing or distasteful in other quarters.

Every one will admit that he who writes for the instruction of the public, must study the style of conciliation, and abhor the inspirations of the spirit of detraction, and strive against egotism and self-laudation; but every botanist may not only avail himself, to the utmost latitude, of the 'Phytologist' for the contradiction of any statement that appeared therein, but he may exercise his privilege of preserving his incognito, of wearing his mask where and when and as long as he pleases, without a question about his motives for concealment.

The Editor apologizes for the unusual length of this article. Since he undertook the editorship, now nearly six years ago, there has been no necessary cause for so long and so unpleasant an Address as the present. He begs to tender the excuse, usually made by those whose indulgence of themselves, at this festive period, has passed beyond the limits of moderation, viz. that "Christmas comes but once a year." He, for the succeeding eleven months, abandons all exclusive claims to the pages of the magazine, and freely offers them to those who have something more cheering and instructive to offer to the readers than complaints, remonstrances, and requests, for redress of grievances.

In saluting our friends "with *congé* profound," *i.e.* making our bow and courteously retiring, we beg to present them all with the usual civilities, the customary compliments of the season, assuring them that with the *past* we are well contented, and that we see much that is both hopeful and encouraging in the prospects of the future.

In taking our leave of the Old Year, with only a few regrets at its departure, we introduce its successor with the charitable hope that it will not be worse than the last, the weather only excepted: this was so tantalizingly bad, so provoking by its continuous changes from bad to worse, that an apology can hardly be offered or accepted in its behalf. In bidding adieu to our readers, we offer them our good wishes, and pray that they may enjoy as

much prosperity and contentment as we hope and desire for ourselves.

From these charitable aspirations the friend who has been the cause of our inflicting so long a programme on our phytological supporters, is by no means excluded. As we are not profound physiologists, like Dr. Carpenter, nor deeply conversant with the laws of natural selection, so ably illustrated by Mr. Darwin, all our conjectures about the secret causes which grieve our friend would be only abortive efforts to discover what is possibly a mystery to himself. Whatever be the origin of his distemper, it is clear from the symptoms that he is smarting under some imaginary ill, or is letting his clear philosophic mind become beclouded by the darkling shade of jealousy and disappointment. The torrents of abuse, the cumulative rebukes, so plentifully poured out and heaped on a few scientific sinners, that can barely see an inch before their respective noses, for supposed offences against laws never appointed by Nature, are surely too cogent proofs that they proceed from a mind ill at ease. All attempts to lead or scare such a herd of mediocrities, or imbeciles, is just labour wasted, like milking the he-goats, getting blood out of a lamp-post, skinning flints, hunting the gowk, etc., etc. To be in a pet with such noodles is not very unaptly compared to a "tempest in a tea-pot," or to a little puddle trying to lash itself into a fury, and to imitate the swelling billows of the mighty deep.

It is not very easy to persuade ourselves that our facetious friend is in earnest, even though the big blustering words in which he gives vent to his indignant feelings are not such as are usually employed by writers who are in the merry mood. Yet it is more reasonable to believe that he is making game of us for his own diversion, than that he has any serious intention of making us unhappy by the manifestations of his displeasure.

As we profess some acquaintance with the healing art, and are not altogether unskilled in the functions of ministering "to a mind diseased," we can tell the patient where he will find a recipe for his malady far more efficient than any to be found in Kant, Fichte, Hegel, Cousin, Brown, Dugald Stewart, George Combe, Spurzheim, or Gall. This is contained in an epistle written by the holy Apostle Paul to the Church at Colosse, in the third chapter, and at the 12th verse, as divines say, where the servant

of the Lord Jesus Christ wrote for our learning and comfort, as well as that of the Church in his days, "Put on therefore, as the ELECT of God, holy and beloved, bowels of mercies, kindness, humbleness of mind, meekness, long-suffering; forbearing one another, and forgiving one another, if any man have a quarrel against any: even as Christ forgave you, so also do ye. And above all these things put on charity. . . . And let the peace of God rule in your hearts, to the which also ye are called in one body; and be ye thankful."

Charity is like a cloak, for it not only warms the heart of him who is clothed therewith, but it hides or makes an excuse or allowance for the shortcomings of others. He who has Christian patience and forbearance, and the peace of God above all, will not be sorely vexed either by the petulance or the neglect of reviewers,—naughty men!—who are unable to see and unwilling to award a due recompense to merit, as distinguished as it is disinterested.

We bid him adieu, for the present, rather in sorrow than in anger, because our sincere desire is that every human creature may rejoice at this season, when all Christians celebrate the great festival of humanity. We dare not mar intentionally the joy wherewith every heart should be full; nor may we with a good conscience interrupt that peace proclaimed from heaven by angels and confirmed by Him who was the Lord of angels, and the Prince of Peace, by harping on our own petty wrongs, and clamorously insisting on an immediate redress of our grievances. We are well aware that the great and awful day, when time shall be no more, is surely and rapidly approaching, and this season specially reminds us of future events which are as certain as the past; and as we all profess to be followers of Him who was meek and lowly, it should not be taken amiss if one who has seen many returns of this anniversary, should put his readers in mind of the example of Him who said, "Blessed are the peacemakers, for they shall be called the children of God."

Non magnis componere parvum, another volume of our publication is closed, and we are about to close another weightier volume in the great book of the history of time. The past year, ungenial as it was, did not bequeath at its close a legacy of famine and scarcity, as a punishment for our sins. For this we are thankful. The sinister predictions of July were happily

unfulfilled, through the goodness of an overruling Providence. The harvest, though late, was completed before the beginning of that harvest in the Cheviots, recorded by the late genial historian of the 'Botany of the Eastern Borders,' who tells us that the *earliest hairst* that ever was seen, was seen at Benty Dod. This inauspicious harvest did not begin till the first day of the new year, viz. on January 1st (year unknown).

During the past anomalous season, fears were frequently expressed that there would be no harvest at all worth gathering in. Happily these gloomy forebodings have not been realized; our barns may not be, like our shops, "filled with all manner of stores," but there is as yet no scarcity of the staff of life, and there is no valid cause for "complaint in our streets." The necessitous poor will be provided for by the generosity of the charitable, or from the public purse; and all should remember that we are dependent on the Almighty, on Him "who feedeth the young ravens when they cry."

Chelsea, January 1, 1861.

Supplemental Notes on Orthotrichum anomalum.

By J. B. WOOD, M.D., F.R.C.S., etc.

Since my previous observations on *O. anomalum* were sent to the press, I have received from Dr. W. P. Schimper his more mature opinions with regard to the Moss gathered at Aberdour, referred by me to *O. anomalum*, Bry. Eur., but which he at first considered to possess claims sufficient to entitle it to rank as a distinct species. He has, however, subsequently satisfied himself of the correctness of the original name under which it was sent, and now considers it as a modified form only of the true *O. anomalum*, Bry. Eur., differing only from it in the firmer capsule and peristome, which are much more highly coloured than in its normal state. Under these circumstances, I consider it my duty to offer to Dr. Schimper the best and most ample apology in my power, for having thus hastily given to the readers of the 'Phytologist' his first and immature impressions respecting it, derived from a merely cursory examination of the specimens sent to him for reference, instead of waiting, as would have been much better, until he had more thoroughly completed those arduous and extensive researches on which he was still occupied, and

while so many new species, originating out of this inquiry, were crowding upon him and necessarily operating in a great measure to prevent him devoting so great an amount of time and attention to the especial study of this plant, as under other and more favourable circumstances he doubtless would have bestowed upon it. I hope this explanation will be satisfactory alike to my friend Dr. Schimper and to your readers. That erroneous impressions are frequently the result of all primary investigations on most subjects in connection with Natural History, few I think will deny, more especially where, as in the present instance, the case is surrounded with difficulties of no ordinary character, and which require for their unravelment an amount of patience, experience, and ability which is not found to be possessed by many. Even my friend Wilson, on first seeing the Aberdour Moss, was much more disposed to refer it to *O. strangulatum* than to the species to which it really belongs; a circumstance not at all to be wondered at, seeing that at that time we knew but little of the real merits and characters of the species, and had no practical acquaintance with them. I now proceed to quote some of the subsequent observations made by my friend Schimper in his last letter. He says: "I certainly consider your *O. anomalum*, Hook. and Tayl., as perfectly distinct from that so named in Bry. Eur., which is unquestionably the one described by Hedwig in his 'Musci Frondosi,' where the capsule is represented at plate 37, t. 2, with sixteen striæ, and concerning which it is said in the text, 'Harum (striarum) aliæ omnem longitudinem metient, aliæ ab orâ ortæ circa medium evanescent.'" He then proceeds: "What name must be given to your English Moss? (the *O. anomalum* of H. and T.). I would suggest that of *O. neglectum*! As to your plant from Aberdour, I cannot now satisfactorily distinguish or separate it from that of the true *O. anomalum*, Bry. Eur. and of Hedwig, and you will find in the parcel that I have had the pleasure of sending to you, numerous specimens which I gathered during the last summer in the vicinity of Baden Baden and near Strasbourg, which perfectly accord in every respect with your own."

As regards the name to be given to our indigenous species, I confess that I hardly think the one suggested by Dr. Schimper a suitable or appropriate one; but on discussing this question with my friend Wilson, when on a visit here last week, he very kindly offered to make still further inquiries into the previous history of

the species, and I have just received from him the result of his investigations, conducted with his usual care and accuracy, and the most strict and rigorous adhesion to facts; and which, to my mind, are perfectly satisfactory and conclusive, and will, I hope, be so considered by all who really take an interest in the question. In his letter, he says: "Under the article of *O. saxatile* (Dill. Bridel), in Bridel's *Bryol. Universa*, vol. i. p. 275 (= *O. anomalum*, H. and T.), described with 'peristomium simplex, dentibus sedecim *per paria* coadunatis, distinctis tamen, linea media longitudinali exaratis, siccitate suberectis, *nunquam reflexis*.' Bridel cites *Grimmia striata*, var. *rupestris*, vel *saxatilis* of Hedwig's *Fund. Muscor.* vol. ii. p. 89, t. 7, fig. 35, 'ubi peristomium bene sistitur, *contra* in *Musc. Frond.* t. 37, peristomio potius ad *O. cupulatum* pertinente, unde probabilis Hookeri opinio, Hedwigium has duas species utut distinctissimas commiscuisse, *Hook. et Tayl. Musc. Brit.*'"

The work cited is Hedwig's 'Fundamenta Historiæ Naturalis Muscorum,' Lipsiæ, 1781, 2 vols. 4to, six years before the publication of his 'Musci Frondosi,' where, *as I suppose*, he has cited his *Grimmia striata*, var. *rupestris* (*O. saxatile*) as a synonym. I did not previously advert to this fact of the Moss of Hook. and Tayl. having been so given, and I am now sensible that Hedwig's representation of the Moss first published under that particular name of *O. anomalum*, *must bear that name* (*O. anomalum*), even if it be proved and admitted that the Moss published in 'Fundamenta Historiæ' be quite a different species, while Hedwig considered it identical with that of 'Musci Frondosi,' 2, t. 37; and if so, then, notwithstanding Bridel's calling Hedwig's *Musc. Frond.* Moss *O. saxatile* (Dillen.), that name (and not the one suggested by Dr. Schimper, *O. neglectum*) should be borne by the Moss of Hook. and Tayl. There are *now* obvious reasons for this change, although H. and T. saw "no reason for altering the name (*O. anomalum*), as Bridel has done, to that of *O. saxatile*." I think this should be stated quickly to our good friend Schimper.

There can be *no doubt* that *O. saxatile*, Brid. *Bry. Universa*, 1. 27. 5, is *O. anomalum* of H. and T., and is, moreover, well described in that work; so that even if Hedwig had not given it the name of var. *saxatilis* of *Grimmia striata*, Bridel's name ought most assuredly to be retained. That of *O. neglectum* is scarcely apposite, for truly neither Bridel nor British bryologists ever neglected this Moss.'

At the commencement of this inquiry, I certainly never entertained the least idea that results so important, so interesting and unexpected, would have accrued from what was simply intended as a means for acquiring further information as to our indigenous species, as compared with that of Bry. Eur. I cannot avoid the confession that I feel deeply gratified that means so small should have been productive in eliciting such an amount of highly interesting information to bryologists in all countries. It would now appear from the researches of Dr. Schimper, that we have in Europe, belonging to the section of *O. anomalum*, the following species, viz.:—*O. anomalum*, Hedw. and Bry. Eur., *O. saxatile*, Dill. Bridel (our indigenous *O. anomalum*, H. and T.), *O. Blyttii*, *O. Sæmmerfeltii*, and *O. sclerodon*; all found in Norway. In addition to these, I may mention also as belonging to the same group, and recently detected, *O. Breutelii*, and *O. arcticum*, in Greenland; *O. Barthii*, in Labrador; and *O. Pylaiseii*, in Newfoundland. Surely there is sufficient stimulus and encouragement here to excite all to further and renewed research. The field for investigation and continued inquiry is yet ample, and will doubtless still afford to all who perseveringly investigate its treasures for themselves, rewards far exceeding their most sanguine expectations. I hope the knowledge of such facts and results as have already been made manifest may stimulate anew all the bryologists of this and other countries, and I shall feel most especially obliged by any communications from the numerous readers of the 'Phytologist' bearing upon this subject. I may mention here, as one result of this inquiry, the discovery for the first time in this country of the interesting *O. Sturmii*, Hoppe, gathered by my much esteemed friend Mr. D. Moore, of Glasnevin, on mossy rocks, at Luggielaw, in the county of Wicklow, which had lain hid and undetected in his herbarium since 1857, and sent to me with numerous others, supposed varieties of *O. anomalum*, but from which it is easily recognized. I have also lately received from Scotland genuine examples of *O. anomalum*, Br. Eur., besides those from Aberdour, and I would especially request the attention of our Scottish friends to this species, hoping that they may be able to communicate through the pages of the 'Phytologist' further information relating to its distribution and occurrence in that part of the kingdom.

HYDROCHARIS MORSUS-RANÆ.

Having obtained plants of the Frogbit (*Hydrocharis Morsus-ranæ*) from ditches near Christchurch, in Hampshire, and grown them in a pan of water for three or four years, an opportunity has offered of observing the manner in which this aquatic lives unharmed by the winter frosts, and disperses itself through the waters in which it grows. The peculiarities noticed do not seem to have been mentioned in any of the leading botanical works, and are perhaps of sufficient interest to warrant their admission into the pages of the 'Phytologist' for general information.

Hydrocharis Morsus-ranæ is described in all the Floras as being *perennial*; but it decays entirely away every autumn in October or November, and disappears altogether from the surface of the water which it has hitherto nearly covered with its leaves. In what sense, then, is it *perennial*?—and how is its permanent existence secured otherwise than by seed? It is observed to be in the following manner:—The Frogbit sends off in different directions floating runners, ending in plants, which again send off others, and in this way it occupies and covers the surface of the waters in which it is found. But whence does the original plant proceed which produces all these proliferous runners, for during the winter months there is not a trace of one left? It is seen to take its rise from a little bud or *bulb*; for besides the runners bearing plants putting forth leaves and flowers, each plant, towards the end of summer, sends off one or more runners which end in a scaly bud, and at the time of the decay of all the rest of the plant in the autumn months, these scaly buds retain their vigour and vitality, become detached from the perishing runners, and sink to the bottom of the water, where they pass the winter upon the mud. Early in May the little scaly buds, which have lain tranquilly below during the previous months, yielding to the influences of the season, and to the mysterious periodicity of their nature, rise once more to the surface, expand, put forth their leaves and proceed to run their summer course of existence as before.

The history of the Frogbit would appear then to present these points, which are remarkable. First, it offers an instance of a water-plant, the perennial existence of which is secured by means of scaly buds, produced at the end of runners, and separating from the parent plant,—in other words, by means of

subaqueous bulbs. For what is a bulb? To quote Balfour's 'Class-book of Botany,' page 67, "It is a bud produced underground, the centre corresponding to the axis, which is clothed with scales, and which sends flowering stems upwards and roots downwards." Bulbs, like other buds, are formed upon or at the end of stems. In general, these stems are reduced to a mere disk, but there are very many cases in which bulbs are formed at the end of long runners, an example of which is to be found in the wild tulip (*Tulipa sylvestris*), the bulbs of which are described in the 'English Flora' of Sir J. E. Smith, as observed by Mr. Ker, to be "formed at the extremity of lateral shoots of a considerable length." Sir W. J. Hooker also, in his 'British Flora,' notices "that the wild Tulip increases by throwing out a long stout fibre from its root, at the extremity of which a bulb appears." *Anisanthus (Gladiolus) Cunonia*, and several species of *Oxalis* from the Cape, may also be cited as instances in point.

Here, then, in the Frogbit, we have a true *bulb*, by means of which it increases and continues permanently to live, but it is *subaqueous*,—a form of bulb not hitherto, it might seem, clearly recognized. Secondly, the dispersal of the Frogbit is ensured by means of the bulbs produced at the end of runners of some length, and then detached in the autumn from the parent stem, and moving freely with the gentle movements of the water in which they lie, a fact worth noting. Thirdly, it is seldom that the eye witnesses so distinctly as in the case of the Frogbit the marvellous arrest of the decay affecting the whole of the rest of the plant at the precise point at which it reaches the bulbs at the extremity of the stems. There the vital force might be supposed to become enfeebled and to fail, but, on the contrary, it is there found to be stored up in all its wondrous energy, and there it resists successfully the destruction which dissolves all else except the little bulbous reservoirs in which it lies contained. Although this wonder is repeated continually in other plants, very strikingly in such as are of only annual duration, the seeds of which alone survive the general decay, yet it is most plainly to be *seen* in this analogous preservation of the Frogbit's bulbs. In the last place, the return of the bulb of the Frogbit to the surface of the water at the appointed time, in exact obedience to the law of its nature, brings strongly into notice another of the surprising facts which are scarcely adequately to be explained in the present state of human knowledge.

BOTANICAL NOTES, NOTICES, AND QUERIES.

NOTICE TO CONTRIBUTORS.

The Editor regrets that there have been long in his possession several communications which he could not publish for want of room. He particularly refers to articles from Mr. Sim, Mr. A. G. More, Mr. Lloyd, Mr. Beisly, Mr. Jerdon; also from three other correspondents whose names he is not at liberty to publish. There are also waiting for insertion several extracts from the letters of correspondents whose missives, he acknowledges, bear a not very recent date. He entreats all these kind friends to have patience with him, and he will try and do his best to please them all.

ARENARIA BALEARICA.

(Extract from a Letter.)

All I know about *Arenaria balearica* may be simply stated in a few words. A young lad, gardener at Moncrieffe House, brought, about the beginning of June, 1859, a portion of a little plant which he said grew on the north wall of their fruit-house, about two feet from the ground: there was only one patch of it, about a foot in diameter. I sent a bit of it to you, as I could not find any of our descriptions of the British *Arenarie* to agree with it. I thought it came nearest *A. ciliata*. At last I looked in my Botanical dictionary, and found therein described, shortly and insufficiently, a plant under the name of *A. balearica*, which I thought might be the plant in question. I sent a bit of it to Mr. C. C. Babington, Cambridge, who at once replied, confirming my opinion. On the 16th or 17th of June last year, I went myself to Moncrieffe, and on the tool or fruit house saw the *A. balearica* and collected some of it myself. I never intended to say whether this plant be indigenous to Scotland or not, I only recorded a fact, waiving all conjectures relative to the how or the when of its appearance there. There it was, and probably there it will continue to grow as long as the tool-house whereon it has settled itself stands. Nature pleases herself in the selection of suitable localities for her offspring. Botanical geographers would fain confine her within bounds, but their laws, not hers, are like the spiders' webs which catch the weaker denizens of the insect world and let the stronger break through.

Some plants will submit to the laws made and provided for the restraint of their wandering propensities, but not all. The plant in question, *Arenaria balearica*, may be one of these, one of the vagrants of Flora's dominion; unhappily she is not the only one that discomforts phytogeographers.

JOHN SIM.

Communications have been received from

Dr. Windsor; J. B. Wood, M.D., F.R.C.S.; Joseph Croucher; Edwin Green; R. Heward; James Hussey; Harriet Beisly; J. G. Baker; John Sim; W. Wilson; T. W. Gissing; W. P. W. Richardson.

PLANTS OF DOVER, &c.

List of Plants collected about Dover, Walmer, Folkestone, and Sandgate, from the middle of May to the beginning of July, of the past year, 1860. By H. C.

FILICES.

Only the following common species were observed :—*Lastrea Filix-mas*, *Polystichum aculeatum*.

Athyrium Filix-femina. On banks near St. Radigund's.

Asplenium Ruta-muraria. On a wall at the foot of the Castle hill, Dover; also on the wall leading to the entrance of Walmer Castle.

Scolopendrium officinale. Common on banks, but only the normal form.—I did not meet with any of the varieties so frequent at Torquay.

Pteris aquilina. Not common, and very stunted.

GRAMINEÆ.

Phalaris arundinacea, *Anthoxanthum odoratum*, *Phleum pratense*, *Arrhenatherum avenaceum*.

Melica uniflora: Combe Wood. *Milium effusum*: the same locality.

Kæleria cristata, Pers. Shakspeare's Cliff.

Avena præcox (*Aira*, L.). Downs near St. Radigund's.

Poa annua, *P. nemoralis*, *P. pratensis*.

Catabrosa aquatica. Ditch near Charlton church, with *Glyceria aquatica* and *G. fluitans*.

Sclerochloa maritima, Lind. (?) Very abundant on the cliffs within reach of the sea spray.—The locality given in the British Floras is "salt-marshes."

Sclerochloa rigida, Link. Common, especially on the beach at Walmer.

Briza media, *Cynosurus cristatus*, *Dactylis glomerata*, *Festuca pratensis*.

Bromus asper. Grounds of Walmer Castle.

Bromus sterilis, *B. mollis*, *Lolium perenne*, *Hordeum murinum*.

I devoted little time to the study of the Grasses, and none to that of the *Carices* and other *Cyperaceæ*, etc.

ALISMACEÆ.

Alisma Plantago.

LILIACEÆ.

Agraphis nutans. Abundant in all the copses.—We also found a variety with pure white flowers, a more delicate plant than the common Bluebell.

Allium ursinum. Plantation at Kersney Abbey.—This I found in May 1849, but was unable to ascertain if it still grew there, as the grounds are now closed to visitors.

ASPARAGACEÆ.

Convallaria maialis. Westwood, about sixteen miles from Dover.—For this locality I cannot vouch, not having been able to get so far. A basketful of the plants was brought to us for sale by a decent old peasant woman, who, in answer to our inquiry as to where she had obtained them, named Westwood, assuring us that they grew there in abundance.

TRILLIACEÆ.

Paris quadrifolia. Combe Wood and plantations at Waldershare. Often with *five*, and occasionally with six leaves.

ORCHIDACEÆ.

Orchis ustulata. East Cliff, near the Cornhill C. G. station (June).

Orchis fusca. Combe Wood (June 8th).

Orchis Morio. Meadows.

Orchis (Anacamptis, Rich.) pyramidalis. On chalk downs.

Gymnadenia conopsea, Rich. Also on sunny chalk downs, with the last-named.

Habenaria chlorantha. Copse on the road to St. Radigund's.

Ophrys muscifera (Myodes). Small plantations to the right of Waldershare church.

Ophrys apifera. Shakspeare's Cliff (July).

Ophrys aranifera. Exceedingly plentiful on Shakspeare's Cliff, and still more so on the waste ground near the railroad at the bottom of the steps cut in the side of the cliff, beyond the tunnel.

Spiranthes autumnalis, I gathered on the downs leading to St. Radigund's, Sept. 3, 1849.

Listera ovata. Common in all the copses.

Cephalanthera grandiflora. Plantation to the left of the road in going to Waldershare, and woods of Kersney Abbey, at the root of the Fir-trees.

IRIDACEÆ.

Iris fetidissima. On banks along the Folkestone road, and in Kersney Wood, etc. (not in bloom).

ELEAGNACEÆ.

Hippophae rhamnoides. Waste ground at the foot of Shakespeare's Cliff, and on ascent to Abbott's Cliff.—In both places I only found plants with male flowers.

EUPHORBIACEÆ.

Euphorbia helioscopia. Common in waste ground.

Euphorbia Peplus. Common.

Euphorbia amygdaloides. Abundant in woods and copses.

Mercurialis perennis. Not uncommon.

Mercurialis annua. A troublesome weed in cultivated ground.

URTICACEÆ.

Parietaria officinalis. On old walls, and on the East Cliff, growing luxuriantly in the chalk.

POLYGONACEÆ.

Of the following genera, *Polygonum*, *Rumex*, *Chenopodium*, there were many representatives, but not sufficiently in flower to be determined, with the exception of—

Chenopodium Bonus-Henricus, which grew about the Priory, Poulton, and St. Radigund's farms.

Beta maritima. Abundant along the shore and on the cliffs east and west of Dover.

Atriplex. Several species (*varieties* according to Bentham), but these also, not being in flower, could not be determined.

Obione (Halimus) portulacoides, Wall. Little saltmarsh between Shakspeare's and Abbott's Cliffs.

Salicornia herbacea. In the same place, not in bloom.

CALLITRICHACEÆ.

Callitriche verna. Var. β of the Illustrated Handb. B. P. In the Dour and other streams.

PLANTAGINACEÆ.

Plantago media, *P. major*, *P. lanceolata*, and *P. Coronopus*, all very abundant. I looked in vain for *P. maritima*, which is so common on the south Devon coast.

PLUMBAGINACEÆ.

Armeria maritima grows in large patches on the sandy cliff near Sandgate. Not observed on the chalk.

Statice spathulata. On the cliffs on both sides of Dover.—Round the margin of the saltmarsh at the foot of Abbott's Cliff, already mentioned, a *Statice* formed quite a turf, but whether *spathulata* or *Limonium* I was not able to determine, as it was only in bud. According to Bentham, one is only a variety of the other.

PRIMULACEÆ.

Primula veris and *P. vulgaris*. Both more abundant and luxuriant than I have ever seen them elsewhere. The latter especially decked every hedgebank and copse with innumerable tufts of its pale yellow stars, occasioning a constantly recurring delight to me, for it does not figure in the Belgian Flora, and it was many years since I had seen it blooming "à l'état sauvage."

Primula elatior? was brought to us from the neighbourhood of Mount Ararat (near Dover), where I was told it was common. This is the plant known locally as the "Cowslip," while *P. veris* bears the euphonic appellation of "Horse-buckles."

Lysimachia nemorum. In copses.—The only one of its genus met with.

Anagallis arvensis. Cornfields and waste ground.

VERBENACEÆ.

Verbena officinalis. Common, but not in flower.

LABIATÆ.

Mentha aquatica. Marshy ground beyond River, and in the Dour.

Salvia verbenaca. On the right bank of the road leading from the Arch Cliff Fort to Shakspeare's Cliff.—This is the only locality where we met with it.

Origanum vulgare. Common everywhere on the chalk.—Just coming into flower when I left.

Thymus Serpyllum. Common.

Calamintha Acinos, Gaud. (*Thymus*, L.). About Guston and Langdon, etc.

Glechoma hederacea. Under hedges and banks, etc.

Lamium Galeobdolon. Copses, common.

Galeopsis Tetrahit. Copse to the right of the Folkestone road.

Stachys Betonica. Abundant also in copses and borders of woods.

Ballota fœtida. Hedges and roadsides; common.—Not in flower.

Ajuga reptans. Copses and banks.—The finest specimens I ever saw; some had spikes of flowers exceeding a foot in length.

SCROPHULARIACEÆ.

Veronica hederæfolia. Exceedingly common; trailing along all the banks, and overspreading the cornfields.

Veronica agrestis. Not so abundant.

Veronica Buxbaumii. Also infesting the cultivated fields.—One of the commonest weeds on the road from River to St. Radigund's.

Veronica arvensis. Heights at the back of the Castle, and left of the road to Shakspeare's Cliff.

Veronica montana. Border of Combe Wood, on a bank near St. Radigund's Abbey; also near Mount Ararat, about half a mile beyond St. Radigund's, on a shady bank, with Ferns.

Veronica Anagallis. Marsh beyond River, on the road to Alkham.

Veronica Beccabunga. In the Dour, at the back of Charlton.

Scrophularia aquatica. In the marsh near River.

Linaria Cymbalaria. On the Castle wall, Walmer; also on a wall at Buckland.

Pedicularis sylvatica. In a field near St. Radigund's Abbey.

Rhinanthus Crista-galli. Meadows.

Bartsia Odontitis. Cornfields.

Euphrasia officinalis. Chalk downs.

OROBANCHACEÆ.

Orobanche caryophyllacea. I suppose this species is peculiar to Kent, as that county is named as its habitat in all our Floras. It is certainly very abundant, almost covering the piece of waste ground between the Shakspeare's and Abbott's Cliff tunnels, and extending up the side of the latter nearly to the top. It was so matted together with *Lotus corniculatus* and *Galium Mollugo*, that I had some trouble to find out on which it was parasitic. After several ineffectual attempts with the trowel, I at length succeeded in digging out one with the *Galium* attached to it, thus leaving no doubt of its identity. It was new to me.

VERBASCACEÆ.

Verbascum Thapsus. On the cliffs at Sandgate, and about Dover, not in bloom (July).

SOLANÆÆ.

Solanum Dulcamara. Common in hedges round Dover, but especially luxuriant on the shingly beach at Walmer, where it grew in patches, the branches trailing on the ground and so intertwined as quite to form a matting. The flowers too were in denser heads, and of a darker purple, than I had ever observed them when growing in hedges.

BORAGINACEÆ.

Borago officinalis. A variety with pure white flowers (very pretty) on the cliff at Folkestone, near one of the flights of steps leading up from the Sandgate road to Albion Villas.

Lycopsis arvensis. Waste ground close to the Sandgate turnpike.

Symphytum officinale. A variety with blue flowers, similar to those of the *Pulmonaria* of our gardens. It was growing among the grass at the foot of the enclosed part of the cliff, between Folkestone and Sandgate. Thinking we had stumbled on a grand prize, my youthful companion climbed over the invisible fence, at the risk of being prosecuted for trespass, to secure it. We were much disappointed to find on examination that, excepting in brilliancy of colour, it did not in any way differ from the common Comfrey.

Myosotis palustris. In all the streams.

Myosotis intermedia (*arvensis*, Hoff.). Fields and waste places.

Myosotis collina. Folkestone cliffs (May).

Lithospermum arvense. Fields.

Lithospermum officinale. On the left bank of the road from Dover to Deal, about halfway between the two places.

Echium vulgare. Extremely abundant on the chalk cliffs.

CONVOLVULACEÆ.

Convolvulus Sepium. Common in the hedges, not in bloom (July 6th).

Convolvulus Soldanella. In the sand, close to the road, at the foot of the Folkestone cliffs.

GENTIANACEÆ.

Erythraea Centaurium. On the downs on both sides of Dover, just coming into flower (July 6th).

Gentiana Amarella. Downs near St. Radigund's, etc. (Sept. 1849).

Chlora perfoliata. Abundant in the chalk at Dover and Walmer. Not observed at Folkestone, where the soil is sandy.

CAMPANULACEÆ.

Campanula Trachelium. Combe Wood.—This and *C. rotundifolia* were the only representatives of this family met with.

COMPOSITÆ AND DIPSACEÆ.

Carlina vulgaris. Cliffs east and west of Dover (not in flower July 6).

Carduus nutans. Common on the chalk.—On a part of Shakespeare's Cliff which has slipped several yards below the level, we noticed the variety with white flowers, also recorded among the Yarmouth plants ('Phytologist' for February, 1860).

Carduus acanthoides. Meadows at the back of Buckland.

Carduus tenuiflorus. Abundant about Dover and Folkestone.

Carduus palustris. Marshy ground near River.

Carduus acaulis. Not unfrequent; just coming into flower (July 6).

Centaurea Scabiosa. Common and luxuriant.—*Centaurea nigra*, the more usual species, was not met with, or was overlooked, probably from not being in bloom.

Anthemis arvensis. Clover-fields on St. Margaret's road, and border of field near Combe Wood.

Anthemis Cotula. Very common.

Pyrethrum maritimum. Abundant on the East Cliff, and on the beach between Dover and Folkestone.

Artemisia maritima (?). I frequently met with a plant of this family, not in bloom, which differed from the common Mugwort in the shape and colour of its leaves, which were not *white* and *tomentose* at the back. I cannot be sure I have named it correctly, as I was not able to determine it by flowers or fruit.

Senecio aquaticus. Marsh, near River.

Eupatorium cannabinum. Side of the cliff leading down to the piece of waste ground between the two tunnels already mentioned; not in flower.

Hypochaeris radicata. Folkestone and Walmer, etc.

Thrinacia hirta. Everywhere.

Tragopogon pratensis. Not unfrequent on the chalk.

Lactuca (Prenanthes, Sm.) muralis. Walls of St. Radigund's Abbey.

Crepis fetida. Some very diminutive specimens by the side of the footpath along the beach at Walmer, in company with *C. taraxacifolia*, but easily distinguished by its unopened, nodding flower-buds, whilst the latter was already in seed (June 28th).

Crepis taraxacifolia. Common on banks and borders of fields, and so much taller and stouter than I am accustomed to see it on the banks of the Meuse, that careful examination alone convinced me they were one and the same species.

Dipsacus sylvestris. On banks and in copses, where it grows to an immense height.—Not in bloom.

Scabiosa Columbaria, abundant; and *Knautia arvensis*, round Dover.

VALERIANACEÆ.

Centranthus ruber grew on a bank at Walmer, but seeing it in the garden, as well as on the walls of the Castle, I cannot consider it otherwise than an escape from cultivation, though it is said to grow wild in Kent.

RUBIACEÆ.

Asperula Cynanchica. Edge of Shakspeare's Cliff, and elsewhere on the chalk.

Rubia peregrina. Among stones lying between the waste ground already alluded to and the beach, several patches of it, just coming into bloom.

CAPRIFOLIACEÆ.

Viburnum Lantana. Hedges and copses.

Sambucus Ebulus. In the interior (at the back of the farms) of St. Radigund's Abbey.

Lonicera Periclymenum. Common.

ARALIACEÆ.

Adoxa Moschatellina. Frequent.

UMBELLIFERÆ.

Sanicula europæa. Plentiful in all the copses.

Pimpinella magna. Guston and West Langdon.

Pimpinella Saxifraga. East Cliff.

Bunium flexuosum. Combe Wood.

Feniculum officinale. One tuft on the St. Margaret's road; in greater quantity on the Folkestone cliffs, not in bloom, but unmistakable from its aromatic odour.

Crithmum maritimum. Dover cliffs, forming in places little plantations.

Angelica sylvestris. Coombe Wood, and other shady places.

Pastinaca sativa. Borders of fields.

Daucus Carota. Most luxuriant on the East Cliff. I did not observe *D. maritimus*, which I had found on the rocks at Torquay.

Torilis nodosa. On a bank near the turnpike between Folkestone and Sandgate; also to the right of the road from the Arch Cliff Fort to Shakspeare's Cliff.

Petroselinum segetum. Cornfields on the St. Margaret's road.—We only found two plants, but, had time permitted, further search in the same direction would probably have led to the discovery of more.

Smyrniolum Olusatrum. One of the commonest weeds on the chalk round Dover.—It was coming into flower by the second week in May, and the last was an unusually backward spring, so I should think June, in ordinary years, would be late for it.

Of the Rose family I only found the common genera and spe-

cies that grow everywhere, and it was too early in the season for me to prick my fingers with the Brambles.

CRASSULACEÆ.

Sedum acre. Exceedingly abundant on the beach at Walmer, and very rich in colour.

LEGUMINIFERÆ.

Sarothamnus scoparius. Ascent to Abbott's Cliff.

Genista tinctoria. Shakspeare's Cliff.

Ulex europæus. Chalk downs.

Ononis arvensis. Borders of fields, etc.

Anthyllis Vulneraria. Abundant everywhere on chalk.

Lotus corniculatus, var. γ . *villosus*. Heights near the Barracks: 1849.

Medicago maculata. Cultivated as a fodder plant on the cliffs at Folkestone, where it grows luxuriantly, but certainly wild by roadsides, and in waste ground at Dover and Deal.

Medicago denticulata. Folkestone cliffs.

Trifolium scabrum. Walmer, very starved specimens, the plot of ground where they grew having been eaten down by cattle.

Vicia bithynica. Folkestone cliffs, May and June.

Lathyrus macrorrhizus. Combe Wood.

Lathyrus maritimus. Beach at Walmer, almost within reach of the sea-spray.—There were many patches of this, the most beautiful of our wild Peas, and it was in full bloom (June 28th) when we fell in with it. Those who have had similar experiences, will readily understand the feeling of pleasure with which I contemplated this new acquisition to my collection.

Lathyrus Nissolia. Abundant on the Cliff at Folkestone, growing with *V. bithynica*, and *L. Aphaca*, the three forming such a lovely nosegay as to call forth an exclamation of surprise and delight. The Grass-Pea also grew plentifully at Sandgate, and was peculiarly brilliant in colour.

Hippocrepis comosa. Frequent about Dover.

Onobrychis sativa. Shakspeare's Cliff and elsewhere, much cultivated.

CRUCIFERÆ.

Cheiranthus Cheiri. Covering the East Cliff, which was quite

gay with it, all through the month of May; also on the old walls of the Priory Farm.

Barbarea vulgaris. Copse and fields near Waldershare church.—By no means so stout and coarse, nor of such dark green leaves, as my Meuse specimens, owing probably to difference of soil and situation. Our Belgian plant is abundant on the dry, sunny limestone rocks along the valley of the Meuse.

Barbarea præcox. In a field at the back of Charlton, and on the Folkestone cliffs.

Arabis hirsuta. Borders of cornfields, and on the East Cliff.

Brassica oleracea. Cliffs, East and West.

Brassica campestris. Fallow fields.

Sinapis nigra. Folkestone cliffs, where it quite replaced the Charlock.—We searched for it in vain on the chalk, round Dover.

Diploxys tenuifolia, *D. muralis*. Both frequent on the East and West Cliffs.

Lepidium Draba. On the Cliff at Folkestone, and on the left bank of the road, near the turnpike.

Senebiera Coronopus. Roadsides, and along the Parade.

Crambe maritima. On the beach at Walmer.—There was a little wooden hut near, with an enclosure in which there were some plants of the Kale. But whether this sort of garden had been made to secure the Kale, or whether those on the beach were an escape from it, I cannot say.

Raphanus Raphanistrum. Cornfields on the Folkestone road.

PAPAVERACEÆ.

Papaver somniferum. I give this on the authority of the young relative who accompanied me in all my excursions, and who wrote me that she had discovered it, after I left, in walking from Dover to Folkestone, by the beach. I am unable to give the exact spot.*

Glaucium luteum. All along the coast, from Folkestone to Walmer, where it is particularly abundant, growing quite to the water's edge.

* The locality, or rather, the unusual station for this plant, is beyond Lydden Spout, on the way from the houses on the cliff. The place is generally known by the name of East Wear Bay. We particularly noticed this as a good lesson in botanical geography.

Chelidonium majus. In all the villages around Dover, as well as near the Water-works on the Castle Hill.

RESEDACEÆ.

Reseda Luteola, *R. lutea*. Frequent.

CELASTRACEÆ.

Euonymus europæus. Hedges and copses.

POLYGALACEÆ.

Polygala vulgaris. Plentiful on the banks along the St. Margaret's road. I also found, in a field near St. Radigund's, a variety which closely resembles *P. depressa*, Wender, if not identical with it.

Of the *Mallows* and *Geraniums*, I met with only the common kinds, excepting a variety of *Erodium cicutarium*, with white flowers, with a dark spot at the base of the petals, which we found on the cliff just at the entrance of Sandgate.

LINACEÆ.

Linum angustifolium. Abundant on the bank to the right of the road from Walmer Castle to St. Margaret's.

CARYOPHYLLACEÆ.

Silene nutans, var. β , Smith. Grows in profusion on the East and Shakspeare's Cliffs, the air being scented by the fragrance of its starry white flowers towards evening when they expand.—It differs from our Belgian *S. nutans* by its larger size and greater hairiness.

Silene inflata. A common weed in cornfields.

Lychnis diurna. Copses and hedge-banks. We found the variety with pale flesh-coloured flowers in a copse at the Walder-

Lychnis vespertina. Tolerably abundant in cornfields and on banks.

Lepigonum marinum. On the cliffs.

Arenaria trinervia. Shady banks.

Cerastium arvense. Heights near the Castle.

FRANKENIACEÆ.

Frankenia levis. Little saltmarsh at the foot of Abbott's Cliff.

RANUNCULACEÆ.

Clematis Vitalba. In all the hedges.

Anemone nemorosa. Plentiful in the copses.

Ranunculus circinatus (*Batrachium*, Reich.). In the Dour, at the back of Buckland.

The Flora of Dover does not appear rich in plants of this family. I noticed none but the most common species.

Omitted in their proper places.

Pyrethrum Parthenium. On the walls of Kersney Abbey, near the gateway.

Agrimonia Eupatoria. Near Poulton Farm, and ascent of Abbott's Cliff.

ISOETES HYSTRIX.

Recent discovery of Isoetes Hystrix, by GEORGE WOLSEY, Guernsey; in a Letter to the Editor.

This little plant I found in damp spots on L'Ancrisse Common, in this island, in June 1860.

The following description of the species and its localities is compiled from Grenier et Godron, 'Flore de France,' and from Lloyd's 'Flore de l'Ouest de la France.'

Isoetes hystrix, Durieu in litt., Bory, Compt. rend. Acad. Sc. vol. xviii., January, 1844, etc.

Root tapering, black, furrowed, surrounded by white, shining, 2-3-toothed scales. Lloyd says three-toothed, Gr. and God. two-toothed, sometimes with an intermediate short tooth. Leaves linear, pointed, scarcely furrowed, slightly convex on the outer side with prominent nervation, contiguous at the base, and forming a bulb, spreading above, one or two inches long. Macrosporangies finely reticulate, microsporangies truncate-aculeate.

Grenier and Godron state that it grows in dry mountainous or hilly pastures in the Isle of Corsica, and never in inundated places; abounds in moist pastures, and on the seashore, Bonifacio, etc.

Lloyd gives a full and particular account of the habits of this interesting novelty, viz. : "This species grows in patches (*pieds isolés*), not forming a turf or sward, on dry sandy flats, and seated on small tumps or little hillocks like mole-hills. The disposition of its leaves, which spread out and form a circle, serves to distinguish it from the plants with which it is associated, for example, from *Romulea Columnæ* (*Trichonema Columnæ*), and *Scilla autumnalis*, which frequently are found in the places where this plant grows." This intelligent author further adds : "Although the ordinary stations or habitats for this species be exposed grassy flat places, I have often seen it growing on the sands at the base of dunes (small hills or sandy banks near the sea), where the plant is larger (*plus robuste*). In Belle Isle I have seen it on several steep hills of no great height, exposed to the south, and surrounded with *Romulea* (*Trichonema*) and *Ophioglossum lusitanicum*. It grows on the south-western coast of France, from the Loire to Cape Finisterre. It is perennial, and is in fructification from March to May.

It will probably hereafter be detected in other parts of the Channel Islands, and we hope that the above brief, simple description of the plant and of its habits and localities will assist in its identification those who may be so fortunate as to find this interesting novelty.

ARENARIA BALEARICA.

"Semper ego auditor tantum, nunquamne reponam?"

"Strange! all this difference should be

'Twixt tweedle-dum and tweedle-dee."

In the Annual Address, printed in our first monthly issue for this current year, 1861, there is some allusion to the subject of the present article, which was then under consideration; and an engagement was then made, that the matter should be fully discussed on the earliest fitting occasion. This promise is now to be redeemed by the present performance.

In this case the pen is drawn, not to attack, but to defend; and it will not be used for inflicting castigation, but for maintaining the truth. It is a compulsive, and neither a voluntary

nor an agreeable task which is now to be fulfilled. It is seldom that the 'Phytologist' assumes the functions of a *censor morum* , and these duties, when undertaken, are discharged in the spirit of meekness, kindness, and charity, with a vivid consciousness of human infirmity, and with the sincere desire of dealing honestly and candidly, neither suppressing any important fact, nor setting "down aught in malice."

The earnest desire of the writer is to be a healer of breaches, a peacemaker; to write in the conciliatory mood, not to exasperate nor alienate, but to reconcile. If justice demands firmness in the refutation of unjust accusations, moderation requires gentleness in the style or diction. *Suaviter in modo, fortiter in re*, will be the rule in the following composition.

I will not incur the jealousy and hatred of mankind by assumptions of superiority, nor by the affectation of philosophico-phrenological discernment, nor by any superciliousness of language, nor by dictatorial dogmatic assertions. These are the weak instruments of minor mediocrities, who mimic and parody the affectations of genius, and, by their feeble efforts to obtain notoriety, render themselves only objects of ridicule and commiseration to the rest of mankind. While they are laughed at for their egregious self-conceit, and the airs of importance which they assume, they are, by the more feeling and sensible portion of humanity, pitied for their weakness, for the defects of their education, the want of moral training and discipline, and for the faithlessness of their friends, who wanted the courage and the love to tell them of their infirmities and to admonish them to beware of the seductive allurements of self-glorification.

I further beg to intimate to those readers of the 'Phytologist' who have not seen the extract subjoined, that this is *one* of the *twin cases* supplied to Professor De Candolle, to convince him "that our eminent botanists are not sound reasoners." With the other case the present deponent has no concern; he has only to justify Mr. Sim, the correspondent who transmitted the fact, and the Editor who gave it publicity.

Another preliminary remark may be made on the author's reference to his "own readers" needing no apology for his "troubling them with this second warning instance." His readers might possibly save him the trouble of apologizing, but the readers of the 'Phytologist' might ask why he did not publish

his objection to the report of the discovery, in the same paper in which the original account first appeared. This would have been both a courteous, customary, and satisfactory mode of procedure. If his object was merely the detection of error and the publication of truth, why was not the 'Phytologist' used as the medium for contradicting the "pseudo-discovery," as he calls it? The writer of this article will not attempt to surmise the author's motives for his unusual and uncourteous proceeding; but he cannot help inferring that truth was not the sole object, and in this inference he believes that all those who are best acquainted with both the implicated parties will coincide with him.

It is well known to all our readers that Mr. Watson, or anybody else, might have challenged the statement about the *Arenaria*; and, that if a contradiction or a counter-statement had been sent to the 'Phytologist,' that contradiction would have been made public. But the author of the article knew that there was a sting in its tail, which would have been extracted; the poison would have been squeezed out of the serpent's fangs; therefore another medium was selected. We make no complaint about this; for the author of the 'Cybele' is the very last man in England whose aid is desirable in connection with the 'Phytologist.' Rather, he is the only botanist known whose room is better than his company. But for all this, he is welcome to state a fact or correct an error in our pages. He may say in justification that he knew the Editor of the said periodical would not give publicity to his article because it was condemnatory of his editorial vigilance; but this is a mere pretence, for the Editor has entered articles that were far from being complimentary to himself. But it is now time to let Mr. W. tell his own story, in his own elegant diction; let the tail go with the hide, the bee's bottom, sting and all; the readers of this journal shall have served up for their delectation an effusion which is just about as remarkable for its offensive personality as it is for the hobbling style of its composition.

"ARENARIA BALEARICA not Native in Scotland.—So much mischief may be done by would-be-thought discoverers sending inaccurate reports to editors, who are themselves not duly prepared by the geographico-botanical knowledge requisite for distinguishing between the probable and the improbable in local botany, that I can feel no apology needful to my own readers for here troubling them with a second warning instance; one fortunately

arrested in time to prevent another most improbable species becoming permanently incorporated in our lists of truly British plants. It is a fitting accompaniment to the preceding case of the *Diervilla*, resembling that one in the risk of a garden plant becoming thereby recorded for the future as if really a native production of Scotland. In May last, 1859, I received from the Editor of the 'Phytologist,' New Series, a note to this effect:—

“ I enclose an *Arenaria*, sent this morning from Scotland. It is no state of *A. serpyllifolia*, and it does not agree with Babington's description of *A. ciliata*. It also differs from *A. norvegica* as described by Babington. *A. multicaulis* is unknown to me. Will you be so good as give me your opinion of it when you have time? ”

“ Writing here from recollection, my reply was immediate, and to the effect, that if reported to me from the Mediterranean, instead of Scotland, I should unhesitatingly have named the plant *A. balearica*; that I knew of no boreal species to which it could be referred or related; and that the alleged locality of Scotland was geographically improbable, unless I was wrong as to the name. In the next month's number of the 'Phytologist' the following brief notice was given of this pseudo-discovery:—

“ Mr. Sim has sent us a specimen of what he thinks may be *Arenaria balearica*, a plant new to Scotland. He has been advised to send a specimen to Mr. Babington.' ('Phytologist,' 50, 192.)

“ So far, the readers of the 'Phytologist' were in a very likely way of being misled into supposing this Mediterranean *Arenaria* a wild plant new to Scotland; no intimation of a garden origin being stated or suggested, even while the idea of it being *A. balearica* is attributed to the finder himself. But in the same periodical for November then following, Mr. John Sim records a 'botanical ramble,' made to the 'Hill of Moncrieffe,' where he discovers *Scrophularia vernalis*, *Achusa sempervirens*, and other garden species, which no geographical botanist believes to be native in Scotland. In the course of his ramble he visits the 'pleasure-grounds and flower-garden of Sir Thomas Moncrieffe,' and there he finds, 'about the middle of June,' the plant new to Scotland, as mentioned in the subjoined extract from his ramble:—

“ On the wall of an old fruit-house, I saw a patch of *Arenaria balearica*, of which I gathered a few specimens; how or by what means it got there I cannot tell, only there it is, and none knows how.' ('Phytologist,' 55, 327.)

“ The question now arises, where did the previously found specimen come from? that which was sent to London in May, and recorded in the June number of the 'Phytologist,' as a plant new to Scotland? Very significantly, that first record is omitted from the Index to the 'Phytologist' for 1859, page 385, where Mr. Sim's confession of the fruit-house locality for the species is referred to only. And considering how many localities

for improbably native plants have been already reported on the same authority, it may become matter of some importance to future botanical topographers, to ascertain whether this case of the *Arenaria balearica* is a fair sample of the rest? Also, how far it may be held an exhibition of editorial care and competence, in announcing new British plants or new British localities? While saying that I cannot place scientific reliance upon Mr. Sim's reports, or upon the phytological records of them, it would be most unfair not to disclaim any insinuation against Mr. Sim personally, on the score of moral truthfulness. I can well believe him writing with perfect sincerity of intention, while imperfect in his reports, and unsound in his conclusions from alleged facts; the records being made worse against him by want of editorial discernment." (Supplement to 'Cybele,' p. 38.)

The first sentence is a long one, containing several propositions, hanging rather loosely together, more remarkable for intricacies and involutions than for that clearness and logical precision which might be looked for in the composition of an author who takes credit for more philosophical acumen than he allows to any other botanist, yea, more than to all of them put together.

Instead, however, of analyzing this ponderous period of the learned Theban's, it will be easier for our readers to scrutinize the facts, which are like Sir John Falstaff's halfpenny roll to a gallon of sack, or like some wretched daub of a painting in a gaudy and clumsy frame. We fear exhausting the attention, or, it may be, the patience of our readers; and we also regret the space occupied by so worthless a topic. For what advantage will it be to a single individual, whether this *Arenaria* grow in Scotland or not. Will the publication of its discovery be subservient to human happiness or to the amelioration of mankind? Only in an imperceptible degree. Its effect on society will be unfelt; and it will be forgotten, even by botanists, in the space of half a decade of years. The fact itself, in the grand totality of scientific discovery, is like the infinitesimal globules of the homœopathic practitioner, like a grain of strychnine in a hogshead of water. But the reputation of men is a more important concern than is the discovery or fancied discovery of a south European plant on one of the bleak hills of Caledonia; and it is to this part of the subject that the candid consideration of our readers is humbly requested.

"The mischief that would be done" (more, the much mischief

has been prevented, the ill weed has had its blossom nipped off) was hatched by two persons, viz. by Mr. Sim, the "would-be-thought discoverer," and by the Editor, who was not sufficiently prepared (duly prepared) by "geographico-botanical knowledge" to deal with such difficult questions as the publication of a notice of a plant strayed from the Continent. We ask our readers, if Mr. H. C. W. deserves so well of society as to have a monopoly of all botanical discoveries? Or is he alone to have the privilege of promulgating such scraps of information? No such pretensions will be admitted. Mr. W. may make discoveries; and, like the barn-yard fowl, which cackles loudly and warns the whole homestead when she has laid an egg, he may sound his own applausive trumpet-note, and beg the entire scientific family of mankind, and womankind also, to listen to his swan-like song of self-complacency. And why not? Gentle reader, we gainsay him not; he will never be blamed by us for celebrating his own praises; we rather pity him, for it is universally credited that when a man humbles himself to speak and write in commendation of himself, he has lost all his friends.

But why will not Mr. W. let us have the same liberty which he takes to himself? "Would-be discoverers!" Does not Mr. W. wish to be a discoverer, to be enrolled among the benefactors of the human race, with Columbus, with Bacon, with Harvey, with Newton, Jenner, Watt, and Stephenson? Yes, truly; but this discovery of Mr. Sim's is no discovery; it is a *pseudo-discovery*; a discovery and a false discovery, an entity and a nonentity.

On this we join issue, lead a proof, request a fair hearing, and subsequently we will call on the jury for a triumphant acquittal.

Mr. W. has perversely misrepresented the case. In the first place, no discovery was either claimed or wished for by Mr. Sim; for, from the tenor of his note, printed in our January number, p. 32, 1861, he disclaims its discovery altogether. Let this pass. How do you, Mr. Reviewer, exculpate the Editor whose skill in geography is not nearly up to the mark? Very easily. Mr. Watson may profitably remember the old proverb, "They that live in glass houses should not throw stones." Mr. W. edited the 'New Botanist's Guide,' and in this work I find that he confounds Brompton in Middlesex with Brompton in Kent. Like Captain Fluellyn, he is as hasty in his temper as he is in judgments founded on defective comparison; or he speaks and writes

in a hurry, and, like the choleric Welshman, he is weak in the ratiocinative faculty. He inferred that as there is a Brompton in Middlesex and a Brompton in Kent, "a river in Wales and a river in Macedonia; the name of the Welsh river is Wye, but the name of the other is out of his prains: but it is so like as his fingers to his fingers: there is salmons in both." Mr. Watson's reasoning is as amusing as the Welsh captain's. As "there is salmons in both rivers," so there is the plant *Geranium pyrenaicum* at both the places called Brompton. Possibly there is; but Sir James E. Smith, who is quoted as the authority for the Kentish locality, does not bear out the assertion, for he limits it to the Middlesex Brompton.

Again, the learned author of the 'Cybele,' in his remarks on the altitude of *Hypericum Elodes*, states, vol. i. p. 253, "Mr. Bowman observed it (*H. Elodes*) at one thousand yards of altitude in North Wales, and I think it was seen by myself rather higher on Dartmoor, in Devon." That is, as one of our correspondents expressed it, the accurate geographer saw the plant not on *terra firma* but *in nubibus*. No part of Devonshire is within one thousand feet of the elevation where it was seen by our accurate phyto-geographer.

If any sharp-witted reader say, this is after all but a lame excuse for the somnolency of the Editor, it may be retorted that the accuser should enter into court with clean hands. This Mr. Watson cannot do, for his blunders are egregious and innumerable. But there is more to be said in justification of the Editor, if the court, both judge and jury, will have patience to hear it.

But, abstaining from all banter and badinage, we mean to assert that this discovery is a real and not a pretended one. Mr. W. himself saw the plant, and other botanists examined it and identified it as the plant bearing the name set at the head of this article. It was never observed there before, or rather, it was not recorded before; therefore it was legitimately entitled to a notice as a discovery *new* to Scotland. The author, Mr. W., is disposed to chuckle over the good effects of his timely warning, like the fowls—*anser*es ornithologists call them—which by their cackling awoke the sleeping Roman sentinels, and thus preserved the Capitol from the nocturnal surprise of the Gauls. The plant has already obtained no little notoriety as a plant *new* to Britain;

whether it will ever get a permanent place in our list of truly British species, time alone, the universal discoverer, will show. It will probably have to pass through the improbable, the uncertain, the doubtful, the colonials, and the denizens, before it arrive at the exalted rank of plant-citizenship.

I intended to offer a few remarks on the term or phrase "improbable species," but I will, to save time and space, postpone these, and confine my discourse rather to things than to words, except as the latter are representatives of facts or of activities. I will not however pass over the flagrant breach of literary or social etiquette in the giving of publicity to the Editor's note; although there is nothing in it of which he needs to be ashamed, yet he probably would not have written it if he had entertained the slightest suspicion that his correspondent was not an honourable man, and would regard it as a private communication of a strictly privileged nature. I, as a friend, counsel the Editor of the 'Phytologist' not to trust Mr. Watson hereafter. He has been once deceived: this is Mr. W.'s fault. If he is deceived a second time, the fault will be his own.

The first portion of this literary and scientific curiosity has now been criticized, and the result is that Mr. W. is contradicted, and we hope is also convicted, to the satisfaction of any reasonable jury, of a double misrepresentation.

But there is more evidence forthcoming. Listen or look again, most patient of readers. "The readers of the 'Phytologist' were in a very likely way of being misled into supposing this Mediterranean *Arenaria* a *wild* plant new to Scotland." Observe, *lector benevolentissime*, that the word *wild*, underscored, is not ours, but Mr. Watson's. We wrote "new to Scotland," and we mean to maintain the absolute and incontrovertible accuracy of this; but we will not answer for the epithet *wild*, simply because it is not ours, and we have only to justify what we have written, but are not called upon neither to admit nor to disown what Mr. W. has written in our behalf. The original report is admitted and justified, but not burdened with Mr. Watson's addition.

Read on, gentle reader. "No intimation of a garden origin being stated or suggested, even while the idea of it (its) being *A. balearica* is attributed to the finder himself." We never heard of this *Arenaria* as a garden, or ornamental, or a cultivated

plant, and how could we hint or suggest its garden origin? We knew that it was found in or about a garden, but so are many plants notoriously wild. We might have suggested what is not true, and a *suggestio falsi* is as bad as a *suppressio veri*. We must be on our guard; "Evil communications corrupt good manners." Nothing was hinted, and nothing was suggested, and therefore nobody was misled into a false supposition. Besides, there are Balearic plants which are also British plants; and there are even more *Arenarias* than this one, which are common to both the British and the Balearic Isles. How could it be affirmed with certainty that this is *not* one of these common plants? There is positive evidence that it grew there, and there is only negative evidence against its being a probable native. Surely the testimony of two or three or four witnesses is to be received as a proof much more credible and cogent than the mere opinion of a botanical geographer, who finds plants growing in or among the clouds, one thousand feet above the highest hills of Devon, and that with his eyes open. Surely his unsupported supposal, when he is about half a thousand miles from the spot, is not a very convincing kind of negative proof.

But it appears that the attribution of the name of the plant to the finder is a fault. It is no such thing. Can nobody identify plants but Mr. Watson? There are two mistakes here. Mr. Sim was not the original discoverer or finder of the plant. Yet it appears from his own statement that he had the patience to puzzle out the name, and was able to identify the plant by comparing it with a series of *Arenarias* described in his herbal. Surely this is very creditable to our correspondent who sent the notice for publication.

But the amount of Mr. John Sim's offences against botanical geography is not yet told. Listen, most courteous reader! "In the same periodical for November then following,"—mark the accuracy of the statement and the elegance of the phraseology,—"Mr. J. S. records" another "botanical ramble, made to the hill of Moncrieffe, where he discovers *Scrophularia vernalis*, *Anchusa sempervirens*, and other garden species which no geographical botanist believes to be native in Scotland." This is the head and front of Mr. Sim's offendings. If they had been found by Mr. Watson in a locality where they had not hitherto been noticed, he would have taken the credit of the discovery.

We will not answer for the creed of geographical botanists, for if like Mr. Watson's belief, it is a very loose one; but as we do not know what it is, and have never yet heard that they have any general formula of faith in plant-distribution, the less said about it the better. But we can say that, so far as we know, the plants above-named, viz. the *Anchusa* and the *Scrophularia*, are as much, if not more, wild in Scotland as or than in England, and probably as in France to the bargain. We will present botanico-geographers with this fact, and wish it may do them much good.

We hope our readers will now acquit the Editor of the 'Phytologist' of both intentional and ignorant mistakes; and consequently he expects not merely a verdict of acquittal, but a finding of wilful misrepresentation against his accuser.

But he hopes they will not be discharged by the judge until the writer's opinions about wild and tame plants has been submitted to them, and in these his opinions he will neither compromise the 'Phytologist' nor its Editor. He will merely give his opinion, and will support it both by evidence and illustration.

It may be taken for granted, by the general consent of all mankind, botanists not excepted, that all plants, like all animals, are divisible into two classes, *wild* and *tame*. There may be, indeed there are, a few of both animate and sentient beings that are both tame and wild. The ass is an example among beasts, and the Crab among plants. As a logician may say, every herb and animal which is not tame is wild, and every one which is not wild is tame, with the exception of the small intermediate class which assumes both these distinctive characters.

From these premises it is inferred that as the *Arenaria balearica* is not a *tame* or cultivated plant, nor a plant having an intermediate character—it is a wild plant. It can scarcely be called an escape from cultivation, for it belongs to a genus quite unsuited for the practice of the florist's art. That it grows on a tool-house is no valid reason for denying its *wildness*; the Chickweed and Groundsel grow on garden-walls, and sometimes among the choicest flowers, and their *wildness* is uncontested. It is not urged against its claims to spontaneity, if not to nativity, that it was planted on the tool-house, or that it has become semi-naturalized like the Snapdragon. This latter plant has existed among us for centuries, probably for thousands of years; the *Arenaria*,

like the *Aremonia*, has taken us by surprise. But the fact of its occurrence on a tool-house and in a garden, though surprising, is not to be ignored. It is a fact, and an interesting fact, although it may be a puzzle to addle-headed plant-geographers. It may be supposed to have been introduced among seeds, or it may have reached these islands in packages, or it may have reached us by swimming in currents, or have been transported by birds, or been attached to the hairy skins of beasts,—all favourite and popular modes of plant-distribution. But who can say with any certainty that the tool-house in the garden at Moncrieffe is the only place where it grows and where it may ultimately be discovered? The *Aremonia* has been already detected in other localities in Perthshire, and in Lancashire also, if fame is to be believed. It is surely not impossible for the *Arenaria* to obtain a wider location than that of a small spot on a brick wall! Who can gainsay the possibility of this wider distribution? It may be discovered in other parts of Scotland, or in Ireland, or even in England itself, the refuge of the destitute. There is positive evidence that it has been found; there can only be negative evidence against the probability of its being found in future.

The candid critic starts a query, viz.: "Where did the previously-found specimen come from?" Observe the style, curious reader! "That which was sent to London in May, and recorded in the June number of the 'Phytologist' as a plant new to Scotland?" The answer to be given is plain and straightforward. It came from the tool-house so often mentioned. There is no mystery, nor concealment, nor affectation, about this point. Everybody agrees here. Mr. Watson does not even affect to doubt this part of the relation, but he subjoins a very significant remark, viz.: "Very significantly, that first record is omitted from the Index to the 'Phytologist' for 1859, p. 385, where Mr. Sim's confession of the fruit-house locality for the species is referred to only."

There is some truth in this part of Mr. Watson's statement. The first notice, viz. that on p. 189, being only two lines and a half, was overlooked when the Index was compiled, and this omission is supplied in the Index to Vol. IV. for 1860. The significance of this fact was originally of small dimensions, and it has gradually diminished, and has now totally disappeared.

The fact was significant, and it may now be left to the discretion of our readers to decide whether it was more significant of the *mala fides*, the faithlessness, of the Editor, or of the *malus animus* of its discoverer.

The senseless twittle-twattle contained in the last paragraph of this impertinent curiosity is as singular and as rare a specimen of harmless invective as it is of human imbecility. The would-be ratiocinative author contradicts himself, and innocently gives an answer to his own cavil. That it is utterly without meaning I will not assert, for its intention evidently was to hurt one who had never wronged him either by word or deed. The *animus* of the period is plain as a pike-staff, but it is like the feckless dart of the aged, feeble Priam, on the shield of the armed, warlike son of Achilles,—it only recoils on the thrower. It is as defective in moral dignity as it is in grammatical structure and logical deduction. It is, on the whole, just such an effusion as might originate in a mind clouded and darkened by the fumes of the incense of flattery burnt under the nostrils of one greedy of praise, or on the altar erected to self-idolatry.

Where is the causal reasoning, the philosophical inference, or logical definition, in the last paragraph of this pitiful exhibition of petty spitefulness, p. 40.

Courteous reader, be so good as to compare these two quotations, which are submitted to thy candid consideration:—

Mr. W. writes, "I cannot place scientific reliance"—(what is scientific reliance?)—"upon Mr. Sim's reports or (nor) upon the phytological records of them." Or, in plainer terms, that fact was no fact, but a figment of Mr. Sim's invention, and the phytological record of them is to be placed in the same category. This is most emphatically denied, and the accuser is hereby challenged to prove what he has asserted. Again: "It would be most unfair not to disclaim any insinuation against Mr. Sim personally, on the score of moral truthfulness." Look on that, and look on this. I cannot believe him, says Mr. Watson, and yet on the score of moral truthfulness he is unimpeachable! "Nescio quo teneam Proteu."

Surely this is a pregnant example of the effect of "addiction to psychological studies" on the student himself, in qualifying him for a discoverer and a teacher of truth.

But it is the most childish of all childish twaddle to separate moral from scientific truth. Both kinds are relative, so far as humanity is the revealer of the truth, whether it be a truth of science or a truth of morals; no finite being can possess truth absolutely. This is an attribute of Deity alone.

What more would Mr. Watson know about the plant, or about the space it occupied on the wall of the tool-house? Why did he not ask Mr. Sim for a more detailed report of the circumstances under which he saw it? Mr. Sim would have told him that the patch of *Arenaria balearica* was not much more than as much as he could cover with the crown of his hat; the number of the stems (flowering stems) was probably from fifty to sixty, or perhaps seventy or eighty,—a few more or a few less could not be of very great consequence, even to a botanical geographer! Mr. Sim knew that it was a south of Europe plant; this he learnt from his herbal; but he knows also that there are scores of plants common to the British Isles and to the Mediterranean, to both shores, both the European and the African. How was he or anybody else to know that this was not one of those common plants?

But this is not all. "Considering how many localities for improbably native plants have been already reported on the same authority, it may become a matter of some importance to future botanical topographers to ascertain whether this case of the *A. balearica* is a fair sample of the rest?" This is where the shoe pinches; it is a matter of some importance to Mr. Watson to discredit facts which he did *not know*, and for which he was ashamed to be indebted to observers whom he vilified, though just as trustworthy as he himself.

It may be a matter of some importance to future plant-geographers to know that the localities reported by Mr. Sim have been seen by hundreds of botanists, and a record of their observations, confirmatory of Mr. Sim's, has appeared in contemporary periodicals. The 'Phytologist' has a backer in a local periodical published at Perth. Also, a report of a recent botanical excursion to these very localities, last June (1860), was sent to the Editor of the 'Phytologist,' but, for reasons not necessary to be advanced here, was not accepted for publication.

We would not insult our readers by remarks on "improbable species" and "garden species," which no geographical botanist

believes to be native in Scotland. Some of our readers understand that Mr. Watson's sense of "*native*" is not universally accepted by botanists, but surely the testimony of more than a hundred personal observers is not to be refuted by the opinion of one would-be plant-geographer.

As this article has already exceeded the limits within which the Editor wishes to confine such discussions, it must be concluded with a few brief but not trivial remarks on the subject of *Arenaria balearica*.

1st. The little plant itself, the innocent cause of this contention, is not worth one-hundredth part of the expense incurred in the denial and justification of its claims to appear in a phytological record of the occurrences of a season, or among the productions of a country. The plant, economically, is of no value whatever; it is neither fit for food, nor for physic, nor ornament. Nobody but a botanist would go out of his way to pluck it, and by all botanists, except Mr. Watson, it will be utterly forgotten in a short time. The latter-named individual may have cause to remember it.

Again, in the 2nd place, the little plant is not only worthless, and will speedily be forgotten, and, consequently, is not deserving of so large a space in the annals of science, a matter to be regretted by economists, by the disciples of Adam Smith, but in addition to this, it has been made a subject of cavil and of uncharitable remarks; much envy, and no little hatred and uncharitableness, have been elicited by or through its instrumentality. This is very much to be deplored. The property wasted in the controversy, foolishly thrown away, is not so precious as the time, the temper, the patience, and the charity, which are recklessly squandered on such foolish disputes, which will certainly never be settled, because their settlement is impossible, and if it were, it would be of no practical use to any human creature.

The only excuse the 'Phytologist' can offer to its indulgent readers, for trespassing so far on their property and their patience, is, that the controversy was unsought, and would have been gladly shunned; even after it was decided that our pacific tactics were to be abandoned for a brief period, a flag of truce was transmitted to the enemy, and was treated with disdainful contempt. Hence we had no alternative but to enter the arena

of controversy; the point of honour forbade our declining what was tantamount to a challenge. *Jacta est alea*, as Cæsar said on crossing the Rubicon. We have thrown down our gage; let truth and honour be the umpires, and we are indifferent about the issue. If we are truthless and dishonoured, we deserve to be foiled, and if so, we promise to admit our error; but it will be time enough to confess when we have been proved to be in the wrong. For the present, we justify whatever has been done in the matter. More than this, we condemn what Mr. Watson has done, and tell him publicly that he ought to be ashamed of his ways, and amend them. We have stated the truth, so far as it was known to us. That Mr. Watson has stated what he did not know to be true, and insinuated what he might easily have known to be false, we do most solemnly and confidently assert.

If we are to abide faithful to the principles on which the *New Series* of this journal was established, and in conformity to which it has hitherto been conducted, we must give publicity to all facts which are reported by correspondents on whose fidelity and accuracy reliance ought to be placed. Our pages, as has been repeatedly stated, are at the service of every one who has any strictures to offer, or any animadversions to make, on any communication whatever which is printed in the 'Phytologist.'

It is hoped that our readers will be satisfied with what we have done to justify our correspondent and ourselves. There has been no display of wounded vanity, egotism, or *amour propre*, in our defence; we have guarded ourselves against acerbity of language as well as against bitterness of spirit. The miserable being who is continually spitting venom, scattering firebrands, whose indignation seethes like the hot steam of a boiling cauldron, scalding, scorching, and piercing to the heart every one within reach, is an object of sincere commiseration, but not of ribald ridicule.

The most valuable reproof and rebuke, when administered in the acrimonious spirit of calumny and detraction, are lost; the object, which should be peace and goodwill, is sacrificed to the means; the latter assume an undue prominence, and the result is that the breach, instead of being healed, is made wider than ever. We hope we have now satisfied all reasonable persons that our intentions now, as heretofore, are pacific. We are the

decided enemies of contention, and we now desire to bid adieu to all hostilities, both literary and scientific, henceforth and for ever.

BOTANICAL NOTES, NOTICES, AND QUERIES.

WAHLENBERGIA HEDERACEA.

(From a Correspondent.)

In reference to the above-named plant, about which you request information, I cannot say that it was ever either collected or seen by me on Keston Common; but I was told by the late Mr. Peete that it grew on the bog below the springs which are generally known as the source of the Ravensbourne. These springs are opposite to the gate of Holwood Park, and not above one hundred yards from the road. Inside the gate of the park there are the remains of both the rampart and fosse of a Roman encampment.

In looking over my notes and an interleaved copy of the 'New Botanist's Guide,' or rather the Botanist's New Guide, to the localities of rare British plants, I perceive that in June, 1834, I found this elegant little plant in a bog in Epping Forest, at High Beech, between Loughton and Epping. I have heard that it has been seen in several other parts of the Forest, but I have not seen it.

In Waterdown Forest, adjoining Groombridge, in Sussex, I have seen it very plentiful.

It also abounds in St. Leonard's Forest, near Horsham, and in Tilgate Forest, on the left of the Brighton road, near Peaseporridge Gate, a little beyond Starvemouse Moor.

Here it grows in slightly moist places, similar to those where you and I saw it on the table-land of the Berwyns, on the left of the road between Bala and Llangynog; but in St. Leonard's Forest it grows most abundantly on the dry soil in the wood, about the mouths of the rabbit-holes.

It is not *uliginous* in that part of St. Leonard's Forest; neither does it, by its distribution, evince any preponderating partiality for the west of our island; and in Europe it is found on the eastern shores of the Adriatic.

Its altitude on the Berwyns, where it grows, as above-mentioned, not more than two miles from Llanderfel, is probably more than one thousand feet.

W. P.

A NEW MATERIAL FOR THE MANUFACTURE OF PAPER.

The following exceedingly interesting communication on a novel kind of straw paper is based upon an article in the columns of the 'Breslauer Gewerbeblatt,' September, 1860:—

"Among the many endeavours that have been made, both in ancient and modern times, to procure a fit substitute for paper, one at length has been crowned with success. Recent experiments have proved Indian Corn to possess not only all the ordinary qualities necessary to make a good article, but to be in many respects actually superior to rags, hitherto the only material found to be really available

for that purpose. The discovery to which we allude is a complete success, and indeed may be expected to exercise the greatest influence upon the price of paper within a very short time. Indian Corn, it is true, cannot be grown except in countries of a certain degree of temperature—at least, not with the prolific result of warmer climates; yet the plant is of frequent occurrence all over Europe, and can be easily cultivated to a degree more than sufficient to satisfy the utmost demands of the paper market. Besides, as rags are likely to fall in price before long, owing to the extensive supply of material resulting from this new element, the world of writers and readers would seem to have a brighter future before it than the boldest fancy would have imagined a very short time ago. This is not the first time that paper has been manufactured from the blade of Indian Corn; but, strange to say, the art was lost, and required to be discovered anew. As early as the seventeenth century, an Indian Corn paper manufactory was in full operation at the town of Rievi, in Italy, and enjoyed a world-wide reputation at the time; but with the death of its proprietor the secret seems to have lapsed into oblivion. The manifold attempts subsequently made to continue the manufacture were always baffled by the difficulty of removing the flint and the resinous and glutinous matter contained in the blade. The recovery of this process has at last been effected, and is due to the cleverness of one Herr Moritz Diamant, a Jewish writing-master in Austria. Having busied himself for some time in experiments on Indian Corn, the ingenious discoverer has at length been rewarded with the desired results of his labour; and a trial of his method on a grand scale, which was made at the Imperial manufactory of Schlögelmühle, near Glognitz (Lower Austria), has completely demonstrated the certainty of the invention. Although the machinery, arranged as it was for the manufacture of rag paper, could not, of course, fully answer the requirements of Herr Diamant, the results of the essay were wonderfully favourable. The article produced was of a purity of texture and whiteness of colour that left nothing to be desired; and this is all the more valuable from the difficulty usually experienced in the removal of impurities from the rags. Knots and other inequalities of surface, so frequent in the ordinary paper, and which give so much trouble in printing, the new product is entirely free from, and this without the material undergoing any special process to attain the desired end.

“Another immense advantage, and this in an economical point of view, is the reduction of the steam power required in the manufacture by *one-third* of its present amount, in consequence of the material being reduced to pulp by chemical, and not, as at present, mechanical agency. The present proprietor of the invention is Count Carl Octavio zu Lippe Weissenfeld, who has bought it from the originator, and from several experiments deduced the following results:—

“1. It is not only possible to produce every variety of paper from the blades of Indian Corn, but the product is equal, and in some respects even superior, to the article manufactured from rags.

“2. The paper requires but very little size to render it fit for writing purposes, as the pulp naturally contains a large proportion of that necessary ingredient, which can at the same time be easily eliminated if desirable.

“3. The bleaching is effected by an extraordinarily rapid and facile process, and, indeed, for the common light-coloured packing paper the process becomes entirely unnecessary.

“4. The Indian-corn paper possesses greater strength and tenacity than rag paper, without the drawback of brittleness so conspicuous in the common straw products.

“5. No machinery being required in the manufacture of this paper for the purpose of tearing up the raw material and reducing it to pulp, the expense, both in point of power and time, is far less than is necessary for the production of rag paper.

“Count Lippe having put himself into communication with the Austrian Government, an Imperial manufactory for Indian-corn paper (*Maishalm-papier*, as the inventor calls it,) is now in course of construction at Pesth, the capital of the greatest Indian Corn growing country in Europe. Another manufactory is already in full operation in Switzerland; and preparations are being made on the coast of the Mediterranean for the production and exportation on a large scale of the pulp of this new material.”

Let us express a fervent hope that a great traffic will arise in this cheap though precious material, and that English vessels will before long be freighted with shiploads of books and papers *in futuro*. We see no reason, however, why the material might not be grown in large quantities in many, especially the warmer parts of England. In Brandenburg, with its different soil, and where the temperature is certainly not higher on the average than that of Great Britain, Indian Corn, though a novel introduction, may now be seen on many a sandy acre rearing up its broad leaf-blades to a height of half-a-dozen feet or upwards. What an era seems here to be opening for the future of cheap literature! In this one invention lies, perhaps, the antidote for all the evils occasioned by the non-removal of the paper duty.

BARNABY GOOGE.

In the last number of the 'Phytologist' there was an extract from Barnaby Googe, *mispriated Goorge*, relating to *Buck-wheat*, or *Beech-wheat*. The work referred to is entitled, 'The whole Art and Trade of Husbandry, contained in four books, *enlarged* by Barnaby Googe, Esq., printed in London, 1614, by Y. S., for Richard Moore.' It appears from Mr. Googe's epistle to the reader, that the four Books of Husbandry were set forth by Master Conrade Heresbach, a great and learned counsellor of the Duke of Cleves, but put into English by Googe, and altered and increased with his own readings and observations, joined with the experience of sundry of his friends. I do not collect what part of this work, thus put into English, is Heresbach's, and what Googe's. The work is valuable and very interesting to all who desire to know something of husbandry and gardening at that early period, ordering of orchards and woods, *treatment of cattle, poultrie, and bees*. I should like to know more about the said Conrade Heresbach; probably some of the contributors to the 'Phytologist' can enlighten me.

S. BEISLY.

INDIGENOUS PLANTS.—MYRTLE, LAUREL, CYPRESS.

Mr. George E. Frere, in 'Notes and Queries' for September, 1860, refers to these plants as the badges of the Scottish clans, Campbell, Graham, and M'Dougall, and says they are the only apparent exotic plants in the list of clan badges; this list is given in Haydn's 'Dictionary of Dates.' Mr. Frere says the Campbells' badge is *Myrica Gale*, or Dutch Myrtle, a British plant, and not an exception to the rule he has heard, that the badges of all the clans were plants indigenous in Scotland; but if the badges of Graham and M'Dougall are the plants known in the South by the names of Laurel and Cypress, they still remain exceptions to the rule.

I think the Editor of the 'Phytologist' can answer these questions, and we may be enlightened upon the subject of indigenous plants; for it appears that the clanships of Scotland originated in the time of Malcolm II., about the year 1008. Is there anything inconsistent in saying that these plants grew in Scotland at that period, or do the names signify other plants which grew there?

S. B.

A LARGE PEAR-TREE. (See 'Phytologist,' vol. iv. p. 369.)

The tree described below, if not larger, is probably more productive; but we have in stock a notice of a Pear-tree, a genuine English production, which is probably bigger, certainly more productive, than both. The 'Nymphe,' a provincial journal, gives an account of a Pear-tree at the village of Amphion-vers-la-Rive, near Evian, in Sardinia, which is one of the sights of the neighbourhood. Its trunk is said to be about eleven feet in circumference at the height of a man from the ground, and its altitude about sixty feet. Once in three years it bears such an enormous amount of fruit that the branches have to be supported by strong iron supports. The pears are beautiful in appearance, but extremely disagreeable in taste, and are used for making cider, of which, in 1816, they are said to have yielded 1848 litres, or about 400 gallons, which fetched 540f.; this year the crop gave 2000 litres, but the value of the cider is only half what it was in the former year. It is calculated that the number of pears the tree produces in a full year is about 124,000, and a dinner-party of 150 could be easily accommodated under the shelter of its branches.

ORIGIN OF SPECIES.

We have seen noticed in your journal some startling assertions, taken from the natural history of the 'Vestiges of Creation,' respecting the transformation of Barley into Wheat; but I find that some of our ancient writers tell us of things quite as strange. For instance, Dr. William Bulleyn, in his 'Book of Simples,' written in 1562, fol. 29, says, "Wheate will turn and degenerate out of his kind, and be changed into Darnel: specially in weate [wet] years; so saith Matthiolus, in Dioscorides, lib. ii. c. 78. I have seen the like in a field named Helly, in a town called Hells-holl, in Suffolk." S. B.

VERTICAL RANGE OF HYPERICUM ELODES.

(From a Correspondent.)

Please tell me if there be any part of Dartmoor more than a thousand yards high. See 'Cybele,' vol. i. p. 253, in remarks on the range and altitude of *Hypericum elodes*. "Mr. Bowman observed it (*H. elodes*) at one thousand yards of altitude in North Wales, and I think it was seen by myself (the author) rather higher, on Dartmoor, in Devon." W. P.

[Our correspondent is referred to the 'Phytologist' for October, 1860, where he will see, on the authority of a recent historian of Devon, that the extreme elevation of Dartmoor is 2090 feet, considerably under the altitude where it (*H. elodes*) was seen by Mr. Bowman in North Wales, and still more under that where the learned author of the 'Cybele' thought he saw it on Dartmoor, in Devon. In the latter county the plant appears to have been seen *in nubibus*.]

Communications have been received from

George Wolsey, with a specimen of *Isoetes hystrix*; J. S. Mill; John Sim; John Lloyd; Thomas Moore; William Pamplin; Dr. Lawson.

RECEIVED FOR REVIEW.

The Kingston (Upper Canada) Daily News.

CUMBRIAN BOTANY.

By E. GREEN.

Holborn Hill is a large village situated near the extreme southern point of Cumberland, and separated from Lancashire only by the Duddon Sands. It stands on elevated ground, and commands a fine panoramic view, extending from Black Comb on the north, around the furthestmost point of the estuary at Broughton, and so on along the Lancashire side of the sands to the long straggling Isle of Walney; Coniston, Old Man, and other mountains of the Lake district filling in the background.

At the distance of a mile is a good and extensive beach, on which break the waters of the Irish Channel. The air is pure and bracing. Close to the village is a station on the Whitehaven and Furness Railway, which is connected with another line branching off from the Lancaster and Carlisle Railway at Carnforth. There is a good inn, and one or two small lodging-houses. It is frequented chiefly by the commercial traveller, the sportsman, and an occasional antiquarian or geologist. For the two latter there is abundance of work; for Druidical circles and other remains of antiquity abound in the neighbourhood, whilst the mighty mass of Black Comb affords endless scope to the mind of either a contemplative or a real practical geologist. "It is," as Professor Sedgwick says, composed "of contorted Skiddaw slate, and has by a great fault been raised two or three thousand feet above its natural level." Near Bootle, eight miles distant, is a red porphyritic dike, which I was anxious to see; but, being pressed for time, the slight search I made was unsuccessful. According to Professor Sedgwick there are many other places on this mountain where the granite has been forced up in a state of fusion through the slate, thus creating a subject for man's highest powers of thought!

I have been told on all hands, for I have not yet made the ascent myself, that the extensive and varied view from the summit of the Comb is of no ordinary description.

I hope that this long preamble may induce other tourists to notice this neighbourhood; for I feel assured that the visitor, whether he be a geologist or an archæologist, a disciple of Linneus or an humble follower of Izaak Walton, will find abundant

scope for the indulgence of his tastes, be they geological, botanical, antiquarian, or piscatorial.

The vale of the Duddon, bounded by its romantic rocks, will gratify the artist, and supply him with numerous objects for the exercise of his pencil, and his power of selection and combination. It is with the wild flowers adorning the banks of the stream that we are concerned; and I can assure the genuine lover of botany that he will leave this vale a happier if not a wiser man than when he came.

I will now give a loose sketch of my rambles among the floral treasures of this locality between the 6th and 18th of last September. I am indebted to the kindness of Mr. Sim, of Perth, in giving me the names of a few of the plants I was unable to make out. At the suggestion of the same kind friend it is that I publish this record. The truth is, I was afraid my materials were too meagre for these columns, and that what plants I might esteem as somewhat uncommon the people of the South might sneer at as weeds growing at their very doors. The Daisy and Celandine are common all England over, it is true; and perhaps some good people may think that *Verbena officinalis*, *Bartsia Odontites*, *Echium vulgare*, and the like, are also everywhere to be met with. All I can say is, they are not common in this neighbourhood. I have already given an account of the plants about Sea Scale, eighteen miles higher up the coast (see 'Phytologist,' November, 1839); and it will be seen on comparison that, even allowing for the difference of the times of gathering, the Floras of the two places, though in some respects similar, yet vary very considerably. Sallying out with my vasculum on September 6th, with that sense of pleasure so peculiar to the lover of Nature when treading fresh ground, I took the road leading to Broughton, and soon fell in with *Ranunculus sceleratus* and *Samolus Valerandi*; then making my way to the shore I gathered the prickly *Eryngium maritimum*, the beautiful (and to me Heath-like) *Sagina nodosa*, and the minute *Radiola millegrana*, all entirely new to me and all in flower, though the two latter had mostly shed their delicate petals. Next day I crossed the railway at the station, took the road to the left, and then traversed the shore of the estuary until the most southern point of Cumberland was gained. On the route I gathered *Gentiana campestris*, *Statice bahusiensis* (which grows here in abun-

dance), *Triglochin maritimum*, and *Plantago maritima*. At the Point, on a hedge-bank, grew the long straggling *Vicia hirsuta*, which is pretty common in the vicinity, though perfectly new to me. Rounding the Point, I suddenly came upon a fisherman's hut, of modest pretensions as to architecture. An old woman stood before it, anxiously gazing across the sands: she was expecting her son from the opposite shore, and feared the tide, which here rolls in its wall of waters with fearful rapidity, might surprise him. Soon after passing this hut a strange fantastic outcropping of the mountain limestone broke upon my view, the only limestone I saw in the neighbourhood. Here I observed *Asplenium maritimum*, very stunted. On the following day I collected *Anagallis tenella* near the shore at Silecroft, and *Convolvulus Soldanella* on the shore near Kirksanton, between which and Holborn Hill *Asplenium Adiantum-nigrum* grows in great profusion and luxuriance by the roadside. On September 10th I visited a wood above Beck Farm, and there found the following: *Geranium molle*, *G. dissectum*, *G. columbinum*, *Hypericum humifusum*, all abundant; also *Gnaphalium sylvaticum?*, *G. uliginosum*, and *Eupatorium cannabinum*. I then returned through the village, crossed the railway, and behind the artificial tide-bank discovered a piece of spongy ground, which yielded my old friends *Ranunculus sceleratus* and *Samolus Valerandi*; also, *Cochlearia officinalis?*, a splendid tuft of *Carex arenaria*, *Triglochin palustre*, and many others of more frequent occurrence. Next day I paid a visit to the small hamlet of Kirksanton, or "Chapel Sucken." A chapel is supposed to have formerly stood where now is a large duck-pond, bordered by fine plants of *Artemisia vulgaris* and *A. Absinthium*. The latter (common Wormwood) is much sought after by persons at a distance, who come here to gather it for medicinal purposes. In the hedgerows below the hamlet I gathered *Vicia sativa*, *Lycopsis arvensis*, and *Potentilla reptans*. Flax is here grown to a certain extent, and the small farmers in this part of the county are giving more and more attention to its cultivation. The linseed, after being boiled or steeped in boiling water, is given to the calves, which thrive well upon it.

The potato-disease has been much less virulent here than in most places. In one year, indeed, when this valuable esculent was scarcely to be had for love or money, the Kirksantoners enjoyed almost a monopoly in the market. The soil is generally

sandy, and from its contiguity to the sea must frequently be replenished with saline matter, which may perhaps account for the mitigated form in which the disease here appears.

On the 13th I again went shorewards, and passing *Genista tinctoria* and *Drosera rotundifolia* (now both out of flower), I arrived at Hotbarrow, where the above-mentioned outcropping of the limestone suggested the working of a quarry long ago. Here on the shore grew *Glaucium luteum*, and in an old shaft which has been sunk for iron ore I feasted my eyes on splendid plants of *Scolopendrium vulgare*, of richest green. One root bore seven fronds, of which four were forked at the apex; but I presume that neither this individual plant, nor an individual forked frond of the same, is entitled to the rank of a variety. Here also *Geranium sanguineum* grew in abundance, and facing the shore *Agrimonia Eupatoria*, *Rosa spinosissima*?, and *Hypericum perforatum*? Though I am *almost*, still I am not *quite*, certain as to the names of some of these plants, hence the notes of interrogation.

On the 17th I searched a streamlet above Beck Farm, and was rewarded by finding *Hypericum Androsæmum*, and fine plants of that beautiful fern, *Polystichum angulare*. *Iris Pseudacorus* is plentiful here and everywhere. Then skirting the hillside in the direction of the village I passed *Sedum Telephium* on the rocks, and in a marshy field below grew *Drosera rotundifolia* and *Narthecium ossifragum*, to me *common* plants. In the brickfield near the station grows *Alopecurus geniculatus*. *Stellaria graminea* and *Trifolium filiforme* are both rather common in the lanes, and on the sands *Aster Tripolium* is abundant.

During my stay here I read Dr. Windsor's interesting paper (in, I think, the September number of the 'Phytologist') and was fired with the zeal to become his humble gleaner. I purposed starting one morning by rail to search Humphrey Head, and especially the wood the Doctor mentioned, but circumstances prevented me. There is one interesting plant at Humphrey Head, which I found some years ago, and although the Doctor does not mention it I cannot think that it has been extirpated; I mean *Atropa Belladonna*, which grows near the Spa.

Should any reader of this journal think it worth while to visit this neighbourhood for any of the objects touched upon he will have also an excellent starting-place for the Lakes. A walk up

the glorious vale of the Duddon, and the ascent of the mighty Wrynose Pass, will put the tourist in possession, as it were, of the keys of the Lake scenery, and it will do him good to accustom himself to the wild and grim before breaking in upon the beautiful.

Grasmere, December 13th, 1860.

NEW VARIETIES OF BRITISH FERNS.—No. 1.

By THOMAS MOORE, F.L.S., F.R.H.S.

I propose to place upon record in your pages, as opportunities may occur, a short account of the new forms of British Ferns, the existence of which may have become known to me since the publication of the recent ‘Octavo Nature-printed British Ferns;’ and in doing so trust to offer information which may prove interesting to your readers. The place of honour may properly be accorded to a very beautiful new form of Lady Fern.

1. *ATHYRIUM FILIX-FÆMINA*, v. *VERNONIÆ* (Jervis).—Fronds oblong, tolerably symmetrical; pinnæ oblong-lanceolate, suddenly and shortly acuminate; pinnules crisp, irregular, often ramose or geminate, obliquely-ovate, usually somewhat distant, narrowing into a short winged petiole which is decurrent with the winged rachis, split down nearly to the costa into linear-oblong lobes which are distinct and finely saw-toothed; sori not well developed, placed near the base of the lobes, forming a series on each side of and not far from the costa.

This very handsome and elegantly crisped form of Lady Fern was found originally at Milwick by Mrs. Vernon, and was by her pointed out to Mr. Swynfen Jervis, of Darlaston, Staffordshire. In the singularly decurrent or winged condition of its parts it is nearly the counterpart of *Bollandiæ*, a very remarkable new form of *Lastrea Filix-mas*, described in the ‘Octavo Nature-printed British Ferns.’ The fronds are from fifteen to eighteen inches long, oblong-lanceolate, and nearly symmetrical. The pinnæ moderately distinct, oblong, suddenly contracting to a short serrated point. The pinnules are rather unequal in size, sometimes forked or ramose, sometimes growing two from one point, as if geminate, the basal ones rarely considerably enlarged, shortly petiolate, the petioles winged and decurrent with the winged

rachis, divided nearly to the costa into linear-oblong serrated lobes, the undivided portion about equal in width to the wing of the rachides, so that the costæ, petioles, and rachides appear about equally winged, and the pinnæ consequently bipinnatifid; the segments are rather distantly toothed, with their sides recurved in an undulated manner, giving a very pretty crispy appearance to the surface. The development of the parts is somewhat irregular, and yet scarcely enough so to disturb the symmetry of the fronds. This variety is most nearly allied to that called *conioides*, but partakes also of some of the peculiarities of *latifolium*, and in a lesser degree of those of *polyclados*. It is a very handsome form, and very rare.

2. *ATHYRIUM FILIX-FÆMINA*, v. *GRANTIÆ*.—Fronds dwarf, six to eight inches high, broadly oval-lanceolate, crispy, the rachis sometimes branched, and the apex slightly multifid; pinnæ oblong, imbricated, slightly narrowed to a short bluntish point, somewhat irregular; pinnules crowded, overlapping, bluntly ovate-oblong, wavy, pinnatifid with shallow lobes, which are divided into two or three remarkably obtuse rounded teeth or crenatures, connected at the base by a distinct wing to the rachis; stipites and rachides stout; sori not developed.

A very distinct and elegant dwarf form of Lady Fern, communicated by Mrs. Grant, of Collumpton. The plant was found in the neighbourhood of Truro, Cornwall, by Mr. Paul, and given to Mrs. Grant. The short broad fronds with the parts very densely imbricated and the surface crispy, the rounded teeth of its pinnules, and the occasionally multifid and ramose condition of the rachides, are features quite unlike what are found in other described forms, and render this a welcome addition to the already numerous varieties of Lady Ferns.

KENTISH PLANTS, ADDITIONAL.

Addition to the List of South Kent Plants, collected in the course of last summer. By H. C.

CRUCIFERÆ.

Cakile maritima. August 1. In the sand between Dover and Folkestone, about two miles from the latter place.—In the 'Il-

illustrated Handbook of the British Plants,' the south of England is given with a note of interrogation as a station for this species. Will not the fact of its being found near Folkestone help to settle the question?

LEGUMINOSÆ.

Lotus major. Little wood on the Folkestone Road. July.

Ervum tetraspermum.

Trifolium striatum. By the roadside at the foot of the cliffs, between Sandgate and Folkestone. June 23rd.

Lathyrus sylvestris. West Langdon, near Dover. July.

COMPOSITE.

Picris hieracioides.

Sonchus arvensis.

Helminthia (Picris) echioides. Between Dover and Folkestone. August 1st.

Cichorium Intybus.

Centaurea Calcitrapa. On the beach near Folkestone. Aug. 1.

UMBELLIFERÆ.

Enanthe Lachenalii (Gmel.). Salt marsh at the foot of Abbot's Cliff. August 1st.—I have only been able to determine this species from dried specimens collected and sent to me by the young relative who accompanied me in my botanical rambles during my stay at Dover; but the *long pedicels* of the florets, the *reflexed calyx*, the *tapering achenia*, not inserted on an enlarged corky disk (Babington and Bentham), and the fact of its growing in a salt marsh, induce me to believe that I have named it correctly.

In my first list I inserted *Crambe maritima*, but expressed a doubt whether it might not be merely an escape from cultivation. I hesitated about admitting its spontaneous growth on a *pebbly* beach, as most of our Floras give *sandy* seashores as its habitat. My doubts have, however, been removed by finding in the addenda (p. 126) to Jacob's 'Plantæ Favershamienses,' 1777, a copy of which has lately come into my possession, "*Crambe maritima*, St. Margaret's at Cliff,—uncommon." I fell in with it just about halfway between Walmer and St. Margaret's, and have since received specimens collected between Dover and Folkestone; so that South Kent would seem to be a long-known and well established station for the Sea-kale.

Another plant which I had no opportunity of examining except from dried specimens, was the *Statice*, which is so thick as to form quite a turf-like border to the little Abbot's Cliff salt marsh. Not feeling sure of its identity, I submitted it to my correspondent, Monsieur Crépin, and he informs me that it is the same as that which grows on the cliffs, the *St. occidentalis*, Lloyd and Babington's Man. 4th ed., *spathulata* of the earlier editions, and *auriculifolia* of Bentham.

[The fair authoress of these lists of Kentish plants has just intimated that the species named *Sclerochloa maritima* and *Artemisia maritima* are misnamed. We are curious to learn what are their generally received names.]

VITALITY OF SEEDS.

Some Observations on the Vitality of Seeds. By GEORGE JORDEN.

The vitality of seeds is a subject highly interesting to the botanist, physiologist, agriculturist, and chemist. That the seeds of some species of British plants under certain conditions will retain their vitality in an embryal state for a great length of time is an indisputable fact; that plants are often found appearing and then disappearing after considerable intervals of time in different localities, as I have oftentimes observed; therefore botanists may not consider that they have exhausted any locality of its botanical treasures, for fresh denizens will occasionally make their appearance to surprise us during our explorations.

I have made repeated excursions annually over a limited area of country for nearly sixty years, and occasionally even now find fresh acquaintances greeting me, whose seeds have long lain in repose until some meteorological influence or disturbance of the earth's surface has bid them come forth and again fulfil their destiny, so that we know not where they are reposing in or on the earth's surface; therefore we should be cautious when we censure botanists with giving erroneous statements in recording certain localities where they are not now to be found, but may at some future period.

The following I have frequently found where old hedges have been removed, woods felled, wastes cultivated, and other disturb-

ances of the earth's surface, where their seeds probably have been reposing a long time :—*Acinos vulgaris*, *Æthusa Cynapium*, *Anthemis Cotula*, *Anagallis arvensis*, *Ballota nigra*, *Capsella Bursa-pastoris*, *Cardamine impatiens*, *Cynoglossum officinale*, *Digitalis purpurea*, *Dipsacus pilosus*, *D. sylvestris*, *Fumaria capreolata*, *F. officinalis*, *Galeopsis Tetrahit*, *Hyoscyamus niger*, *Lapsana communis*, *Myosotis arvensis*, *Nepeta Cataria*, *Polygonum Persicaria*, *P. Convolvulus*, *Papaver Rhæas*, *Potentilla argentea*, *Radiola Millegrana*, *Reseda Luteola*, *Sagina procumbens*, *Sinapis arvensis*, *S. nigra*, *Solanum nigrum*, *S. Dulcamara*, *Spergula arvensis*, *Urtica urens*, *Viola tricolor*, *Verbascum Thapsus*. The seeds of these plants are most liable to repose without vegetating for indefinite lengths of time. How long the seeds of these plants would remain reposing in Nature's lap is an abstruse problem not easily solved, even by the most acute physiologist. Nature is very chary of her secrets; she must be tortured ere she will divulge them; she likes to tease man and excite his inquisitiveness.

The plants whose seeds possess this property are mostly annuals, some biennials, and a few perennials, and more particularly the narcotic tribes, and those seeds that are round and small, whilst those properties of the seeds of those humble weeds, many of them not destined to exist above a few weeks, and at most a few months, should produce seeds that will remain in a state of non-entity in the earth for very many years; but in the higher orders, as we ascend in the vegetable kingdom, this vital property diminishes, and at last ceases altogether, for the seeds of many of them cannot by any means be preserved—some not more than one year. Those instances, as in all others emanating from a Divine source, shows the care bestowed for the well-being of all organized beings, whether animal or vegetable, even the meanest; for with the Creator of all there is nothing mean.

Geology, that sublime science which has done so much to elevate the intellectual faculties of mankind, has rendered some service to botany, its lovely and inseparable partner: whenever a breach is made in her domain, she willingly repairs it. Railway cuttings and excavations have revealed to mankind many valuable discoveries, and brought to light many botanical gems which otherwise would never have appeared; as I witnessed two years ago, where a railway-line was traced out through a dry barren pasture-field which had been cultivated at some remote period.

The occupier removed the soil to the depth of three or four inches for a space of about two perches, when there appeared in the summer following a number of our native plants which covered the denuded spot. They grew most luxuriantly, pleased with their release from so long a captivity.

The following plants were enumerated growing on that spot :—*Lychnis vespertina*, *Arenaria serpyllifolia*, *Potentilla argentea*, *Lycopsis arvensis*, *Anagallis arvensis*, *Polygonum Persicaria*, *P. Convolvulus*, *Viola arvensis*. All these plants grow in arable fields in the neighbourhood; the question is, did those seeds remain ever since this field was cultivated, or have from time to time found their way there by other means is a question not to be answered; if they remained ever since the field was last cultivated, it must have been more than half a century, which is not improbable.

The arable fields have selected a peculiar Flora of their own—obtrusive immigrants—from our own and foreign lands, and everywhere pertinaciously follow the plough, many of them most troublesome aggressors. The most troublesome are *Papaver Rhœas*, *Sinapis arvensis*, *Anthemis Cotula*, Flora's tricolor banner, red, yellow, and white, which she spreads over the fields of Ceres to her great annoyance. Those three are the most troublesome to the farmer amongst his cereals and legumes; the Poppy amongst the wheat, to which it is particularly attached, because this cereal allows it a longer sojourn to mature itself and ripen its numerous seeds; but a judicious farmer would, as soon as his crops are secured, plough his fields, when the congenial weather at the end of summer would bring up the young plants and allure them from their slumber to destruction; then either plough again or leave them a prey to the frost. For nearly sixty years I have observed this pest to clothe the fields, whenever they were with wheat, a complete sheet of scarlet, and often the crops rendered worthless; and when those fields were grassed for several years and then planted with wheat, still the poppy has appeared in abundance. The old proverb "One year's seeding is seven years' weeding," more likely to be seven times seven. The stinking Chamomile (*Anthemis Cotula*) is a noxious agrarian aggressor: when abundant in clover has caused the death of horses when turned in to feed when hungry and have eaten too much of it with the clover.

There is a peculiar and distinct group of our native plants, the most charming which shun the company of the arable weeds, they are biennials; they conspicuously present themselves to our notice and admiration by waysides, woods, wastes, hedges, ditches, borders of fields, and homesteads; those are the most of note: *Digitalis purpurea*, *Verbascum Thapsus*, *V. Lychnitis*, *V. Blattaria*, *V. virgatum*, *Cynoglossum officinale*, *Reseda Luteola*, *Hyoscyamus niger*, *Echium vulgare*, *Dipsacus sylvestris*, *D. pilosus*, *Carduus nutans*, *Onopordon Acanthium*; they all produce abundance of seeds that lie dormant to spring opportunely to beautify the face of nature. The Foxglove, Henbane, the great Mullein, I have reason to believe, have sprung up from seed where there had been no disturbance of the earth's surface for between forty and fifty years.

I have not been aware that the seeds of any species of the Order *Gramineæ* possess the vitaline properties with those other plants enumerated; nor is it necessary, as they were designed as a perpetual and permanent vestment of green to clothe the mead, the mountain, and the moor, till Flora presents a robe adorned with gems of every hue.

As the seeds of the Grasses do not possess this vitality, the mummy wheat fallacy must be exploded, and considered as a hoax upon the credulity of mankind.

I suggest that our botanic gardens would be most eligible places for experiments on the vitality of seeds, etc.; it would afford valuable instruction as regards this obscure subject.

Bewdley, February 1st, 1861.

ACCOUNT OF A REMARKABLE PEAR-TREE AT HOLME LACY, NEAR HEREFORD.

Our readers will be pleased to peruse the following account of this celebrated vegetable curiosity, which proves that there are wonders in our own land almost as marvellous as the productions of distant and tropical countries. This example of one of the Hereford Pear-trees shows that the tendency to self-propagation is not confined to the famous Fig-tree of Hindostan, the celebrated Banyan.

We have received from the intelligent and obliging gardener of Holme Lacy Court the following account of the present condition of the tree; and his statement is submitted *verbatim* to our readers:—

“Holme Lacy Gardens, January 25th, 1861.

“Sir,—In reply to your request respecting the Pear-tree at this place, I enclose a description by the Rev. J. Green, formerly clergyman of this parish, and an extract from a ‘History of Herefordshire,’ lately published, and a few remarks on the same. And first I must not lead you astray by describing it as a single tree. The original has no existence, not even in tradition, as far as I can learn, and on its identical position it would be useless to speculate: in my mind there is no doubt but that it has partly or *altogether fallen prostrate*;* and, as described by Mr. Green, the parts in contact with the earth became rooted, and this process is still going on among the prostrate stems, towards the extremities. These latter accessions have their connecting part traceable for more than twenty yards; but in the older trunks those upright stems, perhaps the first descendants of the original, have thrown off their connection, but still leaving enough to prove that that connection once existed; and one of them is imitating its parent in parting with a limb to form another colony.

“I cannot altogether account for the difference between Mr. Green’s estimate and my own; but there would be a considerable difference in the measurement of a tree such as this when it was in fruit; and again, the space between the two larger trunks, 24 yards, might be included in Mr. Green’s measurement, because he was quite aware that that part once existed, being very recently cut away to obtain a view of the park from the vicarage windows, whereas in my calculation this space is left out; and the solitary part measured by itself being 20 yards by 10. Report says that what is now the flower-garden at the Vicarage was occupied by this tree. And at one time 30 cords of wood were cut from it; and a cord is 16 feet long, 2 feet high, and 2 feet

* I come to this conclusion from the fact of a tree in a neighbouring meadow undergoing the same process; it reaches along the ground no less than thirty yards, and twenty-five yards across. Thirty feet of top, which had begun to form a tree nearly erect, has just fallen again, and the cattle are making sad havoc. In this tree the mark of the graft is distinctly visible. This is the same variety as the larger tree.

wide, closely built together. Seven hogsheads is the greatest quantity made lately, and 20 bushels make a hogshead. Fifty feet is about the height; and five of the largest trunks measure 8 feet, 8 feet $6\frac{1}{2}$ – $11\frac{1}{2}$ in., 8 ft. 9 in. in circumference; and at the present time they cover 1850 square yards.

“I ought to add, the soil is rich alluvial, about three hundred yards from the river Wye, and only a few yards above its level.

“The following is an account of the large Pear-tree at Holme Lacy, from the pen of the Rev. Mr. Green, as it appeared in a local paper, 1858:—

“‘This tree consists of eighteen immense branches, proceeding in all directions, as from a common centre, and lying upon the ground, appear to have broken themselves off, in consequence of their great length and weight, from an original parent stem. At first only partly separating, they seem eventually to have become rooted at the first point of contact with the earth, and then completing the separation, and rising again from the earth in a peculiarly twisted shape, each branch has at length attained the bulk of an ordinary tree. Although much of the tree has been cut away by former residents at the vicarage, the ground still covered by it measures fifty-seven yards in one direction, and in another, at about right-angles with it, sixty-nine yards.

“‘The Rev. J. Green has, however, traced it 65 yards in one direction, and 103 yards in another, thus showing that at one time about 6695 square yards must have been covered by this enormous tree.’

“Sir E. Scudamore Stanhope, my employer, has kindly furnished me with the above. The following I extract from a ‘History of Herefordshire:’—

“‘Near the parsonage house is a remarkable Pear-tree, covering a large space of ground, and forming an orchard of itself, which, according to records dated 1776, yielded from fourteen to sixteen hogsheads of perry, of a hundred gallons each, and is accounted for as follows:—A large branch having been broken by the wind, its head fell to the ground, the butt still adhering to the trunk. Some time after it appeared to have struck into the ground, taken root, and formed a scion. Willing to encourage this *lusus naturæ*, the incumbent gave orders for other layers to be made from the tree in a similar manner, which became rooted, and bore fruit.’

“If I have omitted anything you would wish to know, please to say. I believe these statements to be correct.

“Yours faithfully,

“SAMUEL WELLS.”

In addition to the above, John Lloyd informed us that he first became acquainted with this tree in the year 1823; and he was informed that in favourable years its produce was about twenty hogsheads of perry, containing one hundred gallons each. The same kind correspondent sends an account of the same tree from an old friend of his. His letter is also printed *verbatim*.

“Clapham Common, 31st January, 1861.

“My dear Sir,—I have obtained some more information concerning the Holme Lacy Pear-tree, from the landlord of the Stag and Spring Well tavern, Wandsworth-road, near Chandler’s nursery, who informs me that the tree, which covers a quarter of an acre of land, stood originally in the parson’s garden, but crawled over the hedge into a meadow adjacent. Twenty-one hogsheads of perry have been made from it in one season. It is a wild or nondescript pear, small and green, and so astringent as to be uneatable. It does not produce good perry, only what they term in Herefordshire family drink. Now the worst remains to be told. Some years ago the incumbent of the parish died, and his successor, wishing to make a substantial fence to his garden, cut and mangled the tree in a sad manner.

“Mr. Bluck, my informant, who is a very intelligent man, says he can clasp the original stem within about a foot; he further informs me that there is a younger Pear-tree standing in a meadow belonging to a farm near the church, and this one shows the same Banyan propensities; and further, that there is a full account of the tree in Duncombe’s ‘History of Herefordshire.’

“I hope, when you publish the account of the tree, you will speak of his Reverence’s Vandalism in the way it deserves, and you will oblige the cider and perry drinkers of the whole county.

“The most remarkable fact in connection with this giant of the orchard is the enormous quantity of pears which it has been known to produce in one year. At the time above mentioned, Mr. Wellington, who then held the situation of gardener at Holme Lacy Court, informed me that three years previous, twenty hogsheads of perry were made from it. A customary local hogshead holds about ninety-five gallons, Imperial measure; so if we multiply these two numbers together, we shall have a product of 1900 gallons. Herefordshire farmers calculate their seventeen bushels of pears (if they are of good quality) will, when ground

and pressed, produce a hogshead of perry; and according to that calculation, the tree must have borne the almost fabulous quantity of 340 bushels of pears in the year alluded to.

“JOHN LLOYD.”

Note by the Editor.

Mr. Bluck says he can clasp the original stem within about a foot. He evidently means the largest stem; for it appears that the original has long ceased to exist.

It is hoped that the above account will satisfy the most censorious of our readers, that this is not *one* of the mare's-nests which we have been accused of publishing. We have the authority of about half-a-dozen eye-witnesses, several newspapers, and county historics to corroborate this account of one of the most remarkable of the curiosities of vegetation.

RARE PLANTS NEAR SPINDLESTONE, NORTHUMBERLAND.

(From a Correspondent.)

The Spindlestone hills extend from the ancient castle of Bamborough to Belford, a town of Northumberland, fourteen miles from Alnwick, and three hundred and twenty from London. They are about five miles in length, and are composed, like the coast rocks, of basalt. These hills are only half an hour's walk from the Belford station of the North-eastern Railway, *i.e.* the coast railway from Newcastle to Edinburgh.

Several years ago I visited this rich locality, and some of my discoveries are honourably recorded in Dr. Johnston's 'Natural History of the Eastern Borders.'

The plants are entered here in the order in which they were observed by me for the first time in this locality, for I have visited it more than once.

In a plantation on the west side of the hill, *Saxifraga granulata* was seen associated with *Vicia lathyroides*, both in flower (this was in May); also *Primula veris* and *Asplenium Trichomanes*.

Another capture in this plantation was *Spiraea Filipendula*, here-

tofore unknown as a Northumbrian plant. Some exception may be taken to this locality (a plantation), but I have been informed by one of the planters of this part of the hill that no ornamental plants were introduced here, as the spot was planted merely for a fox-cover. No walk, ride, nor drive, exists in the whole space, now covered with trees. There is no doubt about the existence of the *Spiræa* on the open bushy pasture while it was in its original state; for since the plantation, grew up the number of the plants has sensibly diminished, and in a few years it is to be feared the *Spiræa* will cease to grow in this locality.

I next turned my attention to the south side of a large rock in the same plantation, and there I observed and collected *Potentilla verna* and *Allium oleraceum*, the latter not yet in flower (May). The last-named plant is very plentiful on various parts of these hills.

Orchis Morio was also seen. On this part of the hill grew also *Trifolium arvense*, *Dianthus deltoides*, *Scabiosa Columbaria*, and more plants of the *Spiræa* were in flower than when I visited the place at an earlier period of the season.

After leaving the plantation, I scrambled about the southern base of the rocks, and there found *Astragalus glycyphyllus*, *Gnaphalium uliginosum*, *Hieracium pallidum*, and other plants of less note. While crossing the hill towards Warn Mills, on damp rocks, I succeeded in finding *Spergula subulata* and *Sedum villosum*; also *Draba majuscula* (? *D. verna*) in abundance. *Arenaria verna* was associated with the above.

My most interesting discoveries were still to come. While standing with my face to the south (towards Alnwick), having the Cheviots behind my back, and while admiring the beauty of a glorious sunset and rich landscape, I chanced to see on the ground, at my very feet, *Allium Schænoprasmum* and *Mænchia erecta*, both plants additions to the Flora of Northumberland.

When I first visited the place the *Allium* was not in flower, but some bulbs which I carried away and planted in a garden bloomed freely.

I pointed out this station to the late amiable Dr. Johnston, the learned author of the 'Botany of the Eastern Borders.' On these hills also I have collected a pink variety of *Gnaphalium dioicum*, and the narrow-leaved form of *Orobis tuberosus* (*Lathyrus macrorrhizus*, var. *tenuifolius*); also *Cystopteris fragilis* and

Asplenium Adiantum-nigrum. *Allium Schænoprasum* has been detected in two other spots, but under the same circumstances, viz. on a bare rock on which it was barely possible for it to bloom; but the transplanted bulbs flower freely.

I beg to subjoin the following list of plants of which I have spare specimens, and also a list of such as I wish to have in return; and as I am not a professional botanist, and am not in the practice of writing for the public press, I am reluctant to give my name. A note addressed to W. R., Finkle Street, Alnwick, will be duly delivered to the author of this notice of the rare plants of Spindleston.

List of plants which I can exchange:—

Ranunculus Lingua.	Carduus heterophyllus.	Gagea lutea.
Helleborus viridis.	Crepis succisæfolia.	Listera cordata.
Corydalis solida.	Hieracium aurantiacum.	Scilla verna.
Sisymbrium Irio.	Pyrola rotundifolia.	Allium Schœuoprasum.
Hesperis matronalis.	Asperugo procumbens.	Convallaria Polygonatum.
Mœnchia erecta.	Statice Limonium.	Cladium Mariseus.
Sagina subulata.	Salsola Kali.	Sesleria cœrulea.
Impatiens Noli-me-tangere.	Polygonum Raii.	Arundo Epigejos.
Potentilla verna.	Euphorbia Esula.	Lastrea Thelypteris.
Sedum villosum.	Daphne Laureola.	

The plants I want are—

Woodsia hyperborea.	Ophiglossum lusitanicum.	Asplenium lanceolatum.
Athyrium latifolium.	Cystopteris alpina.	Asplenium germanicum.
Lastrea cristata.	Cystopteris montana.	Adiantum Cap.-Veneris.
Lastrea Farnisicii.	Asplenium anceps.	Hymenophyllum tunbridg.

W. R.

BRITISH LEPIGONA.

Note on the Occurrence of Lepigonum salinum, Fries, in Cheshire, and of Lepigonum neglectum, Kindberg, in the Isle of Wight.

I am indebted to Mr. G. E. Hunt, of Manchester, for the opportunity of examining some specimens of a *Lepigonum* gathered by himself in Cheshire, the station being described as 'on cinder-heaps by the side of a canal at Timperley.' Another correspondent has also favoured me with some immature examples

of what seems to be the same plant, from the vicinity of the 'salt-springs of Winsford,' also in Cheshire.

In the shape, smoothness, and colour of its seeds, this Cheshire *Lepigonum* is very closely allied to *L. marinum*, Wahlb., the *L. marginatum*, DC., differing however from that species by its more slender habit of growth, its smaller flowers and capsules, and by producing two kinds of seeds (winged and wingless) in the same capsule. The root appears to be annual; and, if one may judge from Mr. Hunt's dried specimens, the petals are shorter than the calyx, and of a bright pink colour at the top. The peduncles are rather long and reflected, and are supported by fully developed leaves, instead of short bracts, as in *L. marinum*. The seeds also of the *Lepigonum* from Timperley, are much smaller than in *L. marinum*, of a bright brown colour, inclining to reddish; in shape compressed, suborbicular, with the border little marked, and perfectly glabrous. A few winged seeds occur, but most are apterous.

I cannot resist the conclusion that this is the plant called *Lepigonum salinum* by Fries, the *Spergularia salina* of Presl; and from its station in the vicinity of saltworks, the name seems sufficiently appropriate.

It is to be observed that Brebisson, in the third edition of his 'Flore de la Normandie,' mentions *Lepigonum salinum* as growing in salt-marshes bordering on the sea, so that it would be well to look for the plant in similar localities on our side of the Channel. Besides *Lepigonum salinum*, Brebisson gives, as occurring in the seaside meadows of Normandy, the true *Lepigonum medium* of Fries, a plant which I believe has not yet been discovered in England.

In the Isle of Wight I have found *Lepigonum neglectum* of Kindberg growing abundantly along embankments, and at the foot of walls bordering on the sea, as well as in the drier parts of salt-marshes. There can be little doubt that this plant will be found widely distributed in Britain, it having usually received the name of *Arenaria media* from English botanists. *Lepigonum neglectum* resembles *L. rubrum*, and, like it, has seeds studded with concentric rows of points or tubercles. At the same time *L. neglectum* is easily distinguished by its much stouter habit of growth, by its short, entire, and dull-coloured stipules, by its peduncles being supported by short bracts instead of leaves, by

its larger capsule, and especially by the shape of its seeds, which are rounder and more flattened than in *L. rubrum*, some of them winged; their colour dull brown, their shape broadly obovate, obliquely pyriform, with one side nearly straight.

TODMORDEN BOTANICAL SOCIETY.

We have much pleasure in informing our readers that botanical societies are increasing and prospering. There is a very important colonial association of this kind, to which our attention has been called by a correspondent, and of which an account will soon appear in the 'Phytologist.' The above-named Society claims our first notice.

On Monday evening, the 7th January, 1861, there was a large gathering of botanists in the above-named town, and the proceedings appear, from the report in the 'Todmorden Post' of Saturday, the 12th, to have been of more than ordinary interest.

An account of the festivities and hilarity and hearty enjoyment of the opportunity afforded the friends of science for social, genial, and scientific intercourse, is, of course, more gratifying to those who were there and then present than it would be to our readers; therefore we content ourselves with merely stating that there is a good report of the meeting in the paper above quoted.

We wish that the reporter had furnished the readers of his paper with the faintest sketch, the merest outline, of the President's address, containing a review of the proceedings of 1860. Mr. Stansfield electrified his hearers when he concisely recounted the botanical trophies of the past season, in which the members of the Todmorden Botanical Society appear to have borne no insignificant part.

The county of Lancashire has long been famed for the numbers and energies of its local botanists, and it has recently added another subject for congratulation, viz. a Field Naturalists' Society, which now numbers more than three hundred strong. Its headquarters is Manchester, and the members, which are of both sexes, have their meetings, excursions, soirées, etc.; and their perseverance, success, and enthusiasm in botanical pursuits are highly to be commended. If botany be so prosperous in the provinces, what might be its success if cultivated with as much

ardour and energy in the Metropolis, where the access to books for reference and to public herbaria, and to collections of living plants, is so much easier than in provincial towns and in such remote and obscure places in Todmorden !

London not long ago had a Botanical Society, which, like some village benefit clubs founded by the gentry and clergy, languished rather than lived for a brief space, and then died of sheer atrophy or inanition. This result was a natural consequence of the narrow minded and egoistic policy of its chief patron, who cared more about realizing the petty object of selfish vanity than he did about the interests of science.

The conceit of these would-be promoters of science, viz. the Patron and the Honorary Secretary, who were, in fact, the alpha and omega, the head and tail of the association, was prominently manifested by their causing their pictures to be painted and hung up in the meeting-room. Was the expense of this egregious example of foolish ostentation defrayed out of the funds of the Society, or did the eminent members pay for their likenesses out of their own pockets ?

We hope the provincials will not split on this rock or stumbling-block of petty ambition and self-conceit.

Societies for the promotion of science, unless they belie the name which they assume, must have more comprehensive objects and be animated and governed by a more liberal spirit than the defunct Botanical Society of London was ; their professed objects should be catholic, not sectarian. The performances of *cliqueism* will do no good service to science nor to humanity ; and unless the principles of an association embrace this higher object, viz. the promotion of knowledge among mankind in general, the combination will be an abortive effort to obtain even personal notoriety.

We hope our Todmorden and Manchester friends will not mistake nor misappreciate the purport of these remarks. They are the result of both thought and observation ; and though they be condemnatory of selfish aims and objects, they are meant to be both laudatory and encouraging to the hundreds (? thousands) in Lancashire, viz. at Todmorden, Manchester, and Liverpool, whose leaders, supporters, and patrons, appear to be actuated by right motives, and are obviously seeking the welfare and gratification of the many, and not striving through these means to promote their own paltry interest and personal gratification.

We have a request to make to these zealous and successful Lancashire botanists, viz. that they would not confine their discoveries and limit the utilities of their example to their own neighbourhood. If they would send us, now and then, a report of their successes as published in their local papers, we would print them for the common information of all who take an interest in the subject. Our periodical is very widely extended; it embraces the United Kingdom and its colonial dependencies, and it has a very fair circulation in the Continent.

We beg to conclude our report of this interesting and instructive meeting with the following extract from the 'Todmorden Post,' above referred to:—

"The programme being now complete [that is, all the speeches being spoken, all the songs sung, and all the healths drunk, as appointed by the authorities], a very animated conversation ensued upon the subject of Darwin's theory, before alluded to by Mr. Grindon.* The gentlemen who took part in it were Mr. Grindon, Mr. Blomley, Mr. Hedley, Mr. W. M. Sutcliffe, and Mr. C. Chambers, to all of whom Dr. Wood replied in a very long and forcible argument, confuting the Darwinian theory *in toto*, which was listened to with breathless attention, and drew down upon the Doctor the loudest applause. The proceedings concluded about twelve o'clock. We understand Dr. Wood presented to the Todmorden Botanical Society, privately, a collection of dried specimens of plants, 170 species, and from 300 to 400 varieties, gathered in Britain, the Pyrenees, and Switzerland."

Through the kind intervention of a friend and well-wisher to the progress of humanity, we are able to give our readers a very succinct history of this well-organized, carefully-managed, and successful Society. It is from the Honorary Secretary; and the thanks of the proprietors of the 'Phytologist' are hereby tendered to him, for his very interesting history of an association which has far higher objects in view than the collecting, naming, and localizing the native vegetable productions of the district where the members reside.

"I deem it a duty I owe to you and to the Institution, as Honorary Secretary, to furnish you with a few of the statistics and other particulars of the Society.

* If Mr. Grindon or any other of the maintainers of the Darwinian theory (if there be one) about the origin of species, will be so good as to draw up a succinct epitome of his view on this question, the Editor of the 'Phytologist' will gladly avail himself of such a *précis* for the information of his readers.

“ You will see by the copy of Rules herewith sent, that it was established in 1852, by a few botanists and gardeners of the neighbourhood. From that time to the present it has made steady progress, and the number of members now on the books is about a hundred and fifty. It is not to be supposed that these are all botanists; the greater number of them are patrons and friends, people who support the institution from a sense of its utility, as a moral agent working for the common good of the neighbourhood. We have three or four clergymen, some of them active students; and many tradesmen and gentlemen give us encouragement.

“ The Society from its commencement has maintained a high moral tone, and has become the admiration of the neighbourhood. No political or religious squabbles ever disgrace the meetings, which are held on the first Monday in every month. The number of members that attend these meetings varies from twenty to forty or fifty, and the number of volumes taken out of the library is on an average about a hundred. Several of the members have become tolerably well acquainted with British plants, and many, both young and old, take a lively interest in the proceedings.

“ In the summer months the Society has monthly excursions on the Saturday immediately preceding the monthly meetings. These excursions extend from four to ten or twelve miles round Todmorden, and are great sources of interest to those who participate in them. Some account is given at the monthly meeting on the Monday succeeding the excursion: such as the nature of the district visited, the plants seen or gathered, and the incidents or accidents that occurred *inter ambulandum*, etc. In addition to these the Society has a grand Midsummer excursion, for three, four, or more days, to some distant locality. In 1858 it was to Ingleton, Craven; in 1859 to the Lake district of Cumberland and Westmoreland; in 1860 to Connemara, Clifden, etc., west of Ireland. Some twenty in number joined in the Craven excursion, including two clergymen; about twelve in that to the Lake district; and four in that to Connemara. The Annalist attends all the important excursions, taking notes of all discoveries of any moment.

“ The annual meeting is held in the May of each year; a good and substantial dinner is provided, the Secretary reads his Report,

the Treasurer makes his financial statement, and the Annalist reads the transactions, and the whole is blended with rational amusement and instruction. There are also occasional *réunions*, such as the one reported in the paper sent you by Dr. Wood.

“It may be as well to state that all the business of the Society is managed *gratuitously*, and the whole of the subscriptions exclusively devoted to the purchase of books, specimens, etc.”

The following are extracts from the rules, etc., of the Todmorden Botanical Society :—

“At a meeting held as above, on the 26th May, 1852, it was resolved—

“That this Society shall have for its object the study of botany, the purchasing of books and periodicals, the investigation of plants, their physiological and anatomical structure, their agricultural and horticultural value, the best modes of cultivation, their classification, arrangement, names, etc. To further this object, lectures will occasionally be delivered, papers read, discussion entertained, and details of botanical rambles and experiments given by the members at their respective meetings.

“It is desirable that all the members should bring to the Society’s meetings specimens of plants, flowers, fruits, seeds, etc., for the purpose of investigation.”

“Also, the subscription to be sixpence per month, or six shillings annually, to be paid in advance.”

The number of works on botany, horticulture, floriculture, chemistry, geology, entomology, conchology, etc., belonging to the Society and circulated among the members, is upwards of three hundred, probably amounting to upwards of a thousand volumes.

It is hoped that the Annalist will find time now and then to send us a report of the discoveries made by these enterprising botanists. We recommend the example of the friends of progress at Todmorden to the consideration of our readers in all parts of the kingdom, and further take the liberty of telling them to “go and do likewise.”

Reviews.

Outlines of British Fungology. By the REV. M. J. BERKELEY, M.A., F.L.S. London: Lovell Reeve, 1860.

We trust the publication of this work is a symptom that Mycology is about to become more studied by British botanists

than it has hitherto been; for hitherto, certainly, the students of that branch of the science have been "few and far between," and the study of it "more honoured in the breach than in the observance." It is now nearly a quarter of a century since the second part of the fifth volume of Hooker's 'English Flora' (written by the same Mr. Berkeley who is the author of the present work) appeared; and how few of the botanists of England have devoted themselves in any measure to the study of the Fungi during that period! Other branches of cryptogamic botany have received a considerable share of attention, and the Ferns, in particular, have been a very popular object of study, and have excited much interest, but the poor Fungi have lived and died unnoticed and uncared for.

One cause of this neglect arises, we think, from a great and general misapprehension as to what Fungi really are, and from a tendency to consider them as disagreeable and even disgusting objects. In this, however, there is a great mistake, as, though many of the Agarics and other larger kinds are not very pleasant to behold, especially when in a state of decay, there are innumerable forms of beauty and grace to be found among the lower and smaller kinds. On this point Mr. Berkeley observes, in the commencement of his first chapter, "Every one is more or less acquainted with the soft, fugitive, variously coloured, succulent plants which abound everywhere in our woods and meadows, and which are known under the common names of Toadstools, Mushrooms, or Champignons, according as they are objects of disgust or admiration, from their real or supposed poisonous or nutritious qualities, . . . but there is no general conception that the multitudes of parasites which grow on dead and living plants, frequently inducing disease or decay, the mould which runs over our fruit and provisions, or the yeast of beer and mother of vinegar, are closely allied productions, if indeed the very existence of some amongst them is recognized at all."

The publication of a popular volume like the present will do much to clear away the ignorance which prevails on the subject; and we heartily wish it success. Mr. Reeve has secured the services of one of the first Mycologists of the day, either at home or abroad, and the book is altogether a handsome one, and got up in excellent style.

In his preliminary observations, Mr. Berkeley alludes to the

word "*Fungology*," used in the title of the book, and defends it on the ground of its being very generally received. Certainly *Mycology* is the more correct term, but perhaps it does not convey the meaning of the subject-matter to the general reader so well as the more spurious one of *Fungology*.

After several chapters of "introductory matter," in which we think he rather takes it too much for granted that his readers already know something of the subject, but which are full of interesting facts and observations, our author goes on to give a complete list of British Fungi, including all the discoveries that have taken place since the publication of the 'English Flora,' and which are numerous. Greater attention is of course paid to the larger and more conspicuous Fungi, as the genera *Agaricus*, *Polyporus*, etc. etc., and by far the greater part of the volume is taken up in the description of these; while of the smaller Fungi a mere list, without the specific character, is given. In a popular work, as this undoubtedly is, it was probably prudent to confine the attention principally to the more showy and noticeable species; but we could have wished that the reader's attention had been more particularly directed to the many microscopic beauties which lie hid in many of the smaller kinds, as, for instance, in the numerous and various species of *Sphæria* with which almost every dead or decaying branch is covered, and the sporidia of which assume the most varied and curious forms.

The 'Epicrisis' of Fries, which was published subsequent to the appearance of the 'English Flora,' has (as was to be expected) been taken as the basis of the arrangement of the Hymenomycetous Fungi. Assuredly that work is a wonderful production; but we cannot help thinking that the distinctions of Fries are sometimes too refined and delicate for practical purposes. Mr. Berkeley well remarks, in his preface, that "few exercises of the mental powers can be more improving than the study of such a genus as *Agaricus*;" for the subdivisions are so many, and the distinctions so nice and subtle, that it requires considerable exercise, both of memory and judgment, to assign to any particular plant even the precise *subdivision* to which it belongs. And the same remark applies to other large genera.

The old genus *Agaricus* is now divided into upwards of a dozen distinct (though not very different) genera, and even the restricted genus *Agaricus* is subjected to many subdivisions.

We observe that Mr. Berkeley, in his descriptions of species, sometimes omits to give the colour (or colours) of the plant, and this we consider an omission of some importance, especially in a popular work, as the colour in these lower vegetables is often of considerable service in determining the species, and at any rate is a great help to beginners.

In the nomenclature of the smaller Fungi great improvement has taken place of late years, and many new genera have been formed for the reception of new or anomalous species. Among these we may instance the partition of the old genus *Sphæria* into a number of distinct genera, corresponding (in general) with the former subdivisions of the genus. We notice, likewise, the transference of several old species to other genera, as *Dothidea typhina* to *Hypocrea*, *Sphæria Dothidea* to *Dothidea*, *Excipula Rubi* to *Cenangium*, etc. etc., all which appear very proper and necessary.

The volume contains twenty-four coloured plates, which are mostly well executed and faithfully coloured, though we must except several figures, which are not very well done, as *Agaricus vaginatus*, *Boletus edulis*, *Dacrymyces stillatus*, *Helvella crispa*, and a few others. The colouring is perhaps too bright in some instances, but in general the illustrations are very good, and it is marvellous to see how many figures the artist has contrived to introduce in a single plate.

Here, however, we must repeat our regret that so little notice has been taken of the lower and smaller Fungi. We think that *at least* half-a-dozen plates out of the twenty-four might have been devoted to these, with microscopic delineations of their structure and fructification; and this would have been of great service to beginners, as it is almost impossible for young students to determine the smaller Fungi without the aid of figures.

J.

Excelsior, or *Murray's Royal Asylum Literary Gazette*, September, 1860. Perth: printed by Robert Whittet, High Street.

This number of the 'Murray,' as it may be styled for the sake of brevity, in rather humbler if not in briefer parlance than its primary and more august title, contains for its leader and prin-

cial subject the Flora of Moncrieffe and Kinnoull hills, or rather, a list of some of their rare, and probably also their common productions, a list, we are respectfully informed, "for which we are indebted to the kindness of Dr. Balfour, . . . the distinguished Professor of Botany in the University of Edinburgh."

The learned Professor is equally and honourably distinguished by his love of the science, and by his desire to extend its knowledge among his pupils. His class expeditions have been frequently noticed in our pages.

We hope, for the credit of the leader, and especially for the reputation of the University of which he is a popular and energetic member, that the account of this class excursion, if not a caricature, is at the very least a gross exaggeration. If it be not, all confidence in the ancient saying must be shaken, "*Ingenuas didicisse fideliter artes emollit mores, nec sinit esse feros.*" The writer of this notice will not register in the pages of the 'Phytologist' the doings of Scotia's ingenious youth, the hope of the nation, the alumni of Edina's celebrated seat of science and learning. There is enough, and more than enough, in the 'Murray' of September, 1860, if true, to show that Scotland, proud of the scientific reputation of her children, has no reason to boast of their progress in the knowledge and observance of the graces, amenities, and civilities usually expected among the more polished classes of society.

Justice to ourselves demands a few strictures on the list itself, which forms the fundamental portion of the article in the 'Murray.' The tumultuary proceedings of the "Philistines," as they are not very decorously called, are but like the garnishing to the substantial viands served up for the delectation of eccentric taste, not for the enlargement of our knowledge.

All the plants recorded by the learned Doctor have already been published in the 'Phytologist,' some of them more than once. The writer of the list and the editor of the 'Murray' could hardly be ignorant of this fact; they ought not to be so; and in common courtesy they might have stated in their notice of their second-hand discoveries, that if they were not indebted to our pages for the information which they circulate as original, they might have noticed the other labourers who had preceded them, not as gleaners, but as original workers, in the same field. Literary etiquette, as well as common honesty, would have re-

quired some reference to the periodical in which the plants growing about Perth were originally published.

This *new* but not *original* list of the Perth plants is as remarkable an illustration of the ancient Latin verse,

“Hos ego versiculos feci, tulit alter honores,”

as can be supplied by the whole range of literary and scientific productions.

The honest and simple-minded author of the Perth Flora might adopt the language of the poet when a brother poet claimed the merit and reward of the famous distich which he did not write; and he would not be wrong in saying,

“Has ego herbiculas legi, tulit alter honores;
Sic vos non vobis vellera fertis oves.”

The sheep is shorn, and her fleece taken, without so much as saying, “With your leave.”

As the name of the original discoverer of the stations of these rare plants is omitted in this new list, for reasons best known to the compiler and publisher, it will not be entered here, not because we are ashamed of our correspondent, but because his name is as familiar to most, if not to all of the readers of this periodical, “as household words.”

After all, it is satisfactory to be able to produce the authority of the eminent Professor of Botany in the University of Edinburgh as a voucher for the authenticity of the plants already recorded in our pages, and also for the genuineness of the localities where they grow. The ‘Murray’ may henceforth be quoted as a corroborative, though secondary evidence, in support of the facts originally published in the ‘Phytologist.’

One point, not satisfactorily cleared up in reference to the spontaneous Perth plants, has been omitted, and we (the Editor) are sorry for this omission; we mean that in reference to *Arenaria balearica*, about which some remarks, not altogether of a friendly kind, though they may have been well intended, have been made by a contemporary, who shall also be unnamed here: some of our readers know to whom this allusion is made.

We hope that the next time the amiable Professor of botany above mentioned leads his pupils to the hills of Kinnoull and Moncrieffe, he will give us his opinion about the *Arenaria balearica*.

BOTANICAL NOTES, NOTICES, AND QUERIES.

To the Editor of the 'Phytologist.'

It is customary with nearly all British botanists to consider both species of *Doronicum* as *alien* to this country. My own observation of the plant being confined to one habitat for *D. Pardalianches*, near Bewdley, in Worcestershire, I can scarcely offer an opinion. The place where it grows there is a hedge and ditch, and at some distance from a house; but, of course, in conveying manure or refuse to fields or meadows, seeds of garden plants may be taken to what appear very unlikely places for garden plants to grow. In this habitat, an *escape* from a garden (in the true sense) it certainly is not. What has led me to these remarks, is a passage in Ben Jonson's 'Masque of Queens,' apparently written for performance at the court of James I., about 1609, consequently anterior to the time of Ray. The passage is—

"And I have been plucking plants among
Hemlock, Henbane, Adder's-tongue,
Nightshade, Moonwort, *Libbard's-bane*."

Now you will observe that all the plants named here are acknowledged native except the "*Libbard's-bane*;" and most of them are plants not at all likely to be cultivated; hence it is a fair inference that the *Leopard's-bane* would be a wild plant. Gerard and Parkinson both give Northumberland as a locality for *D. Pardalianches*.

I offer these observations for the benefit of those who have better means of observing this plant than I have.

T. W. GISSING.

Wakefield.

To the Editor of the 'Phytologist.'

In the 'Phytologist' for November, 1860, there is a paper on "Poets' Flowers," and in some lines from 'Comus,' the Knotgrass is noticed. On reading this article, it brought to my remembrance Sir Walter Scott's allusion to the plant in the 'Lady of the Lake,' where he says,—

"The Knotgrass fettered there the hand
Which once could burst an iron band."—Canto iii. 5.

It is possible that the plant quoted by the two poets may not be the same, but I am unaware of any other plant bearing the name of Knotgrass than *Polygonum aviculare*.

It has always struck me as one of the most beautiful passages in the same poem, Scott's description of Ellen's grace and sprightliness, as narrated in the following lines:—

"A foot more light, a step more true,
Ne'er from the heath-flower dashed the dew.
E'en the slight Harebell raised its head
Elastic from her airy tread."—Canto i. 18.

The plant alluded to by Scott is evidently *Campanula rotundifolia*, which is often called the Harebell, although older writers have given that appellation to *Hyacinthus nonscriptus*.

R. HEWARD.

'Phytologist,' vol. iv. p. 224.

Sir,—Your correspondent, A. G. More, who dates Bembridge, June 2, 1860, writes as follows:—"Those botanists who are in the habit of referring to the latest (fourth) edition of the 'Manual,' or to the paper published by Mr. Babington in the 'Transactions of the Botanical Society of Edinburgh,' will hardly require to be told that only twelve species of the Batrachian section have hitherto been recognized in Great Britain."

Perhaps not; yet there may be some botanists, like myself, who have not all the four editions of the 'Manual,' and never saw a single volume nor part of the 'Transactions.' May such be excused for not knowing how many Batrachian *Ranunculi* have been hitherto recognized in Great Britain? Your correspondent may reply, "So much the worse for them." I shall only say of the Batrachians the converse of what the Orientals (see Haji Baba, *passim*) say of their beloved friends, "May their shadows never be *more*."

BETA.

PTERIS AQUILINA.

In August last I observed a quantity of Ferns in their marchantiate state (newly-developed), growing upon the front wall of an area which gives light to a single window in the smoky locality of Lambeth. There were about thirty plants, and some of them had so far expanded their first frond that I could identify them with *Pteris aquilina*. A few days ago I paid a second visit to the place, and to my great disappointment found that the bricklayer had been there, and with that fatal instrument to Ferns, a trowel, had scraped off every Fern, and stuffed the joints with mortar. The question how the Ferns came there is far from being an uninteresting one. Clapham Common is the nearest locality where the plant grows wild, and the late Dr. James Forbes Young's garden in Kennington Lane is the nearest place where it was then cultivated,—the latter place distant about half a mile, and the former about three miles; and with so many buildings intervening, it is scarcely possible that the spores could be blown from either place. A more probable solution to the mystery attending its origin is, that we frequently may see it upon costermongers' wheelbarrows, used to divide the different kinds of fruit, and it is extensively used in packing fruit for the London markets.

JOHN LLOYD.

SHAMROCK.

Shamrock, the national emblem of Ireland, is *Trifolium repens*, not *Oxalis Acetosella*. (See 'Phytologist,' N. S., vol. i. p. 366 and 519.) C. E. P., Torquay, who asks (see 'Phytologist,' N. S., vol. iv. p. 319), "on what grounds botanists now consider the *Oxalis Acetosella* to be the real Shamrock of Ireland, and why it should not be a Trefoil," is hereby informed that botanists do not consider the Wood Sorrel to be Ireland's Shamrock. They believe, or most of them believe as the writers in the 'Phytologist' do, as quoted at the head of this note. The question might be easily answered on etymological principles. *Shamrog*, or *Shamrock*, is in the Irish language the term for *Trefoil*. On principles of common sense the same result will follow. The tradition is that St. Patrick took this plant as an illustration of the doctrine of the "undivided Trinity." The humble White Clover,

Trifolium repens, the Saint could easily procure, as it grows everywhere; he had merely to stoop and pick up an illustrative example of "three in one," and one developed into three. He might have hunted for days ere he had the hap to light upon Wood Sorrel. It is unphilosophical to reason on what is not a fact. It is not true that botanists deny the identity of Shamrock and Trefoil. A few of the fraternity, who wish to appear wiser than their brethren, may advocate the claims of Wood Sorrel, but some affect paradoxes.

R.

COWSLIPS OF JERUSALEM, OR JERUSALEM COWSLIPS.

(See 'Phytologist,' N. S., vol. iv. p. 320.)

Parkinson, in his 'Paradisus,' p. 248, London, 1629, informs his readers that there are several kinds of Jerusalem Cowslips, viz. :—

"1. *Pulmonaria maculosa*, common spotted Cowslips of Jerusalem."—This is *Pulmonaria officinalis*, Linn.

"2. *Pulmonaria altera non maculosa*, unspotted Cowslips of Jerusalem."—This is only a variety of the above.

"3. *Pulmonaria angustifolia*, narrow-leaved Cowslips of Jerusalem."—These have also spotted leaves, but the leaves are longer and rougher than in Nos. 1 and 2.

"The Place.—The Cowslips of Jerusalem grow naturally in the woods of Germany, in divers places, and the first kind in England also, found out by John Goodier, a great searcher and lover of plants, dwelling at Mapledurham, in Hampshire.

"They flower for the most part very early, that is, in the beginning of April.

"In English they are diversely called, as Spotted Cowslips of Jerusalem, Sage of Jerusalem, Lungwort, and Spotted Comfrey." Z.

AN INTRUDER.

In June, 1858, I observed *Orobancha minor* growing upon Clover in a paddock that had been laid down the preceding year. In 1859 I observed it in the same place, and also among a collection of Cape Pelargoniums standing in a greenhouse situated upon an eminence, at a considerable elevation above the paddock, and about two hundred yards from it, and quite out of sight of it. It did not confine itself to one species, but grew indiscriminately upon several with very opposite habits, as the hard-wooded *P. ternatum* and *P. citrodorum*, the succulent soft-wooded *P. echinatum*, and the tuberous-rooted *P. triste*, but I did not observe it growing upon any species belonging to either of the subgenera *Hoarea* or *Phymatanthus*. In the present year, in addition to growing upon Pelargoniums, it grew upon *Sonchus platylepis* and various other plants, as well as upon a gesneraceous plant in the stove.

JOHN LLOYD.

VENUS'S LOOKING-GLASS.

Can you or any of your correspondents kindly inform me if the Speedwell has ever been known by the name of Venus's Looking-glass? I have always heard this name bestowed on *Specularia Speculum* (a garden

flower in England, but a common cornfield weed on our plateau above the Meuse), until lately, when looking over 'Recreative Science,' No. 14, p. 129, I fell on the following passage in an article by Dr. Spencer Thompson, on "Wayside Weeds and their Teachings," in which, after enumerating heath flowers, Holly, Bindweed, etc. etc., he says, "Next have we the Veronica, Speedwell, or Venus's Looking-glass, of real heavenly blue"! Is this a slip of the Doctor's memory, or of his pen?

ELEOCHARIS AND OLOLEUCOS.

Will the Editor kindly allow a word in favour of writing *hololeucos*, instead of the specific name usually spelt *ololeucos*, or *ololeucus*? ('Phytologist,' p. 274.) The aspirate is surely as much required in this case as in *Heleocharis*. H.

[The editor has no objection to any innovation which is an amendment; but at the same time he begs to suggest that the verbal critics would have the goodness, out of kind consideration for the less learned and uncritical of the fraternity, to enter, along with the *new* name, that by which the plant is more commonly known.]

BOTRYCHIUM LUNARIA, curious var. of, with compound fronds, on the hill above Llandderfel, between the farm called Maes-y-Clawd and Coedy-Derw.—J. JONES, 1860.

NOTICE.—Mr. George Wolsey, of St. Andrew's, Guernsey, hereby notifies that he is now ready to supply dried specimens of *Isoetes Hystrix* on the following terms, viz.:—He will send *three* specimens for *six penny postage-stamps*, sent in an envelope, enclosing an empty envelope, stamped and addressed to the applicant.—Note: Mr. Wolsey, the discoverer of this interesting novelty, can supply any number of examples on these conditions.

Communications have been received from

W. Richardson; Peter Inchbald; J. G. Baker; John Sim; A. G. More; J. B. Wood, M.D., F.R.C.S.; W. Winter; S. Wells; H. Beisly; Rev. W. M. Hind; John Lloyd; Dr. Lawson; George Jordan; Tom Stansfield; George Wolsey; Thomas Moore; William Pamplin; H. C.

BOOKS AND NEWSPAPERS RECEIVED FOR REVIEW.

The Todmorden Post. Todmorden Advertiser.
The Manchester Examiner and Times.
The Harrow Gazette.
The Gardener's Chronicle, Jan. 26th.
The Chemist and Druggist.
The Kingston (Canada) Chronicle and News.
Rules, etc., of the Todmorden Botanical Society.
A Priced Catalogue of British and Exotic Ferns, etc., offered for Sale by Abraham Stansfield and Sons, Todmorden.

NORTHUMBRIAN BOTANY.

The Plants of Ratcheugh Crag. By W. R., Jun.

A very young candidate for botanical renown makes his *début* this month in our pages, and the indulgence of the readers is hereby bespoken, more out of deference to established custom than from any inherent necessity there is of speaking for one who can be safely trusted to tell his own story in his own way.

We beg to state that we like the following paper: first, because it is a good one; next, because it is short; thirdly, because the matter of it is expressed in brief, plain language; and, lastly, because it is written by a youth who evidently loves the subject, and who has read the 'Phytologist' with advantage both to himself and to the public. It makes the heart of the liberal sing for joy when the instruction brings forth fruit suitable for the enjoyment of the recipient, and not unfit to be offered for the information and gratification of others.

Some readers of the 'Phytologist,' when they see the heading of this article, may say, in what part of the world are these crags which they are invited to visit? I will therefore hasten to inform them that the locality to which I wish to introduce them is in "far away Northumberland." Ratcheugh Crag is a range of low, basaltic cliffs, three miles to the east of Alnwick, and about the same distance from the coast. The western side of the crags, viz. that next to Alnwick, is formed of almost perpendicular rocks, but it slopes gradually down on the eastern side; the entire length is about half a mile. It is divided into two parts by a road which passes over the depression between them, and it is with the larger or northern part chiefly, that I intend to deal at present.

It is somewhat in the shape of a crescent, with its points towards the south and east, and its convex side facing the north and west. There is an observatory on the top, in which a good telescope is kept by his Grace the Duke of Northumberland. The prospect from it is very fine, and extends from the east of Berwickshire to the north-west of Durham, embracing almost all the Northumbrian coast, and any one can readily obtain admission by applying to the person who has charge of it. I have selected it, not because it is our best locality,—for there are

others in the neighbourhood that can well bear comparison with it,—but because I am better acquainted with it than any other.

For early spring plants, this is one of the best localities in the neighbourhood, and it is usually visited by those who are on the outlook for the first floral harbingers of genial weather and the time of flowers. On the summit is the common Primrose and Cowslip, both very fine, and on the sloping bank, in front, grows *Primula intermedia* (*β P. elatior*).* But it affords greater rarities in *Viola hirta* and *Sesleria cærulea*. The *Sesleria* covers a large part of the top; the Violet is also plentiful, but it grows at the foot and on the face of the rocks as well as at the top. On walking round, other interesting plants may be seen, such as *Viola sylvatica*, *Fragaria vesca*, *Oxalis Acetosella*, *Anemone nemorosa*, *Ajuga reptans*, *Orchis mascula* and *O. maculata*, all in considerable quantity. I have also seen two plants of *Gymnadenia albida*, near the north end, in May, 1858, and I gathered a single specimen of *Habenaria viridis* last June, in the pasture on the east side. There is one part where the basalt rocks are overlaid with limestone, and very near the top of the lime there are a few dense bushes of *Prunus spinosa*, which always produce abundance of blossoms, and shed a perfume that surpasses everything else in the vicinity. A *Cerastium*, which I took to be *C. semidecandrum*, flowers here in March, and two months later the barest parts afford a few minute plants of *Saxifraga tridactylites*. It seldom exceeds an inch in height, and is generally very slender, but I collected one specimen $3\frac{3}{4}$ inches high, and with the leaves large in proportion. At the same time with the Saxifrage, *Mænchia erecta* may be collected. It grows in a small field to the south-east, lying next to the crags, among tufts of *Aira præcox*. On the banks near it are *Montia fontana*, *Myosotis versicolor*, *Hypericum humifusum* and *H. pulchrum*, and a *Draba* I made to be—from descriptions in the ‘Phytologist’—

* The following note is from Dr. Johnston’s ‘Flora of Berwick:’—“The latter is a very remarkable monstrosity (? variety), distinguished for its size and beauty. The common stalk is strong, 4 or 6 inches long, bearing an umbel of about nine flowers, each supported on a partial stalk, with lanceolate bracteas at their bases. The flowers are rather less than the single ones, but the limb is equally expanded. This variety is the *P. elatior* of Dr. Hooker’s Fl. Lond., according to Smith, and probably also of Dr. Greville, Fl. Edin. 48, though the description is somewhat confused.”

D. glabrescens. The Hypericums do not flower till at least a month after the others. *Myosotis collina* grew on a wall on the east side of the plantation, but as the wall has been pulled down and rebuilt, that locality is destroyed for the present.

Two interesting Ferns are also to be had in May, viz. *Ophioglossum vulgatum*, and *Botrychium Lunaria*: they grow in a pasture on the south-west side, in front of a large quarry. The Moonwort is near a well in the field, and the Adder's-tongue about halfway between it and the plantation.

Erica cinerea grows on the banks beside the quarry, and *Hieracium boreale*, *Stachys Betonica*, and *Teucrium Scorodonia*, bloom there in July. The botany of the crags is at least more varied in midsummer, although it then does not produce rarer plants. I will commence at the south-western end, and notice the plants as I proceed. The limestone before mentioned affords a few plants of *Scabiosa Columbaria* and *Sedum acre*. In front of it are *Vicia sativa* and *V. hirsuta*, and just below them, two or three patches of *Geranium sanguineum*. *G. lucidum* grows on several parts of the wall that encloses the plantation. Beside these, and on the rocks lying northward, are *Arabis hirsuta*, *Pimpinella Saxifraga*, *Poterium Sanguisorba*, *Helianthemum vulgare*, and *Thymus Serpyllum*. *Euonymus europæus* clings to the face of the rocks, and on a ledge about halfway down, there is one large plant of *Astragalus Glycyphyllos*. *Hieracium vulgatum* grows all along the front of the cliffs. Proceeding to the northward, we will find *Arenaria serpyllifolia* growing on the rocky ledge. I noticed a few plants of *Sagina subulata* growing in the midst of the *Arenaria*. *Arenaria trinervis* is plentiful at the foot of the precipice. Leaving these, as we go along, a few rather scarce Grasses may be picked up, such as *Avena pratensis*, *Koeleria cristata*, *Bromus sterilis*, *Festuca bromoides*, and others.

Allium oleraceum is abundant as we proceed, and so is *Rosa spinosissima*. About eighty yards from the observatory, *Dianthus deltoides* and *Cerastium arvense* occur on a bare dry place, both sparingly.

There is a small but dense tuft of *Astragalus hypoglottis* a few feet from the building. It flowers very late—September and November. About sixty or seventy yards on the other side of the observatory, a *Thalictrum* is growing on the ledge of the rocks. I believe it is *Thalictrum flexuosum*, but it is so much

damaged by the wind, that it never reaches maturity. A little further on, there is a white variety of *Digitalis purpurea* growing among the rocks; further on, a patch of *Vaccinium Myrtillus*. Near the eastern end of the plantation on the south side, where the limestone rises again to the surface, several plants that grow on the crags are found, and with these *Briza media* and *Avena pubescens* grow in abundance. Here are also *Tragopogon minor*, *Carex glauca*, *Anthyllis Vulneraria*, *Silene inflata*, and *Linum catharticum*. The higher part of the same field is a stronghold of *Carduus tenuiflorus*. It is not only plentiful, but absolutely a pest, to the great distress of the reaper and haymaker, who are obliged to protect their hands, or experience the truth of the motto which surrounds Scotland's national emblem, *Nemo me impune*, etc.

In the same field, but lower down, and beside Ratcheugh (farm), I obtained a few specimens of *Crepis setosa*, which was introduced with clover-seed. Here are also a few Ferns to be collected: *Asplenium Ruta-muraria*, on the limestone; *A. Trichomanes*, sparingly, in the crevices of the rocks; *A. Adiantum-nigrum*, more plentifully; and *Polypodium vulgare*, in great abundance. *Lastrea dilatata* and *Polystichum angulare* grow in the plantation. There are a few others I have omitted. The most worthy of notice are *Asperula odorata*, *Scabiosa succisa*, *Alchemilla vulgaris*, *Hyacinthus nonscriptus*, *Lastrea ovata?*, *Lychnis diurna*, *L. vespertina*, and *L. Flos-cuculi*, plentiful in the plantation and the drive; *Galium saxatile*, on the top of the crags, and *Adoxa Moschatellina*, at the base; *Potentilla reptans*, on an earth-capped dike at the south end; and *Filago germanica*, on the dry banks near it.*

Lest my description should fail to give the reader a precise idea of the localities of the plants entered, I may remark that the greatest distance between the remotest here mentioned does not exceed half a mile, and even a stranger to the district would succeed in reaping a good reward, or be abundantly repaid, for his visit to this interesting locality.

* In May, 1858, I discovered a small patch of *Doronicum plantagineum* among the trees in front of the crags, but when the trees were cut down, to burn the branches, a fire was made on the place where it grew. I fear the plant is now destroyed.

BOTANY OF THE DOWARD HILLS.

Botany of the Dowards (Herefordshire), Great and Little.

(From a Correspondent.)

About ten years ago there appeared in the old series of the 'Phytologist' (see vol. iii. p. 856), "Notes on the More Interesting Plants found during a Day's Excursion on the Great and Little Dowards; by William Bennett, Esq.," and the reporter and his companions had no reason to be discontented with the result of their botanizing.

The most experienced in such researches best know that all the plants even of a very small district, say, for example, three or four square miles, including considerable diversity of surface and probably some variety of soil and elevation, are not to be seen in a day, even by a company of acute botanists. All the plants do not appear at the same period; and even if they did, strangers who visit a locality remote from their usual haunts (about their own homes) seldom happen to fall upon the exact spots where the rarer species grow.

Some hitherto unrecorded species remain still to be noticed, and the present contribution is offered to supply this information.

Clematis Vitalba is not one of the plants enumerated in the list above mentioned, though it is not unfrequent on these hills. *Helleborus fœtidus* and *H. viridis* are additions to Mr. Bennett's list. See 'Phytologist' as above quoted.

About twelve years ago *H. fœtidus* grew plentifully in a wood on Great Doward Hill, in Herefordshire, and has been gradually decreasing since that period, and some two or three years since it totally disappeared. It has been frequently and carefully sought for by botanists well acquainted with its locality and habits, but without success. The cause of its disappearance is probably the growth of the underwood, and it is probable that when the underwood or coppice is again cut, the Hellebore will spring up anew.

It is believed that the removal of the underwood from the upper parts of the hill has been the cause of the increase of *Carex montana*, which is now found in profusion.

Helleborus viridis grows in a pasture at the base of the Great

Doward sparingly; but there are several large tufts of it growing in a *brake* adjoining.

This plant alternately appears and disappears in a large copse wood on the south side of Ranmer Common, in Surrey. About two or three years after the wood has been cut, the green Hellebore abounds everywhere in the open spaces between the bushy underwood stools; after the copse wood has grown from seven to ten or twelve years, the Hellebore begins to disappear; and when the wood is full-grown, or when the Ash and other coppice wood is large enough for the hoopmaker's purpose, the plant has entirely disappeared, and reappears when the copse is cut as before.

The appearance and disappearance of plants is illustrated by another plant not uncommon in Surrey, viz. *Narcissus Pseudo-Narcissus*. The Hook Wood, between Guildford and Ash, on the north side of the "Hog's Back," perhaps three miles from Guildford, is periodically cut down for the coppice wood, not all in one season, for it is much too large for that process, but a portion—say ten or a dozen acres—is cut annually, and by the time the last dozen acres are cut, the first-cut portion is grown up and ready for the cooper's use. In a certain part, probably in more than one part, the Lent Lilies (*Narcissi*) spring up the first year after the wood is cut. They probably grow during several years, gradually disappearing when the shade is too much for them. In all this there is nothing marvellous; and probably for this cause these facts are but seldom recorded and more seldom heeded. *Omne ignotum pro magnifico*. The incredibly marvellous is wonderfully attractive; hence the implicit belief in the germination of mummy-wheat after its interment since the times of Cheops, or between three thousand and four thousand years ago.

It is asserted, on the highest possible authority, that when a forest or part of a forest is either cut down or burnt down,—for the same results will follow in either contingency,—there is a fresh crop of wood springs up as different as possible from the wood which grew there before it succumbed to the axe of the woodcutter or to the combustion of the potash-maker.

There may be nothing very wonderful in all this. The fresh crop of timber, unlike that which was removed, may have originally germinated or have sprung up with the more fortunate or hardy children of the forest, which, like the giants of old, oppressed the weak, caused them to hide in caves, dens, and holes,

yet were unable to exterminate the feebler races. When the Titans succumbed, a humbler race took their place.

Were any change in the position of the earth's axis to take place, or if by any other mechanical or physical alteration the Arctic regions could enjoy a somewhat higher temperature than they do at present, there would soon spring up a luxuriant growth of Birch, Pine, and even Oak trees; and if these were only slightly protected from cattle, the hills and mountains of Lapland would abound in forests like the pine-clad hills of Norway and North America.

This new arborescent vegetation would not spring from seeds which had lain dormant in the soil since the Creation, but from plants which had existed for centuries under the Heath, Moss, and Lichens with which these inhospitable countries are covered. The herbaceous Willow would be as ligneous as the Willows of our brooks, if the short summer and scarcity of heat and light suffered it to ripen its tissues and to convert them into woody fibre. The trees of Sweden, or several of them, are found in Lapland, but only a few inches high; the only ligneous portion of them is just the part protected by the scanty vegetation with which they are surrounded.

The Hellebores and the Daffodils probably need more caloric, as well as more light, than they can get when the place where they grow is densely covered with trees, branches, and leaves. When these are removed, the plants appear and grow vigorously, till the subsequent growth causes them to decrease, and finally to disappear.

Hutchinsia petraea grows on the calcareous rocks, and *Hippocrepis comosa*, *Spiraea Filipendula*, and *Onobrychis sativa* on the grassy open places. The latter is usually considered an escape from places where it was or is still cultivated. Whether this be so or not, the plant is well established in many parts of the kingdom.

Tilia grandifolia and *T. parviflora* grow in plantations. Botanists are not unanimous in admitting their claims as natives of England, although they are entered in every Flora, from Gothland in the Baltic to the Balearic Isles in the Mediterranean.

Acer campestre and *Euonymus europæus*, plants of the Dowards, have also an equally extensive range in Europe, viz. from Sweden to the south of Spain.

Poterium muricatum is one of our recent acquisitions, acquired either by separation from *P. Sanguisorba* or by importation with foreign seeds. The plant, whether a variety of *P. Sanguisorba* or as distinct as Hereford is distant from Ross, grows in old pastures on the Little Doward, where there has been no cultivation within the memory of the oldest inhabitant. It does not appear to be an introduction in Herefordshire.

Pyrus Aria and *P. Torminalis* are distributed over most parts of Europe, from Denmark to Greece, and they form part of the arborescent vegetation of this part of the west of England.

Cotyledon Umbilicus appears to have a predilection for the western parts of England, and therefore if its distribution in England, independently of its European range, is to be the subject of consideration, it is far from being a western plant, for it is found in the most eastern counties of England. The nature of the surface and the state of the atmosphere have more effect on the distribution of the plant than a few degrees east or west have.

The plant however is not confined to the west of Europe, but is a denizen of Switzerland, and grows to the east of the Adriatic, and extends into Greece and Turkey, about as far as possible in Europe from the Atlantic. But this is an example of one of the necessary consequences of attempting to establish general laws without a competent knowledge of individual facts. The result is, only vague and uncertain generalities.

Cornus sanguinea, *Viburnum Lantana*, *Acer campestre*, and *Ligustrum vulgare* are chiefly found in hedges; and hence it is a matter of wonderment that their nativity has not been called in question by some sharp-sighted observers, who will not let the world be ignorant of their perspicacity while they have wind enough in their lungs to blow their own trumpets withal. These would-be-wiser observers than their fellows will say, "True; but they are not exclusively found in hedges: they are called sylvestrals; and woods, like hedges, are mostly planted." But are there no natural hedges, as there may be and are natural woods? When wood covered most part of the country, and before clearings and roads were made, all the shrubs and trees now growing in hedges might have grown in the original forest, and they may have been left, and probably were left, as a protection to the cleared cultivated portions which skirted the public thoroughfares. Hence

probably most of the arborescent septal vegetation in England, and Scotland too, is descended from the original shrubs and trees that once constituted part of the ancient forests with which most of this country was originally covered.

Among the hedge-plants of the Dowards are also the following, and they have never yet been deemed suspected aliens, though they grow in hedges, and almost exclusively there, viz. *Bryonia dioica*, *Tamus communis*, and *Carex pendula*. These grow all over Europe, from Portugal to Hungary inclusive.

Sison Amomum, another plant of the Dowards, grows under hedges. This species has a moderate European range, viz. from the Alps to the north of Greece.

In woods or plantations (these words are nearly synonymous in the modern history of rural affairs) the sylvan and septal (hedge-plants) vegetation is combined. Most of the plants so called grow both in woods and in hedges. Some of the rarest on the Dowards are, in addition to those mentioned at the beginning of this notice, viz. the Hellebores, etc., *Daphne Laureola*, *Serratula tinctoria*, *Monotropa Hypopitys*, *Cephalanthéra grandiflora*, *Ophrys muscifera*, *Neottia Nidus-avis*, *Luzula Forsteri*, *L. pilosa*, var. *Borreri*, *Carex montana*, *C. clandestina*, *C. digitata*, etc.

It has been already observed (see *supra*) that one of the rarest of these *Carices*, *C. montana*, has become more plentiful since the hills were partly denuded of their wood. It was first discovered by Mr. Purchas in its above-mentioned Herefordshire locality. The other two species of the genus with which this rare plant is associated are also rarities, at least in England. *C. digitata* has an extensive range in Europe, viz. from Norway to Switzerland, and from the west of England to the east of Europe. *C. clandestina* has an almost equal horizontal range, but its latitudinal extension is not so great as that of *C. digitata*. *C. montana*, the scarcest of the three in England, has a much longer range than that of either of its two associates on the Doward Hills.

The rarer pascuals (pasture plants) on these hills are *Helianthemum vulgare*, *Agrimonia Eupatoria*, *Plantago media* and *P. Coronopus*, *Carex præcox*, *Chlora perfoliata*, *Ophrys apifera*, *Spiræa Filipendula*, *Erigeron acris*, *Hippocrepis comosa*, *Taxus baccata*, *Orobanche major*, *Polypodium calcareum*, etc.

Among the agrarial species may be noticed *Sinapis alba* and *S. nigra*, *Reseda lutea*, *Carduus nutans*, *Picris hieracioides*, etc.

The rarer aquatics and marsh plants of this district are *Cerastium aquaticum*, *Ranunculus fluitans*, *Myosotis palustris*, *Symphytum officinale*, *Carex acuta*, *C. pallescens*, *Ophioglossum vulgatum*, etc.

The following species grow about roadsides or on banks, or near hedges or in waste places, "nooks and corners," viz. *Arabis hirsuta*, *Viola hirta*, *V. odorata*, *Origanum vulgare*, *Arum maculatum*, *Inula Conyza*, *Dipsacus pilosus*, etc.

As the botanists of England may soon look for and also have the pleasure of reading a Flora of Herefordshire, the above list is given as a kind of first-fruits, or, as some would say, *Primitiæ Floræ Herefordiensis*. It is printed and published for the use of botanists in this county, and for the convenience of those who mean to visit it with botanical objects.

There are many rare plants both on the north and south extremities of the county. *Euphorbia stricta*, for example, is to be found not very far from Ross, and *Astrantia major* not very far from Ludlow on the north. Botanists are guided in their researches on the existence and distribution of plants more by the natural state of the country than by its political divisions into counties, which appear to have perplexed more than one geographical botanist.

N.

FERTILIZATION OF FERNS.

Every species in the animal kingdom is allowed by naturalists to be sexual, but under various modifications. Every species of vascular plant is allowed to be so too; but when we come to the cellulars we are at a dead-lock, for our elementary botanical teachers have not as yet enlightened us as to whether even Ferns possess any sexual development. We are informed that they have been subjected to the strictest microscopical scrutiny, and that no stamens or pistils have been discovered, or any organs which may be supposed to perform such operations as are caused by them in other orders.

It may be asserted that the body of the largest shark may be

dissected with no better success, and yet the animal deposits eggs, and the mode and limits which Providence has assigned to it to observe, as well as the smallest sprat, in reference to the continuation of their respective species, is perfectly understood by naturalists.

Taking it as an established fact that all animals and half of the vegetables are sexual, may we not infer that Ferns may be sexual also, and that they bear the same analogy to fish as vascular plants do towards the higher orders of animals? May we not without any great stretch of our imaginative faculties assume that some of the plants, fronds, or spore-cases produce male spores, and others female? When the indusium bursts and the spores disperse, it is quite probable that a male and a female spore may frequently fall into the same nidus, and that the male may be the progenitor of the marchantiate portion of the plant, and the female be fertilized by the vegetative influence of the male to produce the frond. By the way, I may observe that when a pot of spores are under cultivation, many never survive the marchantiate state.

Now as all naturalists are well aware that fish, which are a lower order of animals than birds or beasts, deposit their eggs prior to impregnation, is it going too far to assume that Divine Providence, in its infinite wisdom, has thought proper to endow a certain inferior order of vegetables with the means of propagating their species in a similar manner?

To me such an hypothesis appears perfectly natural; but, as Sir Roger de Coverly replied when he had an abstruse question propounded to him, "much may be said on both sides."

PISCATOR.

FAVERSHAM PLANTS.

An Account of a few hours' Observations in and about the ancient town of Faversham, Kent.

On Monday, the 3rd of September, 1860, we left the London Bridge terminus of the North Kent railway for a week's botanizing in south Kent, and we halted from three to four hours (from between one and two o'clock to between five and six) to

look for and collect a few specimens for which Faversham is celebrated.

It is believed that the readers of the 'Phytologist' will excuse this now oftener than the thrice-told tale about the plants of Faversham: first, because all who read this may not have the works of Jacobs and Cowell on their shelves; secondly, the present *story* will be only a short one; thirdly and lastly, because we have something to tell them which was never printed before.

The station is on the right-hand side, or on the west of the town, and consequently, in going to the creek, where the rarest of Kentish or even of English plants grow, viz. *Peucedanum officinale*, the traveller has to pass through the town; and future tourists are recommended to turn aside into the churchyard, as we did, and if they are not botanists, they may spend a half-hour not unprofitably in "meditating among the tombs." Our object was not this; for examples enough of the ravages and trophies of time and of death are obtainable without incurring the expense of a journey to so distant a place as Faversham. We went to botanize, and we did so, energetically and successfully. If there be two species of *Parietaria*, viz. *P. diffusa* and *P. erecta*, they are surely to be seen in Kent. Probably they grow on these ancient walls or spread over the contiguous rich mould of the churchyard. But this plant or these plants abounded in several parts of the coast subsequently visited, and many examples were looked at and compared, but with no definite or satisfactory results.

The Pellitory, though mural in the interior of our island, is not so in Kent. It grows far from towns and from houses, sometimes on the chalk rock or on the chalk *débris*, but it is quite as common on the rich marly soil of the undercliffs and even on the level ground, but as remote as possible from dwellings and ruins, its common habitat in the inland parts of the country.

Crepis biennis we did not observe about the churchyard. It is entered in Cowell's list, and it may be there, though we did not see it; but we saw plenty of common or garden Parsley, Snapdragon, and blue Toad-flax (*Antirrhinum purpureum*); these, with *Festuca myurus*, or *F. pseudo-myurus*, or *F. bromoides*, *Hieracium Pilosella*, *Veronica arvensis*, *Erigeron acris*, and such-like, formed the staple of the mural (wall) plants of Faversham churchyard.

Crepis biennis, which we never saw but in Kent, is stated by Stowell (see 'Phytologist,' N. S., p. 103) to be plentiful in this neighbourhood wherever the chalk crops out.

But the pride and the glory of the Faversham Flora is the *Peucedanum officinale*, a plant in these our isles, almost exclusively confined to Kent; and this is the better known of its two Kentish reported stations. We hesitated about going to Whitstable in search of it, but ultimately concluded that our time would be better spent in searching the coast further south.

This rare species still grows plentifully on the high bank which skirts the creek on the Faversham side of the river. If the tourist goes on straight to the harbour, and then follows the dike towards the east, leaving the creek on his right, he will soon see plenty of this plant.

Here also grow *Allium vineale*, *Juncus cænosus*, *Triglochin palustre*, much relished by cattle, *Juncus maritimus*, *Glyceria (Sclerochloa) distans* or *G. Borreri*. These plants constitute the principal herbage of these grassy banks and salt meadows. *Aster Tripolium* and *Statice Limonium* grow luxuriantly on the mud-banks within the sea-wall (dike?). *Rumex Hydrolapathum* and *Potamogeton pectinatus* grow in the water.

Our intention is not to make out a fourth list of Faversham species, but merely to notice and record the changes that have been observed since the publication of the last printed list (about four years ago: see 'Phytologist,' vol. ii. p. 103), and to record with these newly-observed plants a few of the prominent and rarest of the others, for the convenience of those who may follow in our track.

There is a plant new to the Flora of Faversham, viz. *Lepidium ruderale*, to be entered as a species belonging to this locality. The rarest species of this genus, viz. *Lepidium latifolium*, was a Faversham plant when Dr. Jacobs compiled his Flora. It had disappeared when Mr. Cowell published his very complete and systematic localized lists. Another species, *L. campestre*, an agricultural weed, was detected by the Rev. H. A. Stowell and published in the 'Phytologist' for 1856, vol. i. p. 254, N. S. We have the pleasure of reporting the above-mentioned plant, another member of the genus, not previously recorded as growing in this part of Kent.

Lepidium ruderale is a plant of migratory tendencies, but it

is hoped that it may become permanent in this station. It has been occasionally seen at Wandsworth, near the steamboat-pier, on the Surrey side of the river; and also on the bank of the Kensington canal, on the Middlesex side of the Thames; and it has been observed also at Turnham Green, Middlesex. It is not uncommon about Greenhithe and Gravesend, and it is exceedingly plentiful on the river Coln, below Colchester.

The following additions are also to be made to the plants of Faversham, viz. *Diplotaxis muralis*, which appeared here plentiful enough, and it accompanied us during our whole route through Canterbury, Deal, and Dover, to Hythe, where our journey terminated. This species, unlike its relative, *D. tenuifolia*, shows no predilection for walls; it is everywhere, in Surrey and Kent, where it abounds, contented with a humbler station. It would be too tedious to enter all the stations for a species which is in this part of the country nearly as common as Shepherd's-purse.

On a wall on the left, near Davington church, while ascending the hill from the creek, *Sedum dasyphyllum* was detected in considerable abundance. This rare plant may have been introduced subsequently to the publication of Dr. Jacobs's Flora, but it had apparently been settled there long prior to the compilation of either of the modern lists of the Faversham species.

Verbascum Lychnitis, as a mural plant, is also a new discovery. This grew on a wall a short distance beyond Davington church, on the same road, and on the same side of it. This plant was solitary when first observed two years ago. There are now, September 3rd, 1860, three plants, viz. the original or mother-plant, now of considerable bulk, having both flowers and fruit, also one of its descendants in flower, and the third and last has now well-developed radical leaves.

This locality produces abundant and fine specimens of *Salvia verbenaca*, and also of the rare *Calamintha Nepeta*, which abounds both on the turf in the churchyard, and on the churchyard wall.

This plant is probably sometimes mistaken for *C. officinalis*, and *C. officinalis* may also occasionally be mistaken for it; and the mistakes may be counter-checks, and the relative numerical proportions between the statistics of the two plants may not be much affected. The numbers of stations known, or at least published, for *C. officinalis* is at least twice as many as for *C. Nepeta*. But if the census of the individual examples is to be taken, *C. Ne-*

peta is a thousandfold more numerous than *C. officinalis*. The latter grows here and there on banks and on roadsides; the former, *C. Nepeta*, covers many acres in several parts of Kent and Essex, where it is the sole herbage, excluding every other plant except grass. In some places it gives a hue to the fields where it grows, which at a considerable distance look as if full of clover. *Calamintha Nepeta* is gregarious in the counties of Essex and Kent, where we saw it; and by this habit, as well as by its colour and the smallness of its leaves, it may readily be distinguished from its near relations. In a dried state, or in the herbarium, the three species *Calamintha sylvatica*, Bromf., *C. officinalis*, and *C. Nepeta*, are not very readily distinguished.

Any botanist accustomed to the comparison of herbarium specimens, and who is well endowed with energy and patience, and could spare the time, might do good service to the science, and might be helpful to the students of our native plants, if he would undertake the unprejudiced examination of the three ill-defined species of *Calamintha*, *C. officinalis*, *C. Nepeta*, and *C. sylvatica*. He might commence with the largest of the three forms, *C. sylvatica*, Bromf., and he should diligently compare with this assumed species the largest forms of *C. officinalis* which may be in his herbarium. This latter plant pretty well connects the smallest of the three, viz. *C. Nepeta*, with the largest, *C. sylvatica*. Probably the examination of a dozen examples of each would decide the question about the specific distinctness or the identity of the three generally received species. If connecting forms be found among the dozen examples of the respective plants or species, of course their specific distinctness must be abandoned; or if their distinctive characters be so minute as to be observable only by such a close scrutiny of a series of specimens, few botanists, it is to be feared, will have both the time and patience necessary for their satisfactory identification.

The important question, which of the two practices, viz. the splitting or combining of species, is most conducive to the progress of science, will be answered by the leaders of the two scientific sections in conformity with their own peculiar views. Much may be said on both sides, much has been written not always in a courteous way, and it is probable that for the purposes of science, the one mode of procedure may be as beneficial as the other; but the segregative process will eventually be a cause of much

trouble and discomfort to the future historians of the British species. The history of the recent mutabilities in the nomenclature of our plants may be an instructive example, for the changes that have been made during the last thirty years far exceed those made during a century previous to 1830.

Something may be advanced here about the nativity of *Sedum dasyphyllum*, a plant which is challenged by some and passed by other botanists. Mr. Watson decides against its claims on the ground that the few natural stations where it has been seen are mentioned "on authority not strong, and seldom corroborated by any second observer." Seldom corroborated! How often should a station be reported, and how many times should it be corroborated by subsequent observers, ere it is allowed to pass the ordeal of the sage of Thames Ditton? The 'Phytologist' supplies corroborative proofs of the genuineness of the Perthshire localities, both of *Sedum album* and *S. dasyphyllum*; confirmation strong as Holy Writ can be easily produced, "in precise terms," and attested by hundreds of observers.

But will any phytogeographer answer this question, viz. are all plants growing on old walls, whether "garden, abbey, or hospital" walls, introduced there by cultivation? If he answers No, and further replies, only a donkey, but no botanical geographer, would ask such a question,—it may be asked, how came the other plants, the *Arenaria serpyllifolia*, or *A. leptocladus*, or *A. balearica*, which grows on the tool-house at Moncrieffe, or Shepherd's-purse, or Groundsel, and a multitude more, on the wall? These plants are never cultivated, but eradicated wherever and whenever they appear. How are the genuine plants to be distinguished from the spurious? They all grow together. The others, it may again be asserted, are common plants, and therefore there can be no question about the legitimacy of their origin. The other is uncommon, it is scarce or rare. It may be asked again, are all rare plants which have the misfortune to grow on walls to be excluded? Possibly they might grow on natural habitats if there were any present suited to their peculiar economy.

Mr. Watson's arguments are not convincing; he did not judge accordantly with the evidence, and probably the evidence on which he relied was defective. But a metaphysician should be able to sift evidence, and he should possess in addition the moral ability to decide impartially.

In a head of pure fresh water near the town, *Hippuris vulgaris* still grows, with several other aquatics. *Cuscuta Trifolii* had been well-nigh forgotten but for the friendly aid of the notes made on the spot. It may be as well to state here that every plant seen and entered in this report was entered into a note-book when it was seen or collected; and these notes were subsequently copied out and sent to the compiler of this narrative of the journey. Furthermore it should be stated that no plant was entered about which there was the slightest hesitation in reference to its identity. When we had any doubt, or had reason to suspect that there might be a shade of suspicion about the name, the latter was instantly cancelled.

The Clover Dodder was plentiful in a clover-field near Davington church. It was seen attached to other plants besides Clover, especially to *Crepis virens*. It did not appear to have done much mischief this wet season.

Rumex pulcher and *Lolium multiflorum* appeared in many places. The latter, being a valuable agricultural grass, is spreading.

Thus ended our botanizing at Faversham, which did not detain us more than three or four hours. The writing of this notice has filled up as much time as the collecting of the plants did. At five o'clock we started by rail for Canterbury.

KINGSTON (CANADA) BOTANICAL SOCIETY.

The 'Phytologist' is indebted, as we believe, to Professor Lawson for several newspapers containing the historical account of the formation of this Society, and our thanks are hereby tendered for the means thus afforded for giving our readers an outline of these interesting proceedings.

A brief epitome is all we can find room for.

On the 7th December, 1860, there was a large meeting held in a class-room of Queen's College, Kingston, to consider the propriety of organizing a Botanical Society; and the proposal appears to have been cordially received by the professors, graduates, and students of the University, as also by the influential gentlemen and citizens of that part of the colony.

The addresses by the Rev. Principal Leitch, Professors Lawson and Litchfield, were very appropriate. We hope the Society, so

auspiciously inaugurated on this occasion, will have a happier existence and produce more satisfactory results than a similar Society which the last of the speakers intimated that he aided to establish in the British metropolis. The allusion here made is to the unhappy Society of London, which perished by inanition or sheer famine. This miserable abortion never had a healthy existence, and its foster-parents appear to have been the most inefficient of all imaginable incapables. But *de mortuis nil nisi verum*; we dare not enter *bonum*; this would be a sheer misapplication of the word. We trust there is a better futurity for its younger and more vigorous sister of Upper Canada; but we, for our part, should not, like the Professor, gratuitously state that our connection with the London namesake was of a very intimate character.

De gustibus nil disputandum. Probably the Doctor did not know that the Institution which he helped to form in London more than twenty-five years ago has been long reckoned among the departed.

We anticipate for the Botanical Society of Kingston a prosperous career of usefulness for many years. Our hopes are chiefly founded on the comparatively unknown capabilities of the country. Possibly few countries on the globe, as some affectedly call the earth's surface, have had their vegetable productions more carefully and successfully investigated than the British Isles, and still there are novelties to be recorded as well as seen; not merely new localities for rare plants, but absolute accessions to the number of species. What may we not expect in a large, perhaps the largest, dependency of the empire, the greater part hitherto unexplored? Another ground of our confidence in the success of this Society is in the characteristic energy and enterprise of colonial settlers, whether these be provincials by birth or by immigration. A third and the most important element in the constitution of this Society is the thorough cosmopolitan or catholic nature of its objects. It appeals to the woodcutter, the pearlsh-maker, the cultivator, the trader, the professional man, the moralist, and the theologian.

It is a grave mistake to divorce science from humanity; and societies which confine their objects to the welfare, instruction, or amelioration of their own associated members only, acquit themselves of scarcely half of the functions devolving on them in their combined or aggregate capacities.

Our readers would not thank the 'Phytologist' for a list of the members of this new co-operative association. Few, indeed, of these names are known here, although they are no doubt the very *élite* of the Canadian population of that part of the colony. Our readers in the colonies must increase very manifold ere we can afford to print their names in our pages, unless they will condescend to employ the humble periodical, in which these remarks appear, as a vehicle for telling the British botanists what are the vegetable productions of their colony. Of course the Secretary of the Society, Professor Lawson, does not come within the bounds of this class: he is a British botanist, and has been a contributor to the 'Phytologist' from its commencement.

Our readers are presented with some account of the constitution of the Society, which will be more satisfactory than a list of members, or even an outline of the speeches delivered when it was formed.

The first law defines the objects of the Society, viz. the study of Botany in all its departments and its application to the fine and useful arts; these are to be carried out by periodical meetings, communications, field meetings, correspondence, interchange of specimens, experiments on plants, introduction of new plants, the publication of transactions, etc.

The next law determines who shall be members, and these are divided into four classes, viz.—1. Honorary Members. 2. Fellows. 3. Annual Subscribers. 4. Corresponding Members.

The fourth and fifth rules define the mode of election and the duties and contributions of the members. (Note—the second and third classes only contribute, and the contribution is two dollars annually.) The remaining rules provide for the election of office-bearers, etc.

The Society may justly be congratulated on their sensible scheme of a moderate annual payment.

The first meeting of the Society was held on 11th January, 1861, in the same place, for the election of Fellows, Subscribers, office-bearers, etc. The Society by this time probably amounts to above 200 members in all. The British honorary members elected at last meeting are the following:—Dr. Balfour, Dr. Greville, Sir W. Hooker, Dr. Lindley, Mr. J. F. Syme, Dr. W. L. Lindsay.

Dr. Mueller and Mr. Thwaites are the Colonial Honorary Members.

At this meeting donations were presented to the Society, already an influential and important body, consisting of books, memoirs, monographs, papers, plants, etc.: and several papers were read, among which is an interesting one from an exploring party in the far-west, and from which an epitome will be made for the gratification of the readers of the 'Phytologist.'

We beg to inform our readers that this Society is named the "Botanical Society of Canada," a rather comprehensive and, some might say, an ambitious title; but if the ground was not preoccupied, it is not only defensible but laudable, and every well-wisher of botany will be delighted to hear that their success has been as great as the auspiciousness of their beginning.

VALERIANA CALCITRAPA.

(From a Correspondent.)

While rummaging over some old bundles of plants, I happened to light upon specimens of *Valeriana (Centranthus) Calcitrapa*, from (so far as I know) an unrecorded locality; and I am much mistaken if it does not turn out to be the earliest direct testimony that we have of its existence as a British plant. The plants are accompanied by a ticket in the handwriting of the late Mr. Benjamin Forster, of Walthamstow, at whose sale the bundle of plants in which this Valerian occurs, came into my hands.

The following localities for this introduced (? naturalized) species, viz. 1. Walls belonging to Chelsea Hospital, Middlesex. 2. Churchyard-wall, Eltham, Kent. These two stations are recorded in print. See Withering's 'Arrangement,' vol. i. p. 63, 4th ed., 1801, and Hull's 'British Flora,' 2nd ed., 1808. 3. Palace, Enfield, Middlesex, in MS.

It is remarked in 'Cybele,' vol. ii. p. 25, that the plant above named has very slender claims to inclusion among our British plants as a naturalized alien. Those who are curious in such matters,—I mean writers who would read even their Bibles if thereby they could fix a charge of plagiarism on their contemporaries, or even on their predecessors, for they are not very particular about where the dirt is flung, whether on the living or on the dead,—should turn to the 309th page of the old series of the 'Phytologist,' and there they will learn from what source the author of the 'Cybele'

drew his inspiration. As I do not mean to make scientific capital by trenching on the informer's trade, I will turn to a more congenial topic, and I intend to claim for the late Mr. Forster the honour (if there be any, hanging at the end of so slender a thread or modicum of information) of being the original discoverer of this plant as a spontaneous British production. If the late above-named amiable botanist was not the first who observed it growing wild in several places as before said, he was the first to record its growth where it is still found.

In vol. i. of the old series of the 'Phytologist,' and *not* in vol. iii. as quoted in the 'Cybele,' and on the 648th and 649th pages, there is a note from the real Simon Pure, revealing the history of the distribution of *Centranthus Calcitrapa* in the following, quoted from the 'Phytologist,' as before stated:—

“It is now fifty, if not sixty, years since (*Mem.* the author of this note dated it 6th June, 1843) I first saw this plant on a wall at Eltham, where it was well known to the London botanists, who, I believe, always thought it had escaped from Sherard's garden, and it was therefore considered a naturalized plant, etc. We also used at the same to find it on the wall of a garden at Enfield, in Middlesex, which had formerly been that of Dr. Uvedale.” If fifty years be subtracted from 1843, the remainder, according to Cocker, will be 1793, and if the longer period, viz. sixty years, be taken from the date when the above-quoted note was written, the remainder will be 1783. Or if we take the mean period, the result will be 1788; and if we add the seventeen years which have elapsed since June, 1843, we have about seventy years as the historic period of this plant as a naturalized species in England.

In casting my eye over the geographical range of *Centranthus Calcitrapa* I find that it is known in the middle and south of Europe, and also in the *Balearian Isles*!

It is very devoutly to be wished that another *Balearic* plant, viz. *Arenaria balearica*, may meet with as great success as this tiny Valerian,—that she may spread herself about and occupy as many stations, and, above all, that she may have her humble claims not only admitted but defended by as many celebrated and generous botanists as have patronized her modest compatriot, is the humble wish of one of Flora's devoted admirers.

Remarks on the Botany of the Chilterns.

By CHAS. JOS. ASHFIELD.

I notice, in the first volume of the 'Phytologist,' some notes of plants found near Tring, Herts. I have botanized on the Chiltern Hills at different times, from Whiteleaf Cross, in the parish of Monks Risborough, to the other side of Tring, and can add my testimony to that of your correspondents (vol. i. pp. 105, 331), as to the botanical poverty of the district. Early in September 1850, I found some fine specimens of *Atropa Belladonna*, at the foot of the hill on which the Bridgewater Monument stands, and on the hills in the immediate neighbourhood an abundance of *Gentiana Amarella*. *Dianthus Armeria*, *Malva moschata*, and one or two of the *Linariæ*—I believe *spuria*, for one—are to be met with in the hedges and fields in the neighbourhood. In July 1850, I had several rambles in the neighbourhood of Chequers and Whiteleaf Cross. The greatest rarity, perhaps, that I met with, was *Iberis amara*, a great quantity of which grew in a cornfield at the foot of the hill on which the Cross is cut. In the woods in the neighbourhood, *Ophrys Nidus-avis* and *Prenanthes muralis*, together with an abundance of *Alchemilla vulgaris*, *Asperula odorata*, *Galeobdolon luteum*, and *Sanicula europæa*, are to be found. *Helianthemum vulgare* grows plentifully on the higher parts of the hills, especially on the top of King Cunobelin, the highest, I believe, of the Chiltern range, and some dwarf specimens of *Campanula glomerata*, from one to two or three inches high, grew in the space occupied by the Cross, and on hills in the neighbourhood. I also met with a few specimens of *Ophrys apifera* and *Orchis pyramidalis*. *Galium Mollugo* is plentiful in the hedges at the foot of the hills about Monks Risborough, etc. *Buxus sempervirens* grows on the sides of the hills about Velvet Lawn. *Sedum acre* and *Poterium Sanguisorba* are not uncommon in the same neighbourhood. *Geranium pratense* is plentiful and fine about Great Hampden House and church. I may have met with a few other plants which I cannot call to mind at present, but I have a distinct recollection of those I have mentioned, and, indeed, have specimens of some of them.

You ask, in vol. i. p. 108, if *Habenaria chlorantha*, *Bupleurum rotundifolium*, *Ajuga Chamæpitys*, *Spiranthes autumnalis*,

and *Paris quadrifolia* are to be found in the district referred to. The first four I have certainly never met with between Whiteleaf Cross and Tring, but I am not quite certain whether I have found the fifth there or not.

I may as well mention that a ramble of a very few miles, in a north-westerly direction, from Whiteleaf Cross, will bring one to the most prolific station I am acquainted with for the *Fritillaria Meleagris*. It is, I believe, on a farm called Waldridge; but, at any rate, it is near the hamlet of Ford, in the parish of Dinton. The field in which the plant grows is known throughout the neighbourhood, and, as I am informed, even so far as Aylesbury, by the name of the "Crowcup Field," and many persons walk from miles round to gather the flowers every year. I have been told that *Thalictrum flavum* flourishes in the same locality as the Fritillary, but I have never seen it there. I have seen *Fritillaria* growing in two other places, one at Great Munden, Herts, recorded by the reverend author of the 'Herts Flora,' to whom I had the pleasure of being introduced some years since, and the other not far from hence ('Flora of Preston,' part ii.), but in neither place is it so plentiful as in the Bucks locality.

Having mentioned Dinton, I may state that the following are some of the scarcer plants to be found in that parish:—*Galeopsis Ladanum*, *Campanula hybrida*, *Linaria spuria*, *Thlaspi arvense*, *Sambucus Ebulus*, *Erysimum cheiranthoides*, *Hyoscyamus niger*, *Origanum vulgare*, *Rumex maritimus*, *Bryonia dioica*, *Tamus communis*, and a *Rhamnus*, I forget whether *ca-tharticus* or *Fragula*.

TODMORDEN BOTANICAL SOCIETY.

(From the *Todmorden Post*, March 9th.)

The monthly meeting of the energetic members of this Society was held on March 4th, Mr. Stansfield in the chair, when the excursions for the coming season were arranged. The times and places are as follow:—1st, March 30, Ramsden Wood; 2nd, May 4, Sheddin Clough; 3rd, June 1, Dentedale, Sedbergh; 4th, June 29, Whiteley Dean; 5th, August 3rd, Grand Excursion, North Wales; 6th, August 31, Silverdale; 7th, October 5, Grieve Clough and Boldsworth; 8th, November 2, Thieveley Scouts.

As some readers of the 'Phytologist' may wish to join these zealous Lancashire botanists, we have much pleasure in giving publicity to the foregoing appointments.

The number of specimens laid on the table was limited, but there were several very interesting forms of the Hart's-tongue, *Scolopendrium vulgare*; also some highly interesting varieties of *Polystichum angulare*, gathered by the President in the course of a recent ramble in the neighbourhood of Stainland; *inter alia*, *P. ang. cristatum*, and *P. ang. subtripinnatum*. A large leaf of the splendid ornamental-foliaged plant, *Maranta zebrina*, was brought from Vale Nurseries; also specimens, in flower, of the beautiful *Franciscea confertifolia*, the very curious *Rhipsalis salicornoides*, *Centradenia floribunda*, etc. Among hardy herbaceous plants from the same place, *Helleborus orientalis* and *H. olympicus* were remarkable.

The choice of books was duly proceeded with. From the eagerness with which almost every description of work was called for, it was evident to us that there could not be many books with uncut leaves in the Society's library; and we were most agreeably surprised to find that such of the books even as contain botanical mysteries, hidden under the guise of not very elegant Latinity, and designated by clumsy and uncouth Latin names, are not allowed to get dusty; on calling for a work of this character we found we had been forestalled. These are healthy signs, and we are glad to report them.

Our report would be very incomplete were we not to notice a specimen of a fossil plant, from the Millstone Grit rock, brought by T. E. Hammerton, Esq. The specimen in question was one of those denominated "swords" by the quarry-men. It was from eighteen inches to two feet in length, and much flatter than ordinary, presenting no appearance of having been cylindrical, except at the inferior end. It was difficult to say, from the condition in which the specimen was brought, whether it had belonged to the endogenous or aerogenous plants; if to the latter, it would probably be of the genus *Calamites* of Lindley and Hutton, but if so, it must have been an excorticated specimen, for no distinct traces were observable of the longitudinal grooves and cross-joints characterizing these plants; if to the former, it must have been a gigantic Reed: that such existed at the time the Millstone Grit was deposited, is very probable. The Presi-

dent stated that he had seen a fossil specimen, with the inferior portion of the stem more than six inches in diameter, with the protruding roots, exactly as we see in the larger kinds of Grasses at present existing.

We wish the members of this well-managed Society fine weather for their excursions, which we also hope will be very successful. Our readers will naturally look for a report of the rarities and novelties which they may have the good hap to discover.

Reviews.

Flora of Cambridgeshire ; or, a Catalogue of Plants found in the County of Cambridge. By CHARLES CARDALE BABINGTON, M.A., F.R.S., F.L.S. London: Van Voorst, 1860.

The 'Flora of Cambridgeshire' is an admirable specimen of its class. Four requisites are essential to the completeness of a local Flora. First, a competent knowledge of the plants. Second, a perfect acquaintance with the literature of the subject. Third, a thorough exploration of the field of study. Fourth, and not least, a critical eye for anything suspicious in the place of growth of any doubtful native. All these points have been most carefully attended to in the volume before us. In the fifty-six preliminary pages Mr. Babington gives us a full account of all that has been written by former botanists upon the plants of Cambridgeshire. Then follow some excellent topographical remarks; a map of the county; and a table of distribution, in which the plants are traced through eight subdivisions or districts.

The nomenclature and arrangement are naturally those of the fourth edition of the 'Manual of British Botany.' Generic and specific descriptions are omitted as unnecessary in a local Flora; and the matter under each species is limited to—1. The Latin specific name, followed by the English name, when there is a real one. 2. The denomination of the plant, as found in the works of Ray, Martyn, Lyons, Relhan, etc. 3. The general character of the places where the plant grows, its duration and period of flowering. 4. The special localities, followed in each case by the name of the authority, or the initials of the observer.

An important feature of Mr. Babington's 'Flora of Cambridge-

shire' is its historical character. Two hundred years have now elapsed from the time that the first Catalogue of Cambridgeshire plants was published by the illustrious Ray; many other Floras, Catalogues, and similar treatises have since appeared. Thus, the present Flora, as the last of a series of works upon the same subject, becomes at once a record of the progress of botany, and a witness of the changes which have taken place upon the surface of the country—of the consequent disappearance of many plants, the apparently recent introduction of others. Fully aware of the interest attaching to his work in an historical point of view, Mr. Babington has taken care to give, under each species, a reference to the earliest writer who mentions it as found in Cambridgeshire, and, when possible, the name of the original finder is stated; also, for the purpose of contrasting the present state of the Flora with its former condition, the localities which rest solely upon the authority of the older botanists, are distinguished by being printed in *italics*. If anything, perhaps too great respect has, in a few cases, been shown for ancient authorities. For instance, we cannot help suspecting that *Senecio sylvaticus* was mistaken for *S. viscosus* in the localities given; and possibly *Ænanthe fluvialis* for *Cicuta virosa*.

It is a special province of the local botanist to distinguish between indigenous and introduced plants, both by stating his own opinion, and by reporting exactly the kind of station in which a suspected plant occurs. Mr. Babington appears to have bestowed much care on this portion of his subject: he has been the first to adopt the use of a separate brand (‡) for the "probably," as distinguished from the "possibly" (†) and "certainly" (*) introduced species. He has also attached the mark of foreign origin to several of the "colonist" class. In both these particulars Mr. Babington is supported by the high authority of Alphonse De Candolle, as may be seen by a reference to the 'Géographie Botanique,' vol. ii. p. 642 (see also 'Phytologist,' n.s. vol. ii. p. 451.)

The following paragraphs, quoted from the Introduction, will give some idea of the surface of the country, and of the "great alterations caused by modern enclosures and drainage:"—

"Cambridgeshire," writes Mr. Babington, "may be described as flat and naked; nevertheless it is not so absolutely flat as is generally supposed. A range of conspicuous chalk-hills extends across the southern part

of the county, and the south-eastern district, consisting also of chalk, is undulating and well furnished with wood. To the north of the chalk country a broad belt of level clayey land occurs, having much flint gravel distributed over its surface. Formerly, each watercourse traversing this clayey district was bordered more or less widely by a morass, and some of its depressed parts formed tracts of fen.

“Until recently most of the chalk district was open and covered with a beautiful coating of turf, profusely decorated with *Aemone Pulsatilla*, *Astragalus Hypoglottis*, and other interesting plants. It is now converted into arable land, and its peculiar plants mostly confined to small waste spots by roadsides, pits, and the very few banks which are too steep for the plough. Thus, many species which were formerly abundant have become rare; so rare as to cause an unjust suspicion of their not being really natives to arise in the minds of some modern botanists.

“Until within about sixty years the whole of the clay district was open, although cultivated. The homesteads were collected together so as to form villages, and each had one or two little paddocks attached to it; the remainder of the parish, the ‘field,’ being without fences, and divided by slender lines of ancient turf, denominated ‘balks,’ into long narrow strips called ‘yard-lands.’ With a very few slight exceptions, all the ‘field’ is now enclosed, and the ‘balks,’ with the various plants which grew upon them, destroyed by the plough. Thus the plants native to the clay have suffered nearly as much as those indigenous to the chalk. Where they were formerly abundant they are now rarely to be found.

“Botanically speaking, the Fens have undergone an equally, if not more, destructive change. The employment of steam has made the removal of the water so certain, that nearly the whole level may be cited as a pattern in farming. With the water, many of the most interesting and characteristic plants have disappeared, or are become so exceedingly rare, that the discovery of single individuals of them is a subject for wonder and congratulation. There is scarcely a spot remaining (I only know of one, near Wicken) in which the ancient vegetation continues undisturbed and the land is sufficiently wet to admit of it coming to perfection. Owing to the necessary existence of numerous ditches to divide the fields and collect the water, those plants which are absolutely aquatic have not suffered so greatly as the others.”

No wonder that we find in the Appendix some 50 species enumerated as “Lost Plants.”

As might be expected, from its southerly position and its proximity to the European continent, Cambridgeshire affords a rich variety of indigenous plants. Including nearly eighty species marked as introduced, the species enumerated in the table of dis-

tribution amount to 928, a high number, when it is remembered that the maritime Flora hardly exceeds 30.

With the exception of *Ræmeria hybrida*, marked as probably introduced, Cambridgeshire has no British plant peculiar to itself. It shares its most characteristic species with Suffolk and Norfolk and others of the eastern counties. Such are *Apera interrupta*, *Medicago sylvestris*, *M. falcata* (all three treated as natives), *Statice caspia*, *Primula elatior*, *Silene Otites*, *Carum Bulbocastanum*, *Seseli Libanotis*, *Barkhausia fætida*, *Phleum Bœhmeri*, *Medicago minima*, *Galium anglicum*; and the well-known rarities of the Fens, many of them already lost, *Cineraria palustris*, *Sonchus palustris*, *Sturnia Læselii*, *Senecio paludosus*, *Viola stagnina*, etc., nearly all of which belong to the "Germanic" or eastern "type" of Watson. It is indeed the comparative prevalence of this group which forms a principal feature of its Flora, for out of the 127 species placed by Watson in his Germanic type more than 80 occur in Cambridgeshire.

At the same time it is remarkable that several of the most local "Germanic" plants are wanting, e.g. *Holosteum umbellatum*, *Veronica verna*, *Artemisia campestris*, *Verbascum floccosum*, apparently restricted to the adjacent counties of Suffolk and Norfolk; and others with a wider range, *Turritis glabra*, *Veronica Triphyllos*, *Cynoglossum sylvaticum*, *Carex bönninghausiana*. We miss also *Hordeum sylvaticum*, *Daphne Mezereon*, *Phyteuma orbiculare*, and some of our rarest Orchids, which do not reach so far north.

The southern or "English" type plants constitute a large proportion, and include, like the former group, many rare and local species, such as *Hypochæris maculata*, *Vicia gracilis*, *Chenopodium hybridum*, *Veronica spicata*, and many others, too numerous to be quoted at length.

The northern or "Scottish" and "intermediate" types have few representatives in Cambridgeshire: *Thalictrum saxatile*, *Drosera anglica*, *Sanguisorba officinalis*, *Potentilla verna*, *Parnassia palustris*, *Antennaria dioica*, *Campanula latifolia*, *Galeopsis versicolor*, *Pinguicula vulgaris*, *Potamogeton prælongus*, *Carex dioica*, and *C. filiformis*, nearly all of which range further south in the damper climate and more hilly country of the west of England.

Erodium moschatum, an escape only, is the single species of the "Atlantic" or south-western group which occurs in the list.

As before remarked, the sea-side plants are few, being confined to quite a small district, itself much circumscribed by recent draining operations. The only rarities are *Statice caspia* and *Obione pedunculata*, the latter probably extinct.

We must not forget to call attention to the valuable matter given in the Appendix, itself a most important contribution to British Botany, and which contains articles on the following subjects:—1. On *Thalictrum saxatile*. 2. On *Papaver dubium*. 3. *Viola canina*, Linn. 4. On *Arenaria serpyllifolia*. 5. On several Brambles. 6. On *Serrafalcus*. 7. On *Triticum*. 8. On the Vegetation of the Fens. 9. List of the Lost Plants of Cambridgeshire. 10. On the Geographical Relations of the Cambridgeshire Flora as compared with that of Great Britain.

It only remains for us heartily to recommend Mr. Babington's latest volume as a model County Flora. We feel convinced that it will add to the well-deserved reputation of its author, and we trust that the 'Flora of Cambridgeshire' will obtain an extensive circulation among all who take an interest in the distribution of British plants, as well as among the botanical students of the University, whose wants it is especially calculated to meet.

The Chemist and Druggist: a Monthly Trade Circular. Published for the Proprietor, by James Firth, Cannon Street West, London, E.C.

This number, among other well-written articles with which the 'Phytologist' does not meddle, contains one on the Natural Order *Ranunculaceæ*, which comprehends several officinal plants, viz. *Aconitum*, *Actæa*, *Hellebore*, *Nigella*, etc.

We need not quote the article on this Order to afford our readers a sample of the serial in which it appears, as most of them are already in possession of the information which it contains. The following extract from a reformer will speak for itself:—

“For my own part, I cannot coincide with many members of the trade, who deem it more judicious to fill the shop with fancy articles supplied ready for sale, and offering a certain amount of profit, if sold, to the slower, but more steady, lasting, and legitimate mode of increasing trade by means of the preparation and introduction of medicines in such a form as to render

them less nauseous, more concentrated, and purer, but equally efficacious. The arguments usually adduced against this are, that it involves a great deal of valuable time; that experiments are not conducted without expense; that the manipulation attending many chemical compounds requires experience and tact, which all individuals do not possess; lastly, and chiefly, that when prepared and submitted to the public, these preparations do not always take."

Another still more important suggestion is thrown out, and one which has a close relation to the matters with which *phytology* has to deal, viz.—

"That prizes be given to the person or persons who shall best make and produce the active principle of any given plant or plants, in such a form as to be fit for exhibition as medicines; that the process be made as simple and practicable as possible. That preference be given to such articles as rhubarb, gentian, etc., and that contributions be accepted of one shilling and upwards. Other minutiae to be arranged as circumstances may from time to time determine."

Our next extract will further illustrate the nature and objects of this periodical, which, we should state, is published for the trade, and sold only to members of this trading community:—

"*The Colouring Matter of Leaves.*—When leaves are extracted by alcohol, a green oil is obtained, which is called *chlorophyll*. Fremy has ascertained that this consists of a *blue* and a *yellow* principle, which he has succeeded in isolating: to the blue principle he has given the name *phyllocyanine*, and to the yellow the name *phylloxanthine*. Leaves which become yellow in autumn contain only the latter."

We may further say that this periodical, of which we have seen but two numbers, has our good wishes. May the favourable gale of prosperity constantly fill its sails, and may its circulation and usefulness be equal to the talent and enterprise of its proprietor and manager.

R.

BOTANICAL NOTES, NOTICES, AND QUERIES.

LIVERPOOL NATURALISTS' FIELD CLUB.

Sir,—It may interest some of your readers to know that the Liverpool Naturalists' Field Club intend having a grand Festival in St. George's Hall, about the middle of April; I have therefore the pleasure of enclosing a programme for your inspection.

Yours, etc., H. S. FISHER.

The Editor of the 'Phytologist' regrets that he did not receive the above

note in time for its being printed in the March number. He has much pleasure in giving publicity to the proposal; and judging from the names entered in the list of the General and Sectional Committees, it may safely be predicted that this effort to utilize and popularize all the branches of Natural History will be decidedly successful. The proposal has our good wishes, and if we were near Liverpool, the promoters of the good work should have our active and zealous co-operation. The following is the programme, for which we are obliged to Mr. Fisher:—

“The Committee having decided upon holding a Grand Anniversary Festival of the Liverpool Naturalists’ Field Club, in St. George’s Hall, during the month of April, earnestly solicit the immediate and active co-operation of every member of the Club, and of all who take an interest in the pursuits of Natural History. By early, combined, and sustained effort, it is believed that such a variety of rare and choice specimens in every department of Natural History may be collected as cannot fail to be generally delightful and instructive.

“Members who possess or can procure specimens or curiosities, cases of birds, insects, shells, minerals, fossils, etc., books, plates, or diagrams illustrative of Natural History, which they are willing to lend for exhibition, are requested to communicate at once to the Secretary of that department to which the objects may belong, stating what amount of space will be required for their effective display.

“Vegetable or animal products used in manufactures or the arts will be acceptable:

“Ingenious members will oblige by sending in sketches of suitable designs for ornamentation, in keeping with the character of the Hall and the objects of the Exhibition.

“A committee of ladies will kindly assist in the æsthetical department, and superintend the decorations and commissariat.”

RETROSPECTIVE.

Arenaria balearica.—This interesting little plant, the Earl of Ilchester has informed me, grows now on several walls and garden buildings on his Lordship’s estate, Abbotsbury, Dorset. Its origin or how it first came there is unknown, but there it is in tolerable plenty, and it has been observed in the chinks and crevices of damp walls for a considerable period,—several years; I understood at least twenty years. W. P.

VIOLA TRICOLOR, VAR. ARENICOLA.

(Phytol. iv. 301.) The author naïvely subjoins, after a long description of the above variety, the following:—“I cannot here find any characters by which to separate this plant from *V. tricolor*, of which Mr. Babington very justly considers it a variety.” It might be asked, why, then, did he trouble himself by describing it, and why did he cumber half a page of the ‘Phytologist’ with a long description of a well-known plant? Is not this a specimen of scientific twaddle? Q.

ANTIRRHINUM ORONTIUM.—This agrarial plant has also been sent from Perth, and it is recorded in the list of additional species detected by

our keen observant correspondent. The range of the species must *now* be extended from York to Perth, an extent of above two hundred miles.

ANTIRRHINUM MAJUS arrived in the same parcel and sent by the same obliging friend. These two species illustrate the uncertainty that clings to recent very unsatisfactory attempts to separate what are called native from what are called introduced plants.

Antirrhinum Orontium is reported to have been found in thirty counties, and *A. majus* probably in sixty; yet the latter is *now* all but universally deemed an introduction and the latter a native. They might be put under the same category without violating historical proof or natural probabilities.

LATHYRUS TUBEROSUS.

The above plant is entered among British productions by Dr. C. Merrett, in his 'Pinax Rerum Naturalium Britannicarum,' ed. sec., p. 46.—*Glandes terræ*, Peas Earth-nut G. (Gerrard), 1236. *Lathyrus arvensis sive terræ glandes*, P. (Parkinson, 1061).

Note.—It may be stated that the doctor quotes no authority nor locality. N.

EXTRACTS FROM CORRESPONDENCE.

. . . . We had the pleasure to see abundance of *Galanthus nivalis* in its beauty, and apparently quite wild, in some rough fields by the roadside as you go from Corwen to Cerrig y Druidion, *Adoxa moschatellina* growing near it. Besides the Snowdrop, we can now add to our Merionethshire Flora *Narcissus Pseudo-Narcissus*, which grows plentifully on the lands of Garth Llwyd, a small farm in this parish. The Daffodil also grows for a considerable distance on banks and borders of woods and fields near the railroad between Ruabon and Wrexham, in the adjoining county, Denbighshire; also *Helleborus fetidus*. W. P.

Llanderfel, March, 1861.

Communications have been received from

John Sim; John Lloyd; Charles Howie; George Wolsey; Tom Stansfield; C. J. Ashfield; W. Winter; H. S. Fisher; Harriet Beisly; Sidney Beisly; J. B. Mackay; J. S. M.; Rev. W. M. Hind; W. Pamplin; J. G. Baker.

BOOKS RECEIVED FOR REVIEW.

Flora of Preston and its Neighbourhood, Parts I. and II.
The Gardeners' Chronicle, Feb. 16th.
The Chemist and Druggist.
Notes on Books.
The Todmorden Post, March 9th.
The Preston Chronicle, March 17th, July 14th, and August 11th, 1860.
A Priced List of Hardy, Herbaceous, and Alpine Plants, by A. Stansfield and Sons, Todmorden.

CHAPTERS ON BRITISH BOTANY.

CHAPTER VI.

Dr. William Turner and the earlier British botanists.—The Father of English botany.—Turner and Ray.—Dr. Bulleyn.—Dr. Thomas Gibson.—Gesner.—Harrison.—Merrett.—Turner's influence on his contemporaries and on posterity.—Plants of Northumberland, Cambridge, Middlesex, Kent, Somerset, etc.—General List of British Plants described in the Herbal.

Dr. William Turner, the author of Turner's 'Herbal,' and also of many other works, on theological controversy, medicine, etc., has been very justly called the "Father of British Botany." He is the first original English botanist, and he was evidently as well read in the works of Theophrastus, Dioscorides, Pliny, Paulus Egineta, Avicenna, Simeon Seth, etc., as he was well acquainted with the plants of England and Germany. His great work on botany is the result of much observation and experience, and a lasting monument of his industry, erudition, and critical judgment. One of his contemporaries, Dr. Bulleyn, observes, that his "Boke of Herbes will alwaies growe grene, and neuer wither as long as Dioscorides is helde in minde by us mortal wights."

The illustrious Mr. John Ray well deserves the honour of precedence among all English authors as the first who introduced method or system into this branch of human knowledge; so Dr. William Turner was the first writer, in our vernacular, who added the fruits of his own researches to the meagre compilations from the 'Schola Salernitana,' E. Macer, Bartholomæus, the 'Grete Herball,' Dr. Linacre's Macer, etc. etc.

Dr. Pulteney, in his 'Sketches of the Progress of Botany in England,' relates that "the true era of botany in England commences with Dr. William Turner, the earliest, most judicious, and most learned authority, whose abilities, both as a critic and a philologist, are highly distinguished, and whose uncommon diligence, learning, and originality have secured him a certain passport to posterity."

In the present series of chapters it is not proposed to enter, with much detail, into the lives and works of our eminent botanists, but rather to offer succinct notices of the British plants described in their works, stating when, where, and by whom they were first observed; but a little relaxation of our plan will be

made in treating of the life and labours of the first real observer and true describer of our native species.

The following brief notice of Dr. Turner, and of his works, is compiled from 'Summarium Illustrium Majoris Brit. Scriptorum,' by John Bale, Bishop of Ossory, from Thomas Fuller's 'Worthies of England,' from Wood's 'Athenæ Oxonienses,' Tanner's 'Bibliotheca,' and last but not least, the Histories of Northumberland.

William Turner, as Dr. Pulteney writes, vol. i. p. 59, "was born at Morpeth, in Northumberland, and educated at Pembroke College, Cambridge, under the patronage and assistance of Sir Thomas Wentworth;" and Hodgeson, in his 'History of Northumberland,' vol. ii., supplies the following note about our author:—

"Just at the dawn of literature in England, two stars of pre-eminent lustre appeared in Morpeth,—William Turner and Thomas Gibson, both justly celebrated as divines, physicians, and naturalists."

In Mackenzie's 'View of the County of Northumberland,' vol. ii. p. 184, there is a note to the effect that "an Herbal," by Thomas Gibson, still exists in MS. Can any reader of this inform the public where this early unpublished treatise lies buried?

Fuller's notice of Turner, see 'Worthies of Northumberland,' is very brief, very lively, and, like some other articles by this quaint author, is more conjectural than correct. It is not an exhaustive, but it is a very good-natured account of this early botanist.

"He was born at Morpeth, bred in the University of Cambridge, where he became an excellent Latinist, Grecian, orator, and poet. He was very zealous in the Protestant religion, writing many books in the defence thereof, and much molested for the same by Bishop Gardiner and others. He was kept long in durance, and escaping at last by God's Providence, fled beyond sea. At Ferrara, in Italy, he commenced doctor of physic: there gaining his degree with general applause. He wrote a great herbal and a book of physic for the English gentry, as also treatises of plants, fishes, stones, metals, etc. He afterwards went into Germany, where he lived in great credit and practice, and, as I conjecture, died there in the reign of Queen Mary.* Reader, I conceive him worthy of thy special notice because he was both a confessor and a physician, qualifications which

* Neither of the late learned editors of Fuller's 'Worthies' has thought it worth his while to correct by a note the erroneous conjecture of their author.

meet not every day in the same person. . . . Thomas Gibson. It is pity to part him from the former, because symbolizing in many particulars of concernment.

- Both {
1. Born in this county, and in the same town of Morpeth.
 2. Flourishing at the selfsame time.
 3. Physicians by profession; this Thomas did incredible cures of disease.
 4. Writing of the same subject, the nature of *herbs*.
 5. Professed enemies to Popery.*

Thus far honest Thomas Fuller.

It will be seen below that Dr. Turner lived several years after the time when Fuller conjectures that he died, and he was as hostile to Popery as he was zealous for the Reformation.

Industrious Anthony Wood, who had no partiality for ultra-Protestants, informs his readers that "he, Turner, was much addicted to the opinions of Luther," and that he was besides hot-headed and meddlesome. This crabby early authority supplies us with the following account of his death after enumerating some of his works:—

"After all the rambles and troubles that our author Turner made and did endure, he did quietly lay down his head and departed this life 7 July in 1568. Whereupon his body was buried in the church of St. Olaves, † in Hert Street, in London, leaving behind him several children."

Dr. Bliss, the amiable commentator and editor of 'Athenæ Oxonienses,' informs the readers that

"He (Turner) married the daughter of George Ander, an Alderman of Cambridge, who after the death of her first husband married to Richard Cox, Bishop of Ely, and in her second widowhood did, in memory of her first husband, Dr. Turner, leave to Pembroke Hall, in Cambridge, of which he had been Fellow, an annuity of five merks, and some pasture lands in Knapwell."

John Bale, the early literary historian, and Bishop of Ossory, writes very forcibly in praise of our author. For example, he affirms that he was nowhere branded with the anti-Christian mark, (*nusquam characterizatus, hoc est, nec rasus, nec unctus, quod auditu fit rarissimum,*) "he had never received the tonsure, and was not consecrated to be a priest." Hence it may be inferred

* From Nichol's ed., 4to, 1811. Nuttall's ed. is word for word like Nichol's.

† Tanner adds to Wood's account,—“vel in ecclesia Crutched Friars (Strype, in vita Parker).”

that this gave a handle to Anthony Wood, who reproaches him for undertaking the office of a preacher without authority. Possibly he received deacon's orders at Cambridge, and so was authorized to preach.

In Bale there is the following list of Turner's works :—

De Naturis Herbarum.	Epigrammata Diversa.
In Catonis Distica Moralia.	Prudens admodum, et si quid.
Sententiarum Flores ex Variis.	Causa, candide Lector, initi labo.
Ad Unionem Dissidentium.	Difficilia quæ Pulchra, etc.
De Arte Memorativa.	Non est ignotum tuæ dominationi.
In Publij Mimi Versiculos.	Quamvis tam veteres illi Philo.
Pro Insequenda Romana Vulpe.	Alienum est omne quicquid oper.
Contra Wintoniensis Technas.	Licet ab ipsa pueritia fuerim.
De Missa Papistica.	Haud est tuæ Majestati Illustriss.
De Hierosolymorum Excidio.	

Mackenzie, in his 'View of Northumberland,' states that Dr. Turner was elected Fellow of Pembroke College in 1531; but Dr. Pulteney's account is that he was a student of that College in 1538. Are there any matriculation-books or rolls of this early date extant in Cambridge University to help to clear up this point? His first work on plants was printed at London, 1538, by John Bydel.* In this tract he describes himself as a very young man, and on the whole writes in a humbler style than that which would naturally be expected in an author who had been seven years a Fellow of a College.

* "Libellus de re herbaria novus, in quo herbarum aliquot nomina Græca, Latina, et Anglica habes, una cum nominibus officinarum, in gratiam studiosæ juventutis nunc primum in lucem editus." Or, in English, 'A New Book on Plants, with their Greek, Latin, and English Names, Official Uses, etc., for Junior Botanists.' In an address to the reader, printed on the back of the titlepage, he notices that it may be justly wondered why a beardless youth like himself, very slenderly skilled in the science of medicine, should venture to publish a work on botany, while he was aware that there were so many persons in the country better acquainted with the subject than himself.

The following are specimens of this very interesting tract, which is in quarto, and is contained in two sheets and a half, or ten folios :—

"*Viscum Angli vocant Mysceltyne, aut Myscelto* (called in English Mysceltine or Myscelto). Densissimus iste frutex nusquam nisi in arboribus nascitur; e terra nunquam pervenit. Viscum tot sæcula Anglis ignotum fuisse demiror, quum in pyris et malis sylvestribus nusquam non proveniat."

"This very bushy shrub grows nowhere but on trees, never on the ground; and

Our author's work, 'Historia de Naturis Herbarum Scholiis et Notis Vallata,' may be the work entered first in Bale's list, see *ante*. Pulteney is probably mistaken in suspecting that Bumaldus is the only author who notices this treatise. He is certainly so in stating that this is Turner's first botanical work : see below.

The 'Libellus de Re Herbaria' was printed at London, 1538 ; the 'Historia de Naturis Herbarum' was printed at Cologne, in 1544.

There is a fuller account of our author's literary labours in Bishop Tanner's 'Bibliotheca;' and the following list is partly derived from A. Wood and partly from Tanner :—

The Hunting of the Romish Fox, which more than 7 years hath been hid among the Bishops of England, etc. Basil, 1543.

A History of Birds, from Pliny. In Latin. Colon. 1544.

Rescuing of the Romish Fox, etc. 1545.

Hunting of the Romish Wolf. (Pro Insequenda Romana Vulpe. Bale.)

Dialogue Containing an Examination of the Mass, etc. (De Missa Papistica. Bale.)

New Herball. (De Naturis Herbarum. Bale ?)

A Preservative or Triacle against the Poison of Pelagius. 1551.

A New Book of Spiritual Physic. 1555.*

A Book of the Nature and Properties of the Baths of England, etc.

A Treatise of the Bath at Bath.

it is singular that it should have been unobserved for so many ages in England, where it abounds everywhere on apple and pear trees."

"*Mercury vocatur; ejus duo sunt genera, mascula et femina. Masculam haud temere apud nos reperitur; vidi tamen Cantabrigie, in horto aulae regiae,*" etc.

"There are two sorts of Mercury, the male and the female. The latter is un-frequent in our country; but I have seen it in the gardens of King's College, Cambridge."

"*Lupus salictarius, officinis dicitur lupulus.*" In officinal language, *Lupulus*; and in English, Hoppes."

"In the shops the Daisy is called the lesser Consolida; in the language of the country a Daisy. In Northumberland we call that a Daisy which has a purple flower and is raised in gardens; the flower we call a Banwort."

The imprint of this rare tract is "Londoni apud ioannem Bydellum, anno dni. 1538."

* In his preface to this work he relates the following :—"When as of late yeares I practised bodely phisick in England, in my Lorde of Sumersette's house, divers sick beggars came unto me, and not knowing that I was a phisician, asked of me mync almose. To whom I offered to heale their diseases for Godde's sake. But they went by and by awaye from me and would none of that."

The Nature of Waters.

The Nature of Wines.

The Nature and Virtue of Triacle.

The rare Treasure of English Baths.

Unio Dissidentium, containing the Agreement of the Doctors with Scripture, and also of the Doctors with Themselves. Dedicated to Domino Wentworth.

Another work or tract is entitled,—

The Comparison of the Old Learning and the New.

Tanner writes that William Turner was ordained a priest by Ridley, also that about the same time the University of Oxford conferred on him the degree of M.D., on his appointment to the office of Physician to the Duke of Somerset.

In his Grace's house at Syon he wrote his Epistola prefixed to his little book 'De Nominibus Herbarum.'*

Previous to his receiving these honours and preferments, or soon after his return from exile, on the accession of Edward VI., he had been promoted to a prebendship (Botevant) in York-Minster, also to a canonry in Windsor, and to the Deanery of Wilts in 1550.

Soon after this period, viz. in 1551, Dr. Turner published his most important work, viz. his 'Herbal,' which was dedicated to his patron, Edward, Duke of Somerset, and was printed by "Stuen Myerdman, and soolde in Paule's Churchyard, at the sygne of the Sprede Egle, by John Gybkin."

This, which is the first edition of the first part, contains title, prologue (two leaves or folios), ninety folios, and table of contents. The obverse side or page of the last leaf is blank.

His zealous advocacy of the principles of the Reformation, or of the new doctrines, as they were then called, rendered England an unsafe abode during Mary's reign, and he again went into voluntary exile. The second part of his 'Herbal' was printed at Cologne; hence it is probable that during his sojourn on the Continent he resided near this city. This part is dedicated to Sir Thomas Wentworth, Lord Wentworth, and was printed by Arnold Bircman, 1562.

* In 1548 Dr. Turner published a small volume, entitled, 'Names of Herbes in Greke, Latyn, Englyshe, Duché, and Frenshe,' 12mo, London.

This work is not mentioned by the literary historians above quoted. It is described by Pulteney, vol. i. p. 64.

When Queen Mary died, he returned to his native country, and was reinstated in all his Church preferments. The third part of the 'Herbal' was printed by the same printer in 1566, and has the following title:—"The Thirde Parte of Wm. Turner's Herball, contayning the Herbes, Rootes, and Fruytes whereof is no mention made of *Dioscorides*, *Galene*, *Plinye*, and other olde authors. Imprinted at Collen, by Arnold Birekman, in the year of our Lord 1566." The dedication is to the Company of Surgeons, and is dated from Wells, June 24th, 1564.

In 1568 all the three parts were reprinted at Cologne, in black-letter, with a dedication to Queen Elizabeth. This was the year of the author's death.*

There are several reasons why the first rank, the most honourable place, should, among the early botanists of England, be assigned to Dr. Wm. Turner; for, first, his knowledge was multifarious, not merely as a naturalist, but as a scholar; secondly, he was a good philologist, being well acquainted with the languages of Greece and Rome, in which all science at that period was communicated, and, besides this accomplishment, common to all learned men, he was well acquainted with German, which was then called Dutch, as it still is in Germany, and also with French, Italian, and English; thirdly, he condescended to write his 'Herbal' in our vernacular, in a language scouted by the learned at this early period; fourthly, to his extensive knowledge of plants he added something still more useful and attractive, a

* Hodgson, as quoted above, gives the following honourable testimony to the merits of Dr. Turner:—"William Turner, M.D., a native of Morpeth, is a character whom I wish from the first to introduce to my readers as one entitled to high consideration for his learning and labours. No one will dispute the competency of Conrad Gesner to pronounce judgment on the scholars and natural historians of his time; and he, in the preface to his *History of Birds*, printed in 1555, has said that before himself a few in modern times had briefly written on the names and natures of birds, among whom Gyb. Longolius, a German, and William Turner, an Englishman, were both men of the greatest learning and deserving of the highest praise." Also, in his book '*De Herbis Lunariis*,' he says,—“About fifteen years since, Turner, an Englishman, returning out of Italy, paid me a visit, and I found him a man of such excellent learning, both in medicine and most other sciences, that I can scarcely mention such another.”

William Harrison, another contemporary of Dr. Turner's, in his '*Historica Descriptio Britanniaë*,' under "Bath," calls him "Dr. Turner, the father of English physieke," and in another place "the famous clerk, Doctor Turner."

"Turner," says Dr. Merrett, in his '*Pinax*,' "was the most indefatigable man of his age, and published a book on birds, little in size but great in value."

feeling for and a sympathy with suffering humanity; and he wrote his 'Herbal' not to show the extent and variety of his acquirements, nor principally that he might contribute to the enlightenment of his contemporaries and posterity, but he laboured with a more charitable intention, viz. with the view of alleviating the ailments incident to the sinful and mortal condition of humanity.

In his preface he very forcibly apologizes for the language he employs, and asks "whether it were better that many men should be killed through the apothecary's ignorance of Latin, or that the herball should be set forth in English?" And again, he says, "Whether it were better that the surgeons should kill men for lack of knowledge of herbs, or that an *herball* should be set out into them in English, which for the most part understand no Latin at all, saving such as no Latin ears can abide?" (See Dedication, fol. 2.) These are pertinent questions, and the man who had the moral courage to contravene the conventionalities of his age deserves to be ranked among the prominent advocates of human progress.

Dr. Turner's erudition, judgment, industry, observation, and experience, were universally acknowledged by his contemporaries, but the honour which they paid to his meritorious abilities was too much like the cold tribute rendered to honesty, if we may credit the Latin moralist, who casts a little of the salt of satire into his moral hash: "*Probitas laudatur et alget*" (honesty is praised, and, shivering with cold, it starves).

Lobel, the contemporary of Turner, writes in his 'Adversaria,' p. 93, ed. 1756, eight years after the Doctor's decease, that he had seeds of *Cranbe maritima* from him, "cujus semina jam diu medicus Anglus hac parte exercitatissimus, Turnerus nos donârat eamque monocaulum et *μονοσπερμον* vocandam a semine singulari volebat" (and who wished it to be named monocaulis and monospermous from its single seed). On referring to Turner's 'Herbal' we cannot find this account, which Lobel probably quoted from memory, without reference either to the 'Herbal' or to the communication. The Dover Cole will be subsequently noticed. Lobel, in his congratulatory epistle to John Gerard on the accomplishment of the great work of the last-mentioned author, gives Turner a place among his botanical worthies, *Matthiolus Dodonæus, Turnerus, Clusius, etc.* Gerard

mentions in his epistle to his "courteous and well-willing readers the excellent worke of Master Doctor Turner."

In John Parkinson's notice of his predecessors, Turner's name does not appear. Johnson, the learned editor of Gerard, gives the following testimony to the merits of this great botanist:—

"Let me now at last looke home, and see who we haue had that haue taken pains in this kinde. The first that I finde worthy of mention is Dr. William Turner, the first of whose works that I haue seene was a little booke of the names of herbes, in Greek, Latine, English, Dutch, and French, etc., printed at London, anno 1548. In the yeare 1551 he set forth his Herbal, or History of Plants, where he giues the figures of *Fuchias* for the most part. He giues the names in Latine, Greeke, Dutch, and French. He did not treat of many plants. His method was according to the Latine alphabet. He was a man of good judgment and learning, and well performed wat he took in hand."*

It may be inferred that Turner's 'Herbal' was then, as it still is, a scarce book, and it is hoped that this will be received as an apology for the seeming neglect with which it has been treated by both ancient and modern botanists.†

We will now give an outline of the contents of this primary and most excellent English Herbal, premising this remark, viz. that our object is to elucidate the history of our English native species, rather than to enter upon the great subject of plants in general.

Both Johnson and Pulteney relate that the arrangement of the 'Herbal' is alphabetical, according to the Latin names; but the author does not adhere very strictly to this order; he employs both Greek and Latin names, which are followed by those under which his plants were known in Germany, France, and England; for the first plant on the first page of the first edition (part i.) is *Absinthium*, and the two last are *Agrimony* and *Bean*, *Agrimonia*‡ and *Faba*.

* Johnson's 'Gerard,' Address to the Reader.

† Dr. Pulteney, who devotes about twenty pages of his work to our author, remarks "that the succeeding herbalists, Gerard, Johnson, and Parkinson, seem not to have paid due honour to his merit and learning;" and subsequently states that "in justice to Turner they should have noticed all the plants he has recorded, particularly the natives of England."

"Ray," he further relates, "at the distance of nearly a century, was sensible of his worth, having styled him a man of solid erudition and judgment" (Pulteney's Sketches, vol. i. p. 76). See Raii Hist. Plantarum generalis, in explicacione nom. abbreviatorum, etc.

‡ He employs the Greek name *Eupatoria* for *Agrimony*. This uncertainty about

The index, or register, which is on the recto side of the last leaf, is alphabetical according to the English names, and the number is nearly one hundred and seventy.

The localities noticed in England are chiefly Northumberland, his native county; Cambridge, where he was educated; Dover, by which he went to the Continent; Sion House, Isleworth, and Richmond; and Somersetshire, where he was chiefly domiciled after his last return to his native country. The continental localities are chiefly Bonn, on the Rhine, Worms, Basle, and several parts in the north of Italy.

The second part begins with *Fagus* and ends with *Xanthium* and *Xyris*, and here, as in the first part, the names are alphabetically arranged. The number in both parts, with the additions made in the third part, is about three hundred. This last part of the work is dated from "Welles, June 24th, 1564," and dedicated to the Company of Surgeons, to whom he apologizes for its imperfections thus:—"Being so much vexed with sickness, and occupied with preaching and the studye of divinitie and exercise of discipline, I have hadde but small leisure to write Herballes."

Turner, according to Pulteney, "is the first author who has given a figure of the Lucern, which he first brought into England, and named *Horned Clover*. He treats largely of its cultivation from Pliny, Palladius, and Columella."

Dr. William Turner's merits as an English botanist will be better understood, and the amount of our obligations to him will be more precisely known, when his labours in this department of the science can be compared with those of his predecessors, his contemporaries, and his immediate successors. This part of the general subject will constitute the matter of a subsequent chapter. For the present our account is limited to the British plants and their localities, which were first, as far as is known to us, described and published as indigenous, native, or spontaneous productions.

The number of English plants described in Turner's 'Herbal' is upwards of three hundred, about one-third of those enumerated in Ray's 'Catalogue of the Plants of England,' and barely one-sixth of the species now generally believed to be of spontaneous

the names, *i. e.* Greek or Latin, causes much trouble to the students of Turner's 'Herbal.' But the students, or even readers, of this excellent work are not numerous.

British growth. The following is an account of our author's discoveries,—for all his plants may be deemed such, as no one before him described the localities or the plants, and few did so much as name them, as native productions.

As has been hinted above, Wm. Turner's English plants may be arranged in four classes, viz. :—1st. Plants of Northumberland and its vicinity. 2nd. Cambridge and the contiguous counties. 3rd. Middlesex, Surrey, and Kent. 4th. Somersetshire, etc.

The Northumberland plants specially recorded by Dr. Turner (his own order is followed) are the following :—

1. *ARTEMISIA MARINA*. "Sea Wormwood. In oure tyme it is plenteously founde in England, about Lynne and Holly Iland (Holy Island), in Northumberland," etc. (Pt. i. fol. 1.)

2. *PARIS QUADRIFOLIA*. "(One berrye.) The herbe that hath bene taken for lyberdes bayne, groweth plenteously besyde Morpeth, in Northumberland, in a wod called Cottyng Wod." (Pt. i. fol. 4.)

3. *SCILLA NUTANS*. This, which our author calls "*Hiacinthus*, is comen in Englande, though it be not of the beste, and it is called Crow towes, crow fote, and crow tese. The boyes in Northumberlande scrape the roote of the herbe, and glew theyr arrowes and bokes wyth that slyme that they scrape of."

4. *BELLIS PERENNIS*. "In Northumberlande men call thys herbe a banwurt, because it helpeth bones to knyt againe." (Pt. i. fol. 31.)

5. *HELLEBORUS VIRIDIS*. Syterwurt. "When I came in to Englande, I dyd hear that dyuerse husband men whyte (with) whome I spake vsed (used) to put the roote of berefoot into beastes eares, and called the puttynge in of it syteryng of beastes, and in sume place called the herbe syter wurte." (Pt. i. fol. 64, 65.) "I haue seen both the kyndes in Englande: the one kynde in gardynes whyche is wylde in Germany; and the other kynde with the broader leaffe whyche is onely in gardynes in Germany (as farre as I could perceyue) in Northumberlande in the weste parke besyde Morpeth, a good stone cast from the water syde in the syde of the hylle." (Pt. i. fol. 65.) "I holde that a man for defaut of it (*H. niger*) may use that kynde of Berefote that goeth every year into the ground (*H. viridis*), whereof groweth greate plentye in a parke besyde Colchester, and in the west parke besyde Morpeth, a little from the river called Wanspeck." (Pt. ii. fol. 160.)

6. *ERICA*. "The hyst hethe that euer I saw groweth in Northumberland, which is so hyghe that a man may hyde hymself in." (Pt. i. fol. 85.)

7. *JUNIPER*. "In England it groweth most plenteously in Kent; it groweth also in the bysshopyrche of Durram, and in Northumberlande." (Pt. ii. fol. 25.)

8. *LEPIDIUM LATIFOLIUM*? In Turner this is named *L. magnum*. "Thys *Lepidium* that Pliny and Paul describe, groweth plentifully about the water syde that rynneth thorow Morpeth in Northumberland, in suche places as great heapes of stones are casten together with the myght of a great spat or flood." (Pt. ii. fol. 35.)

9. *LINUM USITATISSIMUM*. "Flax, which is called of the Northern men Lynt, in Duche Flachs, etc., groweth very plentifully also in south parte," etc. (Pt. ii. fol. 39.)

10. *MEUM ATHAMANTICUM*. "Meu groweth in the bisshoprik of Durram, in wild mores, called felles, and viii. myles about Bon (Bonn), in Germany, in a countre called Caltland." (Pt. ii. fol. 57.)

11. *OROBANCHE MAJUS*? "*Orobanche*, Chokewede (Pt. i. fol. 88), groweth in many places in England, bothe in the Northe countre besyde Morpeth, whereas it is called our Lady of New Chapellis flour,* and also in the south countre, a lytle from Shene, in the broum closes." (Pt. ii. fol. 71.)

12. *PETASITES*. "Thys herbe is called in Northumbrelande an Eldin, and in Cambridgeshyre a Butterbur, in Duch Pestilenz Wurz."

13. *PLANTAGO MAJOR*. "The greatest kynde is called in the South parte of Englande Plantayn or grete Plantayn, and in the north countre Waybrede or grete Waybrede." (Pt. ii. fol. 94.)

14. *SORBUS AUCUPARIA*. "The tre groweth in moyst woddes, and it is called in Northumberlande, a rowne tre or a whitken tre, in the south partes of England, a quicke beame tre." (Pt. ii. fol. 143.)

The plants of Cambridgeshire and neighbouring counties observed and described by Dr. Turner are,—

1. *LIGUSTRUM VULGARE*. "Pryvet groweth very plentifully in Cambrich shyre in the hedges, and almoste in euery gardin in London." (Pt. ii. fol. 38.)

2. *MYRRHIS ODORATA*. "It groweth . . . very lyke unto Humlock (Hemlock). I never saw greter plenty of it then I haue seen in the hortyard (orchard) of Pembroke hall in Cambridge, where as I was som tyme a pore felow." (Pt. ii. fol. 60.)

3. *LENTILS*. "Lentilles grow in great plenty in Cambridge shyre, and all throw Germany, where as they are husked and used for a meat." (Pt. ii. fol. 33.)

* "Thys herbe is called about Morpeth in Northumberland, new-chappell floure: because it grewe in a chappel there in a place called Bottell Bankes, where as the unlearned people dyd worslyppe the Image of synt Mary, and reckened that the herbe grewe in that place by the virtue of that Image." (Fol. 88.)

4. *SAMBUCUS EBULUS*. "Walwurt groweth mych about Cambridge." (Pt. i. fol. 83.) "I have marked in our Englyshe ebulo in Cambrýge shyre that the stalk was round and not foure square." (Pt. i. fol. 58.)

5. *PETASITES*. "This herbe is called in Northumberland an Eldin, in Cambridge shyre a Butterbur." (Pt. ii. fol. 83.)

6. *HORDEUM MURINUM*. "The way bent (way bennet) hath a leafe like grasse, and groweth plentuously in Cambridgeshire about highē ways." (Pt. ii. fol. 17.)

7. *ONONIS ARVENSIS?* (*SPINOSA*). "In Cambrýge shyre this herb is called a whyne but I put pety to it to make dyfference betwene thys herbe, and a fur, whyche in manye places of Englande is also called a Whyne." (Pt. i. fol. 18.)

8. *PYRUS COMMUNIS*. "*Pyra superba*, that is to say, prowde peares, are lytle and sonest rype, and these are called, in Cambridge, Midsummer peares." (Pt. ii. fol. 108.)

9. *EUONYMUS EUROPÆUS*. "Spyndell tree. Althoughē I haue seen this tree oft tymes in Englande, and in moste plenty betwene Ware and Barkway, yet for all that I never could learne an Englyshe name for it." (Pt. i. fol. 89.)

10. *TEUCRIUM SCORDIUM*. Water Germander. "*Scordium* groweth in Oxfordshyre and in Cambridge shyre in good plenty." (Pt. i. fol. 130.)

The following plants, localized in Turner's 'Herbal,' are some of those growing in the south-eastern shires of England:—

1. *TRAGOPOGON MINOR?* "Gotes bearde. Let us rede as Theophrastus doth: Out of the top eummeth a hore whyte bearde, wherupon it is called gotes bearde: thes be the wordes of Theophrastus. The herbe whiche we cal gotes bearde in barune places hath but a short stalke, but in gardines and in ranke meddos it hath a longe stalke, and full of ioyntes like knees. About London I haue sene in the feld thys herbe wyth a swete roote and wyth blake sede and a yelow floure, and after the floure is gone, with a great dele of longe whyte doune lyke tuftes of whyte here, but about Colon (Cologne) I saw it whyche had whyte sede and a bytter roote, all full of mylke, as in other places it doth appere." (Pt. i. fol. 31.)

2. *HYPERICUM CALYGINUM?* (*HIRCINUM?*) "Greate Saint Johnes wurte. I haue sene it dyuerse tymes in Syon parke." (Pt. i. fol. 16.)

3. *ANEMONE PULSATILLA*. "It groweth in greate plenty aboute Bon (Bonn) in Germanye, and about Oxforde in Englande, as my frend Falconer tould me." (Pt. i. fol. 17.)

4. *ANTHEMIS NOBILIS*. "Chamomye. This herbe is scarce in Germany, but in England it is so plentuous that it groweth not only in gardynes, but also viii. myle about London it groweth in the wylde felde,

in Rychmonde Grene, in Brantfurde Grene, and, in mooste plenty of al, in Hunsley Hethe." (Pt. i. fol. 18, 19.)

5. *AVENA SATIVA*? "Ther is another kinde of otes, called pill otes, which growe in Sussex; it hath no husk abydyng upon it, after that it is threshed and is lyke otemele (oatmeal)." (Pt. i. fol. 29.)

6. *MYRICA GALE*. "There is a shorte bushe that groweth in the fenne called in Duche Gagel, in Cambridgeshyre Gall, and in Summersetshyre Goul or Golle." (Pt. iii. fol. 47.)

7. *VERONICA SERPYLLIFOLIA*. "Paulis betoni. Thys herbe groweth in Syon gardyn, and in dyuerse woddess not far from Syon, wyth a whyte floure myxed with blewe, and wyth a sede lyke unto bursa-pastoris." (Pt. i. fol. 34.)

8. *BRASSICA OLERACEA* and *CRAMBE MARITIMA*. "There are yit ii. kyndes of wyld cole, wheroff I fynd no mencion in any wryter. The one is a wonderful great cole, and hath leues thrise as thike as euer I saw any other cole haue. It hath whyte floures, and round berryes, like yuy (ivy), where in the sede is conteyned."

B. OLERACEA. "I neuer saw it in all my lyfe, sauynge in Douer clyffes. This is myche lyke the other cole; but it is whyter, and rougher, and bytter with all." (Pt. i. fol. 37.) "This herbe groweth at Douer (Dover), harde by the see syde. The other kynde of wyld cole groweth euer by water sydes, with a leafe indentyd, as rokket is: in taste, smelle, fasshione, floure, and sede, lyke unto the gardyne cole; of thes I name in Latyne *brassicam do-abricam*, in Englyshe Douer cole: because I found it fyrst besyde Douer. The secund kynde I cal *brassicam fluviatilem*, and in English waterkole, because it groweth euer by water sides." (Pt. i. fol. 37.)

9. *ALNUS BETULA*. "Byrche is called in Latin *betula*. I haue not red of any vertue that it hath in physik: howbeit it serueth for many good uses, and for none better then for betynge of stubborne boyes, that ether lye or wyll not learne." (Fol. 34.)

10. *CALAMINTHA CLINOPODIUM*. "Horse tyme. I founde thys herbe ryght ouer against Syon." (Pt. i. fol. 60.)

11. *PLANTAGO CORONOPUS*. "Herbe ivy or crow foote plantne. Theodor Gaza calleth it *siligo*. It groweth much aboute Shene in the hygh waye, and aboute the sea syde in the banks whych are made by man's hand." (Pt. i. fol. 67.)

12. *CRITHMUM MARITIMUM*. "Sampere. It groweth plentifully besyde Douer and in Susexe by the sea syde." (Pt. i. fol. 68.)

13. *HIERACIUM VULGATUM*? (*BOREALE*). "Hawke wede. I haue sene this in greate plenty bothe in Englande and in Germany, in the fields about Bonne, in Englande in the medowe a lytle from Shene."

14. *MENTHA PULEGIUM*. "Penny ryal groweth much, without any setting, besyde Hundsley (Hounslow), upon the heth besyde a watery

place, . . . in such pooles as ar full of water in wynter, and ar dried up in sommer." (Pt. ii. fol. 107.)

15. *CASTANEA*. "Chesnut (Chestnut) trees growe plentuouslye in Kent abrode, in the feldes, and in many gardynes in England." (Pt. i. fol. 47.)

The following are the plants observed and localized by our author in the west:—

1. *ALLIUM VINEALE*. "Crowe garlyke or wyld garlyke. This groweth in myddes (meadows) and fields in every cuntre."

2. *ALLIUM URSINUM*. "Rammes or ramseyes groweth in woods about Bath." (Pt. i. fol. 7, 8.)

3. "*HYSSOP*? We have in Sumershire besyde the commen hyssop that groweth in all other places of Englande, a kinde of hyssop that is al roughe and hory (hoary), and it is greter muche and stronger then is the commen Hyssop. Som call it roughe hyssop."

4. *COLCHICUM*. "I have sene it growe in the west cuntre (country) besyde Bathe." (Fol. 62.)

5. *SMYRNIUM OLUSATRUM*. "Our Alexander groweth in moyste places, and in Ilandes, compassed about the se, as in a certayne Ilande betwene the far parte of Sommersetshere and Wales. . . . It groweth in every shyre of England in plenty." (Pt. ii. fol. 68.)

6. *PEUCEDANUM OFFICINALE*. "Harstrang. I hear say that it groweth in England, and I founde a roote of it at Saynt Vincentis rock, a lytle from Bristow." (Pt. ii. fol. 83, 84.)

7. *PRUNUS INSITITIA*. "Bulles tre. I never saw in all my lyfe more plentye of this sorte of Bulles trees then in Somerssetshyre." (Pt. ii. fol. 104.)

8. *ASPLENIUM CETERACH*. "Groweth also in England, about Bristow." (Pt. i. fol. 27.)

9. *CONVOLVULUS SOLDANELLA*, *Brassica marina*, Soldanell. "I have not sene it in England sauyng only besyde Porbek. Howbeit, I thynke verely, that it is in other places, in great plentye." (Pt. i. fol. 37.)

10. *HALIMUS PORTULACOIDES*? Sea Purslane (Purcelline). "I found the same herbe of late besyde Ile of Porbek." (Pt. i. fol. 50.)

11. *ANCHUSA OFFICINALIS*? Red Buglose. (Pt. i. p. 15.) "Thys herbe is called in some places of Englande cattys tayles, in other places wyld buglose; it groweth in grauyly and sandy places, and in pyttes, wher as grauell is dygged out of." (Fol. 16.)

12. *COTYLEDON UMBILICUS*. Wall penny grass. "Thys herbe groweth in Welles (Wells) and divers places in Summerssetshyre in more plentye than ever I saw it in anye other place all my lyfe. I call it pennye grasse, to put a difference betweene it and the sheepe killinge pennye grasse that groweth in merishe and waterye groundes." (Pt. ii. fol. 169.)

13. *BUPLEURUM PERFOLIATUM*. Throw Wax. "I have sene this in great plenty in a corn field on the northe side of the citty of Wormis in Germanye, and in no less quantitye in Somerssetshyre, between Sommerton and Marlocke."

The following are a few of Dr. Turner's plants which have no particular locality entered, but he gives their habitats (place where they are generally found).

The Doctor gives the following description of the virulent property of

1. *ACONITUM NAPELLUS*. "And thys wolfbane of all poysones is the most hastye poison. Howbeit, Plini saith, that this herbe is good to be dronken against the bytyng of a scorpione. Thys is also the nature of wolfes bayne, if anye credence may be gyuen unto Plini, that it will kyll a man if he take it, excepte it fynde in a man some thyng y^t it may kyll; with that it wyll stryue as with hys mache, which it hath founde within the man." (Pt. i. fol. 5.)

2. *ASPARAGUS* "groweth in diverse gardins in England, and in sume places by the sea side, in sandy hilles." (Pt. i. fol. 27.)

3. *ANAGALLIS ARVENSIS*. Pympernell. "The male pympernell groweth commonlye in England in the corne and in tyllod groundes, and so doth the female growe in Germanye about Bon (Bonn) and Colon." (Fol. 15.)

4. *ASARUM EUROPÆUM*. Folefote. "Folfoote groweth only in gardynes in Englande; but it groweth wyld in certayne places of Germanye." (Pt. i. fol. 25.)

5. *CYCLAMEN HEDERÆFOLIUM*. Sowesbrede. "I haue not seen it in Englande, wherefore I knowe no usuall name for it; but least it shuld be nameless, if it ether shuld be brought into England, or be founde in any place in England, I name it Sowesbrede, or rape violet, and the roote is lyke a rape." (Fol. 75.)

6. *VINCA MINOR*. Perwynckle. "Perwynckle groweth wild in many places of Germany, and it groweth plentifully in Englande in gardynes, and wyld also in the west cuntre." (Pt. i. p. 59.)

7. *CORIANDRUM SATIVUM*. "The leues (leaves) are wonderfull and stynkyng when they ar grene, the stalke is a cubytt and a halfe of hygh, full of lytle branches, the floures are white, and the sede is round and bare, and when it is drye, it is of a good sauoure and a good taste." (Pt. i. fol. 66.)

8. *DIPSACUS SYLVESTRIS* and *D. FULLONUM*. "The wyld tasel groweth commonly aboute diches and watery places; in the begynnyng of wynter the golde finches use mych to haunt this herbe, for the sedes sake, wher of they are very desyrus; the other groweth in gardines." (Fol. 82.)

9. *ISATIS TINCTORIA*. *Glastum* or *Wadde*. "The wylde kynde groweth not in England that I know, sayunge onlye in gardens, but it groweth plenteouslye wythout anye sowynge in High Germany, by the Renes (Rhine's) syde." (Pt. ii. fol. 11.)

10. *IRIS*. "I haue sene a litle flour de lice growyng wylde in Dorset shyre, but hole cartes full in Germany, besyde Wormis, in the middowes, not far from the Rhene." (Pt. ii. fol. 23.)

11. *MESPILUS*. Medlar. "The second kinde is that is comen in Itali, Germani, and England, and is comenly called a medler." (Pt. ii. fol. 56.)

12. *OXALIS ACETOSELLA*. Wod sour (Wood Sorrel). "And it can not be *Lotus urbana* (*O. corniculata*), because it groweth alwaies wilde in the woddes, and commonly about tre rootes. We gather that thys Alleleluja or Wodsour shoulde be *Oxys*, in Pliny." (Pt. ii. fol. 74.)

13. *RUBIA PEREGRINA*. Madder. "Rubia groweth in Germany, and also in Englande. And the moste that ever I sawe is in the Yle of Wyght. But the farest and gretest that ewer I sawe groweth in the lane besyde Wynchestre in the way to Southampton." (Pt. ii. fol. 118.)

Here follows a List of the British Plants, or most of those described in Dr. Turner's 'Herbal,' with his names, and the parts and folios (leaves) of his work where they are to be found.

Note.—The *first* is the common scientific name, the *second* is the ancient name; *p.* means part, *f.* folio or page.

<i>Achillea Ptarmica</i> , p. 2, f. 106.	<i>Anchusa</i> , <i>Anagyris</i> , p. 1, f. 15, 16.— Not of English growth.
<i>Aconitum Napellus</i> , p. 2, f. 4.	<i>Anemone nemorosa</i> , <i>A. Pulsatilla</i> , p. 1, f. 17.
<i>Acorus Calamus</i> , p. 1, f. 5.	<i>Angelica sativa</i> , <i>A. sylvestris</i> , p. 3, f. 5.
<i>Adiantum Capillus-Veneris</i> , p. 1, f. 6.	<i>Anthemis nobilis</i> : <i>Camomye</i> , p. 1, f. 18.
<i>Agarick</i> , p. 2, f. 29, 30, 31.	<i>Antirrhinum Orontium</i> : <i>Calfes Snowte</i> , p. 1, f. 18.
<i>Agrimonia Eupatoria</i> , p. 1, f. 90; p. 3, f. 28.	<i>Apium</i> : (<i>Celery</i>) <i>Smallage</i> , p. 1, f. 18.
<i>Agrostemma Githago</i> , p. 1, f. 41.	<i>Arbutus Unedo</i> : <i>Strawbery tre</i> , p. 1, f. 22.
<i>Ajuga Chamæpitys</i> : <i>Grounde Pync</i> , p. 1, f. 53.	<i>Aristolochia Clematidis</i> : <i>Rounde</i> <i>Byrtheworte</i> , p. 1, f. 23.
<i>Alchemilla</i> : <i>Ladies' Mantell</i> , p. 3, f. 23.	<i>Artemisia Absinthium</i> : <i>Comen Worm-</i> <i>wode</i> , p. 1, f. 2. <i>A. marina</i> : <i>Sea</i> <i>Wormwode</i> , p. 1, f. 1. <i>A. vulgaris</i> : <i>Mugwyrt</i> .
<i>Alder</i> . See <i>Betula Alnus</i> , p. 1, f. 34.	<i>Arum maculatum</i> : <i>Cockoupynt</i> , p. 1, f. 24.
<i>Alliaria</i> : <i>Sance Alone</i> , p. 3, f. 1.	<i>Asarum europæum</i> : <i>Folfot</i> (<i>Foalfoot</i>), p. 1, 26.
<i>Alisma Plantago</i> , p. 2, f. 94, 95.	
<i>Allium Schœnoprasum</i> , <i>A. ursinum</i> , <i>A.</i> <i>vincale</i> , p. 1, f. 78.	
<i>Althæa officinalis</i> : <i>Marrische Mallowe</i> , p. 1, f. 11.	
<i>Amaranthus Blitum</i> , p. 1, f. 35.	
<i>Amaradulcis</i> : <i>Bitter Swete</i> , p. 3, f. 2.	
<i>Anagallis arvensis</i> , <i>A. cerulea</i> : <i>Pym-</i> <i>pernell male</i> , <i>P. female</i> , p. 1, f. 15.	

- Ash. *See* Fraxinus and Ornus, p. 2, f. 71, 143.
- Asparagus: Sperage, p. 1, f. 27.—In gardens and by the sea.
- Asperula odorata: Wode Rose or Wode Rowell, p. 3, f. 25.
- Asplenium Ceterach, p. 1, f. 27. Asp. Trichomanes: Maydenshere, p. 2, f. 157.
- Atriplex hastata: Oreche, p. 1, f. 29.
- Atropa belladonna: Nyghte shad, p. 2, f. 142.
- Aquilegia: Columbine, p. 3, f. 6, 7.
- Avena sativa: Pilotes, p. 1, f. 29.
- Ballota nigra: Stynkynge Horehounde, p. 1, f. 30.
- Betonica. *See* Stachys, p. 1, f. 33.
- Beech. *See* Fagus, p. 2, f. 1.
- Bellis perennis: Dasey, p. 1, f. 31.
- Beta maritima: Bete, p. 1, f. 32.
- Betula Alnus: Alder-tre, p. 1, f. 8.—Water sydes, etc.
- Betula alba: Byrch, p. 1, f. 34.
- Borago, p. 1, f. 39.
- Botrychium Lunaria, p. 3, f. 53.
- Brassica oleracea, B. campestris?: *See* Cole, p. 1, f. 36; Water Kole, p. 1, f. 37.
- Bryonia dioica: Brionye, p. 2, f. 166, 167.
- Bursa-pastoris, p. 3, f. 14, 15.
- Bunium Bulbocastanum: Erath (earth) nut, p. 1, f. 20.
- Buxus: Boxe, p. 1, f. 40.—Groweth not of itself (is not spontaneous) in England.
- Calamintha Clinopodium, Nepeta Catoria: Catmynt, p. 1, f. 41.
- Calamintha Acinos?, Clinopodium?, p. 1, f. 60.
- Caltha palustris: Lukken Gollande, p. 1, f. 52.
- Cannabis: Hempe, p. 1, f. 42.
- Carduus benedictus, C. pratensis: Thystelles, p. 2, f. 144.
- Carduus benedictus, p. 3, f. 18.
- Carex: Segge or Shergras, p. 1, f. 46.
- Carum: Carawaye, p. 1, f. 45.
- Castanea. *See* Fagus, p. 1, f. 47.
- Centaurea Cyanus: Blewbottell, p. 1, f. 75.
- Chafweede or Cudweed, Cudwort what? p. 1, f. 48.
- Cheiranthus Cheiri?: Wall Gelouer, p. 2, f. 163.
- Chelidonium majus, p. 2, f. 15; C. minus, *id.*
- Chenopodium Botrys, p. 1, f. 35.
- Chrysanthemum Leucanthemum, p. 1, f. 31.
- Cichorium Intybus, p. 2, f. 21.
- Colchicum, p. 1, f. 62.
- Conium: Homloke (Hemlock), p. 1, f. 57.
- Convolvulus Soldanella, p. 1, f. 37. C. sepium: Withwynde, p. 1, f. 65.—A Lily in whiteness; and it is, as it were, an unperfect worke of Nature learning to make Lilies.
- Coriandrum: Coriandre, p. 1, f. 66.
- Cornus sanguinea: Cornell tree, p. 1, f. 66.
- Corydalis solida: Fumitorye, p. 1, f. 44.
- Cotyledon Umbilicus: Wal penyewort, p. 2, f. 169.
- Corylus Avellana: Hasell nutt, p. 1, f. 67, 68.
- Cowslip, p. 3, f. 80.
- Crambe maritima, p. 1, f. 36, 37.
- Cratægus Oxyacantha: Hawthorn tre, p. 2, f. 73.—Glastenbury Thorn, p. 2, f. 73.—In Summersetshyre, about six myles from Welles, in the park of Glasenberry, there is an Hawthorne which is grene all the wynter, as all that dwell there about do steadfastly holde.
- Crithmum maritimum: Sampere, p. 1, f. 68.
- Cuscuta: Doder, p. 1, f. 46.
- Cyclamen hederæfolium: Sowesbrede, p. 1, f. 75.—Not known as spontaneous in England at this period.
- Cynoglossum officinale and C. sylvaticum: Doggistonge, p. 1, f. 76.
- Cyperus longus: Golangal, p. 1, f. 77.
- Daphne Laureola: Lowry or Lauriel, p. 1, f. 79.

- Daucus*: Carrot? or Parsnep?, p. 1, f. 80; p. 2, f. 80.
- Dianthus*: several undetermined, p. 1, f. 43.
- Dianthus deltoides*: Wylde Gelouer (Maiden's Pink), p. 1, f. 43.
- Digitalis*: Foxegloue, p. 3, f. 17.
- Dipsacus fullonum*, *D. sylvestris*: Gardin and Wylde Tasel, p. 1, f. 82.
- Drosera rotundifolia*, p. 3, f. 79.
- Docks, many; Sorrel, both, f. 121.
- Echium vulgare*: Wylde Buglose, p. 1, f. 16.
- Epilobium angustifolium*, *E. hirsutum*, *E. parviflorum*: Herb Willow, p. 2, f. 44.
- Epimedium alpinum*, p. 1, f. 89.
- Erica*: Heth, p. 1, f. 85.
- Eryngium maritimum*: Sea Holly, p. 1, f. 87.
- Erythraea Centaurium*: Centory, p. 1, f. 48.
- Euonymus europæus*: Spyndell tree, p. 1, f. 89.
- Eupatorium cannabinum*, p. 3, f. 29.
- Euphorbia amygdaloides*: Wode Spurge (Sion Parke), p. 2, f. 154; *E. helioscopia*, *E. Lathyris*, p. 2, f. 31.
- Euphorbia Paralias*, *E. Peplis*, p. 2, f. 81. *E. Portlandica*?
- Euphrasia*: Eyebright, p. 3, f. 29.
- Fagus*: Beche, p. 2, f. 1.
- Fagus Castanea*, p. 1, f. 47.
- Ficaria ranunculoides*, p. 2, f. 15.
- Filago germanicum*, p. 2, f. 11.
- Feniculum*: Fenel or Fenkle, p. 2, f. 5.
- Fragaria vesca*; Strawberrye, p. 2, f. 6.
- Fumaria officinalis*, p. 1, f. 44.
- Gagea lutea*: Wylde Leke, p. 1, f. 40.—Lobel says, Adv. 56, "Anglice nemorosis Sommerseti Ornithogalum luteum collegimus."
- Galanthus*?, p. 2, f. 62.
- Galeopsis Tetrahit*?
- Galium Aparine*: Goosharethe or Clyver, p. 1, f. 20. *G. cruciatum*: Mayden's Heire, p. 2, f. 6.
- Genista*: Broume, p. 2, f. 7.
- Gentian*, p. 3, f. 25.
- Geranium* and *Erodium*: Pink nedle Cranesbill, p. 2, f. 8.—Our author names only *G. molle* and *E. cicutarium*; but he gives six figures, numbered *Geranium* one, two, three, etc., respectively.
- Geum urbanum*: Avenes, p. 2, f. 9.
- Geum urbanum*?, *Cariophyllata sylvestris*: Cloues, p. 3, f. 22, 23.
- Glaucium luteum*: Horned Poppy, p. 2, f. 78.—Thys groweth very plentifully about the see syde, in Englande, bothe besyde Douer and also in Dorsetshyre.
- Glaux*. See Trefoly, p. 2, f. 12.
- Gnaphalium* ? sp., p. 1, f. 48.—Centunculus is called in Yorkshire Cudwede, and in Northumberlande Chafwede.
- Gnaphalium germanicum*: Cottenwede, p. 2, f. 11.
- Hedera Helix*, p. 2, f. 87.
- Helleborus fatidus*, *H. viridis*: Bercefol Syterwurte, p. 1, f. 65.
- Heraclium*: Kowe Parsnepe, p. 2, f. 145.
- Hesperis matronalis*, p. 2, f. 163, 164.
- Hieracium vulgare*: Hawkwede, p. 2, f. 14.
- Hieracium Pilosella*, p. 3, f. 58.
- Hordeum murinum*: Waybent, p. 2, f. 17. *H. temulentum*: Darnel, p. 1, f. 41.
- Holye tre, p. 3, f. 81.
- Humulus Lupulus*: Hoppes, p. 2, f. 42.
- Hyoscyamus*: Henbayne, p. 1, f. 10.—Towns and villages by the sea side.
- Hypericum Androsæmum*: Tutsan, p. 1, f. 16. *H. calycinum*? or *H. hircinum*: Grete St. John's Grasse, p. 1, f. 26.
- Hypericum perforatum*: St. John's Grasse, p. 2, f. 18.
- Inula Helenium*: Elecampane, p. 2, f. 22.
- Inula Conyza*?, p. 1, f. 63.
- Iris Pseudacorus*, p. 2, f. 23.
- Isatis tinctoria*: Wadde, two kinds,

- the garden and the wilde wadde, p. 2, f. 11.
- Juniper, p. 2, f. 25.
- Knautia : Scabious, p. 3, f. 69.—It y^t groweth among the corn, is rankest of all other.
- Lactuca — ? : Lettes, p. 2, f. 25, 26.
- Lamium album : Ded Nettel, p. 2, f. 27. *L. amplexicaule* ?, *L. purpureum* ?, *id.*
- Lappa major : Great Bur, p. 2, f. 82.
- Lastrea Filix-mas, p. 2, f. 3.
- Lathyrus sylvestris ?, *L. tuberosus* : Peese Earth Nutt, p. 1, f. 28.
- Lathyrus macrorrhizus ? : Bitter Fitches, p. 1, f. 86.
- Lenna : Duce's Meat, p. 2, f. 33.
- Lepidium, *L. latifolium*, *L. magnum*, p. 2, f. 35. *L. ruderale* : Sciatica or Wyldes Cresse, p. 2, f. 20.
- Leucojum æstivum, p. 2, f. 163.
- Ligustrum : Primprynt, p. 2, f. 37.
- Linaria vulgaris : Tode's Flax, p. 2, f. 73.—Thoughe thys herb groweth plentuonsly in England, I never heard any Englyshe name for it.
- Linum usitatissimum : Flax or Lynt, p. 2, f. 39.
- Lithospermum officinale, *L. arvense* : Grummel or Graymile, p. 2, f. 40.
- Lolium temulentum : Darnel, p. 1, f. 41.
- Lonicera Periclymenum : Woodbynde, p. 2, f. 82.
- Lycopodium alpinum ? : Hethe Cipres, p. 1, f. 51.
- Lycopodium Selago, and *L. clavatum* : Chamepeuce, p. 1, f. 52.
- Lysimachia Nummularia.—I name it here "herbe two pence;" it groweth in shadowy ditches, etc.
- Lysimachia vulgaris, p. 2, f. 44.
- Lythrum Salicaria, p. 2, f. 44.
- Malva sylvestris, *M. rotundifolia* : Mallowe, p. 2, f. 44, 45.
- Marchantia polymorpha : Liuerwurt, p. 2, f. 36.
- Marrubium : Horehounde, p. 2, f. 51.—
- In places as the bourish Wormwod groweth.
- Melittis officinalis, p. 1, f. 21.
- Medicago Lupulus, *M. sativa* : Horned Clover or Medic Fother, p. 2, f. 52.
- Melilotus cœrulea ?, p. 2, f. 133.
- Mentha arvensis : Corne Mynte, p. 1, f. 41.
- Mentha hirsuta, p. 2, f. 140; *M. Pulegium*, p. 2, f. 106, 107; *M. sylvestris*, *M. viridis*, p. 2, f. 53, 54, 55.
- Mercurialis perennis, *M. annua* : Mercury, p. 2, f. 55.
- Mespilus : Medler, p. 2, f. 56.
- Meum athamanticum : Mew, p. 2, f. 56, 57.—Groweth in the Bishoprick of Durram, in wyldes mores called felles.
- Monk's Rhubarb, p. 2, f. 121.
- Mustard. See Sinapis, p. 2, f. 137.
- Myrrhis, p. 2, f. 60.
- Nasturtium officinale : Sisymbrium, or Cardamine, or Water Cresses, p. 2, f. 140.
- Nepeta Cataria : Cat Mynte, p. 1, f. 41.
- Nuphar lutea : Nenufar, p. 2, f. 65, 66.
- Nymphaea alba : Water Rose or Water Lily, p. 2, f. 65.
- One Berrye, p. 3, f. 31 ; p. 1, f. 4.
- Ononis arvensis : Petye Whyne, p. 1, f. 18.
- Onopordum Acanthium, p. , f. 3.
- Ophioglossum : Adder's Tonge, p. 3, f. 51, 52.
- Orchids, several kinds : Adder Grass, p. 2, f. 149.
- Origanum, Organ : Marjoram ?, p. 2, f. 69.
- Ornithogalum umbellatum, p. 2, f. 70.
- Orobanche major : Chokewede, p. 1, f. 88 ; p. 2, f. 71.
- Oxalis Acetosella : Alleluia, p. 1, f. 74. *O. corniculata* : Lotus Urbana, p. 2, f. 42, 74.—In gardens.
- Papaver Argemone, *P. dubium* ?, *P. hybridum*, *P. Rhœas* ?, p. 2, f. 76, 77.
- Papaver somniferum : Poppy, p. 2, f. 76, 77.

- Parietaria: Pellitore of the Wall, p. 2, f. 14.
- Paris quadrifolia: One Berrye, p. 1, f. 4.
- Pastinaca: Parsnepe, p. 2, f. 80, 138.
- Peare tres at Cambridge, p. 2, f. 108.
- Pæonia, p. 1, f. 84.—The female is common thorow all England and Germany, and in diuerse places of England. . . . The male groweth also.
- Petasites: Elldocken, p. 2, f. 83.—This herbe is called in Northumberland an Elden, and in Cambridgeshyre a Butter Bur.
- Petroselinum: Parsley, p. 1, f. 21.
- Peucedanum: Harstrang, p. 2, f. 84.
- Phragmites communis: Reede, p. 1, f. 25.
- Phalaris canariensis, p. 2, f. 85.
- Pimpinella Saxifraga: Rough Saxifrage, p. 1, f. 81.
- Pine, p. 2, f. 88, 89.—Not native in England.
- Pink. See Fuschius, p. 1, f. 67.
- Plantago Coronopus, P. lanceolata, P. major: Weybrede or Plantayn, p. 2, f. 94, 95; P. media.
- Plantago Psyllium: Flesede, p. 2, f. 105, 106.
- Polygala vulgaris: Milke Lentill, p. 1, f. 96.
- Polygonatum multiflorum, P. verticillatum: Scala Cœli (heaven's ladder), p. 2, f. 97, 98.
- Polygonum Convolvulus?, P. Fagopyrum, P. lapathifolium?, P. aviculare: Knot Grasse, p. 2, f. 97.
- Polygonum Hydropiper: Culerage Arsmart, p. 1, f. 68.
- Polygonum Fagopyrum: Bukwheat, p. 1, f. 83.
- Polygonum Bistorta, p. 3, f. 12, 13.
- Polygonum Persicaria, p. 3, f. 61.
- Polypodium vulgare, p. 2, f. 4; P. Dryopteris?, p. 1, f. 83.
- Populus: Aspe, p. 2, f. 98; Pepler, two sorts, P. alba, and P. nigra?—[Where is *P. tremula*!]
- Potentilla comarum, P. reptans, P. Tormentilla?: Cinkfoly, p. 2, f. 110.
- Primrose is not in Turner's Herbal? is P. veris?: Porcellayn, p. 2, f. 102.
- Prunella vulgaris: Selve Heale, p. 3, f. 60.
- Prunus spinosa, P. domestica, P. insititia: Plum, Slo, Bulles, etc., p. 2, f. 103, 104, 105.
- Pteris aquilina: Ferne or Brake, p. 2, f. 3.
- Pulicaria vulgaris?, P. dysenterica, p. 1, f. 64.
- Pulmonaria angustifolia: Sage of Hierusalem, p. 1, f. 29.
- Pyrola rotundifolia: Limonium, p. 2, f. 39.
- Pyrethrum Parthenium: Feverfew, p. 2, f. 78, 79.
- Pyrus Malus: Appel Tre, p. 2, f. 47. P. communis: Peare, p. 2, f. 108.
- Quercus: Oke, p. 2, f. 109.
- Raphanus sativum: Radish, Crowfote, p. 1, f. 114; p. 2, f. 111.
- Ranunculus sceleratus, R. Flammula, and other species not determined.
- Ribes, p. 3, f. 62.
- Rosa canina: Brere, p. 2, f. 119. R. rubiginosa: Eglentine, p. 1, f. 77.
- Rubia peregrina: Madder, p. 2, f. 118.
- Rubus idæus: Bramble, p. 1, f. 118.
- Rumex, several: Docke, p. 2, f. 129.
- Ruscus aculeatus: Knehull?, p. 2, f. 121.
- Salix, two or three sorts, p. 2, f. 125, 126.
- Salsola Kali, p. 3, f. 38.
- Salvia veronica femina, p. 2, f. 126.
- Salvia: Clare, p. 2, f. 70.
- Sambucus nigra: Elder, Bourtree, p. 2, f. 124. S. Ebulus: Walwurt, p. 1, f. 83.
- Sanicula: Sanule, p. 3, f. 66.
- Sarothamnus scoparius: Broume, p. 2, f. 7.
- Saxifraga?, p. 3, f. 67.
- Saxafraga alba (granulata?) p. 3, f. 67. —I have sene of thys kynd in Essexe,

- by the see syde. . . It groweth in diuerse places in England.
- Saxifraga granulata, p. 3, f. 10, 11.
- Scabiosa succisa: Deuil's Bite, p. 3, f. 42.
- Scandix: Pinke Nedle, p. 2, f. 130.
- Scilla nutans?, p. 2, f. 27.
- Scolopendrium vulgare: Hartistunge, p. 2, f. 86.
- Scrophularia aquatica, S. nodosa: Water Betony, Brown Wurt, p. 1, f. 61.
- Scutellaria galericulata?
- Sedum, species?, p. 2, f. 131.
- Sempervivum tectorum: Houseleke, p. 2, f. 131.
- Senecio vulgaris: Groundel, p. 2, f. 132.
- Sherardia arvensis: Alysson, p. 1, f. 11, 12.
- Sinapis arvensis, S. nigra?, S. alba?: Mustarde, p. 2, f. 137.
- Sison Amomum?, p. 2, f. 139.
- Sisymbrium: Kresses or Carsse, p. 2, f. 64, 140.
- Sisymbrium Irio? p. 2, f. 22.
- Smyrniun: Alexanders, p. 2, f. 68.
- Smyrniun Olusatrum: Alexanders, p. 2, f. 67.
- Sium: Sion, p. 2, f. 139.
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- Teucrium? sp.: Groudne Pyne, p. 1, f. 53.—I here that it is founde in diuerse places in England.
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- Thlaspi, p. 1, f. 152.
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- Ulmus: Elm tre, p. 2, f. 169.
- Urtica romana, U. dioica, U. urens: Roman Nettell, etc., p. 2, f. 169.
- Valeriana officinalis: Setwall, p. 2, f. 161.
- Valerian, p. 3, f. 75. There is another kynde (*Polemonium cæruleum*) whyche we call Valerian in England, and it hath a blew floure, and is called of some Latine men *Valeriana græca*.
- Valeriana (Phu magnum and P. vulgare), p. 3, f. 76.
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ISATIS TINCTORIA.

By JOHN LLOYD.

Since I discovered this plant near to the New Wandsworth station upon the Crystal Palace Railway (*vide* 'Phytologist,' August, 1860), several very interesting particulars have come to my knowledge concerning it, which I here submit to the readers of the journal above named.

The plant was grown for several years by Mr. Wilson Saunders, late of East Hill, Wandsworth, and his garden was about half a mile from its present station in the railway cutting.

The question naturally suggests itself, Did it escape from the garden? From the proximity of the garden and the cutting, it may be inferred that it did do so; but, on the other side of the question, that inference may be objected to upon two grounds: first, it has left no traces on the line of its supposed migration, although there is a cutting belonging to the South-western Railway between the above-mentioned garden and the Crystal Palace Railway upwards of twenty feet deep; and secondly, Mr. Saunders removed from Wandsworth to Reigate during the time that the Crystal Palace Railway was in progress, and removed his plants of *Isatis* to his new abode. The suggestion of J. S. M. in the 'Phytologist' for September, 1860, that it was sown amongst the herbage,—appears to be a more reasonable solution to the question,—as to how came it there,—than any other hypothesis which I have seen or heard advanced; and perhaps the plants which he discovered in Kent may owe their origin to a similar circumstance. A short account of the plants which were taken to Reigate may not be uninteresting.

They were planted in a shrubbery, where they have established themselves so firmly as to become almost troublesome weeds, and

escaped into a field adjoining the garden, where I saw a plant in bloom last summer; and if they extend their radius, they may in time establish themselves in the *débris* belonging to the chalk-pits at Reigate Hill, which is scarce half a mile distant.

Mr. Jos. Croucher, a young gardener who has paid some attention to British plants, discovered it in Sussex, in July last, upon a bank near to the turnpike, by the side of the road between Turner's Hill and Rowfant station.

In a conversation which I had in August last with the intelligent foreman of the Botanic Garden at Glasneven, he informed me that it was not uncommon to meet with a stray plant or two in the neighbourhood of Dublin, and he related to me an interesting circumstance which came under his observation some years ago. An old Elm was blown down, and the ground where it had stood was deeply trenched. In the ensuing spring the fresh exposed soil produced a quantity of *Isatis tinctoria* and *Sinapis nigra*, neither of which plants had been before observed to grow in the immediate vicinity.

ON THE FEN AND DITCH PLANTS OF NORFOLK.

By W. WINTER, of Aldby, Norfolk.

The White Water-lily (*Nymphæa alba*) abounds in the ditches and *broads* (a local word for wide open drains) at Ranworth, Horning, and South Walsham. This, the queen of British plants, flowers here in June and July, and completely covers hundreds of square yards with its broad handsome foliage and its pure white flowers, which in some states of the atmosphere perfume the air with the most agreeable odours, to considerable distances around the places where it grows. It is occasionally found in places whence peat has been dug.

Its yellow and not quite so beautiful associate, the Yellow Water-lily (*Nuphar lutea*), is equally common in all these parts. These two plants may be distinguished by their leaves at all times when these are fully developed. The leaves of the White Water-lily are more circular than those of the Yellow; they are rounded at the apex, and their cordate bases are not so diver-

gent as in the Yellow Lily. The latter has a longer and more pointed leaf, and the basal lobes are more divergent and longer than in its fairer relative.

These are the most conspicuous and the most ornamental plants of our sluggish rivers, dikes, and other deep waters.

Elatine hexandra grows sparingly in shallow pools and in bogs about Ranworth. [This is probably the first record of the locality; and we are pleased to enter it here for the benefit of future botanical geographers, whose scientific utilities and sympathies are not quite extinguished by their personal antipathies.]

Hypericum elodes is also plentiful in the same locality as that reported for the before-mentioned plant. I send a note on this plant to aid the correspondent W. P., who marvels what part of Dartmoor is a hundred yards higher than the Carnarvonshire mountains, where Mr. Bowman (see 'Cybele,' vol. i. p. 253) is reported to have seen it. [The veracious compiler of the last-mentioned abortive effort to exhibit the range of our British plants, thought he saw it rather higher on Dartmoor, in Devon. The wish was father to the thought; he wishes to be thought a farther-seeing and more correct relator of what he fancies he has seen than other men.]

Ranunculus Lingua, although a Ranworth plant, and rather frequent in such places, is not very plentiful in this neighbourhood. Those who want to see this plant in perfection and abundance should visit the old haven at Sandwich in Kent.

The rarest plant in this coronal of Norfolk aquatics is probably *Senecio paludosus*, which occurs occasionally in bogs at Ranworth. The Norfolk botanists should search diligently for *Senecio palustris* (*Cineraria*) and for *Sonchus palustris*. The rediscovery of these plants, which are among the very rarest of England's most precious rarities, will reward the toil of some ardent local investigator. Should this plant be reckoned among the aquatics? Scarcely, for it is found in the same class of habitats as *Sonchus palustris*, which sometimes is an aquatic, but is oftener found in marshy ground only occasionally flooded, and it grows well, or used to grow well, at Kew, in the Royal Gardens, one of the driest spots of England.

Villarsia nymphæoides? I believe I saw this fine plant associated with *Sagittaria sagittifolia* at Ranworth, in some muddy ditches. The author of the 'Cybele,' not always remarkable for

consistency, asserts that this fine aquatic is wild in Norfolk, Cambridge, etc., which he calls its north limit, but that it is certainly introduced in Stafford, Lancashire, etc. (see 'Cybele,' vol. ii. p. 178), and doubtfully wild in the intermediate counties of Warwick and Nottingham. He does not inform us on what evidence he relies for these facts. Probably only his own eyes, which deceived him in estimating the altitude of the moors of Devon, where he saw the marsh *Hypericum* much higher than the mountains of North Wales.

Stratiotes aloides in July and August is common in the ditches at Ranworth. [The readers of the 'Phytologist' may prefer a brief account of the economy of this plant to the useless platitudes of the 'Cybele' about its distribution. Those who care for seeing a sample of unmeaning twaddle, may compare 'Cybele,' vol. ii. pp. 473, 474, with what he has seen or read about the plant.] This plant is very singular in its mode of growth. The numerous radical leaves which spring from its creeping runners, which penetrate far into the mud, and its exotic-like aspect, its flowers, its compressed scape, make an uncommon object. In a ditch that some men were cleaning out, I saw its spreading roots more than three feet deep in the mud, and at least six feet in some places from the body of the plant. It seems to occur all over the Fens, by the rivers Bure, Yare, and Waveney, and several other places in ditches at Loddon, Kirby, Norton, and Toft. If this plant is not a genuine native of England, it is at all events spontaneous in Norfolk.

The last of my aquatic plants is *Potamogeton oblongus*, common at Ranworth, and it flowers in July. This family is well represented in our neighbourhood, both in Norfolk and Suffolk. Here many of the rarer species like the above are common. I intend to send, in the course of the present summer (1861), a series of our *Potamoceæ* for publication in the 'Phytologist,' in order to induce British botanists to pay a visit to this almost *terra incognita* of the British realm.

Review.

The Preston Chronicle for March 17th, July 14th, and August 11th, 1860.

Newspapers, whether of daily or weekly appearance, notice periodicals of all sorts, both monthlies and quarterlies; therefore the subject of this article, not being uncommon, requires no apology.

'Rambles by the Ribble' is the title of a series of very amusing and instructive articles on the antiquities, scenery, natural and civil history of the many interesting localities, towns, villages, churches, monastic remains, manorial residences, etc. etc., which give a more than ordinary interest to one of the prettiest streams of Craven, celebrated for its dales, scars, rivulets, and streamlets.

"Of the many rivers that flow along the valleys of merrie England, there are few that, in the richness of antiquarian and historical associations, the loveliness of the district it waters, or the number of objects of beauty and interest along its course, exceed our own Ribble. In the days of yore the Roman masters of Britain colonized its banks and erected their stations, their homes, their temples, and their altars near its waters. The Danes, Saxons, and Normans have left traces of their ascendancy in the names of our towns, villages, and their inhabitants."

Our pages are not quite appropriate for antiquarian or historical lore, and even the pictorial is not always relished by the strictly scientific *simplers*, yet a sprinkling of something readable, interspersed here and there among the clumsy lumbering Latinities of nomenclature and description, is a relief to the reader: it is like a bit of open green common to a weary pedestrian who has trudged long on the dusty highway, with a brick wall or closely-cropped thorn-hedge on his right hand and on his left.

The following plants were collected during an autumn ramble in the Fylde, between Lytham and the lighthouse, near the very mouth of the Ribble, and not far from Preston. We should like to know the distance, in case we should follow the track of our Preston brethren.

The first-mentioned plant is common in Craven, and probably equally so in North Lancashire; it is one of the rarest of British

plants in the south of England. *Parnassia palustris* (Grass of Parnassus) grows in most of the lower ground among the sandhills in considerable quantities. It is not unknown in Herts and Bucks, but the stations are few and distant.

“In situations similar to those in which we found the Grass of Parnassus we met with large quantities of the *Pyrola rotundifolia* (round-leaved Winter-Green); in fact, in many places the ground was literally carpeted with it.”

This plant is a doubtful native of the south of England. Many years ago the writer of this saw at Henfield a living plant, said to be *Pyrola rotundifolia*, and also said to have been found in a part of St. Leonard's Forest called Miller's Race. Can Mr. Borrer or Mr. Mitten, or any other botanist, tell us if this be a Sussex plant?

“A frequent inhabitant of the little grassy hillocks among the sandhills is the *Gentiana campestris* (Field Gentian), which, though not very remarkable for beauty, is yet interesting on account of its rarity.

“The beautiful *Erythraea Centaurium* (Lesser Centaury) is no unfrequent neighbour of the last, and adds materially to the beauty of the floral scene by its very pretty bright pink blossoms. It is a plant beloved of herbalists, on account of its tonic qualities, and is locally termed ‘Sanctuary.’ But perhaps the plant most frequently to be met with about the sandhills is the *Cynoglossum officinale* (Common Hound's-Tongue). Its dull purple flowers, with their mouse-like smell, had vanished previous to our visit; but we brought back to Preston many mementos of our walk in the shape of numbers of its seeds, which clung with great tenacity to our clothes.

“Between the sandhills and high-water mark there is a great abundance of the *Glaux maritima* (Black Saltwort), and occasionally a few plants of the singular-looking *Eryugium maritimum* (Sea Holly); while in ditches between the sandhills and Marton Moss we saw several specimens of the *Hottonia palustris* (Water Violet). The beautiful lilac-coloured blossoms of the last of course had long departed, the plant blossoming in June, but it was easily recognized, from its peculiarly jagged and divided leaves.

“The most conspicuous perhaps, and one of the rarest, is the *Brassica Monensis* (Isle of Man Cabbage), and we saw abundance of the *Thalictrum minus* (Less Meadow Rue). In the same locality, in their proper seasons, are to be met with *Datura Stramonium* (Thorn Apple), *Lycopsis arvensis* (Small Bugloss), *Salsola Kali* (Prickly Saltwort), *Cakile maritima* (Sea-Rocket), *Trifolium arvense* (Hare's-foot Trefoil), *T. suffocatum* (Suffocated Trefoil), and many others.

“*Anagallis tenella* (Bog Pimpernel), with its lovely rose-coloured blossoms, *Samolus Valerandi* (Water Pimpernel), and *Epipactis palustris* (Marsh Helleborine) are frequently to be met with in the most marshy spots among the sandhills. *Orchis latifolia* (Broad-leaved Orchis) and *Spergula nodosa* (Knotted Spurrey) are not unfrequent neighbours of the three last, but prefer rather drier habitations. From half-a-dozen to a dozen plants of *Asparagus officinalis* (Common Asparagus) are to be found upon one of the sandhills, and how they came there is rather a mystery.

“*Agrimonia Eupatoria* (Common Agrimony) is not unfrequently found upon the sandhills, while *Cochlearia Danica* (Danish Scurvy-Grass) and *Sisymbrium Sophia* (Flixweed) abound on the dry banks and copses in the neighbourhood. The rare *Euphorbia Paralias* (Sea Spurge) and *Silene maritima* (Sea Campion) must not be omitted from our list, the former an inhabitant of the higher part of the hills and the latter of the shore, within a few yards of the base of the hills. There are many other plants, more or less rare, to be found within three miles of Lytham, chiefly on or about the sandhills; but I think those whose habitats are above given are sufficiently numerous to show that Lytham offers quite as many attractions to the botanist as to the valetudinarian and pleasure-seeker.”

We shall be well pleased to see more of these lively sketches of scenery, local history, and botany, especially higher up the river, in the direction of Settle, Penhgent, etc., with which part of Craven and Lancashire we are better acquainted than we are with the portion between Preston and the Irish Sea.

BOTANICAL NOTES, NOTICES, AND QUERIES.

To the Editor of the 'Phytologist.'

Will you, or some readers of the 'Phytologist' learned in Willows, inform me why no use is made (in any description that I am aware of) of the different colour of the anthers to distinguish between some at least of the different species or varieties of monandrous *Salices*? I find two kinds in this neighbourhood, which, with much doubt, I have assigned respectively to *S. Woolgariana* and *S. Helix*. In the one which I have taken for *S. Woolgariana*, with lighter twigs, the catkins are larger, their scales more downy, and the anthers at first invariably *crimson*. In the other, which I have called *S. Helix*, with darker twigs, the catkins are smaller, their scales less downy, and the anthers invariably *orange*. Babington (Manual, ed. 4) describes the whole group, *Purpureæ*, as having “anthers purple, ultimately black.” These both become ultimately black, but at first they are very distinct as crimson and orange.

I am not acquainted with the other monandrous varieties; but between these two at least,—whether I have named them above rightfully or not,—would not this difference of colour in the anthers form a useful mark of distinction for those who, like myself, are much puzzled to distinguish between them? Yet I do not find it anywhere noted. R. E. C.

“General Post Office, March, 1861.

“Sir,—In reply to your letter of the 11th inst., I have to acquaint you that books, having specimens of dried plants attached to their leaves, may be forwarded under the regulations of the Book Post, but that such specimens may not be sent loose, nor can seeds be regarded as coming within the privileges of the Book Post.

“All exchangers of plants have to do, is to have a guard-book made, with thin covers, and (say) about 12 or 15 inches long, by 6 or 8 inches wide, and when sending their specimens, have them securely gummed (by means of slips) to the leaves; thus the advantages of the Book Post can be secured to a numerous body who have perhaps hitherto been ignorant of the privilege.

I am, yours faithfully, G. W. GISSING.

“Of course no letter must be sent.”

[Several of our correspondents have availed themselves of this privilege. We have received and also transmitted hundreds of specimens by post. We thank our excellent correspondent for reminding us that this may not be generally known.]

LIST OF PLANTS FOUND IN THE NEIGHBOURHOOD OF PERTH, BY
JOHN SIM, DURING THE SUMMER OF 1860.

Allosorus crispus: Birnam Hill; plentifully. *Anagallis cærulea*: cultivated ground near Perth; very sparingly. *Achusa sempervirens*: foot of Stenton Rocks, near Dunkeld; abundant and luxuriant, undoubtedly truly wild. *Anthemis arvensis*: fields near Murthley Railway Station; abundant. *Antirrhinum majus*: precipitous cliffs of Kinnoull Hill; certainly indigenous. *Antirrhinum Orontium*: cultivated ground near Perth city; rather sparingly. *Arabis hirsuta*: Stenton Rocks; plentiful. *Asperula odorata*: wood at Stenton Rocks; in the greatest abundance. *Asplenium septentrionale*: near the top of Stenton Rocks; plentiful. *Brassica campestris*: foot of cliffs, Kinnoull Hill; sparingly. *Campanula rapunculoides*: hedges near Bowerswall and Barnhill, and several other places in the neighbourhood. *Carduus acanthoides*: foot of Stenton Rocks. *Carex palescens*: foot of Birnam Hill, north side. *Cerastium semidecandrum*: summit of rocks, Witch-Hill, Kinnoull parish. *Coriandrum sativum*: waste ground; very sparingly. *Cynosurus echinatus*: waste ground, Witch-Hill; sparingly. *Cystopteris fragilis*: stone dikes near Caputh Ferry; luxuriant and plentiful. **Dianthus deltoides*: summit of rocks, Den of Balthayock, Kinnoull parish. *Euphorbia exigua*: cultivated ground near Perth city; rather sparingly. *Geranium columbinum*: rocks, Craigie Moor, near Perth; abundant.* *Goodyera repens*: wood of Scone. *Hieracium boreale*? banks of Tay, near Perth. *Hypericum calycinum*: woods of Dunkeld, one mile east of the town; plentiful. *Lamium maculatum*: wood of Scone, near Palace, probably an escape from cultivation. *Ly-*

copodium alpinum: Birnam Hill, towards summit, north side. **Lysimachia vulgaris*: hedge-side, two and a half miles south-west of Perth, Aberdalgie parish. *Medicago sativa*: border of a field, near Perth; sparingly. *Eurothera biennis*: naturalized in fields about Perth. *Papaver dubium*: cultivated fields. *Papaver Rhoeas*: cultivated fields. *Reseda fruticulosa*: dry barren ground, Witch-Hill, Kinnoull parish; only one plant. *Geranium nodosum* and *Pulmonaria officinalis*: in a wood near Seone Palae. *Ribes Grossularia*: Den of Quarry Mill; plentiful. *Rosa systyla*: hedges and roadsides; plentiful. *Sagina nodosa*: sandy ground, banks of Tay, two miles north of Perth; sparingly. *Stachys arvensis*: cultivated fields, Kinnoull Hill; plentiful. *Trifolium incarnatum*: cultivated fields; occasionally; very likely an escape from cultivation. *Vaccinium Vitis-idaea*: Birnam Hill. *Veronica peregrina*: a weed in cultivated nursery ground; plentifully. *Verbascum nigrum*: waste ground, Witch-Hill; only one plant.

Plants having an asterisk were not seen in a growing state by me. I only saw them some hours after they were gathered. JOHN SIM.

Bridge End, Perth, October, 1860.

BLECHNUM SPICANT, VAR. RAMOSUM, from North Wales.

This very handsome form of *B. Spicant*, figured in 'Nature-Printed Ferns,' vol. ii. p. 226, plate 96, fig. a, was recently found near Llanderfel by Mrs. Jones, on a mountain between Cefn Isaf and Sarnan. The above is a new station for this very elegant and rare form.

. . . This coloured variety of the common Primrose we find growing in the hedge-banks of the lane between Llanderfel and Branas Lodge. I do not remember to have noticed it elsewhere. W. P.

SPIKENARD.

In a former number of the 'Phytologist' I stated my opinion that the precious ointment of Scripture, possessed by Mary, and called Spikenard, might have been composed partly of Attar of Roses, which gave it so much odour. I find, in confirmation of my opinion, the following in Bulleyn's 'Simples,' under the head *Roses*:—"Thus do I end this precious flower, called the Rose, which the *Arabians*, for the excellent sweetness thereof do eall *Narde*." S. B.

In the 'Phytologist' for August last is a question by Q.: What is the genus and order of the Oxberry Plant? I can answer that question: in the counties of Worcester, Salop, and Hereford, the root of the *Tamus communis* is accounted as a good specific for the rheumatism, outwardly applied, and it is generally known to the natives under the name of Oxberry Root (p. 244).

White Bryony is generally known by the name of Mandrake in the same localities. *Agrostemma Githago* is called Coekle; and is not *Psillium Squill*? JOHN LLOYD.

Can any Hampshire reader of this tell the writer what is the *Squatmore* which Mr. Aubrey, in his letter to Mr. Ray (see Derham's 'Letters be-

tween Ray and his Correspondents') says, "grows by the salt-pits, at Lympington, Hampshire, of wonderful effect for bruises: not in any herbal." "This I had," he continues, "from Th. Guidott, M.D., whose father had the salt-works, and is a witness of the cures done by it." QUERIST.

NOTE.—The Publisher and the Editor of this magazine have received several letters about an expected "eventuality which we prefer not to indicate here," but which our readers may be told in plain terms is the discontinuance of our publication. They are hereby informed that our intention is to keep the vantage-ground: we have been bullied and we have been wheedled; an appeal has been made to our pockets; and for the sake of science, we have been humbly entreated to give place to our betters.

Our well-wishers are entitled to our gratitude; and we can only inform them, that we will do our best, as hitherto we have done. That we do not know more is rather our misfortune than our fault; and though our station in society is but humble, we do not wish to emerge from our obscurity,—our social rank is quite equal to our expectations and to our wishes. We are not ashamed publicly to profess that our aspirations and hopes are placed on more solid and permanent objects than the profit, distinction, and honour which properly belong to or are the consequents of literary and scientific reputation.

It is not to be dissembled, that the hostile opposition which, in a certain quarter, is expected to be a final extinguisher to the feeble light we have endeavoured to hold up to our less instructed contemporaries, may and ought to have the effect of making us more energetic in their cause, and of trying to improve the material of the 'Phytologist.' This, our readers know, must mainly depend on their continuing to send us such facts as are interesting and useful to those engaged in these pursuits.

In conclusion, we assure them that we will not adopt any shabby and disreputable means for increasing our circulation.

Communications have been received from

George Wolsey; Tom Stansfield; G. W. Gissing; John Sim; Dr. Windsor; W. Richardson; Rev. R. E. Cole; W. Pamplin; A. G. More; W. Dickinson; Sidney Beisly; Dr. Lindsey; Rev. T. F. Ravenshaw; J. S. M.; W. W. N.; J. G. Baker; J. B. Mackay; G. Davies, Brighton, etc.

BOOKS, ETC., RECEIVED FOR REVIEW.

The Chemist and Druggist, March 15th.

The Todmorden Post, March 23rd.

The Preston Chronicle, March 23rd.

The Chemist and Druggist, April 15th.

Index Filicum, Part II.

Report of the Thirsk Natural History Society.

The Malvern News and Journal, April 10th, 1861.

The Daily British Whig, Kingston, Canada, April 2nd.

List of Local Botanists. No. 1.

Our readers are indebted to the obliging and active Secretary of the Todmorden Botanical Society for the list of Lancashire and Yorkshire botanists published in this number of the 'Phytologist.' This is only a small portion of the names and addresses kindly furnished: the remainder will appear on a future occasion. The Editor desires that all other botanists, willing to assist in completing the list, will communicate with him direct, and thus save Mr. Stausfield the trouble of applying for permission and of transmitting the names.

To our obliging correspondents in Alnwick, Perth, and Sydenham, our kind acknowledgment of their zeal and goodness is due, and our thanks are hereby gratefully tendered.

The catholic principles on which the Todmorden Botanical Society is established,*and the energetic efforts of its members to render science subservient to the noblest and best interests of mankind, have been warmly commended in these pages; and the example of their readiness in offering to aid strangers who, for botanical purposes, may visit their respective localities, is proposed for imitation by their more southern brethren.

We again beg to submit to the notice of *all* our readers that an eminent and dignified station, in the domains of science, will be accorded, not to those who know most, but to the men who make the best use of what they know, or by helping the weaker members of the brotherhood, not by eagerness to show their own superiority.

Our botanical creed is a short one, and soon said, but it is of a very comprehensive character. Our readers do not, after having had it expounded, both by word and work for seven years, need that it should be restated. But we propose one for those who are not able, out of the discordant principles now prevalent, to compile their confession of phytological faith. They need not swear allegiance to Linnæus, nor to the doctrines of his school. They may adopt the system of Jussieu or of De Candolle, or that of any of the great scientific notabilities of modern times. They need neither be *splitters* nor *lumpers*, as the two prevailing sects of British botanists are now, not very elegantly nor courteously, designated. The sole article we should propose as a test of a real, not a pseudo-botanist, is this,

viz. that he loves plants as the exponents of Divine power, wisdom, and goodness, and admires them as examples of beauty, order, and harmony, enjoys them as conducive to the cultivation of his piety, morals, and taste, and uses them for the various purposes of economy and ornament, for which they were created. This should be accepted as the first principles of botanical belief, and the practical part of this short creed is, that the true believer should be ever ready to receive and circulate knowledge, acquire it not for its own sake merely, but that he may, while he enlarges the sphere of his own enjoyments, have the far higher gratification of contributing to the happiness of his family, his friends, and connections.*

William Jolliffe, Almshouses, Newport Road, Ryde.
Daniel Humberstove, Beckenham, Kent.

Alnwick, Northumberland, List.

William Richardson, Finkle-street.
Henry Hunter, Clayport-street.
John Thompson, Northumberland-street.
William Charetton, Narrowgate-street.

Perth List.

F. B. White, Athole-place, Perth.
John Sim, gardener, Scone Palace.
Andrew Dickson, gardener, Scone Palace.
Robert Farquharson, druggist, 228, High-street.
John Macpherson, weaver, Pomarium-street.
Henry Boswell, Esq., Corn-market, Oxford.
T. W. B. Ingle, Esq., Wakefield.

Todmorden List.

Rev. Thomas Sutcliffe, Heptonstall.
John Nowell, the Market-place.—M.
Tom Stansfield, Vale Gardens, Hon. Sec. to the Todmorden Botanical Society.—P.
John Holmes, Church-street.
Jonathan Hedley, Platt's House.
William Patman, Mytholm.
William Sutcliffe, Heptonstall.
John Halstead, "The Hollins."
John Howarth, Robin Wood Mill.

* In the following list, P. denotes *Pteridologist*, M. *Muscologist*. Where there is neither of these letters affixed to a name, general botanist, or botany in general, is to be understood. Also, it may be desirable to state that the obtainment of the gratuitous or *paid* services of any of those persons whose names are in this list, is to be agreed on by the respective parties. This is not undertaken by the promoters of the present movement.

John Fielden, Vale Gardens.
 James Horsfall, Vale Gardens.
 Edmund Holt, Lumbutts.
 Rev. Sutcliffe Sowden, Mytholm.
 R. W. Foster, surgeon, Bank Buildings.

Halifax List.

Samuel King, Lane House, Luddenden-foot.
 Charles Eastwood, Lane House, Luddenden-foot.
 Ben, Barber, Woodfield House.
 J. Walker, Post-office, Booth Town.

Huddersfield List.

W. Guthrie, Fixby Park.
 White, Kirkheaton Nursery.
 Peter Inchbald, Esq., Storthes Hall.

Rochdale List.

John Waddington, 47, Peel-street.
 James Lund, Botanists' Inn, Ann-street.
 John Aspden, Grove-street, Pinfold.
 Wm. Thompson, "The One Ash."
 James Schofield, Church Stile.
 George Brierly, Milnrow.—M.
 William Davies, Oldham-road.
 William Bentley, Royton.
 Walter Morris, surgeon, Drake-street.
 Rev. — Mollineux, Crossfield.

Accrington List.

Fairbank Sutcliffe, Law-street.
 George Lord, 9, Chapel-street.
 George Fowler, Spring Hill.
 John Dugdale, 6, Dutton-street.
 George Chadwick, Bank-street.
 Abraham Heyes, Grange-lane.

List of Manchester Botanists.

Leo H. Grindon, 85, Rumford Street, Hon. Sec. to the Field Naturalists' Society, author of the 'Manchester Flora,' etc.
 Joseph Sidebotham, 21, George-street.—M.
 G. C. Churchill, Esq., Dickinson-road, Rusholme.
 John Bland Wood, M.D.—M.
 Thos. Coward, Spring Gardens.
 Rev. Stanford Harris, M.A., Ivy Cottage, Harpurhey.
 Thomas Glover, Smedley-lane.
 Edward Leeds, Stretford.
 Joseph Fenton, Esq., Crimble Cottage, Heywood.
 Richard Buxton, 72, Gun-street, Great Ancoats, author of 'Botanical Guide to Plants within sixteen miles of Manchester.'
 Robert Holland, Mobberley.
 George Edward Hunt, Bowdon.

John Leigh, M.R.C.S., 26, St. John-street.
 J. Holme Nicholson, Owens College.
 W. P. Scott, The Hodge, Broadbottom.
 William Turner, Esq., Pendlebury House.
 Horatio Micholls, Esq., Bowdon.
 R. S. Yates, Sale, near Manchester.
 Bruce Findlay, Curator of Botanical Gardens.
 Robert Lees, Bradford, Manchester.
 William Patefield, Radcliffe.
 John Holt, Stand-lane, near Radcliffe.
 Thomas Bleachley, Whitefield.
 George Hilton, Simister-lane, Little Heaton.—P.
 James Barlow, Swinton.—P.
 Henry Bleackley, Whitefield.
 James Horsefield, Whitefield.—M.
 George Hulme, Prestwich.
 James Berry, St. James-street, Manchester.
 Richard Hampson, Wharton Chapel, Little Hutton.
 Joseph Evans, Booths-town, near Worsley.
 Joseph Caldwell, Tyldesley Banks.
 James Cooke, Ancots-lane, Manchester.—M.
 Thomas Rogers, Cookson-street, Butler-street, Manchester.—P.
 Jonas Clegg, Esq., 21, Polygon Avenue, Ardwick.
 William Chambers, Salford.

Stockport and Neighbourhood.

William Spencer, Hoyle's Buildings, Stockport.
 Joseph Dunning, New Zealand-road.
 Isaac Williamson, Albion Inn.
 Robert Barton, Heaton Mersey.
 Christopher Thornily, Heaton Mersey.

Middleton and Neighbourhood.

John Turner, Church-street.
 Adam Simpson, Cooper Fold.
 John Bayley, Bradshaw Gardens, Chadderton.
 William Kent, Street Bridge, Chadderton.
 Edward Worsley, Ring o' Bells Inn, Hon. Sec. to the Middleton
 Botanical Society.

Blackburn.

John Witherington, Esq., surgeon.

Haslingden.

Thomas Holden, Whitecroft.

Preston.

C. J. Ashfield, Esq., 11, Frenchwood-street.
 Edmund Graham, Bolton-street West.

Staleybridge.

Jethro Tinker.—M.

Ashton-under-Lyne.

E. Clough, Victoria Street, Ryecroft.
Whitehead, Dukinfield.

Eccles.

Mr. John Shaw, gardener.

Prestwich and Neighbourhood.

James Percival, Broughton Grove Works, Bury New Road,
Hon. Sec. to the Prestwich Botanical Society.
William Horsfield, Besses oth Barn.

Glossop.

J. Ollcrenshaw, Dinting Vale.

Holmfirth.

Firth Hardy, Druid's Hall.

London.

W. Marshall, Esq., 11, Old Fish-street.
Sidney Beisly, Esq., the Cedars, Lawrie Park, Sydenham.
Mrs. Beisley, the Cedars, Lawrie Park, Sydenham.

Norfolk.

Rev. E. Simons, Ovington, Watton.

THREE DAYS' BOTANIZING AT THE BEGINNING OF APRIL.

(From a Correspondent.)

I started on the 1st of April for Andover, drawn in that direction by the promises of Murray's 'Handbook for Hants,' which bore witness of *Daphne Mezereon* as growing abundantly in the woods in that neighbourhood, and particularly in an Oak copse, the remains of what was formerly Harewood Forest, and still called by that name. I left this old country town, now no longer resonant with the passage of post-horses, and took the Stockbridge road. The country is part of the chalk plateau of Hampshire, Berkshire, and Wiltshire, the "*patria*," as Conybeare and Phillips express it, of all the chalk hills, the North and South Downs, the Dorsetshire hills, and the great range which terminates in Flamborough Head, all being a kind of claws thrown out from different angles of this body. Plateau though it be, it is as little of a level as Salisbury Plain itself, being all hill and dale, slope and hollow. The part immediately round Andover must once have been (in American phrase) a "rolling"

chalk down: it is now a blaze of white cornfield, with what hedges it has, reduced to the scanty, ugly mechanical measure of modern agricultural improvement; but after some interval the hollows become deeper, the hills woody, with even an occasional patch of open down, and the country assumes some of the character of the more beautiful chalk districts. About two miles from Andover the road divides, and the left branch climbs over a ridge towards the village of Wherwell. On the summit of this ridge the road skirts one extremity of the forest of which I was in search, and which stretches from this place, over hill and dale for a mile or two, perhaps much further, in an almost direct line towards the south. Presuming that what was said to be abundant in many places would be found with little difficulty, I commenced a regular search through the forest. A more immense abundance of Primroses, *Anemone nemorosa*, *Adoxa Moschatellina*, or the Violet which we are now to call *sylvatica*, I never saw, all in the greatest perfection of floral development, though it was only the 1st of April. A *Luzula* (I believe *Forsteri*) was equally plentiful, and I saw some fine *Oxalis Acetosella*. The root of every tree was coated with luxuriant Moss, and in some places the same Moss covered the ground, but no *Mezereon* rewarded my search, and I must have departed *re infectá*, had I not by good fortune met with some woodmen in the heart of the forest, whom I asked for information. They all knew the plant, and knew it too by its right name; but they spoke of it as of a thing which they had only seen occasionally, and which, though growing in a number of places, is not abundant anywhere. One of them led me to a place full half a mile off, on the outskirts of the forest, near the road leading from Andover to Micheldever station, on the main Southampton line; and here, amidst dense brushwood, into which, but for his information, I should never have thought of penetrating, we (or rather he) found two plants, on one of which there were a few flowers. My guide said there had been more of the plant formerly in this place, but that the growth of the brushwood had been too powerful for it. In a short time it will, no doubt, in this spot, disappear altogether, to show itself again when next this portion of the copse is cleared. My guide had seen it in greater quantity, a few years ago, ten miles nearer town, in Bradley Wood, (I think he called it,) on Lord Carnarvon's property, near Kingsclere. The flowering was

nearly over, as might be expected from the advanced state of other and later spring flowers. The time to look for it would probably be March. I have seen it in perfection about the middle of May, in the woods of

“Vallobrosa, where the Etruscan shades
High overarched embower;”

and in the eastern Pyrenees as late as May 28th: but these, though so far south, were mountain situations, and in the latter case the season was a very backward one.

The next day I crossed to the Isle of Wight to look for the *Pulmonaria*, stated by Dr. Bromfield to grow in all the woods about Ryde. I first tried Quarr Copse, which, I grieve to say, is evidently in course of preparation for being cut up into villas. I found no *Pulmonaria*, though abundance of *Daphne Laureola* in full and fine flower. The next copse, however, Shore Copse, (the one between Quarr Abbey and the Solent,) abounded in the *Pulmonaria*, which I found equally plentiful in all the other woods, and occasionally thickets, in that direction. In some places it was as abundant, and almost as beautiful, as wood Hyacinths elsewhere. Its ample clusters of funnel-shaped flowers, in various stages of the transition (so common with *Boraginæ*) from an original reddish tint to a bright metallic blue, made it, in this stage of its existence, a great ornament to the country. Considerable obscurity hangs over the specific characters of this genus. Dr. Bromfield names the Isle of Wight plant *angustifolia*, and identifies it with *P. azurea* of many German botanists, and of the ‘*Prodromus* ;’ but in the shape of the leaves, and in some other characters, it seems to me to agree better with *P. tuberosa* or *saccharata* than with *angustifolia* (or *azurea*), at least as described by Grenier and Godron, if indeed all three, and perhaps *officinalis* also, are not forms of a single species. Whatever it be, it is one of the most beautiful of our rarer spring plants.

I sought, but vainly, for *Prunus Cerasus*, the Morella Cherry, which, according to Dr. Bromfield, grows in a wood between Wootton church and Whippingham Street, but nearer to the latter, in the western angle of the wood. Two beautiful woods answer to the description, and I searched them widely; but as they were long and narrow, and ran nearly due north and south, I found nothing which could be called decidedly the western angle of either of them.

On the third day I walked to St. Helen's Spit, a narrow slip of ground, partly sandbank and partly furzy common, lying along the beach, west of the narrow mouth of the inlet called Brading Harbour. I had found more interesting plants here formerly, in particular *Scilla autumnalis*, very tall and luxuriant. It now abounded with incipient *Euphorbia Paralias*, and the wreck of last year's *Salsola Kali*. My object at present, still under Dr. Bromfield's guidance, was *Cerastium tetrandrum*: and I certainly found it, but so mixed with *C. semidecandrum*, and probably others, and among so many intermediate forms, that I much incline towards the growing opinion that at least these two and *C. pumilum* (Dr. Bromfield, and that eminent botanist Mr. Benthams, add *glomeratum* and even *triviale*), are but extreme specimens of the variations of one multiform plant. The Editor of the *Phytologist*, to whom I had the pleasure of sending a few of my specimens, is far better able than I am to throw light on this interesting and difficult question.

EXTRACTS FROM CORRESPONDENCE.

Remarks on the Botany of Burnham Beeches.

A long letter might be easily written about the locality of these famous old trees, the scene of poetic sentimentalities and unsentimental picnics. Many a name is carved on the smooth bark of the Beeches; many an initial cut into the smooth green turf, which is here and there strewn with the relics and remains of rural refreshments. The Editor's faithful correspondent has little to relate about the plants, because there are but few plants about which there is anything worth relating.

Buckinghamshire has the reputation of being rich in vegetable rarities: will any obliging correspondent make a note of them, and send it to the 'Phytologist'? The list of plants recorded in the 'Botanist's Guide,' as the growth of this county, is a very short one, and one or two out of this meagre number have no right to be here, because they are not Buckinghamshire species. [What are these intrusive species?]

From what I saw of this part of Bucks,—from the variety of its surface and soil; there is marly, gravelly or gritty, and banky

and boggy land here,—I anticipate that in this county, at the proper season, a very fair amount of good plants may be detected. I write 'detected' advisedly; for where next to nothing has been done, every rare plant observed will be a discovery.

The best way of reaching Burnham Beeches from London, is to travel by the Great Western Railway as far as Slough. There, or soon after leaving Slough, the botanist should go to the right hand, by Farnham Royal, by a road almost at right-angles to the London and Bath road. The distance to the Beeches is not more than two or three miles from Slough. But it may be somewhat more, for a person is but an indifferent judge of distance when he travels with those who have the art of beguiling the tediousness of the way, by kindness and sprightly conversation.

Your correspondent does not know how far it is from Slough to the Beeches; he neither walked, nor did he hire or pay for a fly or cab. In the latter case, Cabby would have enlightened his mind and lightened his purse at the same time, and by one and the same process. But it is not a very unpleasant walk, even in a sultry and dusty day, for the lanes are deep and well shaded, and there are several groves, copses, or small woods, which in May or the beginning of June might repay a visit with a reasonable supply of Orchids and other specimens of sylvan or septal plants.

I did not see any Orchids, for it was at the very end of August when I was here; but two Campanulas were observed in the long narrow lane about halfway between Farnham Royal and Burnham. The *C. Trachelium* is certainly there in plenty: not a rarity, it may be said, in many parts of the country; and also, it is hoped, *C. latifolia*, quite a rarity so far south as this locality. *Inula Conyza* (Plowman's Spikenard), *Malva moschata* (cut-leaved Mallow), and *Verbascum nigrum* (black Mullein), were plentiful. The more widely distributed *V. Thapsus* (Moth Mullein, Taper Mullein, Kentish Blanket, etc.) was, as usual, very sparingly distributed. *Ex pede Herculem*, as the ancient sage observed: you can judge of the stock by the sample. The botanist can tell by these examples, *i. e.* when he sees these few prominent representatives of Flora, that he is in a district not destitute of good plants, if he only knows where to look for them, and has energy enough to keep a vigilant outlook, lest he should walk by them, and imagine that there are no rare plants on his way, because he did not see them.

But the Beeches must not be forgotten in these generalities. There they are ; and huge and protuberant are their stems ; and though rather stumpy in their stature, amply umbrageous (shade-yielding). They surely possess more attractions for the artist or the man of taste, than for the timber-merchant. To the botanist they appear in no way attractive, excepting he be a mycologist. And here he may observe several huge *Polypori* attached to their shapeless, aged trunks, and also one of the most elegant of the *Agaricus*, growing, as it usually does, beyond his reach.

But the great harvest is on the ground, under the trees or beside the trees ; for the Beeches of Burnham are not all patulous (spreading), and consequently there is not much which can grow under them : but cheek-by-jowl with them grow innumerable Funguses, chiefly Agarics and *Boleti*, with Chanterelles, *Hydnum*, *Clavarias*, etc.

A list of these curious plants would possess no interest for the general reader, or even botanist, unless he were also a mycologist, and such a one would rather see them than read about them. The student of this portion of the Vegetable Kingdom might do worse than go to Burnham Beeches, any time between the end of August and the middle of October.

On the Stoke side of the Beeches there is an extensive heathy common, and between the common and the Beeches there is what, in the language of courtesy or by poetic license, might be called a brook, where the bard of the poet * stretched his listless length and pored on the babbling streamlet. In this bog—for it is not a purling burn, except in the fancy of the poet or benevolent observer—there are several ponds or heads of very deep water. In the lowermost—for there is a continuous series of them—grows *Utricularia intermedia*, if your informant is correct in judging by the radical leaflets and their bulbous appendages. The plant rarely flowers with us : it certainly was not in flower when I was at Burnham, and it was raked out of the water in hopes of its proving *Ceratophyllum submersum*. There are in the same water several Pondweeds (*Potamogetones*) ; but what they are deponent saith not, for a good reason.

At the tail of the bog, stretching out and upwards on the

* See Gray's Elegy :— .

“ His listless length at noontide would he stretch,
And pore upon the brook that babbles by.”

moor, there grow plenty of *Rhyncospora banal*, *Drosera rotundifolia*, *Scutellaria minor*, and several other more common plants. *Malaxis paludosa*, a plant which your correspondent wanted to see, but did not, may be there for all that. The ground is boggy enough, and there is plenty of *Sphagnum* to line its nest withal.

Where the chaos of mountains and precipices may be, about which Gray wrote so pleasantly to his friend Horace Walpole, the narrator would very much like to be told. He could not perceive any elevation half so high as the clouds in a fair day, nor anything like a precipice half so fearful as Shakspeare's Cliff. Hills we found none to climb; dangerous crags did not tempt us to risk our necks. But there may be steep craggy places at Burnham, though not in our sight; we were not long there. The venerable Beeches are there still, with their "huge fantastic" roots, and there are other respectable vestiges of the vegetable creation. The timorous hare and sportive squirrel still gambol near the harmless man who is contented with the solitude of the scene, or with what grows out of the ground.

The Londoner who is in quest of a change, *i. e.* of a scene nearly as unlike as possible to that in which his daily vocation lies, should visit this spot. It is too little praise to tell that it is exactly what it was more than a hundred and twenty years ago, bating the poetic embellishments, when the poet described it to his æsthetic friend. This place is exactly what it was hundreds and thousands of years ago. There are no enclosures, no plantations, no cultivation nor improvements. This unique place is still a solitary wild spot, its original character unchanged, and its sylvan beauty unimpaired. Long may its leafy honours appear green and glistening in the summer's sun, and long may the heaps of withered and decaying leaves, partially conceal the scarlet fungus which just peeps through the yielding mass! Long may Burnham Beeches be spared the melancholy fate of Hainault Forest!

BRITISH ORCHIDS.

To the Editor of the 'Phytologist.'

Sir,—If you think the accompanying Notes, extracted from

an interleaved copy of Blackstone's 'Harefield Plants' worth a corner in your interesting journal, they are much at your service; you might call the paper a chapter on Orchises of a hundred years ago. Z.

Kew, March, 1861.

A Chapter on Orchids, etc., of the last Century.

Notes and additions in an interleaved copy of 'Blackstone's,' which formerly belonged to Peter Collinson, in whose handwriting they are, in part, and in that of his son Michael Collinson.

At page 41.—*Paris quadrifolia*: the Herb Paris grows in great abundance in Grass Farm Wood, opposite the eighth milestone, in the Mill Hill road, the only place I ever found it, April, 1766; and in Caper's Wood, between the seventh and eighth milestone, grows the black Hellebore, with a green flower (*Helleborus viridis*); flowers at Christmas; found it in March, 1765.

At page 67.—*Listera Nidus-avis*: found in the year 1755, in the Duke of Portland's woods at Bulstrode.

Orchis militaris: found in 1759, in bushy dry banks, going to Greenford (*sic*) Green, near to Dartford; also near the great Beech-trees, so remarkable a landmark in Kent, as you go to Sevenoaks: this in 1758, and it flowered finely in my garden at Mill Hill, in 1760.

Orchis fusca: found this fine Orchis in an old chalk-pit in the Duke of Portland's Park; and it, together with the above, flowers finely in the Orchis bed at Mill Hill.—Note. I have with great care searched the chalk-pit at Harefield repeatedly, but was never able to find either this or the above.

Orchis mascula: in many places about Mill Hill, with a white flower.

At page 68.—*Orchis Morio*: in many fields near Mill Hill, both with white flowers and with almost every variety of red.

Ophrys muscifera: I found this in a chalk-pit at Harefield, but not in the one described by Mr. Blackstone, where I have often searched for it without success, 1758; it continues to flower in our Orchis bed here annually.

Orchis latifolia: near Rickmansworth, plentifully; flowers with us at Mill Hill.

Orchis maculata (?): I saw this species near Newbury, Berks,

in 1755, in moist meadows; sent it to Mill Hill, where after three years, it flowered finely, and is now declined; this same species we received last year from Bath, and it is now (1760) preparing to flower.

At page 69.—*Orchis conopsea*: I found this sort growing plentifully on dry chalky banks, about two miles from the Beeches, near Sevenoaks; not that place where the Man Orchis is mentioned to be found, that spot not being above a quarter of a mile from them; I have searched the Harefield chalk-pit, but was never able to find one plant of it: flowers in our Orchis bed annually.

Orchis ustulata: nor could I ever find this in Harefield chalk-pit: hath been sent to us from Kent, from near Bath, and from Lincolnshire, and flowers freely in the Orchis bed.

Orchis pyramidalis: near Sevenoaks Beeches, and near to Bumstead, in Essex; I found one plant in the Harefield chalk-pit: it flowers with us at Mill Hill.

Herminium Monorchis: found it as described, in the Duke's pit plentifully; is a very small species, and smells very sweet: flowers in our Orchis bed here.

At page 70.—*Orchis bifolia*: once met with two plants near Mill Hill, 1757; again found it in plenty in 1766: it succeeds in our Orchis bed.

Ophrys apifera: I found this on the banks of the Avon, by the Hot Wells, Bristol, and removed some roots to Mill Hill, where it just flowered after remaining four years in the bed, and after died by maggots eating the heart of the bulbs; I have also found it in sundry other places, as in the Isle of Wight, and at Verulam, near St. Alban's; always had bad success in their removal; but since, viz. in the year 1765, have succeeded.

Orchis hircina: the Tragorchis is a most noble plant, but it is a very rare one; I never saw it but once, and that was a little beyond Dartford, on the road to Greenstreet Green, very sparingly. I removed a large sod of them to Mill Hill in 1759, which consisted of three distinct bulbs, and which I carefully separated, but to my great mortification not one of them ever appeared. My father formerly removed into his garden at Peckham this curious plant, and it flowered there with him for several years. The place whence he got it was near to the fourteenth milestone, just before you come to Dartford Heath, which spot is since entirely demolished by enlarging the road. We found it

since in Heath Lane and in Stanhill chalk-pit; the flowers are of gigantic size in the Orchis bed. Again, in May of the year 1767, I found, in an old chalk-pit near Dartford Heath, several plants of the *Tragorchis*; also six or seven of the larger Fly Orchis, growing upwards of a foot in height. There had been a destroyer in the same pit a little before me, who had (by the holes in the turf) carried away with him in full flower near seventy roots, most of which would undoubtedly perish, and thus this species of Orchis rare to be met with here for the future.

Ophrys aranifera: On the 11th of May, 1767, I have found two roots of this, the early green-winged Bee Orchis in the chalk-pits of Greenhithe, and after, upon the same day, I found great plenty of them growing on an old stony, barren kind of heath, between Greenhithe and Northfleet, on the right hand of the road, and some little distance from it.

At page 72.—*The greater Fly Orchis*: it flowers early in May at this present year, 1760; we received three roots of it from a gentleman at Bath, making a fine appearance in our collection here.

Orchis viridis; I never yet gathered it wild: it hath been communicated to us by our before-mentioned friend at Bath, and it shows for flower this year, 1760.

At page 73.—*Neottia spiralis*: this flowers the latest of all the Orchis kind; we observed some years since that it grew plentifully in a field adjoining to our garden here at Mill Hill; also in another field at Highwood Hill abundantly, both very dry and barren spots; it smells very sweet, but what is most remarkable is, that though growing on the spot, with all the advantage of removing with large sods of earth, and to a soil in a manner its own, yet we have never been able to continue this little difficult plant above one season in our Orchis bed.

At page 74.—*Orchis chlorantha*, the smaller Butterfly Satyrion: my father saw this Orchis growing in a wood between Hampstead and Highgate (now the property of Lord Mansfield, and since enclosed by him with pales); it succeeded well for some years in the garden, and then went off. I saw this plant, in 1756, growing in great abundance for more than two miles' riding among the bushes in Enfield Chase, between Southgate and the Lodge, now in the possession of Mr. Jalabert (1760); there is one plant remaining of it in the Orchis bed, which continues to

flower yearly. This *Orchis* is in my opinion by far the sweetest scented of the whole tribe.—N.B. This flowers a month later than the larger kind.

At page 76.—An elegant kind of *Bee Orchis*, with white wings, and the body of a yellowish shade, growing at or near Rancomb, in Gloucestershire, was found by Mr. Robins, of Bath, one root of which, as well as an elegant painting of the same, we received from Mr. Haviland, of Bath. Mr. Robins gathered ten or twelve in full bloom in 1760.

At page 85.—In the year 1787 I had a present of three roots of the *Wasp Orchis* (?), found at Clifton, near Bristol, of which one root flowered finely in the year 1791; the lip very narrow, yellow, and streaked with dark purple, very analogous to the insect it is named after.

At page 86.—In July, 1788, found, for the first time, after many years' inquisition in Harefield chalk-pit, the common *Bee Orchis*, not in the area, but on the bank upon the right-hand side; and in July, 1790, another plant of the same, together with (for the first time) several very strong roots of the common *Fly Orchis*, never in the course of twenty-six or twenty-seven years observed by me before, although I had searched for it at various times; found also abundance of *Orchis pyramidalis*, and of *O. conopsea*; but of *O. militaris*, and of *O. ustulata* I never could (after the most diligent investigation) meet with a single plant.

The whole of the above is copied from the interleaved copy of Blackstone's 'Harefield Plants,' as before mentioned. Some of the entries are evidently by Peter Collinson, and others in the handwriting of his son Michael Collinson.

The following, extracted from Mr. Dillwyn's privately printed account of the garden at Mill Hill, will form an interesting appendage to the present paper. Under the article *Ophrys muscifera*, at p. 36 of the 'Hortus Collinsonianus,' we read:—"Mem., July 4th, 1757. Went to the Duke of Portland's, at Bulstrode; stayed to the 11th. In returning found the great *Fly Orchis* on the declivity of a chalk-pit in Esquire Cook's park, in the parish of Harefield, Middlesex; but there is one Miles, a parson, of Cowley, near Uxbridge, who is *Orchis-mad*, and takes all up, leaves none to seed, so extirpates all wherever he comes, which is cruel, and deserves chastisement." And a

little further down, under *Orchis hircina*, we read:—"Mem., July, 1763. Miller's Satyrium, No. 2, now in bloom in my garden, three feet high, above fifty flowers." Again, under *Orchis pyramidalis*, we find this curious note by Mr. Dillwyn: "In the 'Daily Advertiser' for July 4, 1768, *Orchis pyramidalis* appears in a list of plants stolen from Mr. P. Collinson, and there are memoranda of many imperfectly defined species, sufficient to show that he possessed a large collection of the more hardy Orchises."

RESULTS OF A FEW HOURS' RESEARCH IN BUDDLE'S HERBARIUM.

This collection, sometimes quoted by Sir J. E. Smith, in his excellent work on the British Plants, forms a portion of the immense herbarium of Sir Hans Sloane, probably the largest contribution to science made by any single private individual of the age in which this eminent naturalist lived. The volume is numbered, and there is a manuscript catalogue of the contents in the rooms containing the Banksian Herbarium, and this catalogue may be readily consulted.

The specimens in Buddle's Herbarium are arranged after the system of Ray in his 'Synopsis.'

The following doubtful species occur:—

1. *Sorbus*, or *Pyrus domestica*, from hilly places in Cornwall, sent by Walter Moyle, Esq., and Mr. Stevens, of that county. See Ray's 'Synopsis,' ed. 1696, pp. 295. Smith, Sir J. E., states, *in loco*, 'English Flora,' p. 364, vol. ii.: "In the mountainous parts of Cornwall, many places, according to Mr. Moyle and Mr. Stevens."

2. *Scilla bifolia*, without a locality, but supposed to be a wild plant, because associated with other acknowledged British spontaneous productions.

3. It is now clearly ascertained that the specimen of *Tordylium* in Buddle's Herbarium is not anything but *T. maximum*. Though entered by Sir J. E. Smith as seen at Isleworth by Mr. Doody (see Eng. Fl. ii. 104), it is clear that he considers *T. officinale*, as entered in Buddle, to have been only *T. maximum*.

The following is in Merrett's Herbarium:—*Medicago denticulata*, first, it is believed, distinguished from *M. minima* or *M. maculata* by the Rev. G. E. Smith, and published in his account of the plants of South Kent, is in the above-mentioned collection, vol. ii. p. 68. Also *Melilotus vulgaris*, under title *M. germanica*. This proves that the white Melilot is not a recent acquisition to our Flora.

This Herbarium contains branched examples of *Botrychium Lunaria*.
H.

KENTISH BOTANY.

Notes and Observations made during a Week's Botanizing in South Kent. By a Correspondent.

The indigenous plants of some of our English counties have been well investigated and ascertained, and Cambridge, Hertford, Devon, Bedford, Oxford, Hampshire, Shropshire, and Sussex may be quoted as examples. Some smaller districts have also been well searched, and Manchester, Reigate, Liverpool, and Faversham are among the number of these favoured localities. The county of Essex is no longer to be a *terra incognita* to the botanists of other parts of the kingdom.

The county Flora of Surrey is still in abeyance, waiting for some enterprising, zealous member of the fraternity to enter into and complete the unfinished work of the late lamented Mr. Salmon, who effected more for the elucidation of the plants of his adopted county than any local botanist within the range of our acquaintance.

The metropolitan counties, with the exception of the fore-noted one, viz. Essex, are still waiting for their local botanical historians to record and publish their native productions. There are, it is believed, some manuscript materials on the Floras of the home counties, as they may be called, but they are at the present time unavailable for scientific purposes.

Isolated and distant portions of Kent have been searched, and lists of these districts have appeared; for example, of the Blackheath hundred, by the Greenwich Natural History Society; also the plants of Faversham, published by Jacobs in 1777, and again by Cowell in 1839, and again by Stowell in 1856.

The Rev. G. E. Smith's 'Plants of South Kent' contributed much to our knowledge of the botany of certain localities in the south-east of Kent; but as a whole, the botany of this county is still unknown.

The London botanists usually confine themselves to the northern parts of the county, along the Thames, and consequently the plants of Gravesend, Cobham, Cuxton, Northfleet, Greenhithe, etc., come in for the greater share of their attentions. Who knows the botany of the Crays,—Foot's Cray, North Cray, St. Paul's Cray, Crayford, etc.? Did the late Mr. Peete, of Dartford, leave any manuscripts on this subject? Who has traversed the range of chalk hills bounding the Weald of Kent on the north-west through Westerham, Wrotham, etc., down to the mouth of the Medway? We are not aware of any addition to the knowledge of our native plants being made in these parts during the present century.

The journey, of which a brief account follows, was undertaken partly for botanical purposes, and partly for change of scene, fresh air, and general conversation (interchange of ideas on scientific, social, and political subjects). Although we rather shun than court publicity, and therefore do not publish our names, yet any reasonable information or explanation will be given by the Editor to any applicant. It may further be satisfactory to the readers of the 'Phytologist' to be assured that no plant is entered about which there was any doubt in our minds respecting either its identity or its spontaneity. It is also proper to intimate that the pronoun *we*, (truly and necessarily employed in the following narration,) does not mean the editorial *we*, but is simply the representative of two persons who were engaged with one mind in the prosecution of a common object. The writer is *one*, but the facts observed and recorded were seen by both the observers.

Although our botanizing, strictly speaking, commenced in the ancient city of Canterbury, our notice of a few Faversham plants is to be regarded as only an episode to this narration of our excursion, yet we were now and then able to catch a hasty glimpse at certain plants on the railway bank or cutting along which we were moving at the rate of from thirty to forty miles an hour. For example, between Woolwich and Erith we saw *Erigeron acris*, which is rather a *pascual* (pasture) than a mural or rupes-

tral (wall or rock) species. *Verbascum Lychnitis* also appeared on the chalk cutting between Erith and Greenhithe. We subsequently saw this rare plant on a wall, a very unusual habitat (?). (The yellow Foxglove, *Digitalis lutea*, is well established on an old wall in Garret Lane, Wandsworth.) *Centranthus ruber* is well established in the sides of the deep cutting between Northfleet and Gravesend. This plant abounds on several chalk rocks in this vicinity. We subsequently observed this introduced (?) plant in a still more unexceptionable station, see *infra*. It may, however, be confidently asserted, that the examples which were seen about the railway on the London side of Gravesend were not indebted to human agency for their introduction into either this locality or into the one to be hereafter recorded.

We reached Canterbury in time to look at only a few of the antiquities of this most ancient town, to an antiquary, historian, or devotee, one of the most interesting of British cities. The plants observed on the walls were repetitions of some seen and already recorded as Faversham plants. See 'Phytologist' for April, 1861, p. 108.

Before breakfast, while at Canterbury, we walked up to Harbledown on the London road, about a mile from the city. From this elevation, which is not great, there is a good view of the cathedral, the churches, gates, and other objects of interest in the ecclesiastical metropolis of the realm. This hill was notable for its antiquities when Erasmus visited England, more than three centuries ago. We did not see much of the remains even of the hospitals, lazar-houses, and chapels which once crowned this well-known spot. We did not see clearly the city and its notabilities, because the atmosphere was hazy; yet it was pleasant to walk over this hill, and to look down into the deep hollow road, trodden by myriads of pilgrims in bygone times, and to muse upon the scenes and circumstances of days long past. Solemn inferences and sentimental reflections might be indulged in on the contrast between the state of this city three or four centuries ago and its present condition; but these would be out of place here, as much so as the old shoe of St. Thomas, kissed by devotees, would have been out of place in the exhibition of farming implements which was held this year, 1860, in the agricultural capital of England. The present charitable foundations are of a rather more utilitarian kind than those were that existed

when Erasmus wrote his *Peregrinatio Religionis*, in which is introduced a rather humorous account of this ancient custom, which scandalized the Protestant Dean Colet, and appears to have only drawn a smile from the countenance, and a coin from the pocket, of the liberal-minded Reformer.

The memory of these superstitious usages has passed away. The shoe is no longer, if existing, exhibited to excite the pious admiration of the passenger. It is probably in the collection of some virtuoso. We saw no objects of interest on Harbledown, neither antiquarian nor vegetarian.

At Harbledown, or rather on it, we observed *Rumex pulcher*, far from an uncommon plant in Kent; also *Torilis infesta*, an infestive (noxious) weed about Southend, on the opposite coast: here also *Polystichum angulare* was observed. These plants are hardly worth recording, but they are entered as the only species which were seen, not as rarities in this part of the country. *Centranthus ruber* grew on walls here and there in this city.

About ten o'clock, on our second day's journey, we started from Canterbury to walk to Sandwich, a distance of a dozen miles, good measure. There is a fair and wide road to walk or to drive on, but there is no public conveyance. Coaches and omnibuses go to Dover, none to Sandwich.

It is now nearly two hundred and thirty years since Thomas Johnson, the famous editor of Gerard's 'Herbal,' with his friends William Broad, Leonard Buckner, Robert Larkin, James Clarke, etc., walked from Sandwich to Canterbury on an expedition like that on which we were employed. Those who have the curiosity to compare the results of these exploring botanists, who travelled by the same road as ourselves, with the plants observed by us, will find some, though not many, common to both the lists. Johnson names upwards of a century of plants collected by his company between Sandwich and Canterbury. Probably our list will not contain one-tenth of the number which he observed. The nomenclature usual in the first half of the seventeenth century is a formidable impediment in the effort to compare the results of the two journeys.*

* Mr. T. Johnson and his associates observed above a hundred plants in their walk from Sandwich to Canterbury. Of these only four or five are recorded in the present list. Many more were probably seen, but they were not such as could with propriety be entered in an account of the rarer species observed.

We were singularly favoured with very fine weather, a most important item in the success and enjoyment of a botanical tour. The summer of 1860 will be long remembered as one of the most inclement or unpropitious seasons which any one now living has ever seen. Two fine days in succession were quite as unusual, as the fulfilment of predictions of a change of weather at the change of the moon. Where we happened to be all this week, the first in September, the weather was fine, without showers, and with a bracing, for the most part east or south wind. We had a few drops, or a slight sprinkling of wet before we reached Ash, and when there, the road gave unmistakable indications of a heavy shower. The nearer we approached the sea, the wetter was the road; and the landlord of the Bull, Sandwich, informed us that they had there a considerable fall of rain. Had we started only an hour earlier, our walk to Sandwich would not have been quite so pleasant as it happily was.

Our first plant (for this day, strictly speaking, was the commencement of our journey) was picked up on the roadside between Canterbury and Littlebourn, on the left-hand side of the way, near a path across what was a park in not very remote times, but now a pasture field, and where there is a couple of gateway pillars, not unhandsome, and of the style of similar erections of the age of Queen Anne or George I.; the place is not above a mile from Canterbury or from St. Augustine's Abbey. This is a very minute description of the locality; but the plant we saw there is rather a scarce species. We could count on our fingers all the places where it has been seen in Surrey, Hertfordshire, and Cheshire, and leave some digits uncounted after completing the tale. Therefore the station of *Dipsacus pilosus* is thus circumstantially described. It grows here both fine and plentiful, well ensconced behind brambles and briers, by which it is both protected and concealed till about this season, when it overtops its prickly shelter. If as much space is filled with our subsequent discoveries as with the first, this article will swell far beyond the usual limits, within which it is necessary, for the sake of space, to restrain such accounts.

Calamintha officinalis appeared on the roadside, and, as usual, in no very great abundance. In a field on the left, cultivated with cabbages and other culinary vegetables, *Linaria Elatine*, *Stachys arvensis*, and *Anthemis arvensis* were found in plenty.

Cerasus avium grows in the hedge, and *Hypericum humifusum* on the grassy borders of the road.

At Littlebourn, *Veronica Buxbaumii* was well established. This plant has now obtained a sufficient settlement in the south of England, although barely thirty years ago it was as great a rarity as *Arenaria balearica* is at the present time, 1860.

It would now be accounted sheer pedantry, or affected *purism*, to refuse to enter this south European species in any list of our spontaneous vegetable productions.

Between Wingham and Ash, on the left-hand side of the road from Canterbury, we were so fortunate as to light upon a large colony of *Geranium pyrenaicum*, rivalling in size and beauty those collected in the mountainous districts of the south of Europe, from which this fine and rare plant has obtained its name.

This very gratifying discovery enlarged and rectified our knowledge about the distribution of this species, which some believe to be a doubtful native. This plant has long been known as a denizen of the valley of the Thames, above London, both on the Surrey and Middlesex sides of the river. Its detection in the south-east of Kent is, it is believed, recorded here for the first time.

Torilis infesta and *Feniculum vulgare* are also entered in the note-book made during this journey, and at this part of the route. In the village of Ash, *Sedum reflexum* was very abundant on roofs and walls; and while on the subject of introduced plants, it may be stated that *Hypericum calycinum*, *M. hircinum*, *Coronilla Emerus*, were pretty well established as plants which apparently would establish themselves on a bank by the wayside, contiguous to a shrubbery.

After passing through Ash, we entered Sandwich marshes, and in the deep ditches collected *Utricularia vulgaris*, *Hydrocharis Morsus-ranæ*, in flower. This fine floating species flowered very sparingly during the past season. In these ditches *Lemna trisulca* abounded, with *Ceratophyllum demersum*, *Ranunculus circinatus*, *Myriophyllum verticillatum*, *Cenanthe fistulosa*, *Typha angustifolia*, *Scutellaria galericulata*, and other more or less common aquatic plants.

At the entrance to Sandwich we turned aside to the left, to visit the ancient ruined fortress of Richboro', the Roman RUTUPIÆ, and walked partly along the river-bank, and partly on the

verge of the cliff on which this curious antique pile still remains, defying alike the operations of atmospheric influences and the insidious attacks of Father Time.

On our way along the flat ground near the river, *Rumex pulcher*, *Centaurea Calcitrapa*, and *Sisymbrium Sophia* were seen, the latter very sparingly; also *Feniculum vulgare*, *Apium graveolens*, *Rumex Hydrolapathum*, *Ononis spinosa*, and *Torilis nodosa*, in profusion; *Cynoglossum officinale*, *Hyoscyamus niger*, and *Pyrethrum maritimum*, the three last-named not so plentiful.

On the edge of the cliff, in the field close to Richboro', by the hedge, we lighted on some very sturdy remains of *Smyrniium Olusatrum*. Not from from this place, there was a long narrow patch of potato-ground, where fine, well-established plants of *Oenothera odorata* were growing.

The ruins or remains of Richboro' consist of an external wall, nearly perfect on all sides except toward the sea, which has made considerable encroachments on this part of the coast. The wall is of great thickness, from twelve to twenty feet, and it is probably twenty to thirty feet in height. On the inner side it appears mostly composed of flint, imbedded in mortar now nearly as hard as the flints themselves. On the outside, there are, besides flints, consecutive rows or layers of Roman brick or tile, arranged equidistantly in a double band.* The vegetation of the wall is chiefly *Echium vulgare*, *Centaurea scabiosa*, and a few smaller but equally common plants.

At the base of the wall, in the interior, the ground is full of Fennel of gigantic growth. This is spreading over the enclosed area, which this season, 1860, was cultivated with barley. The Fennel will grow in any crop, and soon overtops the tallest cereals.

Fennel, probably because it is a plant usually cultivated in gardens, is a reputed introduction; and this is probably the case. But all along the coast, by the ditches, hedges, and about the cliffs, it is almost as common as *Apium graveolens*.

It is very common on the hills, and in the sand-pits between Woolwich and Dartford, where the wild Celery does not grow.

* If there be any truth in Archdeacon Battely's map, Richboro' has been much changed since it was described by Tacitus. The coast and the river are not now where they are laid down in the map of the reverend geographer, who lived many centuries after the Roman historian.

Botanists who have been in Cornwall, report it as being truly wild about the Land's End. It can hardly be more wild than it is in most parts of south Kent.

On our return from Richboro' towards Sandwich, we met with the same *Oenothera*; but as the evening was now more advanced, it showed many more open flowers, and like Buttercups in June, "would be seen whether we would or no." It was well established all down the steep declivity, and had taken possession of the grassy borders of the railway. Like the *Oenothera biennis*, it delights in railway embankments; and like the more common species, it is evidently increasing; but it is a much more ornamental and neater plant than the commoner species. It will probably soon force itself on our notice, and also obtain a place among our excluded species. It will intrude whether we like it or not, and if it is not honoured with a name and a place among our spontaneous plants, it will continue to spread notwithstanding, and sometimes will find a place, as at Richboro', which it bids fair to retain. It is to be wished that it may also obtain historians who may not be ashamed to admit its humble pretensions to historic fame. *Conium maculatum* was another not uncommon species seen in this locality.

About the precincts of Sandwich, and in some parts of the town, *Diplotaxis muralis*, *Phalaris canariensis*, and *Sinapis nigra* were observed. The Canary Grass was not nearly so common as it is near London.*

* This fact affords an instructive lesson to those who volunteer to instruct their less informed brethren in the mysterious doctrines about the distribution or dispersion of plants. It has been generally reported in books descriptive of the Isle of Thanet, that this plant, the Canary Grass, is extensively cultivated in the north-east corner of Kent. This fact must be taken for granted, for we cannot confirm it. But we can assure our readers that the Canary Grass which grows so commonly in many parts near London is not "an escape from cultivation."

Some of these escapes from cultivation are quite as wonderful as many of the wondrous accounts of the appearance of strange plants where they had never appeared before. They are more so, because most of these plants called escapes were never cultivated; nor are they worth cultivation, either for use or for ornament. Sandwich, where a single plant of Canary Grass was seen in September, 1860, is not far from the Isle of Thanet, where this grass is said to be extensively produced. The vicinity of London, where thousands of specimens may be easily collected, is far from the centre of its cultivation, or "the type of its distribution." Why is it so common near London and so rare near Thanet? The answer is easy; London is the great emporium of the empire. All, or nearly all, the harvest or

Prosperity has deserted Sandwich, and has patronized its neighbour, Deal. The former town has been decaying ever since it was forsaken by the sea. It is a dull place, with few attractions even for the antiquary, and the town itself is not very interesting to the botanist, though some of the less frequented streets be green with vegetation. Yet a botanist might spend a week very profitably in this ancient member of the Cinque Ports, and might find good botanizing between Pegwell Bay on the east, and Ham Ponds on the west; and between Sandown Castle and the old haven of Sandwich on the south, and Ash on the north. Mine host of the Bell is a good speci-

produce of Canary Grass is first brought to London, and from this centre it is dispersed far and wide over all the kingdom. But the chief reason why the Grass is frequent near the Metropolis is, because there are more Canary-birds kept in London than there are anywhere else. Thus the appearance of Canary Grass, common Hemp, and Flax, are easily accounted for.

London is the great mart of the whole world; the productions of all the earth reach this great city. It is the great centre, or type, as some would say, of vegetable distribution. London is certainly the centre from which many of our novel plants have emanated or radiated, but it is not the field where they have been much cultivated. The sweepings, the refuse, the rejectamenta of our granaries, seed-warehouses, the shakings of sacks, the litter of stables, all contain seeds from distant parts of the world, some more, some less. These find a place in the dust-bins, the dung-pits, and other more unsavoury localities; ultimately they are all conveyed to the country in the manure, or they are conveyed by, and in, the sewage to the river, where some of them probably perish; a remnant is dredged up in the sand and mud, and thus are deposited in waste places till these are used for more profitable purposes; and the seeds or some of them grow, some for one season, some for several.

Commercial intercourse is the chief agency now in operation, disturbing the law of the distribution of plants, and sometimes they disturb and discomfort the minds of the inventors themselves, who have been at much pains in establishing the laws of Nature, which Nature, like an ungrateful hussy as she is, obstinately refuses to obey.

After the strangers have arrived, cultivation plays a most important part in their preservation; but it has usually less to do with their introduction than other causes have. Winds, tides, currents, animals, birds especially, have obtained much credit for increasing the vegetative wealth of countries; but it is to the operations of human agency, to commercial intercourse, that we are most indebted for the increased and still increasing numbers of our plants.

When our London drainage has been completed, and when a system for the distribution of the sewage of the Metropolis has been organized, then the botanist may expect a rich harvest of plants from all parts of the earth. Many of them doubtless will perish; but some will remain to astonish the simple natives who believe in the marvellous and overlook and despise causes that are at work before their eyes.

men of a bluff, honest Boniface. His accommodation and fare are satisfactory, and his reckonings very reasonable.

LATHYRUS TUBEROSUS.

The following notices of *Lathyrus tuberosus* are sent by a correspondent:—

There is in Turner's 'Herbal,' 29a, part 1st, original edition, a rather obscure intimation that this species is a native of England. From the account of the plant given by this excellent author, it is probable that he confounded two distinct plants under the name of *Astragalus*. His notice is as follows:—" *Astragalus* is named about Colon (Cologne), *Erdekelin*; in Netherlands, *Erdnutt*; in Ouerland, *Erdnusse*. I have sene it in England, in Come (Comb) Park, and on Rychemunde (Richmond) Heth; but I never could learn the name of it in Englyshe. I am compelled for lacke of another name to call it *Peese-earth-nutt*: because it hath leues lyke a lytle Peese, or a *Ciche*, and rootes lyke an Erthnut. Although all the description of Dioscorides besyde dyd agre very well unto this herbe, yet when, as I had found the roote in certine moist places very lytle astringent, I began to dowt, but after that I found that in drye places, and that it had a manyfest astryction, I dowted it no more, but that thys herbe was the ryght *Astragalus*, although Fuchsius do contend, that thys shoulde be *Apios*." There is a figure of this plant on the preceding page. It is probable that the plant found in Comb Wood and on Richmond Heath was *Lathyrus macrorhizus* or *Orobus tuberosus*, Linn., a plant very common in such places.

John Parkinson, in his Herbal, published in 1640, appears to have known the true *Earthnut*, *Lathyrus tuberosus*; for his description agrees with this plant, and not with *L. macrorhizus*.

" Fig. 4. *Lathyrus arvensis*, sive terræ glandes. Pease Earthnuts.

" These earthnuts have divers weake and small square stalks running upon the ground, four or five foote long; the leaves are small, usually two sê together upon a branch, with a clasper at the end of each, taking hold of what standeth next to it. The flowers come forth from the joynts towards the tops of the stalks upon long foot-stalks, many growing together, being narrow, and

of a deep reddish-purple, somewhat bright; the cods that succeed them are small and long, with small round seeds in them; the roots are tuberous, black, and small, fastened to long strings, which spread much on the ground, in taste somewhat like to a dry chestnut. Bauhinus maketh it and the next (*Lathyrus sylvestris lignosior*) to be both one plant.

“The Peace . . . the fourth (the above-named plant), is said by Gerard to grow in many places with us, as Hamsted, Coome (Comb) Parke, etc.; but we rather think it was the next, for the roots of those we have hitherto found in our woods and hedgesides have been more woody than the other sorts, which, growing in our gardens, we have seen to be more tender, and came to us from beyond sea” (Park. 1062).

In Johnson's *emaculated*, not emasculated, edition of Gerard, it is observed by the learned editor,—who rarely abstains, when an opportunity is given, from throwing dirt on the memory of his author,—states that this was confounded with the more common Wood Pea, *L. macrorhizus*, and thinks it no wonder, since Dr. Turner, a man more exquisite in the knowledge of plants, and who had seen the true *Terræ glandes* in Germany, mistook this (the common Wood Pea) for it. And indeed this grows here, and is much more astringent and woody than that of Germany, and in no wise fit to be eaten.” *De gustibus nil disputandum*; every man to his liking. The writer of these notes has eaten the roots of the Wood Pea by the handful, and in those days thought them good, as some Highlanders do in these our more luxurious times. See Ger. Em. 1236.

It will be seen from the above that both Johnson and Parkinson ignore the plant as a British species. See Johnson's Gerard, p. 1236; and Parkinson, 1061.

The next notice of this plant is contained in the ‘*Historia Plantarum*’ of the illustrious Ray, who distinctly states that, to his knowledge, it was not spontaneous in England. The following are the synonyms and the authorities quoted by Ray in 1693 (Hist. i. p. 895).

“*Chamæbalanus leguminosa, J. B.*

Lathyrus arvensis repens tuberosus, C. B.

Sive terræ glandes, Parkinson, Dodocns, Lobel, Gerard.

Distinguitur abunde ab aliis Lathyris radicibus suis tuberosis esculentis.

In Anglia, quod sciam, spontanea non occurrit.”

The first reliable and authentic account of *Lathyrus tuberosus* as a genuine native of England, is supplied by Petiver's Herbarium, where there is a specimen, with the following note, viz. "*Lathyrus arvensis repens tuberosus*. I had it from the Rev. John Sedgwick, who gathered it not far from Lincoln, in the north field of Blankney, near the road to Lincoln."

There is in Buddle's Herbarium a specimen of the same plant, and from the same locality, and indorsed by the same authority. This latter-mentioned specimen is in Herb. Sloan. vol. 119. Lobel, Tragus, and F. Columna are undersigned as the authorities for the species.

The last mention of it, previously to its discovery in 1860 at Wandsworth and Fyfield, is to be found in Lightfoot's 'Flora Scotica,' p. 1137.

Lathyrus tuberosus is recorded in Lightfoot in the Appendix, among his "doubtful natives, or such as have not yet come under the author's inspection." All he says about it is as follows, at p. 1137, vol. ii.—"*Lathyrus tuberosus*. In Dr. Hope's Collection, but where collected he does not know."

This plant is stated in Green's Botanical Dictionary to be a "native of France, Germany, Flanders, Holland, Switzerland, Austria, and Siberia. This is a most noxious weed to the husbandman, and is exceedingly difficult to extirpate."

A full account of its recent discovery will be forthcoming in the Flora of Essex, which has been announced in the 'Phytologist.'

EARLIEST DATES OF FLOWERING OF THE FOLLOWING
PLANTS OBSERVED IN THE VICINITY OF ROSS, 1860-1.

By H. SOUTHALL and B. M. WATKINS.

Petasites vulgaris, Desf.	Dec. 16	Corylus Avellana, L.	Feb. 16
Poa annua, L.	" 16	Taxus baccata, L.	" 25
Taraxacum officinale, Wigg	" 16	Alnus glutinosa, L.	" 25
Bellis perennis, L.	" 16	Tussilago Farfara, L.	" 25
Senecio vulgaris, L.	" 16	Veronica agrestis, L.	" 28
Veronica hederæfolia, L.	" 16	Ulmus campestris, Sm.	March 6
Stellaria media, With.	" 16	Lamium purpureum, L.	" 7
Potentilla Fragariastrum, Ch. Feb. 9		Viscum album, L.	" 7
Mercurialis perennis, L.	" 16	Caltha palustris	" 9
Primula vulgaris, Huds.	" 16	Daphne Laureola,	" 9

Ranunculus Ficaria, <i>L.</i>	March 9	Geranium Robertianum, <i>L.</i>	April 6
Viola odorata, <i>L.</i>	9	Erysimum Alliaria, <i>L.</i>	6
Viola sylvatica, <i>Fries</i>	9	Capsella Bursa-pastoris, <i>DC.</i>	6
Viola hirta, <i>L.</i>	9	Carex præcox, <i>Jacq.</i>	6
Helleborus fœtidus, <i>L.</i>	9	Ribes alpinum, <i>L.</i>	11
Helleborus viridis, <i>L.</i>	9	Carex glauca, <i>Scop.</i>	11
Cardamine hirsuta, <i>L.</i>	9	Stellaria Holostea, <i>L.</i>	16
Carex clandestina, <i>Good.</i>	9	Veronica arvensis, <i>L.</i>	16
Carex digitata, <i>L.</i>	9	Veronica Chamædryas, <i>L.</i>	16
Hutchinsia petraea, <i>Br.</i>	9	Carex vulgaris, <i>Fries</i>	16
Arabis verna, <i>L.</i>	9	Cerastium glomeratum, <i>Thwil.</i>	17
Luzula pilosa, <i>Willd.</i>	9	Plantago lanceolata, <i>L.</i>	17
Anemone nemorosa, <i>L.</i>	9	Prunus insititia, <i>L.</i>	18
Salix Helix, <i>L.</i>	9	Myosotis collina, <i>L.</i>	19
Ribes Grossularia, <i>L.</i>	9	Myosotis arvensis, <i>L.</i>	19
Galanthus nivalis, <i>L.</i>	9	Hyacinthus non-scriptus, <i>L.</i>	22
Anthriscus sylvestris, <i>Pers.</i>	14	Ranunculus bulbosus, <i>L.</i>	22
Luzula campestris, <i>L.</i>	16	Veronica polita, <i>L.</i>	23
Chrysosplenium oppositifolium, <i>L.</i>	28	Fragaria vesca, <i>L.</i>	23
Glechoma hederacea, <i>L.</i>	30	Galeobdolon luteum, <i>Sm.</i>	23
Populus nigra, <i>L.</i>	30	Arum maculatum, <i>L.</i>	23
Oxalis Acetosella, <i>L.</i>	30	Prunus avium, <i>L.</i>	23
Ulex europæus, <i>L.</i>	30	Vicia sepium, <i>L.</i>	24
Gagea lutea, <i>Ker</i>	29	Luzula Forsteri, <i>DC.</i>	25
Narcissus Pseudo-Narcissus, <i>L.</i>	20	Luzula Borreri, <i>Bromf.</i>	25
Narcissus biflorus, <i>Curt.</i>	29	Ajuga reptans, <i>L.</i>	25
Cardamine pratensis, <i>L.</i>	30	Ranunculus aquatilis, <i>L.</i>	25
Ribes rubrum, <i>L.</i>	April 1	Mœhringia trinervia, <i>L.</i>	25
Lamium album, <i>L.</i>	1	Symphytum officinale, <i>L.</i>	29
Prunus spinosa, <i>L.</i>	2	Barbarea vulgaris, <i>Br.</i>	29
Primula veris, <i>L.</i>	2	Chelidonium majus, <i>L.</i>	29
Primula vulgaris, β elatior	2	Orobus tuberosus, <i>L.</i>	May 2
Viola tricolor, <i>L.</i>	2	Lychnis vespertina, <i>Sibth.</i>	2
Veronica agrestis, <i>L.</i>	2	Orchis mascula, <i>L.</i>	2
Sisymbrium thalianum, <i>Gaud.</i>	2	Luzula sylvatica, <i>Rich.</i>	2
		Cratægus Oxyacantha, <i>L.</i>	5

NOTICE.—To the above list the following is subjoined for the information and benefit of botanists, viz. that I will send fresh specimens of the *Luzulas* to readers of the ‘Phytologist’ on the condition that they send me a stamped envelope with the name and address of the sender.

B. M. WATKINS.

Glewstone, near Ross.

[It would be very obliging if our correspondent would include in his kind offer some of the other rare plants, viz. *Gagea*, *Narcissus*, etc.—ED.]

HYDROCHARIS MORSUS-RANÆ.

On the *Hybernacula* of *Hydrocharis Morsus-Ranæ*.

By L. C. TREVIRANUS.*

The fact that *Hydrocharis Morsus-Ranæ*, besides its seeds, has another mode of reproduction by certain little bulbs developed on the roots, which, becoming detached, pass the winter at the bottom of the water, has already been noticed by Nolte ('*Ueber Stratiotes und Sagittaria,*' 6), and is alluded to by Linnæus, in

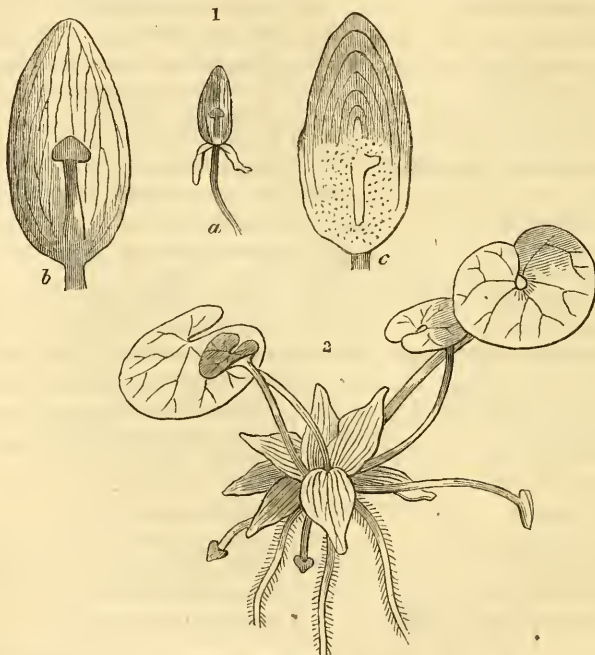


Fig. 1. *a.* Hybernaculum of *Hydrocharis Morsus-Ranæ*, as observed on the 21st of August, natural size, with the lowest scales bent back. *b.* The same, magnified, the outer scales removed. *c.* A vertical section of the same. Fig. 2. The same, on the 1st of March, in process of development, somewhat enlarged.

a few words, in the '*Flora Suecica.*' Fried. Nees (Gen. Flor. Germ. vi. t. 15) has given a tolerable representation of these bulbs, but without mentioning their mode of development. When

* Translated from the '*Botanische Zeitung,*' No. 41. p. 699 (1857).

observed towards the latter end of the month of August, they are long-stalked, elongate, oval bodies, the largest of which are about the size of a small coffee-bean. If cut through vertically, the lower half is found to consist of compact cellular tissue, in which the germ of rootlets is perceptible; the upper, of rudiments of leaves, alternating with large gibbous stipules (sackförmigen Nebenblättern), which are membranous, and veined with red. Of the rudimentary leaves, the outermost has a long stalk, and a very small, kidney-shaped, not folded blade, with red spots; in the second the blade is much larger and the stalk shorter, and in the third still more so. By the 1st of March I found these little bulbs in a state of rapid development. Each had put forth three or four perfect leaves, while the blade of the above-described rudimentary ones remained unaltered in size and shape, though its stalk had somewhat lengthened. The accompanying drawings, made by me during these observations, will obviate the necessity of any further explanation.

BOTANICAL NOTES, NOTICES, AND QUERIES.

HAIRBELL *v.* HAREBELL.

It appears that Sir W. Hooker, in his 'British Flora,' considers that the *Campanula rotundifolia* is the Harebell of Sir Walter Scott's 'Lady of the Lake,' as he quotes the lines of that author in his description of this flower; but it should be observed that Harebell is the common name given by our early writers to the *Hyacinthus nonscriptus*.

Gerard (book i. chap. 79) speaks of Jacinth or Harebells, including *Hyacinthus anglicus*. Elisha Coles, in his Dictionary, gives "Harebells, *Hyacinthus anglicus*." And this flower is mentioned by Shakspeare in 'Cymbeline,' on Fidele, as follows:—

"Thou shalt not lack
The flower that's like thy face, pale Primrose, nor
The azured Harebell, like thy veins."

Coles also gives Hare's-ear, *Bupleurum*, and Hare's-Lettuce, *Sonchus oleris*. We have also in our Flora, a *Trifolium* called Hare's-foot Trefoil. I am therefore curious to know the name of the first writer who calls the *Campanula*, Harebell. In the 'Illustrated Handbook of British Plants,' the *C. rotundifolia* is called Nodding-flower Harebell; but the Rev. Mr. Johns, in his 'Flowers of the Field,' calls it Hairbell. The latter appears to me most appropriate.

H. BEISLY.

GOLD BLOTCHED WEEPING ASH.

In communicating several examples in connection with *Cytisus Laburnum*, var. *purpurascens*, as registered in the 'Phytologist' of September, 1859, I beg to add the following:—Several years ago, I grafted a scion of the Blotched-leaved Weeping Ash upon a stock of the common Ash, in ground one mile from this city. After two years, I lifted the plant to ground occupied by me within the city itself, and there it rested several years, being, from its lofty position, exposed to our cutting winds from the sea. Last season it made a start with young wood from the graft, and also from the stem about two feet below the graft, such young shoots being clothed with leaves having the same blotched variety as the graft; the bark of the graft and the spontaneous shoots from the stem referred to, being also shaded with a golden-bronzed or yellow colour. Four feet down the stem, a shoot from the stock is also allowed to remain, bearing the green bark and leaves of the common Ash.

G. HOWIE.

St. Andrew's, March 5, 1861.

SHAKSPERE PLANTS.

In 'Hamlet,' act 1, scene 5, the Ghost says to Hamlet:—

"And *duller* shouldst thou be than *the fat weed*
That rots itself in ease on Lethe's wharf,
Wouldst thou not stir in this."

In Mr. Douce's 'Illustrations of Shakspeare' is the following note:—"The plant here alluded to might have been *Henbane*, of which Gerard says that it causes drowsiness and stupifies and *dulls the senses*." I think some of the contributors to the 'Phytologist' may be able to give us a little more information on this subject.

S. B.

PETASITES VULGARIS.

A correspondent wishes to know a Kentish locality, within an easy walk of the Metropolis, for *Petasites vulgaris*. Can any of our readers favour us with one?

Blechnum Spicant, var. *ramosum* (see p. 159, vol. v., n.s.), has both sterile and fertile fronds on the same *stipes*.

Communications have been received from

G. Davies; W. P.; B. M. Watkins; Dr. Windsor; W. W. N.; Sidney Beisly; John Sim; Tom Stansfield; W. Richardson; C. J. Ashfield; James Lothian.

RECEIVED FOR REVIEW.

The Todmorden Post, May 11th.

The Preston Chronicle, May 11th.

The Todmorden and Hebdenbridge Advertiser, May 11th.

NORTHUMBERLAND BOTANY.

Botany of Hulne Park. By W. R., Alnwick.

Hulne Park, near Alnwick, in Northumberland, the magnificent demesne attached as pleasure grounds to Alnwick Castle, the princely seat of the Percies, Dukes of Northumberland, presents a wide diversity of scenery, with striking inequalities of surface, in one portion abounding in beautiful undulating meadows and gentle slopes, in others with rugged and lofty hills rising 800 feet above the level of the sea. It embraces a rich variety of objects of interest to the antiquarian, to the scientific naturalist, to the botanical student, and to the lover of the picturesque and beautiful. It is surrounded by a lofty park wall, and the contents within its enclosure are estimated at between three and four thousand acres, its circumference being upwards of twelve miles. The river Aln, crossed by numerous bridges of elegant rural designs, winds through the centre, forming a silvery thread, nearly dividing the park into north and south, its banks shaded and overlung with tastefully laid-out woodlands. Within the park may be found almost every variety of sylvan scenery, of hill and dale, from the rich perfection of modern cultivation to the romantic grandeur of the primitive mountain. The river margin decorated with a choice selection of evergreen and flowering shrubs; the lawns rejoicing in a luxuriant vegetation, and studded over with healthy forest trees; the higher sections covered with the dark green pine, or waving with the purple blossom of the heath and the golden glories of the gorse; the rude and immemorial grey crag, with weatherbeaten grandeur, in the loftier elevations, asserting its supremacy, and adding wildness and sublimity to the whole.

On the north bank of the river, embosomed in wood, stands Hulne Abbey, of Early English architecture, founded for the Order of Carmelite Friars about 1240, by the piety of William de Vesey, the lord of Alnwick of those days, and Richard Grey, a companion knight, two of the Crusaders whose chivalry had led them to the Holy Land, and who, on their return, had discovered in the chosen site for an abbey, a striking similitude to that of Mount Carmel in Palestine. Its towers are still in tolerable preservation, and form interesting objects of inspection to the researches of the mediævalist. On a lofty eminence on the opposite

side, stands Brizlee Tower, a composite column, ninety feet in height, finished in the highest and most elaborate style of masonry of the last century, and from whose summit, reached by an internal staircase, is obtained a prospect of extended and varied beauty. To the north-west and between the openings of the Cheviot range, the visitor catches a glimpse of the blue hills of pleasant Teviotdale, in Scotland. To the east, spread out before his eye, lies a landscape teeming with all the wealth of cultivation, bounded by the coast-line, marked by ancient castles and ruined keeps; and further still the wide expanse of the German Ocean. To the south, his vision is carried on to the fells of the county of Durham. Nearly two miles further down, on a pleasant haugh, formed by a bend in the river, stand the remains of Alnwick Abbey, another monastic establishment, founded about 1147, by Eustace Fitz-John, for Premonstratensian Canons, of which all now left is the gate-tower, appropriated to the residence of one of the keepers, and on the beautiful lawn in front the Alnwick Horticultural and Botanical Society hold their annual Exhibitions.

The soil of the park, resting upon the sandstone, is not so rich in rare plants, as from the inequality of its surface the inquiring botanist might be led to anticipate. It abounds with several species which are clearly not indigenous, but appear to be legacies bequeathed to the district by the inmates of the religious establishments, and who were expelled during the reign of our eighth Henry, and from their long cultivation have in a great measure become naturalized. Among these may be named the *Euphorbia Esula*, which is found in abundance on the walls of Hulne Abbey; the *Corydalis solida* is another instance, and several others might be named in different parts of the immediate neighbourhood.

I may add, that, the Duke of Northumberland, the noble owner of the grounds, with that generosity and consideration which distinguish his character, throws his parks open to the public two days in the week throughout the year, when they are accessible to all, from noon to sunset, throughout the summer. And the Castle, garden, and parks, are open at all times to pleasure-parties from all quarters, on simply applying for a pass at the Castle offices.

The Flora of this part of the country is very attractive. To commence, near Alnwick Abbey, on the banks of the Aln, not

far from the town of Alnwick, there is a locality for *Helleborus viridis*; not a common plant in any part of the British Isles. This station is rather too well known, and the roots are frequently dug up and carried off; and at present (April, 1861) there is but little of it to be taken. It is an ancient and still popular remedy in the pharmacopœia of the cow-leech (see 'Phytologist' for May, 1861). Dr. Turner, in his "Herball," writes, "Dyurse husbandmen used to put the roote of Berefoot into beastes cares, and called the putting in syteryng of beastes, and in some places called the herbe Syterwurte." This practice is not unknown in modern days in other parts of the kingdom.

Viola odorata occurs a little further up the riverside; and east of the old lodge, *Corydalis solida* is found in abundance, associated with a few plants of *Pulmonaria officinalis*. The latter plant is believed to be an introduction; the former one has all the appearances of being in its natural habitat.

By the sides of the drive that intersects this part of the ducal domain, there are numerous patches of *Chrysosplenium oppositifolium* and *C. alternifolium*, both of them in perfection at this time (May 8th, 1861); *Polygonum Bistorta* abounds in the same locality.

On the west side of the old lodge, in a plantation a few yards from the drive, *Lycopodium clavatum* grows; and in an open space further on towards the deer-park, *Ophioglossum vulgatum* and *Hieracium aurantiacum* are found. Of the latter there is plenty; but perfect specimens are rarely found, as the grass is often mown before the flowering of the plant. This last-named species also occurs in some other parts of Scotland, but not without a suspicion of the probability of its having been introduced at some period not very remote.

Paris quadrifolia and *Epipactis latifolia* are found in many parts of the park, and in none more plentifully than in woods near the old house.

The plants on and about the ruined remains of Hulne Abbey are the following, and it may be observed that, in the language of modern botany, they are mostly introductions or suspected aliens; for in botany no period of time, however long, gives to certain species the privileges of nationality.

Hesperis matronalis grows, but sparingly, close to the drive; in a plantation on the opposite side of the road, *Lathræa squamaria*

and *Arum maculatum* are plentiful. Neither of the two latter mentioned have ever been branded as foreigners in England.

On the abbey walls *Euphorbia Esula* is plentiful, associated with a genuine native, viz. *Polypodium vulgare*. Most botanists presume that the *Euphorbia* is an escape from the garden of the Carmelite friars; but if so, it is pretty well naturalized by this time, for the holy brotherhood was dispersed and their establishment dissolved in the reign of Henry VIII., now more than three centuries ago.

The other mural plants growing on these ruins are as follow, viz. :—*Cheiranthus Cheiri*, *Echium vulgare*, *Valeriana rubra*, *Parietaria officinalis*, *Pyrethrum Parthenium*, *Arabis hirsuta*, *Cardamine sylvatica*, *C. hirsuta*, *Vinca major*, *Linaria Cymbalaria*, *Asplenium Trichomanes*, *Lithospermum officinale*, *Chelidonium majus*, *Hieracium sylvatica*, *Draba verna*, *Sedum acre*, *Linaria vulgaris*, *Arenaria trinervis*, etc. [We wish our correspondent would look for *Arenaria balearica*, which as yet has been observed only in two localities in the British Isles, viz. in the counties of Perth and in Wilts: see 'Phytologist' for April, 1861, p. 127.]

Brizlee Hill is literally, or rather, botanically, covered with *Trientalis europæa*; and in the leafy month of June, it is a spot well worth visiting; for such a profusion of these fine plants in bloom, as is afforded in this locality, is a sight of not very frequent occurrence. *Vaccinium Vitis-ideæ* and *Empetrum nigrum*, *Pyrola minor*, *Juniperus communis*, etc., abound on the said elevation.

Ferns are plentiful in the woods, and in various parts of the park, though none of them are of great rarity. The most interesting species are *Polypodium Phegopteris*, *P. Dryopteris*, at the base of the hill; on the north side, *Lastrea Oreopteris*, *L. dilatata*, and *L. Filix-mas* are abundant. *Athyrium Filix-fœmina* occurs everywhere in some one or other of its varied and beautiful forms. *Scolopendrium vulgare* grows on a wall near Hulne Abbey. *Polystichum aculeatum* grows in Blackbog Dean, and *Pteris aquilina* and *Blechnum boreale* all over the woods.

A few plants of *Lastrea Filix-mas*, var. *incisa*, are occasionally to be observed.

Rugley Wood, about two miles from Alnwick, produces the following rarities, viz. :—*Gagea lutea* by the burnside, but not in

great quantity, only two small patches. It has suffered much from the rapacity of greedy collectors, who were not contented to get the flowers and foliage, but who must needs dig up the roots. This spring (1861) I was pleased to see that it had somewhat recovered from the ravages of these spoliators.

Crepis succisæfolia is another of the rare denizens of Rugley Wood. It grows but sparingly, on the west of the road. [Surely this is a "sufficiently exact record of one of its localities," and the authority is unimpeachable. The specimen, or one of the specimens, collected there, is in our possession. We have also seen it at Stainforth Force, near Settle.]

Carduus heterophyllus is abundant by the burnside, and *Trollius europæus* and *Paris quadrifolia* are plentiful on the east side of the wood.

Kyloe Crag is a locality about an hour's walk from Beal station, on the North-eastern Railway, and is a basaltic range of rocks, extending north and south, passing westward with a rugged irregular point. Here *Convallaria Polygonatum* was first discovered by Mr. A. Price, at a date which cannot be now satisfactorily ascertained. It was first made known in the 'English Flora' (1824), and was subsequently lost sight of till 1849, when it was re-discovered by four members of the Berwickshire Naturalists' club, and published in their Transactions.*

The laudable prudence of the Club did not long preserve the locality as a profound secret; for about five years ago I and three other plant-fanciers visited Kyloe Crag, where, after searching a whole day, we discovered three fresh localities, besides the one found by the Club. We found *Asplenium septentrionale* to be very scarce, *Adiantum nigrum* and *A. Trichomanes* in abundance. *Euonymus europæus*, *Arabis thaliana*, and *Thalictrum minus* are also found on these crags.

In Newnham loch, a little way from Newnham station, *Ranun-*

* "Leaving the shore we directed our steps to Kyloe Crag, with a hope that another investigation might be rewarded by the discovery of the oft-sought-for *Convallaria Polygonatum*, and the 'wandering botanist' can only appreciate the feeling of delight that rushed across our mind when we held the long-desired treasure in our grasp. Confined to one place, it was there plentiful and in full flower. To point out the exact spot would be to ensure its destruction, as has already happened to another rare tenant of these crags, the *Asplenium septentrionale*, and that chiefly through the instrumentality of one who calls himself a botanist, and a member of a similar Club to our own."

culus Lingua grows in bogs which surround the loch. The other rare species here are *Pyrola rotundifolia*, *Scutellaria galericulata*, *Lycopus europæus*, *Typha latifolia*, etc.; but recent drainage has caused some of these to disappear.

Note.—*Sisymbrium Irio* still grows on the wall of Berwick, but most abundant at the pier gate.

ADDENDA TO THE FLORA OF HARROW.

About twelve months ago we presented our readers with a list of plants occurring in a wild state in the neighbourhood of Harrow. Since that time we have been enabled to add considerably to our own knowledge of the local Flora, and proceed to lay the results before the public. About 151 Flowering Plants, 5 Ferns, 3 Horsetails, and 3 *Charæ* have been discovered. Some little way has also been made towards preparing a list of the Mosses, *Hepaticæ*, Lichens, and Fungi of the district. This result is owing partly to the extending of our search over a wider field, and partly to a closer examination of the same ground searched last year. The localities in which the plants have been found, and which are indicated by abbreviations in the last column of the list, are as follows:—Alperton, A.; Eastcot, E.; Greenford, Gf.; Harrow, H.; Harrow Weald, HW.; Northolt, N.; Oxhey, Ox.; Pinner, P.; Roxeth, R.; Ruislip, Rp.; Stanmore, S.; Wembley, W.; and Wood End, WE.

Our Harrow Flora now assumes a respectable appearance, containing in all, of Flowering Plants, Fern Allies, and *Charæ*, 539 species and varieties, comprised in 260 genera and 73 families. We hope that this list may, by further research, be considerably enlarged. As it is, after deducting a few plants that occur by merest accident, the remainder is sufficiently large to enable us to withdraw the depreciating remarks made last year in reference to the Flora of this neighbourhood. An extensive Flora could not be expected in an inland district, of small extent, nearly all under grass, and having very little variety of soil. Under these circumstances, and considering how large a portion of the neighbourhood has never been searched at all, we feel gratified that the results of occasional walks, within a term of two years, should have proved so satisfactory. Our Flora is large enough to afford

us full proof of the creative wisdom of our Heavenly Father, and to exhibit to us His tender care in providing for the wants of his people. Let us not be slow to learn the lesson of trust in His gracious providence and love, which the flowers of the field, so simply and yet so eloquently, teach.

<i>Family.</i>	<i>Genus and Species.</i>	<i>Habitat.</i>	<i>Locality</i>
Ranunculaceæ.	<i>Clematis Vitalba, L.</i>	Hedges.	P.
	<i>Ranunculus heterophyllus, Fr.</i>	Pools.	R.
	„ <i>peltatus, Fr.</i>	„	R.
	„ <i>Flammula, L.</i>	Common	HW.
Papaveraceæ.	<i>Papaver Lecoquii, Lamotte.</i>	Gardens	R.
	„ <i>Rhœas, L.</i>	Waste	H.
	„ <i>somniferum, L.</i>	„	H.
Cruciferae.	<i>Coronopus Ruellii, Gært.</i>	Roadsides	H.
	* <i>Lepidium sativum, L.</i>	Cornfields	R.
	<i>Cardamine sylvatica, Link?</i>	Woods	A.
	<i>Arabis thaliana, L.</i>	Old walls	RP.
	<i>Barbarea præcox, Br.</i>	Gardens	H.
	<i>Erysimum cheiranthoides, L.</i>	Cornfields	WE.
	* <i>Sinapis alba, L.</i>	Waste places	H.
Violaceæ.	<i>Viola arvensis, Mur.</i>	Cornfields	WE.
Droseraceæ.	<i>Drosera rotundifolia, L.</i>	Common	HW.
Caryophyllaceæ.	<i>Lychnis Githago, Lam.</i>	Cornfields	WE.
	<i>Sagina apetala, L.</i>	Old walls	H.
	<i>Spergularia rubra, St. Hil.</i>	New churchyard	H.
	<i>Stellaria uliginosa, Mur.</i>	Ditches	HW.
Linaceæ.	* <i>Linum usitatissimum, L.</i>	Roadside, etc.	H.
	<i>Linum catharticum, L.</i>	Common	HW.
Malvaceæ.	<i>Malva moschata, L.</i>	Roadside	P.
Hypericaceæ.	<i>Hypericum humifusum, L.</i>	Common	HW.
	„ <i>pulchrum, L.</i>	„	HW.
	„ <i>calycinum, L.</i>	Hedge-bank	H.
Geraniaceæ.	* <i>Geranium rotundifolium, L.</i>	Garden	H.
Oxalidaceæ.	<i>Oxalis Acetosella, L.</i>	Woods	P.
Leguminiferae.	<i>Spartium scoparium, L.</i>	Common	HW.
	<i>Genista tinctoria, L.</i>	„	HW.
	„ <i>anglica, L.</i>	„	HW.
	<i>Melilotus officinalis, Willd.</i>	Wayside	N.
	<i>Trifolium medium, L.</i>	„	OX.
	„ <i>procumbens, L.</i>	Cornfield	WE.
	<i>Ornithopus perpusillus, L.</i>	Common	HW.
	<i>Vicia Cracca, L.</i>	Meadows	P.
	„ <i>lathyroides, L.?</i>	Waste	RP.
„ <i>gracilis, Lois.?</i>	Meadows	R.	
Rosaceæ.	<i>Orobus tenuifolius, Roth.</i>	Woods	P.
	<i>Prunus domestica, L.</i>	Hedges	R.

Family.	Genus and Species.	Habitat.	Locality.
Rosaceæ.	<i>Prunus avium</i> , <i>L.</i>	Copse	H.
	<i>Rubus nitidus</i> , <i>Salt.</i>	Common	HW.
	„ <i>pygmæus</i> , <i>Weihe.</i>	Edge of wood	OX.
	„ <i>Lejeunii</i> , <i>Weihe.</i>	„	OX.
	„ <i>Balfourianus</i> , <i>Blox.</i>	Hedges	WE.
	<i>Rosa tomentosa</i> , <i>Woods.</i>	„	R.
Onagraceæ.	<i>Epilobium virgatum</i> , <i>Fries.</i>	Ditches	H.
Haloragaceæ.	<i>Callitriche platycarpa</i> , <i>Kütz.</i>	„	HW.
Lythraceæ.	<i>Lythrum Salicaria</i> , <i>L.</i>	Canal	A.
	<i>Peplis Portula</i> , <i>L.</i>	Pools	HW.
Portulacaceæ.	<i>Montia fontana</i> , <i>L.</i>	Streams	HW.
Illecebraceæ.	* <i>Polycarpon tetraphyllum</i> , <i>L.</i>	Garden	H.
Scleranthaceæ.	<i>Scleranthus annuus</i> , <i>L.</i>	Cornfields	P.
Saxifragaceæ.	<i>Saxifraga tridactylites</i> , <i>L.</i>	Old walls	H.
Umbelliferæ.	<i>Hydrocotyle vulgaris</i> , <i>L.</i>	Common	HW.
	<i>Sanicula europæa</i> , <i>L.</i>	Wood	P.
	<i>Helosciadium nodiflorum</i> , <i>Koch.</i>	Streams	P.
		<i>Galium palustre</i> , <i>L.</i>	Ditches
Rubiaceæ.	„ <i>elongatum</i> , <i>Pres.</i>	„	„
Valerianaceæ.	<i>Valeriana officinalis</i> , <i>L.</i>	„	RP.
	<i>Fedia dentata</i> , <i>Bieb.</i>	Cornfields	RP.
Compositæ.	<i>Tragopogon minor</i> , <i>Fr.</i>	Meadows	WE.
	<i>Apargia hispida</i> , <i>Willd.</i>	„	A.
	<i>Crepis virens</i> , <i>L.</i>	„	P.
	<i>Hieracium Pilosella</i> , <i>L.</i>	Waysides	H.
	„ <i>aurantiacum</i> , <i>L.</i>	Old walls	H.
	„ <i>vulgatum</i> , <i>Fries.</i>	Common	HW.
	„ <i>boreale</i> , <i>Fries.</i>	„	HW.
	<i>Aretium minus</i> , <i>Schk.</i>	Banks	R.
	<i>Serratula tinctoria</i> , <i>L.</i>	Meadows	R.
	<i>Carduus acaulis</i> , <i>L.</i>	Common	RP.
	<i>Artemisia vulgaris</i> , <i>L.</i>	Banks	GF.
	<i>Filago minima</i> , <i>Fries.</i>	Common	HW.
	„ <i>germanica</i> , <i>L.</i>	Banks	E.
	<i>Solidago Virgaurea</i> , <i>L.</i>	Woods	P.
	<i>Senecio sylvaticus</i> , <i>L.</i>	Common	HW.
„ <i>Jacobæa</i> , <i>L.</i>	Waysides	H.	
	<i>Anthemis Cotula</i> , <i>L.</i>	„	H.
Campanulaceæ.	<i>Campanula rotundifolia</i> , <i>L.</i>	Common	HW.
Apocynaceæ.	* <i>Vinca major</i> , <i>L.</i>	Waysides	OX.
Gentianaceæ.	<i>Erythræa Centaurium</i> , <i>Pers.</i>	Waysides	P.
Scrophulariaceæ.	<i>Veronica scutellata</i> , <i>L.</i>	Streams	HW.
	„ <i>officinalis</i> , <i>L.</i>	Common	HW.
	* „ <i>peregrina</i> , <i>L.</i>	„	H.
	<i>Euphrasia officinalis</i> , <i>L.</i>	„	HW.
	<i>Melampyrum pratense</i> , <i>L.</i>	Woods	P.
	<i>Scrophularia aquatica</i> , <i>L.</i>	Ditches	P.

Family.	Genus and Species.	Habitat.	Locality.
Scrophulariaceæ.	<i>Linaria Cymbalaria, Mill.</i>	Old walls	S.
	„ <i>spuria, Mill.</i>	Cornfields	P. & GF.
	„ <i>Elatine, Mill.</i>	„	P.
	„ <i>vulgaris, Mill.</i>	Banks	W.
Lamiaceæ.	<i>Mentha viridis, L.</i>	Canal bank	A.
	<i>Origanum vulgare, L.</i>	Banks	P.
	<i>Thymus Chamædrys, Fr.</i>	Common	HW.
	<i>Calamintha Clinopodium, Spen.</i>	Banks	HW.
	<i>Teucrium Scorodonia, L.</i>	Common	HW.
	<i>Galeopsis Tetrahit, L.</i>	Cornfields	R.
	„ <i>versicolor, Curt.</i>	„	H.
	<i>Stachys Betonica, Benth.</i>	Common	HW.
	<i>Scutellaria minor, L.</i>	„	HW.
	<i>*Borago officinalis, L.</i>	Waste	H.
Boraginaceæ.			
Primulaceæ.	<i>Primula elatior, Ang. plur.</i>	Garden	R.
	<i>Lysimachia nemorum, L.</i>	Woods	P.
Plantaginaceæ.	<i>Plantago Coronopus, L.</i>	Common	HW.
Polygonaceæ.	<i>Polygonum amphibium, L.</i>	Canal	GF.
	<i>Rumex viridis, Sibth.</i>	Woods	P.
Euphorbiaceæ.	<i>*Euphorbia platyphylla, L.</i>	Roadside	E.
Urticaceæ.	<i>*Cannabis sativa, L.</i>	Waste	A.
	<i>Parietaria diffusa, Koch.</i>	Church walls	P.
Amentiferæ.	<i>Salix vitellina, Sm.</i>	Pool in sandpit	P.
	<i>Salix alba, L.</i>	Hedges	H.
	<i>Salix repens, Eng. Bot.</i>	Common	HW.
	„ <i>prostrata, Eng. Bot.</i>	„	HW.
Liliaceæ.	<i>Fritillaria Meleagris, L.</i>	Meadows	P.
	<i>Allium vineale, L.</i>	„	R.
	„ <i>compactum, Thuil.</i>	„	R.
Alismaceæ.	<i>Alisma lanceolatum, With.</i>	Pools	A.
Fluviales.	<i>Potamogeton pectinatus, L.</i>	Canal	GF.
	„ <i>oblongus, Viv.</i>	Streams	HW.
Araceæ.	<i>Typha angustifolia, L.</i>	Pools	A.
Juncaceæ.	<i>Juncus acutiflorus, Ehrh.</i>	Common	HW.
	„ <i>lamprocarpus, Ehrh.</i>	„	HW.
	„ <i>supinus, Mænk.</i>	„	HW.
	„ <i>bufonius, L.</i>	Roadsides	H.
	„ <i>squarrosus, L.</i>	Common	HW.
	<i>Luzula sylvatica, Bich.</i>	Woods	P.
	„ <i>pilosus, Willd.</i>	„	P.
	„ <i>Forsteri, DC.</i>	„	P.
	Cyperaceæ.	<i>Scirpus sylvaticus, L.</i>	Canal
„ <i>palustris, L.</i>		Common	P.
<i>Carex stellulata, Good.</i>		„	HW.
„ <i>ovalis, Good.</i>		„	HW.
„ <i>vulgaris, Fries.</i>		Meadows	H.
„ <i>flava, L.</i>		Common	HW.

Family.	Genus and Species.	Habitat.	Locality.
Cyperaceæ.	<i>Carex panicea</i> , L.	Meadows	H.
	„ <i>pendula</i> , Huds.	Woods	P. & A.
	„ <i>glauca</i> , Scop.	Meadows	H.
	„ <i>pilulifera</i> , L.	Dry banks	OX.
Gramina.	<i>Phalaris arundinacea</i> , L.	Ditches	H.
	* „ <i>canariensis</i> , L.	Garden	H.
	<i>Milium effusum</i> , L.	Thickets	WE.
	<i>Apera Spica-Venti</i> , Beauv.	Roadside	R.
	<i>Agrostis canina</i> , L.	Common	HW.
	„ <i>alba</i> , L.	Meadows	H.
	<i>Arundo Phragmites</i> , L.	Pools	A.
	<i>Aira flexuosa</i> , L.	Common	HW.
	<i>Arrhenatherum bulbosum</i> , Lindl.	Dry brooks	OX.
	<i>Triodia decumbens</i> , Beauv.	Common	HW.
	<i>Molinia cœrulea</i> , Mœnch.	„	HW.
	<i>Poa nemoralis</i> , L.	Meadows	R.
	<i>Bromus commutatus</i> , Schd.	„	R.
	<i>Lolium temulentum</i> , L.	Waste	A.
	„ <i>arvense</i> , With.	Meadows	OX.
	<i>Nardus stricta</i> , L.	Common	HW.
	Filices.	<i>Lastrea spinulosa</i> , Presl.	Woods
„ <i>dilatata</i> , Presl.		Common	HW.
<i>Asplenium Adiantum-nigrum</i> , L.		Dry banks	HW.
<i>Blechnum boreale</i> , Sw.		„	HW.
Equisetaceæ.	„ <i>anomalum</i>	„	HW.
	<i>Equisetum sylvaticum</i> , L.	Common	HW.
	„ <i>palustre</i> , L.	„	P.
Characeæ.	„ <i>fluviatile</i> , Fries.	„	P.
	<i>Chara syncarpa</i> , Thuil.?	Reservoir	RP.
	„ <i>vulgaris</i> , Aut.	Pools	R. & A.
	„ <i>fragilis</i> , Desv.	Reservoir	RP.

The remarks of "A." on "The List of Harrow Plants" reprinted from the 'Harrow Gazette' in the 'Phytologist' of April, 1860, certainly demand an answer, and an answer in keeping with the kind tone of his closing paragraph. The materials obtained during last summer for an "Addenda to the Flora of Harrow," made it desirable that the answer should be delayed until the first portion of the "Addenda" should be ready for publication. I have to thank "A.," in the first place, for pointing out several errors, into which I had inadvertently fallen; and which it was most desirable should be corrected. I further trust that the replies given below to his queries and criticisms may on the whole be deemed satisfactory. Be it remembered that the paper was originally drawn up for non-botanical readers;

that only one mark was used to indicate plants of doubtful origin; and that doubt was only expressed in the case of plants likely to have been purposely introduced, except in the case of the *Anacharis Alsinastrum*.

Corydalis lutea was originally printed with an asterisk, which was overlooked in the reprint. This small defect was counter-balanced by several original typographical errors corrected in the reprint.

Coronopus didyma was an error of memory, and, without reference to an authority, was set down as the name of the more common *C. Ruellii*.

Barbarea arcuata has been compared with a plant so labelled from Loughall, county of Armagh, A. G. More, and appears to be identical with it.

Sinapis nigra. Not found; set down in error.

Rosa villosa, I believe rightly named. Examples were distributed last year through the Thirsk Club.

Cratægus monogyna. Inserted only as a variety.

Ribes rubrum and *R. Grossularia*, apparently wild, but in a locality that admits of doubt. How can it be known, with respect to most plants, whether they are of truly spontaneous growth in any particular locality, or have been accidentally introduced?

Viburnum Opulus and *V. Lantana* occur in the neighbourhood, under very different conditions of locality, etc., giving to the latter every probability of spontaneous growth, and to the former no more than a bare possibility. *Hypericum hirsutum*, *Bryonia dioica*, *Plantago media*, and *Sison Anomum*, I have found plentifully in several neighbourhoods where the calcareous element in the soil is very small indeed.

Tragopogon porrifolius I do not consider indigenous. It was found last year in a new locality, but evidently of accidental growth.

Arctium. Very few plants of *Arctium* were found in flower in this neighbourhood in 1859, and those few all *A. majus*. Yet it appears from the search made last year that *A. minus* is the more common plant of the district.

Vinca minor. Found in a new locality last year; yet still of a doubt.

Verbascum Thapsus. Doubtful, though it occurs where it could not have been planted either for ornament or use.

Veronica Buxbaumii. Two new localities found for this. There was no intention to give this a higher claim to be considered indigenous than is accorded to it in our leading works.

Myosotis sylvatica. For the present I am willing to consider that this was put down in error. At the same time, I have a strong feeling that I must have seen this plant in 1859, but have not been able, so far, to verify this conviction.

Atriplex Babingtonii. A confessedly seaside species, yet occasionally occurring inland. In 1857, I found it plentifully between Kensal Green and Kilburn. Last year also I found it in this neighbourhood.

Atriplex patula, L., has been set down through mistake.

Fagus sylvatica seems to have some pretensions to be classed as indigenous.

The Rushes, Pondweeds, and Grasses were justly supposed to be few in number; but those only that had been observed could be inserted in the list. Important additions have been made to all these families; but the number of Pondweeds is still very small. "A." must have overlooked a statement made in the prefatory remarks to the "List of Harrow Plants," when he says that varieties have been made to "do duty for species." It was distinctly stated that the plants enumerated amounted to "three hundred and eighty-five species and varieties." There are several varieties mentioned in the "Addenda" without any distinctive mark attached, such not being requisite for the readers for whom the list has been specially prepared. I shall be glad to receive any remarks, either directly or through the pages of the 'Phytologist,' in reference to the "Addenda," that may enable me to make the "List of Harrow Plants" more perfect. And while I do not strongly object to any friendly critic preserving his incognito, if he desires; still, if not unpleasant to him, I should much prefer that he throw off his disguise and plainly show his colours. Had the List written last year been intended for the pages of the 'Phytologist,' it should have had my signature affixed, that its readers might be able to attach neither more nor less of authority to its statements than is their just due.

W. M. HIND.

Harrow, February 2, 1861.

FRITILLARIA AND CROW-FLOWERS.

Mr. C. J. Ashfield, in his remarks on the botany of the Chilterns, in the 'Phytologist' for April, 1861, notices the *Fritillaria Meleagris* (Fritillary, or Snake's-head), which grows abundantly in a field near to the hamlet of Ford, in the parish of Dinton, and is throughout the neighbourhood known by the name of *Crow-cup Field*. I wish to know something more about this plant, and particularly whether it is the one Chapman alludes to, in his 'Ovid's Banquet of Sense,' as

"Cup-like Twill-plants, strewed in Bacchus' bower."

I have for some time thought that the *Fritillaria* is the plant there alluded to, as it is termed "cup-like" as well as "twilled;" which words are descriptive of the shape of the flower, and the marking of its petals. I think also that the name *Crow-cup Field*, given to the field at Dinton where it so abundantly grows, favours my opinion. Respecting *Crow-flowers* generally, I am curious to know why so many of our common plants have the prefix *crow*. In Gerard's Herbal is the following:—

"Of *Crowfeet*: There be divers kinds of these pernicious herbs, comprehended under the name of *Ranunculus*, or *Crowfoot*, and the knowledge of them is as necessary to the physician as any other herbs, to the end they may shun the same, as Scribonius Largus saith." He then gives,—common *Crowfoot*, right *Crowfoot*, *Crowfoot* of the fallow field, white *Mountain Crowfoot*, round-rooted *Crowfoot*, *Crowfoot* called *Auricomus* *Golden-hair Crowfoot*, *Frog Crowfoot*, grassy *Crowfoot*, winter *Crowfoot*, *Portugal Crowfoot*, *Locke's Gowlons*, or globe *Crowfoot*, and several others, which are all called *Ranunculus*. He also notices *Crow-flowers*, or *Wild Williams*, called in Latin *Armoracia sylvestris*; *Crowfoot*, *Crane's-bill*, *Crow Garlic*, *Crow-toes*, *Hyacinths*, and yellow *Crow-bells*.*

In Halliwell's 'Dictionary of Archaic and Provincial Words, he has *Crowberry* (*Empetrum nigrum*), *Crow Leek* (*Hyacinth*), *Crow Parsnip* (*Dandelion*), *Crow's-nest* (*wild Parsley*), *Crow*

* "The *Crow Garlic*," says Coles, in his 'Adam in Eden,' "groweth in fertile pastures in all parts of England, particularly in a field called the *Mantels*, on the back side of Islington, by London." If these plants take their names from the shape of the bird's foot, what part of them is so shaped?

sope (the herb *Saponaria*), Crow-toe (the *Ranunculus*), and Crow-bell, to which is the following interesting note from Aubrey's 'Wilts Royal Society MSS.,' p. 126:—

“In a ground of mine called Swices, grows abundantly a plant called by the people hereabout Crow-bells, which I never saw anywhere but there. Mr. Robert Good, M.A., tells me that these Crow-bells have blew flowers, and are common in many shady places in this country.”

These Crow-bells must be, I conclude, the same flowers as we call Hare-bells (*Hyacinthus nonscriptus*), and they may be the same as the Crow-toes of Gerard. But I remember Milton, in 'Lycidas,' speaks of “tufted Crow-toes:” does he mean by these the Hyacinth? Shakspeare, in 'Hamlet,' act iv. sc. 7, speaks of “Crow-flowers” in connection with Nettles and Daisies, with which Ophelia made her fantastic garlands. These appear to me to be some of the *Ranunculus* or Crowfoot tribe.

SIDNEY BEISLY.

KENTISH BOTANY.

Plants of Ham, Pegwell Bay, Sandown Castle, Oldhaven, Sandwich, etc.

Next morning, (see 'Phytologist' for June, 1861, p. 185,) the 5th, before breakfast, we went to Ham, to botanize about its celebrated ponds. But ponds we saw none, though of deep water-ditches plenty.

The distance from Sandwich to Ham is under two miles, and the way is by the Deal road, turning off to the right about a mile from the former town. On our way we met with *Pimpinella magna*, not very plentiful, and with *Crepis biennis*, most luxuriant and in great abundance.

This fine plant, which is still occasionally confounded with *Crepis taraxacifolia*, is common in many parts of Kent, particularly about the roadside between Gravesend and Rochester, and in the fields near the path from Cobham to Halling. It is also plentiful about Sevenoaks. But nowhere is it more abundant than on the roadsides near Ham. Here it varies much in size, and in the shapes and divisions of the leaves. Its height is from

two to six feet; the stem-leaves are sometimes *all* quite simple, sometimes they are pinnatifid, with lobes three or four inches long. The plant is now pretty well distinguished from *C. taraxacifolia*, but its distribution is still but indifferently established.

In the 'Cybele' the area of *C. biennis* is entered 6; this means that it has been observed in 6 out of the 18 botanical provinces; and the county census is 10, or it has been seen in 10 counties. In the same work, *C. taraxacifolia* is entered as having a provincial extent of 4, and its comital figure is 8. On comparing notes we found that *C. taraxacifolia* has a greater area than *C. biennis*; we have specimens of the former from Surrey and from Warwickshire or Leicestershire, of the latter we have examples from Kent only. It is certain that these two plants were confounded and mislabelled in the herbarium of the Botanical Society of London, as they were in the 'English Flora,' and in 'English Botany,' both in the original work and in the Supplement.

A correct figure of *C. biennis* is still a *desiderata* in our illustrated Floras. Those who wish to get a better acquaintance with these two species, and to ascertain their distinctive characters, may easily accomplish this in a short visit to Kent.

About the Erith station, *C. taraxacifolia* is unusually abundant, and in a chalk-quarry near the Rosherville Gardens at Northfleet the other species grows. The finest, however, and the most multiform examples of *C. biennis* is near Ham.

On reaching the low meadowy lands, where, as already said, we saw no ponds, we turned to the right, into a boggy peaty field, which was full of *Hydrocotyle vulgaris*,—*Salix adscendens* of 'English Botany,'—with several large and small trees of *Populus nigra*. This being unsatisfactory, we entered another enclosure, on the opposite or left-hand side of the road, and in the ditches here saw plenty of *Hottonia palustris* still in flower (5th September); also further on towards the wood or copse at the further end of the meadow, *Chara hispida* and *C. vulgaris*, and *Sparanium natans* (in flower), *Alisma ranunculoides*, *Lemna trisulca*, *Potamogeton plantagineus*, and other commoner aquatic plants were here seen in abundance.

In the wood there were gigantic specimens of *Rubus idæus*, equalling in length *R. fruticosus*, if this name be admissible; also *Lastrea Thelypteris*, at least four feet in height; *Carex paniculata*, the leaves of which rivalled those of the far-famed Pampas grass.

Lysimachia vulgaris was very luxuriant, and so was *Menyanthes trifoliata*, of course long past flowering. The other plants observed were *Valeriana dioica*, *Sparganium simplex*, and *Triglochin palustre*, with others of less note. This was a pretty fair amount of work done before breakfast.

After refreshment we started for Pegwell Bay, celebrated among gastronomical enthusiasts for its shrimps and shrimp sauce, brown bread and fresh butter, etc. We saw no specimens of either fish or sauce, but we saw what pleased us much more, viz. myriads of *Medicago minima* and *Trifolium scabrum*. The herbage of the gravelly parts of these flats is chiefly composed of these pigmy Leguminifers, with abundance of *Phleum arenarium* and *Erigeron acris* intermixed. In lower and moister places appeared *Erythræa pulchella*, varying from a couple of inches to a foot in height; also *Samolus Valerandi* and *Spergula nodosa*.

Nearer the river appeared *Artemisia maritima*, with a variety which does not agree with *A. gallica* found on the shores of the Mediterranean; also *Suæda* (*Schoberia*) *maritima*, if this be its now current name. (In books it has at least as many aliases as an Old Bailey bird, or a grandee of the highest rank in Spain.) *Statice Armeria*, *Glaux maritima*, *Atriplex portulacoides*, *Triglochin maritimum*, and *Cenanthë Lachenalii** abounded.

This latter plant is found plentifully dispersed over miles of these salt-marshes. *Psamma arenaria* and *Medicago denticulata* of the Rev. G. E. Smith, abounded on the drier parts, while many acres of mud-flats were covered with *Salicornia herbacea*. In Norfolk, land is worth fencing off from the sea, when this plant grows on the muddy shores.

After reaching the mouth of the river which flows into Pegwell Bay, we turned back towards Sandwich, in order to go along the seashore to Deal, and as we did not want to go through the town, we ferried across the river, and directed our course toward the houses of the coastguard on the sand-hills, which here form a natural sea-wall.

* This species, the name of which only is one of our recent acquisitions, has usually a preference for maritime localities; yet we have received specimens from near Ross, at least forty miles from the sea and twenty from a tidal river.

In the Kentish locality it varies in size from a few inches to a yard in height. We have examples from the Ross station, of the dwarf state of the plant, where its small stature is not so easily accounted for, as on the sandy beach of Pegwell Bay, where its stunted growth is attributable to the sandy soil where it grows.

All along on the brink of the river, and especially on the margin of the ditches inside the river-wall, large masses of *Juncus acutus* appeared at intervals, a welcome sight to inland botanists. When passing over the meadow, and not far from the houses of the coastguard above mentioned, we were so fortunate as to light upon several fine specimens of *Polygonum monspeliensis*, a plant unrecorded in the list of the plants of South Kent. Is this a recent importation?

We had now reached the famous sandhills which lie between Sandwich and Deal, along which we were told was a painful and very dreary walk. It happily proved most agreeable, interesting, and instructive to us.*

On the sand appeared *Eryngium maritimum*, one of the most attractive of our seaside plants, not to handle, but to look at and admire.

It is very much to be wished that decorative artists, those who devise and execute the patterns for our paper-hangings, our draperies, furniture, and such-like, would now and then take a walk by the seashore and study the multifarious forms exhibited by our maritime vegetation. This would probably improve their taste; at the very least, it would have a tendency to enlarge their minds, and ultimately be the means of introducing more variety into their productions.

The Rose and the Convolvulus, the Trefoil and the Lily, are all beautiful, but they are repeated till they become tiresome. *Toujours perdrix*, said the facetious Frenchman, *mais toujours perdrix*. Too much of one dish palls the appetite; the constant

* Johnson's notice of the results of herborizing in this locality, viz. the sandhills about Sandown Castle, should not be passed over in silence. His list of plants seen in this locality is very brief. See Ralph's edition, 4to, 1847, pp. 25, 26:—*Malva vulgaris floribus albis*; *Anagallis aquatica*, 3 Lobel; *Cotyledon aquatica, seu Acris septentrionalium*, Lob.; *Buglossum sylvestre*, Dod.; *Tithymalus Paralius*. The cultivated specimens are omitted.

We saw no marine monsters of any sort, not so much as a sea-serpent; yet we are curious about the snake fifteen feet long, formerly killed here, the stuffed skin of which was in the possession of Charles Duke or Duck (Carolus Anas), the learned pharmacist of Sandwich.

This fine specimen of a sea-snake was as thick as a boa constrictor, and it contained in its capacious stomach a large portion of the population of the rabbit-warren. Are there any notices of the capture of this marine monster extant in any of our local histories of South Kent?

repetition of the finest poetry, music, or artistic embellishment, renders the object not only incapable of yielding pleasure, but it finally becomes disgustingly tiresome.

As a variety the artist might copy the leaves, the bracts, the heads, and even the stem of the Eryngo, or Sea-holly. If he be skilful in the art of adaptation, he might make his own fortune and ameliorate the taste of his countrymen at the same time.

On the sand wetted by the spray, if not by the tide, *Honkenya peploides* and *Salsola Kali* grew sparingly, and on the dry sand-hills, *Hypochaeris glabra* and *Silene conica*, the former plentiful, and the latter sparingly. Three or four patches were all that appeared in our way between the preventive-houses and Sandown Castle. *Carex arenaria* and *Triticum junceum* were not unfrequent, *Phleum arenarium* was very common; *Erythraea pulchella* and *Carlina vulgaris* were far from scarce; *Convolvulus Soldanella* appeared only here and there; and very few specimens were in flower at this late period of the season.

We passed by Sandown Castle after looking into that desolate-looking fortress, and went over the hills straightforward to the old haven of Sandwich, which has been for generations and centuries choked up by the encroachments of the Goodwin Sands. Sandwich then had a direct communication with the sea: its roadstead or navigable river is now very circuitous.

It is not very easy to believe the alleged connection between Tenterden Steeple and the Goodwin Sands; but it is far more incredible that the river Stour left its ancient direct channel between Sandwich and the sea, and made for itself a way, thrice as long, through the meadows.

Literary antiquarians have proved, at least to their own satisfaction, that the alleged connection between the silting of Sandwich harbour and the building of Tenterden steeple is well founded. Bishop Latimer, in his quaint, homely style, while preaching, related to his audience a story on which this tradition and proverb are founded. The Bishop said that a commissioner, Mr. Moore, was sent by the government to inquire into the cause of the stoppage of Sandwich Haven by the Goodwin Sands. After he had examined many people, and had heard their opinions about the cause and its remedy, he spied in court an old man, a very old man, much older than any of those who had given evidence on this subject.

The old man volunteered to say something, and his testimony was to the effect that Tenterden steeple had caused the choking of the former channel.

The old man stated that when he was a youth, he had heard this from men who were then very old, and they said that Tenterden steeple was the cause of the obstruction and abandonment of the ancient haven of Sandwich. The old man's evidence was abruptly ended by a shout of derisive laughter, and he retired abashed: and hence the saying is employed, as the learned Ray informs us, when an absurd or ridiculous reason is assigned for something in question.

The historian Fuller both quaintly and truly remarks on this, saying "that one story is good till another is told, and though this be all whereupon this proverb is generally grounded, I met since," says he, "with a supplement thereunto; it is this:—Time out of mind, money was constantly collected out of this county to fence the east banks thereof against the irruption of the sea, and such sums were deposited in the hands of the Bishop of Rochester. But because the sea had been quiet for many years without any encroaching, the Bishop commuted (diverted) this money to the building a steeple and endowing a church at Tenterden. By this diversion of the collection for the maintenance of the banks, the sea afterwards brake in upon Goodwin's sands. And now the old man had told a rational tale, had he found but the due favour to finish it. And thus, sometimes, that is causelessly accounted ignorance of the speaker, which is nothing but impatience in the auditors, unwilling to attend to the end of the discourse."

What truth there may be in this traditionary and local saw of the county, the narrator of the anecdote will not attempt to clear up, but he can state with much confidence that the same physical causes which have diverted the course of the river Stour at Sandwich, so far from what probably was its direct and ancient course to the sea, are still in operation; and every year is increasing the distance of the mouth of the harbour from the town of Sandwich. On the western side of the river's mouth, there is forming a mud-bank covered with Saltwort, as before said, and on the east side the water is gradually encroaching on the land. This process will continue, if the natural cause or agent is not counteracted, to produce still greater effects, and the mouth of

the river Stour will reach the chalk-bound eastern side of Pegwell Bay, and the mouth of Sandwich Haven will be removed several miles further from the town.

Many years ago,—nearly half a century,—the writer of the above remarks was informed that the river Cowie in Kincardineshire, which flows into the bay of Stonehaven by a channel which is, for about a mile, parallel with the sea-line (the river is on one side of a shingly beach and the sea is on the other), flowed straight to the ocean from the mill and bridge, which are both at the east entrance to the town. This account, now a tradition, is confirmed by a very excellent map of the above-named county, made from a survey completed in 1774. In this map the two rivers which flow into this bay, are represented as at least a mile or two apart, whereas in 1820, and probably still, the rivers Cowie, on the east, and Carron, on the west, were only a few yards distant where they entered the sea, in fact, no more than the breadth of the jetty or landing-place of the harbour. What took place within the memory of living witnesses, may have taken place in times long past, although the testimony of the occurrence is but traditionary.

When we reached the old haven of Sandwich, our thoughts were not engaged on any such physical speculations; for we had never previously seen so many and so fine examples of *Ranunculus Lingua*, and consequently our delight and admiration were fixed on the present gratifying show of fine and rare plants, and there were no regrets expressed at the departed glory of Sandwich and its once busy haven: we only regretted that we were not here a few weeks earlier in the season. And we were not sorry that we were not here, and spectators of the desperate sea-fight fought in this roadstead in 1046, when “Lothen and Irling came with twenty-five ships to Sandwich, and there took unspeakable booty in men, in gold, and in silver, so that no man knew how much it all was.”

Sandwich and its haven have doubtless a history worth relating if the materials be forthcoming. Its name frequently occurs in the Saxon Chronicle, and it was the scene of many battles. As early as 851, King Athelstan fought on shipboard and slew a great number of the enemy (the Danes), took nine ships, and put the others to flight. We are content to be the chroniclers of humbler objects, and relate that the great and lesser Spearwort,

the Yellow Flag, the Bulrush, the Marestalk, and the great Water Dock, now fill up the narrow space where kings contended, not for glory, but for spoil, like the ancient Greeks. *Sic transit gloria mundi*. Here we were not unobservant of preparations for a warlike struggle, which we hope will never come: but this is not the place for such inferences or anticipations.*

On our way along the sandhills from Sandown Castle to Deal, we collected here and there the following plants, viz.—*Allium vineale*, *Carduus tenuiflorus*; *Sclerochloe distans*; *S. maritima*, long past flowering; *Scabiosa Columbaria*, a considerable distance from the chalk; *Chenopodium olidum*, near Deal; *Polygala depressa*, Wend.; *Juncus cœnosus*, perhaps *Carex levigata*, and *Hippophae rhamnoides* in fruit.

This we fancied might be the rare plant which our worthy (jocular?) host at Sandwich foretold that we might find if we had any luck; or if we were as lucky as a party of fifty botanists, who were at his house some twelve months ago, were. He very modestly told us that he was no botanist, and therefore could neither tell us the name of the plant nor give a very characteristic description of it; but he said it was a shrub, and grew on the sandhills, and produced a poisonous berry; also that a single leaf of the plant, if infused in a gallon of water, would render the infusion so poisonous, that a small portion would render our deadliest foes perfectly innocuous. This reminded us of Hector Boece's story of the Scottish king Duncan Macbeth, and Sweno, the leader of the Northmen. It is alleged by the historian that the latter chief and his army were drugged and hocussed with a decoction of *Atropa Belladonna*, which the Scots administered in ale and wine. There is probably quite as much truth in this story (see 'Gentleman's Magazine' for July, 1859) as there is in that of our host of the 'Bell' in Sandwich.

* The indulgence of solemn reflections on the altered state of Sandwich haven, and on the contrast between the past and present condition of the kingdom, would not make our readers much wiser. They are too much engaged with the realities of active life, to have much sympathy either with the reminiscences of the past or with anxious forebodings about the future.

We were well satisfied with what we saw, and wish our readers may have as much enjoyment as we had when they visit Sandwich.

BOTANY OF THE RED RIVER.

Extracts from a Paper read before the Botanical Society of Canada, bearing the following title:—On the Botany of the Red River Settlement and the Old Red River Trail. By JOHN C. SCHULTZ. (Read 11th January, 1861.)

“The Red River Settlement of late years attracted much attention in Canada, on account of its isolated position and the many and vague reports that were in circulation regarding it, some describing it as a land of milk and honey, and others as a cold barren waste. But little was known of the real resources of the country till the years 1857 and 1858, when the attention of our Government was directed to it, and they ordered two expeditions to be fitted out, one under the charge of Mr. Hind, and the other under Mr. Dawson. These gentlemen, on their return, after an absence of eighteen months, submitted their reports, accompanied by maps and a geological description of the country traversed. These were published and widely distributed, and many of you, no doubt, have seen them. Therefore any account that I give of the settlement will be as short as possible.

“It is situated on the Red River, near its entrance into Lake Winnipeg, occupying both banks of the Red River and the Assiniboine, which empties into the Red River at the Hudson’s Bay Company’s post Fort Garry, the centre of the settlement. The settlement extends from the mouth of the Red River up about forty miles, and on the Assiniboine river about twenty miles. The distance of the settlement from St. Paul is said to be six hundred miles, and from Lake Superior about three hundred. The population is estimated (rather high, I think) at ten thousand, including the roving population, who live altogether by hunting. The climate resembles that of Montreal in the length and continued cold of the winters, and the rapid vegetation in the spring after the snow is off the ground. All the cereals are raised in abundance, the average produce to the acre exceeding that of Canada. Garden vegetables are also grown in abundance. Indian corn, however, is not so successful, being nipped by the early frosts.

“While residing last summer at Fort Garry, (the Hudson’s Bay Company’s post in the settlement,) I had an opportunity of collecting specimens of plants, some of which are now exhibited to the

Society. From want of the necessary material, they were rather imperfectly prepared, but may perhaps serve to give a general idea of the botany of the immediate vicinity of the Fort. On referring to the list it will be observed that here, as in other prairie land, the richest family is the *Compositæ*, many species of which are found. At the Fort we have not only the ordinary prairie Composites, but a great abundance of such plants as *Artemisia Absinthium*, especially on the drier and higher parts. Next in frequency come the *Cruciferae*, which generally follow man; these are abundant in the immediate vicinity of the Fort. There are many species of *Rosaceæ* and *Leguminosæ*, truly indigenous; *Umbelliferae* are not unfrequent, and we have interesting representatives of *Ranunculaceæ*, *Xanthoxylaceæ*, *Violaceæ*, *Balsaminaceæ*, *Caprifoliaceæ*, *Rubiaceæ*, etc. The timber trees near the Fort are small groves of Aspen and Balsam Poplar, and on the banks of the rivers, Oak, Ash, Elm, Maple, Aspen, and Balsam Poplar."

The author graphically describes his journey, which abounded in adventures, dangers, and other excitements, observing the zoology as well as the botany of the trail, as it is called, between the settlement and Canada. At Detroit Lake he met with a party of Ojibway Indians, with whom our traveller and his company exchanged tea, tobacco, etc., for fish, which the Red-men caught in great abundance.

"After leaving the lake," he proceeds, "the trail passes through many miles of dense woods, consisting chiefly of Oak and other hard woods. In these woods, and southward, is found the Ginseng (*Aralia quinquefolia*) [? *Panax quinquefolium*, L.]. Crossing Otter-tail River, Rush Lake, and some small streams, we finally arrived at civilization again, in the shape of a collection of a dozen of houses, named in Minnesota maps Otter-tail City, and inhabited by travellers who purchase the furs of the Chippeways. After taking dinner here at a two-roomed hotel, for which we paid two dollars, we left the city and crossed Leaf Mountain, the heights of land or apex of the two great watersheds of the Red and Mississippi valleys. Here, as on the rest of the route, the prevailing timber was Pine and Spruce, with occasional Tamarac swamps. The trail here followed down the course of Leaf River till it empties into the Crow-wing River. Here the trail ended, and, crossing this river in a scow, we had now a

bridged road forty-five miles to the little town of Crow-wing, where we arrived on the 2nd of November, completing a trip of something over four hundred miles in fifteen days. At this place we left our horses, and took stages, a hundred and fifty miles, to the city of St. Paul, and from thence by Mississippi boat and railroad to Canada.

“I may mention here that in St. Paul I noticed several barrels of ginseng-root which had been collected by Indians and others, and was intended for export from New York or elsewhere to China. This American Ginseng is the *Aralia quinquefolia*, a different species, it is believed, from the Chinese one, but nevertheless highly esteemed in that country. It is said to be used there as a medicine in cases of debility, but its medicinal properties are not so highly esteemed in this country. Its uses in China must be very extensive, as, independent of the Ginseng obtained in China, and the enormous quantities exported from America, imports are registered at Shanghai of the enormous quantity of 55,000 cattles, from the 11th November, 1858, to 30th June, 1859. This root is found in abundance in the western part of Minnesota, principally in the woods on Oak ridges, and there are persons who make large sums by collecting it and selling at St. Paul for one dollar per pound; by sending it to New York, they get a much larger price. Now as this root is so valuable, and as the climate and soil in some parts of Canada resemble that of Minnesota, I wish merely to mention the possibility of cultivating it in Canada. Hitherto the market has been supplied by indigenous growth, and the consequent disappearance of the plant in many parts of Canada and the States, suggests the propriety of adopting measures by which its production may be increased by artificial means.

“A list of the plants collected at Fort Garry and along the route, with their localities, and critical remarks on the more interesting and obscure species, will be published in the Society's Transactions.”

TODMORDEN BOTANICAL SOCIETY.

Monday evening last, the 6th of May, was the time appointed to celebrate the anniversary of this flourishing Society; and at half-past six, about forty-four sat down to dinner, and Mr. A.

Stansfield, Sen., the worthy President of the Society took the chair.

We have much pleasure in again reporting to the readers of the 'Phytologist,' the increasing prosperity of this excellent association. The following abstract or summary of their proceedings will, it may be confidently asserted, afford much gratification, not to botanists merely, but to all who are interested in the progress of humanity in the ways of peace and charity.

"Although, during the year, we have lost through death, removal from the neighbourhood, and other causes, as many as ten members, yet, with new-comers, the total number at present on our books exceeds a hundred and fifty.

"Of books our library contains 330 volumes, purchased at a cost of from £150 to £200.

"During the year, 700 volumes of books have been issued to members, some of whom, as you are aware, living at a distance, have the privilege of keeping books for three months; a circumstance which ought to be taken into consideration in any estimate of the working of our Society, as drawn from the number of books circulated.

"As usual, there have been many Excursions made during the year. Of such of these excursions as our excellent Annalist may have attended, he will no doubt have preserved a faithful record, which he will have the pleasure of reading to you this evening.

"Mr. Patman is a gentleman who grudges no labour in behalf of the Society; and this spirit of disinterestedness is the general characteristic of our members, to which may be attributed the flourishing condition of our financial affairs.

"Among the more notable features of the botanical campaign of last season, may be instanced the discovery of the very remarkable *Lastrea montana* (or *Oreopteris*) *Nowelliana*, so named in merited honour of our amiable and much respected Vice-President. This extraordinary variety of the fragrant *Mountain Buckler-Fern*, which was discovered by Messrs. Nowell and Stansfield whilst on a botanical ramble in North Wales last summer, is the more notable as so very few deviations have been found hitherto, from the normal type of this beautiful Fern.

"Our eminent Muscologists, Mr. Nowell and Dr. Wood, of Manchester, have also had recently such success in their specialty as has startled the whole Muscological world. I refer to the

'new light' thrown by the above gentlemen on the genus *Orthotrichum*, in regard to which discoveries, as our botanical journals will have made patent to you, not only English but *foreign pens* have been at work.

"The various commendatory notices of our Society that have appeared, from time to time, in the pages of the London journals, and especially the 'Phytologist,' must also be another source of congratulation.

"For the large gratuitous contributions of dried specimens of plants made to the Society during the year, we owe much gratitude to the donors. Dr. Wood, of Manchester, and H. Boswell, Esq., of Oxford, in especial, have presented to the Society what must be considered most valuable acquisitions, in enlargement of our *hortus siccus*.

"The Editor of the 'Phytologist' having resolved to publish a List of all the Botanists (properly so called) in the kingdom, some time ago appointed your Secretary to report for Lancashire and Yorkshire, etc., and much correspondence, of course, has been necessary. The List of Botanists above referred to, is now in course of publication, and will no doubt shortly be in our hands.

"As to the matter of finance, we have some £30 of uncollected subscriptions, and a balance in hand which will almost cover all the outstanding accounts."

After carefully reading the foregoing Report, it would be both stingy and uncourteous to refrain from offering these persevering men the humble meed of approbation at our disposal; and to wish, in Oriental phraseology, as the author of 'Haji Baba' taught us long ago, "that their success may never be less." Their financial statement affords a most favourable contrast with the monetary accounts of more than one Society in which we formerly took an active part.

We only wish we had room for a more detailed account of the interesting proceedings of the evening. Probably when the Analyst publishes or prints his history of the past year's excursions, he will be so obliging as to send us a copy, from which we are certain of gleaningsome facts which will be both instructive and pleasing to our readers. It is also a gratification to hear that the Darwinian theory is exciting considerable attention, and that

it can be discussed with interest and animation. It is fervently to be hoped and desired that these discussions are not sheer *logomachies*, rather disputes about words than about realities. For our own part we would rather hear or read Mr. Patman's notice of new localities for rare plants, than peruse the most ingenious speculations about their origin. The former are what people call *facts*, the latter are only fancies.

This brief notice of an exceedingly well managed and economical Society, is published in our pages solely for the purpose of showing how much good may be accomplished by a very small pecuniary expenditure. The example of the office-bearers especially deserves to be commended and imitated; the members get their *quid pro quo*, *i. e.* the full value of their contributions, six shillings *per annum*; the officials get a barren vote of thanks for their meritorious services. They are not mercenaries, nor vendors of scientific information.

We have dwelt longer than is our wont on this subject, not indeed for the sake of eulogizing these good men, but in the confident expectation that, following in their steps, similar societies, supported at small cost, say by annual payments of five shillings, will be established in every town or even populous parish in England. This is advocated and urged on botanists, wherever two or three can associate, not so much for the sake of science, as with the ulterior and higher object of making people more intelligent, more liberal, and more charitable. In the serious business of life, botany, like every other science, is only one of the means employed for the attainment of noble ends; and these are to make mankind better and consequently happier.

WORCESTERSHIRE NATURALISTS' CLUB.

The first meeting of this Club of practical observers was held on Wednesday last, the 15th of May, 1861, at Malvern, when a large number of members responded to the hospitable invitation of Dr. Grindrod to breakfast with him at Townsend House. After breakfast, the officers of the Club for the ensuing year were elected as follows:—The Rev. David Melville, Rector of Great Witley, President; Rev. A. H. Winnington Ingram, F.G.S., and Edwin Lees, Esq., F.L.S., Vice-Presidents; and

William Matthews, Esq., A.M., F.G.S., Hon. Secretary. Dr. Grindrod then exhibited his unique collection of Silurian fossils.

The botanists detected the rare Burnet (*Poterium muricatum*) and then made a traverse to Brockhill Wood, whose tangled mazes it was found difficult to emerge from, and here some of the heavier-weighted naturalists were "thrown out." Those who were enabled to break through the briars soon found themselves in the romantic Purlicu Lane, a place of double interest, botanical and geological, and while a select few ferreted out the habitat of the rare *Gagea lutea*, others were fishing specimens of *Batrachospermum* out of the brook.

Several new members were elected, viz. the Rev. W. Lister Isaac, Pirton Rectory; George Dawson, Esq., Birmingham; Mr. Jacob Gill, Cradley; etc.

Review.

The Preston Chronicle and Lancashire Advertiser, for Saturday, May the 11th, 1861.

The readers of the Chronicle are again (see 'Phytologist,' vol. v. 1861, p. 155) treated to another instalment of the botanical, anti-quarian, and historical 'Rambles by the Ribble,' and this portion of the series is entitled, 'Ingleborough, Geerstones, Ribblehead, Ingleborough Cave,' etc., and it is just as chatty and pleasant as the previous papers on the same subject; and this is high praise.

The botanical discoveries were not numerous, many plants were not to be expected in a very ungenial spring like the last—probably worse. The party were fain to cower under rocks and dry stone dikes and cairns, to shelter themselves from the merciless storms of hail and sleety rain, which prevail more or less in these parts till St. Barnaby's day, June 11th. Three kinds of Club-Moss were all the rewards they obtained in the field of botanical acquisitions. Few of our readers need to be told what they were, for they are no rarities on the Yorkshire hills.

"A contented mind is a continual feast;" a truth which is amply established by these ardent plant- and cave-hunters; and they exercise the rare gift of making the most of everything, both plants and space. The top of Ingleborough, or Foalfoot, as

the people there call it, is a lofty rock forming the summit or crest of the hill. Querer names Englanders employ! there is a deep hollow near Dudley, barely a mile from the town, which is called the Wren's Nest. The summit of the Foalfoot is called "a vast expanse of table-land, not much less than a mile in circumference." When we were there, our companion told us that it had been a race-course; but the single round made, in racing phrase, only a short heat.

About the Ribble, which is hereabout but a tiny brook, the botanists collected *Trollius europæus*, *Primula farinosa*, one of the most elegant of the Primrose tribe; also *Pinguicula vulgaris*, the marsh Valerian; *Saxifraga granulata*, and *S. tridactylites*.

A few weeks in summer might be very pleasantly and profitably passed in rambling among these Yorkshire gills, climbing the hills, enjoying the extensive prospects, and now and then plucking a plant and floweret as a memento of the place and period. It is not agreeable to be on Ingleborough, or even at its foot, when the snow covers and conceals every blade of grass, every hedge, and every tree. May is an uncertain month; bitter cold has been the weather this season, 1861. The end of July, or the beginning of August, is the botanical season for Ingleborough; and for fine weather's sake, so conducive to personal enjoyment of fine scenery, and irrespective of herborizing purposes, we should prefer the end of August, or the beginning of September, when the temperature is more equable, and the atmospheric changes less sudden and severe. We wish our lively chatty tourists better weather the next time they go to Ingleborough; and like John Gilpin's poetic historian, we wish that "when they next set out to *walk*, may we be there to see."

BOTANICAL NOTES, NOTICES, AND QUERIES.

CUMBRIAN BOTANY.

Having occasionally wandered over the interesting district so correctly described by Mr. Edwin Green in your March number of the present year, I feel some pleasure in being able to add a few names of plants by no means common here, to be found within the limits he points out; and which appear to have escaped his notice.

Euphorbia portlandica grows sparingly along the Drigg shore, between the ordinary high-water mark and the high spring-tide mark; and *E. Pa-*

ralias near Haverigg. I could show Mr. Green a flourishing plant of *E. amygdaloides*, but it is not a native of the northern counties, and may therefore be less interesting to him. *Typha* (apparently *latifolia*, less robust than I expected, was brought to me a few years ago, and said to have been gathered in the Chapel Sucken ditches (pools, or poo's, provincially), and most probably may still be found there.

On referring to Mr. Green's route in the November number, 1859, I find he examined the line of road between Seascale and Drigg, but has not recorded the *Lycopus europæus* which grows along the sides of that road, as well as in a few other Cumbrian localities.

At the edges of the copses between Thwaites Schools and the river Duddon I have observed the *Helleborus viridis*, in scattered patches. *Lithospermum maritimum* grows here and there along the shore, but not abundantly, for some distance; and on the muddy margin of the estuary of the Esk the *Artemisia gallica* flourishes.

A few years ago I noticed the *Inula dysenterica* growing in a hollow near the southern end of St. Bee's heads; but I fear the encroachments of the sea at that point have swept away the whole of the roots, as well as an acre or two of very valuable land where it grew.

Other Cumbrian plants and their localities I have mentioned in Martineau's 'Guide to the Lakes,' edition 1861.

Workington, March 18, 1861.

W. DICKINSON.

[*E. Paralias* is in 'Cybele' placed among those species which are supposed to belong rather to the west than to the east of England. One of the proofs of its belonging to the assumed Atlantic type, is rather a hobbling supporter of this assumption, viz., Coast of Suffolk (Rev. W. Notcutt!!).—'Cybele,' vol. ii. p. 362.

Its European range is not limited to the western shores of our quarter of the world, for it extends to Greece and Turkey; as it grows on the east of England, though not so commonly as on the west. So it grows on the maritime parts of our continent, from the Atlantic to the Adriatic.]

FERTILIZATION OF BRITISH ORCHIDS BY INSECT AGENCY.

(From the *Gardeners' Chronicle*, Jan. 26, 1861.)

Referring to your number for June 9, 1860, p. 528, Mr. Darwin asks for information on this point from persons residing in an Orchis district. It is not as a person answering that description that I venture to reply to his inquiries, because, with the exception of *O. Morio*, rarely *O. mascula*, and most rarely *O. viridis*, and *Listera ovata*, we have none of the British Orchids growing near Ely. In the spring of 1860, I met by accident a poor fellow in a street near Hungerford Market, who, for the important sum of sixpence, sold me fifteen roots of the Fly Orchis (*Ophrys muscifera*), which he had collected near Guildford, Surrey. I planted them in my garden, where they all flowered vigorously, bearing from seven to twelve flowers each. Not one of the seed-vessels swelled, and long after the flowers had withered, I narrowly inspected every one of them, and found the pollen-masses still in their pouches, waxy and moist, where one would have expected to find them shrivelled, like the flowers. I bought at the

same time several roots of the Butterfly Orchis, and one of *O. maculata*. The seed-vessels of the Butterfly Orchis in most instances swelled off, and I think every one upon the *O. maculata* was fertilized. I examined the latter frequently, and found the pollen-masses had been dislodged. If it had not been for the *O. maculata* growing with the rest, I might have referred the condition of the Fly Orchids to the absence of insects on account of the rainy weather, but as they all grew together and flowered at the same time (or nearly so), insects could as well get at the Flies as at the others.

WM. MARSHALL.

Ely.

BARTRAMIA STRICTA, *Brid.*

This Moss, hitherto unknown to Britain, and found only in Spain and Portugal, etc., I found in March this year, at Maresfield, Sussex. From *B. pomiformis* this Moss may be known by its smaller habit, rigid and appressed leaves, never crisped, and the fruit-stalk is erect; the leaves also have aristate points. (I depend on Mr. Mitten's authority for the correctness of the species.)

G. DAVIES.

HYPNUM DISPALATUM, *Wils. MSS.*

Is a species I find near Lindfield, Sussex; it is recently separated by Mr. Wilson from *Hypnum hians*, Hedwig, a Sussex plant very near to *H. Swartzii*. Mr. Mitten is of opinion that the distinctions separating *H. dispalatum* from *H. hians* are scarcely sufficient to constitute a species. Search should be made by all bryologists, especially in the south of England, for fruited examples of these and allies, for at present there is much controversy about the *Eurynchium* section of *Hypnum*.

Idem, Brighton, April, 1861.

DEATH OF THE BOTANICAL GUIDE OF LLANBERIS ON SNOWDON.

Another of these sad accidents has just happened.* An old and celebrated guide, William Williams, left Llanberis at 10 a.m. on Thursday, to conduct a lady and gentleman up Snowdon, thence to descend on the Beddgelert side. Deceased was a noted botanist, and while his party rode slowly forward on ponies he indulged in his favourite science, rejoicing when he had obtained the plants. Arrived at the summit, he left them again in order to gather some Ferns, taking the direction of Capel Curig, when his foot must have slipped, and he was precipitated down a declivity of 300 yards. The party, after waiting an hour and a half, descended to Beddgelert, and thence wrote to Mr. Williams, of the Victoria Hotel, Llanberis; but owing to the guide's non-appearance scouts had already been sent out, and the body was found lying at the foot of the precipice. Crowds of persons attended his remains to the grave.—*From the 'Times' of June 25, 1861.*

An account of the death of Dr. Andrew Sinclair, F.L.S., while engaged in a botanical expedition in New Zealand, has reached us, particulars of which sad occurrence shall be given in our next number, if possible.

* Thursday, the 13th June last; see 'Morning Chronicle,' June 20th, 1861.

PALM. (*Salix cinerea*, Grey Sallow.)

This tree, in some parts of Kent, is called by the common people *Palm*, which on hearing led me to consider why it was so called. I thought as it came so early into bloom, or catkins, the branches might have been used by the early Christians to symbolize *Palm Sunday*, the anniversary of the day on which our Saviour entered Jerusalem, and was met by a multitude of people bearing branches of Palms and singing "Osanna in excelsis." Palm Sunday is the sixth Sunday in Lent, and the next before Easter, and I think this Willow is the most conspicuous of our trees which shows the earliest indications of spring by its foliage and bloom. I should like to know if this tree is called *Palm* in other parts of England.

I find, on referring to the 'Glossary of Dates, Charters, and Customs of the Middle Ages,' by R. T. Hampson, under *Palm Sunday*, the following interesting note taken from the Cott. MS. Claud. A ii. fo. 52. The old sermon for 'Dominica in Ramis Palmarum' has the following account of the day:—"Gode Cryston men and women, ze know welle all this day is calde Palme Sonnenday: than wyste Ihu tha hist passion was negh, and tooke Lazar w^t him, and so ryding on asse hi zode towerde Jerusalem, and whanne the pepul herdun that alle zode azennes him, bothe for wondur of the man that was reysed from deth to lyve, and also for to done Cryste worchep, wherfore many haddon flowres in his way, and many brokon branches of olyfe and of palme and keston in the way, and spreddon clothus in the way, mixing melody and sungynge thus: Blessed be thu, etc.; but for encheson we have non olyfe that beroth grene leves, we takon in stede of hit *hew* and *palmes wyth*, and beroth aboute in process, and so this day we callyn *Palme Sonnenday*."

I think we may read *palmes wyth*, for *wyth*, which is one of the names of the Willow, and *hew* is of course our *yew*.

I expect that some of your readers will be able to inform me when this ceremony of strewing branches by the early churches commenced, and when it was discontinued.

S. BEISLY.

Communications have been received from

James Lothian; John Sim; Sidney Beisley; E. J. Ashfield; Tom Stansfield; W. Pamplin; W. Richardson, jun.; J. R. A. Briggs; F. Y. Brocas; W. Winter; Richard Smith; Archibald Jerdon; J. S. M.; John Lloyd; G. Frost; F. Reynolds.

BOOKS, &c., RECEIVED FOR REVIEW.

The Chemist and Druggist, May 15th.

Notes on Books.

The Perth Reporter, May 25th.

The Preston Chronicle, May 29th.

Jackson's Oxford Journal, May 18th.

The Chemist and Druggist, June 15th.

The Lyttelton Times (New Zealand), April 3rd, 1861.

BOTANY OF SPAIN.

A Few Days' Botanizing in the North-Eastern Provinces of Spain, in April and May, 1860.

NO. I. CATALONIA.

There is hardly any country in Europe whose floral treasures are less known to botanists than those of Spain. That country has produced few indigenous botanists. She possesses, practically speaking, no local Flora; the only one known to Europe being the old, rare, and costly work of Cavanilles, in which, along with such of the native plants as were known in his time, descriptions and figures are given of the American and other exotics cultivated in the Madrid Botanical Garden. There is another book, which the present writer had never heard of, but which he saw on a bookstall at Barcelona; a 'Flora of Spain,' bearing a date soon after the middle of the last century, in which the names given to species are Linnæan, but the genera are arranged on the simple and primitive plan of alphabetical order. M. Boissier, to whom the botany of the Mediterranean basin is so much indebted, has made excursions in several parts of Spain, the botanical results of which have been published. And this is nearly all which has been done for Spanish botany. Yet the country is one of the most largely endowed in our quarter of the globe, with the conditions on which variety of indigenous vegetation depends. It reaches further south than any country in Europe; the rock of Gibraltar being some fifty miles nearer to the Equator than the most southern promontories of Sicily or Greece. The low latitude of the northern provinces, compared with England, Germany, and the greater part of France, is more than compensated by their mountainous character, which renders their vegetation a copious sample of all northern climates, to the Arctic inclusive. Modern investigation has shown that there is as marked a difference between the western and eastern Floras, as between the northern and southern; and of this distribution also, both branches are fully represented in the Peninsula. Its northern and western coasts, especially if we include Portugal, are the typical example of the western or Atlantic Flora; while the dry eastern districts, from the Pyrenees to Carthage (and no doubt

the south coast also), belong in all respects to the Mediterranean portion of the eastern botanical region. Of soils there are all varieties, from the richest alluvion to the barest granitic or calcareous rock; and the proportion of waste is probably unequalled in any European country, Greece and Turkey excepted.

That a country with these attractions to botanists, should have been so little explored by them, is an effect, doubtless, of the same causes which have made, until lately, the resort of travellers thither, for any but commercial purposes, comparatively infrequent; the disturbed state of the country through civil war, the danger from banditti, and the absence of the facilities for travelling afforded by roads, inns, and means of conveyance. The first two of these hindrances have completely, and, it is to be hoped, permanently disappeared. Civil wars are ended, and brigands are now never heard of. The remaining difficulties are in a course of rapid removal. Security and freedom—for in spite of the imperfections of her institutions and of her administration, Spain is a free country—are producing their natural fruits. The impulse given to the national mind by political emancipation; the freedom of speaking and printing which has been enjoyed for nearly a generation; the downfall of the Inquisition, and the decline of the great enemy of modern ideas, the Catholic hierarchy (for Spain, though still a Catholic, is no longer a priest-ridden country) have brought that fine people once more into the full current of European civilization. In the material department of national improvement, Spain is rapidly recovering her lost ground. Instead of the desolate and neglected appearance which we are taught to expect, every province which I visited, except the naturally arid and unfertile plain of Aragon, wore the appearance of diligent and careful agriculture, and not unfrequently of active and successful manufacturing industry. The soil of Spain will soon be completely intersected by railroads. The lines from Madrid to Valencia and Alicante, from Cadiz through Xeres and Seville to Cordova, are open throughout. Of those from Madrid to the French frontier, at both extremities of the Pyrenean chain, large portions have been opened, as well as many shorter and branch railways. The common roads are now numerous, and some of them good. The diligences surprise one by their number. Their rapidity was already noted at a time when the state of the roads seemed hardly compatible with that quality. But what most

surpassed my expectation was the inns. My experience is indeed limited to a few provinces. There, however, they are not only, in the great towns, very tolerable, but even in small roadside places we found them equal to the small country inns of France. The hotels of Madrid, indeed, cannot be compared to those of the great towns of France, and are inferior to those of some places in Spain itself; but Madrid, except in being the seat of the government and Court, is the capital of Castile rather than of Spain. At Barcelona, Valencia, and Zaragoza, there are hotels about on a par with those of provincial towns of secondary rank in France; while not only at places like Tarragona or Guadalupe, but even at an insignificant village like Alcolea, on the plateau of Castile, a hamlet distinguished by nothing but by being one of the stopping-places of the diligences from Madrid to Zaragoza, we found a roadside inn at which it was possible to sleep and even to make some stay in comfort. I should not indeed advise any one to travel in these provinces in the months of August and September, both on account of the heat, and of the plague of insects which might at that season be expected. But these months are later or earlier than a botanist in the south of Europe has any inducement to travel. Botanists, walking tourists, and all who are accustomed to penetrate into the nooks and corners of a country, will find Spain, in the present day, no more closed to them than any other part of Europe.

I should not presume to offer as worthy of attention, such fragmentary notices as I could pick up in a mere run through any country whose botany was known, and which possessed local Floras. Even as regards Spain, my passing observations have little of the value which would belong to those of a profound botanist. My only qualifications are delight in the subject, and some acquaintance with a considerable portion of the general Flora of Southern Europe. I have therefore to apologize beforehand for many deficiencies, and doubtless for some errors. It requires a really good botanist to investigate the plants of a country, with a universal "Species Plantarum" for his sole guide: neither can a traveller carry about with him De Candolle's 'Prodromus' and Kunth's 'Enumeratio,' which, moreover, even joined together, are not complete; and to determine plants by them afterwards from dried specimens, is a task of which every one knows the difficulty. The books I had with me were the 'Flore

de France,' by Grenier and Godron; Woods' 'Tourist's Flora' (in which Spain is not included); and by way of a general Flora, the Compendium of Persoon, which, notwithstanding the extreme brevity and frequent want of precision of its descriptions, enabled me to determine some plants which I could not otherwise have identified. I must premise further, that the only mode of travelling in Spain (except on horseback) being by public conveyances, want of time, and of information as to halting-places, confined us for the most part to journeys from one large town to another; and the rapid pace of the diligences precluded even that common resource of Continental travelling, taking advantage of hills for pedestrian exploration of roadsides. My experience therefore of Spanish botany was mostly confined to the immediate vicinity of considerable towns. Of the intermediate spaces I saw, in general, only what could be seen from a diligence drawn by from ten to sixteen mules at full gallop, or through the windows of a railway carriage; and thus, although I passed a whole month in Spain, I had but a few days of real botanizing during that period, which extended from the middle of April to the middle of May, in an extremely backward season. It is a proof of the botanical riches of the country, that with only these opportunities and such imperfect qualifications, I can still furnish a respectable list of plants.

The province which I first visited, and of which I saw most, was Catalonia; which, both botanically and geologically, may serve as a representative of the whole north-east region of Spain. It differs from Aragon and Valencia chiefly in being more mountainous. Its northern portion is a confused heap of mountains; and all the way to Barcelona these come down to, or very near, the sea. Towards Barcelona they open out into a crescent of no great depth, leaving a semicircular plain, in the centre of which, on the sea, stands this fine city, rich in the signs of prosperous industry, and hemmed in by a girdle of populous villages as prosperous as itself. Close beside it, on a hill cultivated to the top, is the celebrated but not formidable-looking fortress of Monjuich, the scene of so many exploits in the old wars. The plain is rich and fertile, without artificial irrigation, at least in the usual Spanish manner, by canals. Such irrigational apparatus as I saw (all of which was quite close to Barcelona) consisted of those curious irrigation-towers, the work of the Saracens,

which form a conspicuous, and, at first sight, a puzzling feature in the country about Palermo. The plain is crossed here and there by gullies, cut deep into the soil by the torrents of rain which must descend at certain seasons from the adjacent mountains.

The conditions of soil and climate in Catalonia, are much the same as in the Mediterranean provinces of France, and the botany accordingly is very similar. It is the country of the Olive, the Fig, the Vine, and, further south, of the spreading and shady but stiff-leaved Caruba (*Ceratonia Siliqua*) but not of the Orange and the Myrtle. The Aloc (*Agave americana*), and the Prickly Pear (*Cactus Opuntia*) are found; but not, as in Sicily, in wild abundance, forming a great feature in the landscape. The first chiefly appears in the form of hedges (as in Roussillon); and the Cactus I did not observe further north than Tarragona. There too I first came upon the Palmetto (*Chamærops humilis*), the dwarfish representative of the mighty family of *Palmeæ*; that stiff low prickly bush which half covers with its *chevaux-de-frise* of fan-like leaves the vast wastes of Sicily. It abounds also on the line of road from Tarragona to Valencia, and its fibres are made into a kind of matting, the production of which is part of the domestic industry of the country. The plants of the Catalonian landscape were chiefly those of the rocky calcareous wilds of Languedoc and Provence, called locally *Garrigues*, from the provincial name (according to M. Léonce de Lavergne) of the dwarf evergreen Oak which covers them; the *Quercus coccifera*, in which the *Kermes* insect, the European variety of the cochineal, elaborates its brilliant dye. This, and *Quercus Ilex*, are the principal representatives of the old Order *Amentaceæ*. *Pistacia Lentiscus*, the Mastic-tree of Scripture (to my surprise I saw little of the still finer *P. Terebinthus*, though equally or more common in the south of France); the fragrant Tree-Heath (*Erica arborea*); the still more powerfully odorous woody Thyme (*Thymus vulgaris*), inferior in beauty, but superior in odour to our *T. Serpyllum* (which grows there also); that common southern plant, the Rosemary (*Rosmarinus officinalis*); the Spanish Broom of our gardens (*Spartium junceum*) with its intoxicating perfume; the prickly Broom of the south of France (*Genista Scorpius*), which though humbler in stature than our tall Furze, colours the landscape in spring with similar masses of

brilliant yellow, while it projects its sword-like flowering branches vertically and laterally, like the dwarf autumnal Furze of our commons; these form the most conspicuous clothing of the uncultivated ground in the coast region of Catalonia. The honeyed *Koniga maritima*, in flower at all seasons, and especially after other flowers have disappeared, covers the ground, both waste and cultivated, to great distances from the sea; and another winter plant, *Diplotaxis eruroides* (which is brought into Rome by cartloads in full flower throughout January), adorns the cultivated lands with its light-grey cruciform blossoms. If to these we add several species of *Cistus* and *Helianthemum* (of which hereafter), a tolerably complete idea is given of the vegetation, as it exhibits itself at this season to an eye merely wandering over the face of the country.

To proceed to local details; the plants of Barcelona may be divided into those of the plain, and those of the crescent of low calcareous mountains which overlook it. The brightest flower of the plain, in these spring months, is *Hypecoum procumbens*, a Papaveraceous plant, with a flower like that of *Chelidonium majus*, and about as large, though the plant itself is small in comparison. It has a long, crooked pod, and its leaves are cut like those of an *Erodium*. Notwithstanding the name *procumbens*, the plant, though spreading, is erect, and grows copiously among the corn, in appearance like an agrarian *Ranunculus*, of greater size and finer quality than *R. arvensis*. I found this plant in other parts of Spain, and I had already found it near Perpignan. I will not affirm that some of it may not be *H. grandiflorum*, if there be any real difference between the two. I met with another undoubtedly different *Hypecoum* further south, which will be commemorated in its place. Of *Ranunculi* I noticed near Barcelona only *R. bulbosus*, and the aquatic but not batrachian species *muricatus*, allied to *sceleratus*, but with a fruit of a somewhat similar character to *arvensis*. A fine *Fumaria*, with large white and purple flowers (which I also saw near Perpignan), seemed to be *muralis* of Grenier and Godron; but those authors, I observe, have on reconsideration decided their plant to be not one species but three, none of them the true *muralis* of Sender. The *Cruciferae* I noticed were those common plants of southern France, *Sisymbrium Irio* and *obtusangulum*, and *Lepidium Draba*. *Reseda Phyteuma*, a plant nearly resembling *odorata*, but without

its smell, was here, as in most parts of the south of Europe, abundant. This plant reaches so far north in France, that it might well have been looked for in England. The family *Geraniaceæ* is represented by *Erodium malachoides*. *Oxalis corniculata*, and the brittle bush *Coriaria myrtifolia*, with its currant-like racemes clothing its dry-looking branches long before the leaves come out, are here common. Of Leguminous plants, the most worthy of notice is *Lathyrus Ochrus*, a procumbent species, with large oval leaflets, (like a greater and paler *L. Aphaca*,) which haunts, as in Sicily, low moist places in the alluvial ground. The place of our *Lotus corniculatus* is taken by another Sicilian plant, the equally yellow and not less elegant *L. ornithopodioides*. Another Leguminous plant, with oval leaflets and round leaf-like stipules, is *Arthrolobium* (formerly *Ornithopus*) *scorpioides*. Of *Rosaceæ*, the principal is that happily ubiquitous shrub, the Hawthorn; I did not examine whether in both its forms or only in one. It is curious that the form *monogyne* is sometimes the only one found in a large tract of country. According to Gussone, there is no other in Sicily. The only *Potentilla* I saw was *P. verna*, which is rather frequent. The Composites were those common in the south: *Sonchus tenerimus*, like our common Sowthistle, but much more fragile and delicate; *Picridium vulgare*, with its urceolate flowers and hard scarios phyllaries; that ornament of banks, *Urospermum Dalechampii*, and the coarser *U. picroides*; the small Marigold, *Calendula arvensis*; this last is found as far north as Normandy, and I believe no botanist knows, any more than myself, why it does not grow in Kent. Who can tell why *Specularia Speculum*, the Venus's Looking-glass of our gardens, comes up to the very Straits of Dover as a cornfield plant, while, though so generally cultivated in England, we never see it wild, even as an escape from culture?—or why *Orlaya grandiflora*, which I have gathered in cornfields between Boulogne and St. Omer, should not be found in England at all?—or why that commonest of Continental weeds, even on the sands opposite the English coast, *Eryngium campestre*, should be the rarest of rare plants in England, and should not spread even when introduced as a ballast plant. These secrets of vegetation will, perhaps, be some day unveiled. The only Thistles in flower near Barcelona, at this early season, were the same as in Sicily; *Carduus pycnocephalus* (allied to *C. tenui-*

florus) and the elegant *Galactites tomentosa*. Of *Boragineæ*, I observed the common Borage, and a fine *Echium*, perhaps the *violaceum* of the Channel Islands, but it was not sufficiently advanced to enable me to distinguish it with perfect certainty from *E. plantagineum*, one of the handsomest of the tribe, which, as well as others, has been confounded under the name *violaceum*. The *Scrophularineæ* were *Antirrhinum Orontium*; the brilliantly yellow *Linaria supina*; *Scrophularia peregrina* of Italy and Sicily; *S. canina* of southern and middle Europe. The genus *Euphorbia* was largely represented: *E. Peplus* and *helioscopia* of course; those fine plants *serrata* and *Characias*, the first common in the south of France, the second everywhere in the South (*E. Cyparissias* and *gerardiana*, so frequent in southern Europe, I did not see); but the principal *Euphorbia* of the plain of Barcelona is *E. terracina*, less striking in appearance than some of these, but more curious when examined. The calycinal glands characteristic of the genus, which in this, as in many other species, are of a crescent form, are terminated in *E. terracina* by a pair of setæ, exactly resembling the antennæ of an insect. The *Monocotyledoneæ* which I noted were that common weed *Muscari comosum*, the wild original of one of the ornaments of our gardens, and *Asphodelus fistulosus*, the smallest European species of its genus, not general in the south of France, though not unknown there, but most plentiful here as well as in Sicily. Of Ferns, no abundance could be expected in these dry climates, but the Ceterach grew plentifully here and elsewhere, as did also the Maidenhair (*Adiantum Capillus-Veneris*), wherever there was local dampness and depth of shade.

The mountain Flora of Barcelona is much more copious, and as I explored it twice, at some interval of time, I can give a rather fuller account of it. Apart from their form and composition, these heights would scarcely be entitled to a more ambitious name than that of hills. The range, at least this part of it, is of small breadth, and the line of summit looks down upon a wide extent of country, rugged and rocky enough, but of little elevation, though varied with occasional eminences, among which the lofty and many-pinnacled ridge of Monserrat is supreme. The rocks of the maritime range are calcareous, like those of Bas-Languedoc and Provence, and the mountain sides are cut through by deep ravines, of which the gullies that intersect the

plain are a continuation. The rocks, though in most parts thickly clothed with bushy shrubs, show few trees, except a pine-grove here and there. The species of the Pine I did not verify, but it had the aspect of *P. halepensis*, the common Pine of the Mediterranean provinces of France. The remaining wood was chiefly *Ilex*, kept low and bushy by the woodcutters. The floral treasures of this range are considerable. *Leguminosæ* are the most abundant. Besides the thorny *Genista Scorpius* and the Spanish Broom, I noticed two other plants of kindred character: the Furze which fills so large a place in the winter Flora of Provence (*Ulex parviflorus*, or *provincialis*); and the thorny Cytisus, which covers Sicily in March with its yellow blossoms, *Calycotome spinosa*, unless I am mistaken in this last, which was not yet in flower. Of non-thorny Cytisi there were as many as three: *C. candicans* (*Genista* of some authors), one of the most elegant, and here the most flowery of this elegant genus; *C. triflorus*, a shrub of the height of a man, which blackens in drying, and with which all who have botanized near Naples must be familiar; and the dwarfish *C. argenteus* (by some called *Argyrolobium linnaeanum*), one of the *Garrigue* plants of the south of France. *Anthyllis* was represented by *A. tetraphylla*, a Palermo plant; *Trifolium*, by the well-named *T. stellatum*; *Medicago* by several, which, for want of sufficiently developed fruits, I did not determine, but which were apparently some of the common ones of the south of France,—*M. minima*, *denticulata*, *præcox*, *Gerardi*, *orbicularis*, or *marginata*. The commonest of the *Coronilla* of southern France, *C. Emerus*, made a large display of its loosely hung blossoms. Here, as everywhere in Spain, the *Hippocrepis comosa*, the charm of English chalk hills, brought pleasant remembrances of the floral beauties of Surrey and Kent, though often, doubtless, confounded with *H. glauca*, a plant equally common, and if specifically different, perfectly resembling *comosa* in habit and general appearance. The *Lathyri* were represented by the delicate and slender *L. setifolius*, and the large-flowered *L. Clymenum* (*tenuifolius* of Gussone), which I have also found at Perpignan and at Palermo. *Vicia* presented me with *V. tenuifolia* of Roth, an improved likeness of *V. Cracca*; and the much less beautiful *triflora* of Tenore, the first plant I met with which is not a native of France. *Astragalus* offered a species rather insignificant in appearance, *A. sesameus*, a plant not unlike, at

the first glance, to *Bisserrula Pelecinus*; and another, the commonest, but one of the most gorgeous of this splendid genus, which grows in Normandy, and ought to grow in Kent, *A. monspessulanus*. My Catalonian specimens were not of the usual colour, but paler, and with a mixture of yellow; a character attributed to the neighbouring *A. incanus*, but not, so far as I know, to any form of *monspessulanus*; this plant, however, seemed to possess the essential characters of the more common species. Among *Leguminosæ* not yet in flower, I may mention two common plants of southern Europe, the bushy *Dorycnium suffruticosum*, with its small round heads of pale flowers, which I have known to whiten at a distance large spaces of ground; and the trefoiled *Psoralea bituminosa*, with its elegant flowering clusters, and long axillary peduncles.

The greatest ornaments however of these bushy hills were the *Cisti*, which form in some places a great part of the whole vegetation. Without reckoning *Helianthemums*, there were four species of *Cistus* proper; bushes covered all over with large and brilliant blossoms; the decumbent *salviaefolius*, with its milk-white cups; the erect *albidus*, with its grey foliage and delicate mallow-coloured flowers, larger than the largest wild Rose; the stiffish, narrow-leaved *monspeliensis*, with flowers rather smaller than *salviaefolius*, flat and wheel-like, instead of cup-shaped; and a rarer species than any of these, *C. Ledon*, which, with *monspeliensis*, by their viscous touch, and rich resinous smell, form a transition to the real European Gum *Cisti*, *C. ladaniferus* and *laurifolius*. The *Cisti*, happily for Spanish landscape, are, like the *Ericæ*, gregarious plants, and, of all *Cisti* I know, none are so gregarious as *C. Ledon*. Near Perpignan, and on the plateau of Morières, near Avignon, it covers acres of ground. Of *Corollifloræ* not previously mentioned, I noticed a *Verbascum*, probably *V. Boerhavi*; the deep blue *Lithospermum purpuroceruleum*, not unknown in England, and one of the most frequent as well as beautiful of the wood and thicket plants of the South in April and May; *Veronica Teucrium*, which vies with, if it does not surpass our beautiful *Chamædry*s; that curious plant, *Lavandula Stæchas*, named, like several other plants, from the isles of Hyères, but tolerably general in the south of Europe; and *Stachys hirta*, a plant in France confined to the extreme south-eastern corner. Other plants in flower were, a rare but rather

dull-looking *Polygala*, *P. rupestris*, growing in clefts of the rocks; *Paronychia argentea*, one of the ornaments of Sicily, carpeting the ground with its silvery inflorescence and herbage; *Osyris alba*, a scraggy bush of the family *Eleagneæ*, abundant in the South, which, covered at this season with yellow blossoms, fills the air all around with a powerful fragrance like that of the *Galia*. At the back of the ridge, looking towards the north and north-west, I came upon plants of a decidedly English character. *Euphorbia Characias* and *serrata* were replaced by *E. amygdaloides*; and I found here the first Orchid I saw in Spain, *Cephalanthera ensifolia*, a rare, but still a British species. Our common wild Strawberry was occasionally visible. These were nearly all the plants of interest which I saw in flower. Most of the *Compositæ* were not yet in a state to be recognizable. The only ones in flower were *Senecio vulgaris* and *viscosus*. *Inula viscosa*, and *Phagnalon* (or *Conyza*) *saxatile* were distinguishable. The plants not in flower included several of the most characteristic shrubs of southern Europe: the gorgeous Pomegranate, the evergreen *Phillyræa media*, the common *Arbutus* (*A. Unedo*), and one of the most powerfully and sweetly odoriferous of European climbers, which retains its fragrance for many years in the herbarium, *Smilax aspera*. To these let me add the perfoliate *Lonicera implexa*, and another Honeysuckle, which was probably *etrusca*, the other common one of the South; for our Woodbine is in southern Europe a mountain plant, and our garden *L. caprifolium* I have seen wild only in Italy. The curious *Asparagus acutifolius*; *Bupleurum rigidum*, one of the oddest species of a genus already anomalous among Umbellifers; and *Daphne Gnidium*, an ornament of late summer and autumn, complete the list of my observations in the Barcelona mountains, with the exception of Monserrat, the copious botany of which I keep for a separate notice.

Many of the plants above enumerated, I afterwards met with in the same line of country further north, where another evergreen oak, the Cork tree (*Quercus Suber*), abounds, and its produce is an important article of commerce. Here, too, the English Broom, *Sarothamnus scoparius*, makes its appearance, even in the plain, at least near the foot of the mountains. Other common English plants, *Stellaria Holostea*, *Chrysanthemum segetum*, *Centaurea Cyanus*, are abundantly visible to the passing eye,

together with *Lavandula Stæchas*, *Cistus albidus* and *salviæfolius*, *Ulex parviflorus*, *Euphorbia terracina* and *amygdaloides*, *Muscari comosum*, and an *Ononis*, probably *Natrix*. In the woody hills near Gerona, in the middle of May, I had a botanical walk of considerable interest. A deep shady wood of deciduous trees afforded the beautiful *Geum sylvaticum* (otherwise *atlanticum*). This, with *Onobrychis supina*, and the dwarfish and quaint *Lithospermum apulum*, I observed nowhere else in Spain. I found also (besides many of the Barcelona plants) the beautiful *Allium roseum*, the rush-like *Aphyllanthes monspeliensis*, with its large and curiously lined azure flowers, the narrow-leaved *Phillyræa* (*P. angustifolia*) of our shrubberies; a *Sideritis*, (I believe *S. hirsuta*); and a characteristically southern tree of the family *Urticæ*, *Celtis australis*, the *Micocoulier* of the south of France: not to mention *Helleborus fætidus*, *Aquilegia vulgaris*, *Alyssum calycimum*, *Potentilla reptans*, and sundry common *Ranunculi* and *Heli-anthema*.

(To be continued.)

MAIANTHEMUM BIFOLIUM.

To the Editor of the 'Phytologist.'

Sir,—At the beginning of the present month (June, 1861), I visited the habitat of the *Maianthemum bifolium*, in Forge Valley, near Scarborough, and found it growing in great abundance. The following remarks refer to it:—It extends about ninety yards in a continuous line, on the brow of a steep cliff, with a north-easterly aspect, and in some places reaches down the embankment twenty yards or upwards. Within these limits it is in some places so dense that a foot could not be put down without treading on some of the barren leaves. It is shaded by Oak, Mountain Ash, and Birch, and grows in black peat. I think that it is to be wished, with regard to this plant, that some one of our eminent botanists would visit the locality, and give his opinion as to its claims as a native. Should it be denied a place among our indigenous plants, it would become a question what period of time would it require to establish it in the manner it is. Its companion, *Trientalis europæa*, grows in complete beds,

and reminded me forcibly of the beds of seedling Rhododendrons that one occasionally sees in nurseries. Near to the same spot, in a similar soil, and with the same aspect, grows *Lastrea Fenisecii*. I had also the good fortune, early in the spring, to meet with *Carex digitata*, in the same valley. I did not find merely a few solitary roots, but it was generally dispersed throughout the valley. Dried specimens of any of the above-named plants, I am agreeable to exchange or give to any lover of botany.

FREDK. REYNOLDS.

Ayton, near Scarborough, 19th June, 1861.

BOTANICAL PROFESSORSHIP, CAMBRIDGE.

The readers of the 'Phytologist,' and British botanists in general, will be well pleased to hear that "Charles Cardale Babington, Esq., M.A., of St. John's College, F.R.S., F.L.S., etc., was unanimously elected Professor of Botany, in the room of the late very sincerely lamented Professor Henslow." Mr. Babington is well known as the author of the 'Manual of British Botany,' a work which placed our Flora in its real relationship with the vegetation of Europe, as expounded by continental botanists; and which has extended the knowledge of our native plants more than any work since the publication of the 'English Flora' of Sir J. E. Smith. Very great progress has been made in the accurate distinction and critical comparison of our native plants, since the general circulation of the Manual. Professor Babington is also the author of a Flora of the Channel Islands, a Flora of Bath and its environs, and of a Flora of Cambridgeshire, recently reviewed in the 'Phytologist.' He is, besides, one of the editors of the 'Annals of Natural History,' and is distinguished as an antiquary by his work 'Ancient Cambridgeshire.'

He is, besides, one of the valued contributors to our pages; and we have much pleasure in announcing to our readers the above intelligence, and hope that the Professor may long enjoy the honourable position in which he has been placed by the unanimous choice of the authorities of his *Alma Mater*.

KENTISH BOTANY.

Walk from Deal to Folkestone, through Walmer, under the Cliff to Kingsdown and St. Margaret's, along the Downs by the South Foreland, Dover, Lydden Spout, and Eastwear Bay.

At Deal we refreshed and rested for the night; and next morning, the 6th (see 'Phytologist,' vol. v. p. 213), set out by Walmer, Kingsdown, the South Foreland, etc., to Dover. This is not the nearest way to Dover from Deal, but the direct road neither affords the fine views nor the rare plants which we had the pleasure of collecting on this our fourth day's excursion. There are not so many plants to report as on the previous days' botanizing, but the following are of far greater interest than the majority of those which had hitherto been observed.

About Walmer, on the beach, or between the road and the sea, *Reseda lutea*, *Diploaxis muralis*, *Onopordon Acanthium*, *Trifolium fragiferum*, *T. scabrum*, and the much rarer *T. suffocatum* were collected. *Linum angustifolium* was very plentiful, among which a broad-leaved form was seen, which may have been mistaken for *L. perenne*, a species recorded as occurring in these parts.

Marrubium vulgare was seen here for the first time during this botanical tour. *Chlora perfoliata*, *Anthyllis Vulneraria*, *Fœniculum vulgare*, *Chenopodium murale*, and *Linaria spuria* abounded, and several were, notwithstanding the sterility of the soil, very luxuriant. *Centranthus ruber*, and *Linaria Cymbalaria* were well established on the beach in shingly depressions; a situation in which we had never seen either of these two plants previously. The plants selected, in all probability, these stations for themselves. Their establishment there could hardly have been effected by human agency.*

* A remark on some plants in this country, usually found only on walls, will not here be inappropriate.

The Sedums are usually mural plants in the south-east of England. *Sedum album*, *S. dasyphyllum* are seldom or never found here growing on the ground. They grow on rocks in Scotland, and probably, one of them at least, in the west of England, also on rocks. Rocks in the south of England are as rare as brick walls in Scotland; and these and several other plants are necessarily restricted to what are called artificial erections. But the plants are not necessarily indebted to human agency for these artificial localities; in all probability they selected these

At Walmer, or rather on Walmer's shingly beach, on the west end of the village, towards Kingsdown, there were observed several very luxuriant forms of *Medicago denticulata*; the stems were quite procumbent, above a foot long, bushy, or with numerous series of branches, and with only a single twist, or a turn and a half, of the cochleate spiral fruit.

During the subsequent portion of our walk we observed other gigantic forms of Leguminiferous plants, and these will be mentioned in the sequel.

Medicago denticulata was probably long considered only a variety of *M. maculata* on the one hand, and *M. minima* on the other. It differs from the former in the absence of a spot on each leaflet, and it is usually smaller in size. From the latter it differs in its flatter fruit. The fructification of *M. maculata* resembles in figure the nave of a cartwheel, having many convolutions of the spiral. In *M. denticulata* the convolutions are few, viz. from one to three, with flat sides; in *M. maculata* and *M. minima*, the convolutions are numerous, and the base and apex of the cochleate spiral are rounded, not flat. Also when the fruit of *M. denticulata* is quite ripe, it is furnished with prominent radiating ribs, and it is also of a black colour.

This Medick, *M. denticulata*, has been observed and collected during recent years at Wandsworth, near the steamboat-pier; also at Southampton, not far from Itchin Ferry, and at Black-

situations for themselves; or selected brick walls and tiled roofs because there was no natural site present suited to their economy.

Some plants have a preference for walls and roofs in this part of the kingdom, but are not exclusively restricted to such places. *Saxifraga tridactylites* and *Sedum acre* are examples. These indeed often grow on walls, but in some places they grow plentifully on the ground. Various species thrive equally both on walls and on the ground. Shepherd's-purse (*Capsella Bursa-pastoris*) and *Arenaria serpyllifolia* or *A. leptoclados* are familiar examples. *Parietaria officinalis*, *Linaria Cymbalaria*, *Centranthus ruber*, and *Cheiranthus Cheiri* rarely grow on any other situation but on walls. The first of the last-mentioned four plants is universally admitted to be a genuine native; the three remaining are as universally branded as certainly introduced, their introduction being at a more or less remote period.

These three species, viz. *Linaria*, *Cheiranthus*, and *Centranthus*, grow in the southern parts of our isle *on walls*, because here there are but few places where rocks of any kind crop out or rise above the surface of the ground. Rocks there are none in the south-east of England, except a few in Sussex, and where the chalk, the common substratum of a third part of England, is laid bare by the sea, or by the operations of the quarrymen. Hence but little stress can be laid on the

heath and Parson's Green. The variety *M. apiculata* has very recently been detected at Battersea, on a gravelly heap of soil lately laid there to raise the level of the new park. This park is nearly opposite the steam-boat Cadogan Pier, and close to the Prince Albert public-house, on the Surrey side of the river.

Before we reached this part of the beach, we lighted on a fine colony of young plants of *Lavatera arborea* (all seedlings), produced from the *rejectamenta* of the adjoining gardens. It was observed in a cottage garden on our way from Canterbury to Sandwich, and it is probably more or less cultivated about Deal and Walmer. The *Lavatera* will probably remain undisturbed in this locality, and it would be gratifying to learn (if any reader of this who resides near Walmer, or ever goes thither to botanize would inform us) that it is still growing in that place. Several of the plants were in flower, some in fruit, but the greater portion were seedlings.

Between Walmer and Kingsdown we looked vigilantly and anxiously for *Lathyrus maritimus*; and we had the gratification of seeing this fine and rare plant in great perfection and profusion also, scattered over the pebbly beach, not far from Kings-

fact of these plants growing on artificial erections, in determining either their non-nationality or their nativity. More confirmatory evidence than the mere fact of their growth on walls, in quarries, and by the coast, must be adduced before their alien origin can be satisfactorily established.

In our excursion along the greatest part of the rock-bound coast of Kent, our attention was much engaged on these points; and we were inclined to admit that there is no valid proof of alienism which can be established against these plants from the stations where they are now seen. Historical testimony might decide the point, but this is negative, not positive.

Parietaria officinalis grew everywhere, both at the foot of the chalk rock and at a distance from it; so did *Eupatorium cannabinum*. *Linaria Cymbalaria* and *Centranthus ruber*, neither of them uncommon in Kent, grew in depressions on the shingly beach. *Cheiranthus Cheiri* was struggling with the rank vegetation of Thistles and large Umbellifers, and had well established itself on the earthen rampart of Dover Castle, far enough from either rocks or walls. This latter plant appeared here and there on the verge of the cliff, all along from the South Foreland to the town of Dover. It probably grew on the rock below, which was not approachable; it certainly grew well on the thin covering of soil which topped the chalk rock.

We were unable to detect, in this locality at least, any natural indications of alienism in the appearance and circumstances of the Wallflower. Botanists have universally agreed to maintain that it is an alien in England; but it is not easy to discover on what grounds, except that of contemporary testimony, which is often conflicting, and not always supported by Nature herself.

down. All the specimens were in fruit, and a few still in flower and fruit both. There need be no fear about specifying the locality as definitely as we can; for there is no risk of robbing the station. The roots of the Sea Pea run so far among the shingle that the plant can protect itself from (against) the ravages of rapacious plant seekers, and the greediness of plant sellers. It is desirable that others should enjoy the delight we felt, even though they might not have the time, the patience, nor the perseverance to hunt for it so long and assiduously as we did. This was one of our most important captures, it may not be termed a discovery; for the localities, though vaguely given, as "Beach near Walmer," "Between Kingsdown and Walmer," and "Between Deal and Dover," are probably all meant to signify this *one* station where we saw the plant, very near to Kingsdown, and above a mile from Walmer.

The other plants observed in this part of our day's walk were *Crambe maritima*, here and there sparingly on the shingly beach; *Geranium robertianum*, the maritime variety; and a pelorian form of *Linaria vulgaris*, *Glaucium luteum*, *Echium vulgare*, etc.

From Kingsdown we walked on to St. Margaret's, under the cliff, and a very warm walk it was. The breeze, though blowing briskly from the sea, was counteracted by the influence of the cliff, and never reached within a hundred yards of the lofty, steep rocks. We kept botanizing on the undercliff; the upper one was a perpendicular or overhanging chalk rock, on which nothing did or could grow.

Here we first lighted upon large plants of *Brassica oleracea*, long past flowering, and far, very far beyond our reach. We subsequently saw them growing on a lower site, on the *débris* of the chalk, between the road and the sea. Here abounded *Erythræa Centaurium*, or the narrow-leaved variety, which we were good-natured enough to consider *E. linariæfolia*; and broad-leaved forms also appeared, which we could not prevail on ourselves to name *E. latifolia*. *Gentiana Amarella* was in great force, as geologists say, and very luxuriant, often a foot high, very broad-leaved and bushy. Is this the variety or species called *G. germanica*? *Linum angustifolium* again appeared, with the largest forms of *Chlora perfoliata* ever seen, and of the most intense glaucous hue, with flowers of the deepest possible yellow.

With many other plants seen before, and too tedious to enu-

merate,—probably to read about,—there were seen *Linaria minor*, *Nepeta Cataria*, *Beta maritima* (on the cliff), *Cynoglossum officinale*, and *Pyrethrum maritimum*. Here also *Statice spathulata*, or *S. binervosa*, and *Crithmum maritimum* introduced themselves to our notice; the former of the two claimed, and also got, a considerable share of our attention. *Orobanche minor* and *Orchis pyramidalis* we were just able to recognize, though their season had long past. The most common plants of the place were *Eupatorium cannabinum*, *Parietaria diffusa*, and *P. erecta*? most abundant on these rocks, and in the interstices of the fallen masses; and *Picris hieracioides* particularly large and handsome, with deep orange-coloured flowers.

Petroselinum sativum was as well established on the beach near St. Margaret's as *Linaria Cymbalaria* and *Centranthus ruber* are near Walmer.

At St. Margaret's, on the cliff, we saw the Dover variety of *Silene nutans*, a very coarse, large, and rough-leaved form of this plant. It differs very much from the delicate slender form in which this species appears on the rock whereon Nottingham Castle is built.

The walk to Dover along the narrow seashore, between the waves and the cliff, was no further practicable because of the tide, which at this time approached too near the rock to permit a comfortable or safe passage in this direction, and no other way was left but that over the downs, along the sea margin of the cliff, by the South Foreland. From this lofty eminence we had an extensive view of the sea and of the whole coast from the North Foreland all along to Shakspeare's Cliff, beyond Dover. We could see plainly all Pegwell Bay, where we were yesterday, with the lofty cliffs about Margate; also the towns of Sandwich and Deal. Walmer village, with its castle, which has not much of a castellated appearance, was in the foreground of this extensive prospect. The coast of France to the right of Calais, and the steep chalk rocks bounding on the south what are called the Chops of the Channel, were very distinctly seen. Proceeding along by the light-houses, the town of Dover appeared snugly situated between the hills and the shore, with its future harbour of refuge on the left, and its majestic castle on the right. This was a view worth going seventy miles to look at; and it would be easier to imagine the delight of the spectator than to describe

his feelings, if he have any feelings, or any sympathy with the beautiful and the picturesque.

We were looking for plants, not for sublime scenery; and our description, like our subject, ought to be of a simple character; therefore no attempt is made to describe scenes which made a very deep impression on our feelings, and which will never be forgotten. They may be more durable than the stupendous cliffs themselves, which have existed nobody but the geologist knows for how many myriads of ages. Our business was to observe and chronicle humbler objects.

On these bare lofty hills, exposed to every wind that blows, we observed *Spiræa Filipendula*, *Erigeron acris*, *Silene nutans*, β , the variety which grows about these coasts; also *Onopordum Acanthium*, quite at home, but not so stately as in gardens, where it is dignified with the name of Scotch Thistle, probably because it does not grow in Scotland; also *Carlina vulgaris* and *Carduus acaulis* were there, though mostly in an incipient condition. Further on *Cheiranthus Cheiri* became quite a common plant, neither on rocks nor on walls, for there are no rocks above the surface, nor walls on these bleak downs, yet it appeared to be well satisfied with its situation, and throve and increased prodigiously, to the great chagrin of botanical geographers, who obstinately, if not maliciously, confine its locality to strictly artificial erections, "almost all its habitats on walls and buildings"!!!

The cliffs near Dover may be called artificial, for every portion of the earth is the work of the Almighty artificer, though they do not owe their being to human agency. This plant, the Wallflower, has taken a fancy to the Castle Hill, and spreads profusely among the rank growth of Thistles, Helminthias, and other coarse plants. Part at least of this huge rampart may be artificial, in the general and restricted sense of this term, but even here the *Cheiranthus*, if not native, is certainly spontaneous.*

* If the area of the two plants *Cheiranthus Cheiri* and *Matthiola incana* be contrasted, it will be seen that the Wallflower has what may be called a general distribution, or it is found in most counties of England and Scotland. In the former the county of Cheshire ought to be added, for it grows on the rock on which Beeston Castle is built (see 'Phytologist' for January 1860, p. 6), and it grows on rocks in other parts of the island, from the Gloucester Avon to the banks of the fair Tay. Between the South Foreland and Dover Castle it grows on the ground: in this tract there are neither rocks nor old walls. It is true that the little soil of the South Downs lies on the chalk rock, but so does the soil of the North Downs,

In a cultivated part of the downs, opposite to Dover Castle on the east, plenty of *Linaria spuria*, *Calamintha Acinos*, and *Lolium multiflorum* was growing; also *Sinapis nigra* and *S. alba*, the former very plentiful, and the latter not scarce. This is a rare plant in Kent, though extremely abundant in Surrey. Here *Diploxix muralis* was profusely distributed all over the cultivated parts of these hills.

We went round the external rampart, crossing the meadow between the Deal road and the Castle, and from this elevation, with the Castle on the left and the town before us and on our right, we had a most satisfactory and very pleasing view of this charmingly situated ancient seaport.

Dover is snugly ensconced in one of the deepest combs of the south-eastern downs. This term 'comb' is almost peculiar to the chalk formation of the south of England, and always signifies a more or less deep depression stretching into the hills at a right angle, or forming some angle with the main ridge which indicates the direction of these remarkable elevations.

The comb at the bottom of which Dover is situated, may be compared to a basin with about a fourth part of its circumscribing sides broken off, and this broken-off part may represent

where the common turf is chiefly formed of *Brachypodium pinnatum* and *Festuca ovina*; but in these parts the Wallflower does not grow as it grows between St. Margaret's and Dover.

The other plant to be contrasted with the Wallflower is *Matthiola incana*, which is recorded as having been found in only two places in England, viz. near Hastings, Sussex, and in the Isle of Wight; yet this rare plant, found in only two localities, is called native, or a denizen, which may be whichever you please, gentle or uncapricious reader!—and the Wallflower, for which hundreds of localities could readily be furnished, is branded as a certainly introduced plant or alien!!! *And so it is!*

It will be, or it may be, alleged that the Wallflower, which abounds on the downs, at the verge of the cliff near the South Foreland and Dover, came originally from the small gardens of the coastguard men and from the Castle. This allegation is far from improbable; but is it not also probable that the Stock in the Isle of Wight came also from the gardens of the fishermen about Freshwater? Admitting that these threw away the old stems of the plants,—which is the common practice,—a stiff breeze from the north-east would easily blow them along the downs and over the cliff. Among the *rejectamenta* of Freshwater's little bay, or cove, I found stems and fruit of *Lavatera arborea*, a plant which is common in the gardens of Freshwater. It is not so common however as the Stock is, and the consequence may have been that the latter grows on the cliffs of the Isle of Wight, while the former is unknown in the Isle except as a garden plant.

the side of Dover which is opposite to the seabeach. The town fills the bottom of the comb, and has extended along the shore to the east, under the hill on which the Castle stands. When the traveller enters from Deal, the Castle is on the left. When he arrives from the Continent, the Castle is on the right, and the new fortress building on the west of Dover is on the left-hand. The background is completely shut in by steep hills, so that Dover is open only on the south, or that part which is opposite to the sea. Entering either from Deal or from Folkestone the visitor obtains a bird's-eye view of the town.

This is surely one of the most singularly situated and the most picturesque of England's numerous and beautiful urban localities. Its environs, especially its cliffs, are most favourable for botanical pursuits; but as it was now late in the season, and, what was worse, late in the day, we had but little leisure to note the rare plants of this ancient military and naval station. We had made arrangements for sleeping at Folkestone, seven or eight miles further, and determined to take Lydden Spout in our way, therefore haste and good speed were both requisite, in order that we might reach our quarters in proper time.

The only notable plant observed at Dover was *Diplotaxis tenuifolia*, which abounded on the walls, and was not scarce along both sides of the road between Dover and Haugham (here pronounced *Hauffham*).

The sun was setting as we scoured along the land side of the Shakspeare, as they call this celebrated precipice, a singular and well-merited honour to England's greatest poet.

It was dark before we reached the houses on the cliff,* which are occupied by the Preventives and their families. A little boy belonging to one of the coastguard-men volunteered to conduct us down the precipice by a zigzag rude staircase, consisting of four hundred and forty-four steps; united by several inclined planes by way of landings.

* Future botanists who may follow our track (for there are good pickings, rich gleanings, obtainable after those who have spent more time on this coast than we could afford), should, instead of going on straight to Lydden Spout, descend the cliff by the "Shrimpers' Steps," a short distance beyond the Shakspeare, and botanize along the shore till they reach Lydden Spout. We suppose the way between the cliffs and the sea is passable at all times, but this should be ascertained. On reaching Lydden Spout, either the seashore or the top of the cliff may be chosen by the traveller, but the latter is the easier way for the pedestrian.

It was now so dark that we could not distinguish the tall Sow-thistles and the wild Lettuce from the equally gigantic black Mustard, and consequently the rare plants entered by the Rev. G. E. Smith as found in his time within three hundred yards of the Lydden Spout, were as much a myth as the story of Lear and Edward, son of the Earl of Kent, a story which has given both renown and a name to one of the most remarkable objects of this singular coast.

We passed along the beach a considerable way before reaching the spout, which, we too rashly concluded, on reaching the beach, to be as great a myth as the celebrated fountain of Arethusa, which flows half a hundred times as many miles under the sea as this runs underground in South Kent.

Lydden Spout, however, to our great satisfaction, by its pleasing sound informed us of our proximity to fresh-water. This spout, by which water sufficient to turn an ordinary water-wheel, pours down a steep incline, takes its name from Lydd, a village in the interior, about four miles from the coast. Near this village there is a stream which disappears by a swallow-hole, and emerges from the cliff by a large hole or cutting, a few hundred yards on the Folkestone side of the rude staircase by which we descended from the top of the cliff to the beach.

It was too evident that our botanizing had terminated for this day at least, unless we could have botanized by candle-light; and even if this had been practicable, we had no candles. In this emergency the best thing to be done was done, viz. to pick our way in the dark between the sea and the cliff along Eastwear Bay, and by the martello towers to Folkestone. This we did by the combined exertion of plucky resolution and strong thews, and by the useful aid of the coastguard force, who kindly pointed out our way. We reached our destination rather late, and in a rather weary plight.

Reviews.

A Guide to the Isle of Wight. By the REV. EDMUND VENABLES, M.A., and eminent Local Naturalists.

The tourists, excursionists, or valetudinarians of the isles of Albion, have no reason to be discontented with the extent and

variety of the topographical books now in circulation. The fourth estate has good reason, not only for being contented with this branch of literature, but for being proud of the excellence of the guide-books now current. They are prepared for others than wayfarers who go to a place to tarry only for a brief period, and they may be perused with pleasure and improvement by a higher class of readers than those who only want to know how far it is from Cowes to Ventnor, and the names of the best hotels, and where the most comfortable quarters are procurable.

The antiquary, the historian, the geologist, and the botanist, can now get trustworthy information in these works, which are compiled to supply the wants of the genuine student as well as to fill up the spare hours of those who seek only relaxation, exercise, fresh air, and novelty, and who come here to admire and enjoy the beautiful and the picturesque.

Murray's handbooks to several parts of England, viz. to the south coast, Kent, etc., have long been in great repute for the comprehensive character of their contents.

Stanford's 'Guide to the Isle of Wight' is not inferior to Murray's celebrated handbooks in the interesting information it contains. The author and the publisher may think this high praise, for Murray's topographical publications are deservedly in the highest estimation for their excellence.

The new 'Guide to the Isle of Wight' has one distinguishing feature, viz. the Natural History portion; and this has been very carefully compiled from existing works, verified and enlarged by the personal observations of the authors. This feature is not peculiar to this Guide, for most guide-books introduce a little botany, etc., not always judiciously selected, from more general works. In the present work, the authors of the chapters on Natural History have given their names as vouchers for the truth and usefulness of what they have compiled on these subjects.

The geological portion of the work has been contributed and condensed from memoirs furnished by the many excellent geologists who visited this Isle and have written on the formations of its singularly formed exterior. The labours of the late lamented Professor Edward Forbes, we are glad to perceive, are not forgotten by the reverend author of this new 'Guide to the Isle of Wight.'

The articles on the botany, entomology (in part), and zoology,

are by Mr. A. G. More, well known to the readers of the 'Phytologist.' Mr. George Guyon contributed the sections on the Coleoptera, Mollusca, etc. Two reverend contributors to the 'Phytologist,' the Rev. A. Bloxam and the Rev. T. Salwey, supplied the list of rare Mosses, Lichens, and Fungi.

It will not be doubted, much less denied, that this local work offers high credentials, both for the authenticity and proper arrangement of the facts which are recorded in its pages. The work is divided into three parts, and the contents are given below.

I. "Introduction, Approaches to the Island," and "Hints to Visitors." This part fills 8 pages.

II. "Places of Principal Resort, Walks, Drives, and Excursions." This part fills upwards of 300 pages, and is divided into ten chapters, of which Cowes, Newport, Ryde, Sandown, Shanklin, Bonchurch, Ventnor, etc., South-western Coast, Freshwater Peninsula, Yarmouth, and Voyage round the Island, form the principal topics.

The third part contains a general synopsis of the past and present condition of the island. This is divided into the following chapters, entitled Topography, Productions Natural and Artificial, Civil and Religious Affairs, Antiquities, General History of the Island, Geology, Zoology, and Botany. This is a very extensive range of subjects; yet it is but bare justice to state that the articles which we have read are all treated in a very satisfactory manner.

Several of the places described have been visited by us, and therefore we can vouch, on the *crede experto* principle, that the descriptions are genuine, interesting, and graphic. Instructive and suggestive essays might be easily composed on some of the topics above enumerated; for example, on its supposed ancient connection with the mainland of Hants, when the centre of the Solent was the bed of a river; and on the contingency still in the womb of futurity, when the peninsula of Freshwater has become an island, and the little river Yar a strait separating the new islet from the mainland of the eastern and larger portion of the island.

The trade in tin, believed to have been carried on by the Vec-tians of a long bygone age, centuries ere the haughty Roman taught the ancient Britons the superiority of Rome in warfare and civilization,—and the coastguard, soon to be numbered

among the things that were, like the tin-trade and Roman superiority, remind us pensively, if not painfully, of the mutations of human affairs. We however are neither historians nor antiquarians, nor sentimentalists, but botanists, and therefore we will not be like the shoemaker who went beyond his last. The antiquities, the social state of the islanders, their religion, and their politics, must be left unsaid; our vocation is of a humbler kind. The brief space left for further notice of this excellent tourists' guide, must be filled up with some remarks on the *résumé* of its vegetable productions, so well compiled, as above said, by one of the earliest and most esteemed contributors to the 'Phytologist.'

Botanists rarely have reason to grumble at the meed of praise which they receive from each other; and this should not be begrudged, for it is usually all they get for their botanical labours.

Our author, for his botanical *résumé*, divides the Isle of Wight into five divisions: viz. first, the seashore; second, the Northern Tertiaries; third, the Central Chalk range; fourth, the Valley of the Greensand; fifth, the Undercliff, with the downs above it. "Only the more prominent or interesting" species, the reader is respectfully informed, "can find room here; but those who require more complete information, will necessarily refer to Dr. Bromfield's 'Flora Vectensis,' where the localities are most carefully indicated, and also to Babington's 'Manual,' which contains the," as our author informs us, "most accurate descriptions of all our British species."

Some botanists might demur before indorsing the latter clause of the sentence; but the author is well qualified to bear testimony to the value of a Flora which he and most British botanists have consulted with much profit. Mayhap he has not seen all the other British Floras now in circulation and use; or possibly he ignores their existence; or, worse still, not only holds them cheap, but deems them intrusives,—mischievous interlopers on the preserves of science, whose room would be better than their company.

The seashore on the north and east, and the lower cliff on the south of the Island, will most amply repay the botanist for the expense and trouble of a visit to these rich localities. Respecting the former our author says that "It is upon the tract of the

'dunes,' or sand-hills, lying immediately below St. Helen's, that the principal harvest will be made. This small piece of ground, not exceeding probably forty or fifty acres, has been ascertained to yield no less (fewer) than two hundred and fifty species of flowering plants, that (this?) being nearly one-third of the whole Flora of the Isle of Wight; and among those, not the least interesting are twelve out of the thirteen indigenous Trefoils. Indeed, the abundance of *Leguminosæ* and *Caryophylleæ* is the most striking feature of the sandhills, and brings to mind the use which has been made of the prevalence of these two families of plants to characterize a region warmer than our own. The two Stonecrops also might suggest a resemblance to the arid sands of the deserts, were it not for the Reindeer Moss, which is the next plant to meet the eye."

It may be observed that Quarr Copse, near the ruins of Quarr Abbey, can boast of the largest example of *Pyrus torminalis* in the island, probably the largest in existence; see 'Flora Vectensis,' p. 167. And within the ruined walls of what was once a large garden, orchard, or perhaps vineyard, there still flourish fine and numerous examples of *Inula Helenium*, an example of the remains of cultivation, not of an escape. Cultivation has long ceased in this locality, and the Elecampane is a melancholy evidence that on this now neglected spot there *once* grew better things, that are not to be found on "cow-pasture" or "sheep-leas."

Our author notices the curious fact that *Serratula tinctoria* and *Betonica officinalis* may be seen growing in the open pasture behind the fort (near Freshwater), a locality very different from the sheltered woods they usually inhabit. These shady, sheltered spots may be the usual localities of these plants in the Isle of Wight; but in Surrey it is not considered a great curiosity to see them both on the extensive and open heaths of this heathery county.

It would not be fair dealing towards the author and publisher of the 'New Guide to the Isle of Wight' to skim off the cream, as they say, or publish in our pages a list of the rarest and most interesting plants which appear in this summary of the Vectian Flora. All that is desirable here is a mere statement that this part of the work is most conscientiously performed. It is a satisfactory condensation of the most elaborate work on local botany ever published in this country; and which is honourably mentioned by the author of this botanical synopsis.

Some botanists may be of opinion that our author is not exactly correct in stating that *Erodium maritimum*, *Coronopus didyma*, *Euphorbia portlandica*, and *Agrostis setacea* find (have) their eastern limit in the Isle of Wight. Did he here abandon his trustworthy guide? Dr. Bromfield admits the existence of *Agrostis setacea* on Bagshot Heath. It is believed to grow also on the Blackheath tract of hills, not far from Ewhurst. Both these localities are east of the Isle of Wight. *Erodium maritimum* and *Euphorbia portlandica* have both been reported from Kent. We will not vouch for the verity of the report, but we do vouch for the extension of *Coronopus didyma* for at least one degree further east than any part of the Isle of Wight (see 'Phytologist,' *sub voce* *Senebiera*.) Our author may say, "Ay! but it is a mere interloper in the vale of Thames, *i.e.* about Kew, Wandsworth, Parson's Green, Brixton, and Highgate." Possibly this may be true, but is it anything else than a stray plant in the Isle of Wight? On Dr. Bromfield's authority, it is rarer in the Isle of Wight than in the vale of the Thames, and therefore more likely to be an interloper in the island than in Middlesex.

We dislike hypercriticism, but we confess that the first plant entered by name in the general synopsis was a puzzle. "*Statice occidentalis* grows on rocks and cliffs" (p. 468). Is this plant the same as *Statice rariflora*, Drej., or *Statice spathulata*, Desf.? It cannot be *S. rariflora*, for this is said, and doubtless truly, to grow in salt-marshes and in muddy places, and is probably, as Dr. Bromfield states, a variety of *S. Limonium*. In the sequel, viz. on p. 473, *S. spathulata* is entered as one of the plants to be numbered with the extinct species, "*Euphorbia Peplis*, *Lathyrus maritimus*." Again, two or three lines lower down the same page, it is stated that "two of the rock plants are peculiar to this end of the island; if, at least, we suppose *Statice occidentalis* still survives," etc. By a logical, inductive process, it may be inferred that *Statice occidentalis* and *S. spathulata* are synonyms. It would have saved us some trouble if our author had told us so at the first; or better still, if he had been contented with one name for his plant, which is, after all, only a very problematical inhabitant of the Isle of Wight.

It may be of some help to those visitants of the Isle (botanical visitants) who may not be so well read in the nomenclature of botany as the author of this sketch, to be informed that *Lepigo-*

num rupicola (is this specific name a noun or an adjective?) is *Spergularia rupestris* of the London Catalogue, and attributed, but erroneously, to Cambessèdes, and which probably is *Arenaria rubra*, var. *macrorrhiza*, Moris, Fl. Sardica, i. p. 278; see Bromfield's Fl. Vectensis, p. 76. The amiable author last quoted adds to the synonyms the following,—“Moris very judiciously considers this a mere variety, and assigns very sufficient reasons for his opinion.” It might further be questioned whether *Spergula subulata* and *Sagina subulata* be merely synonyms, or representatives of two different plants!

In this synopsis of the Vectian Flora, the author has ventured to enter a few exotic or at least doubtfully native plants; for example, *Arum italicum*, *Melilotus arvensis*, etc.; and the following are humbly offered as supplementary to these suspected or certain aliens, viz. *Hypericum calycinum*, in a wood skirting the shore between Ryde and Quarr Copse; *Linaria purpurea*, not merely on walls, where it is not uncommon in some parts of England, but on the garden ground, where it had no appearance of having been either sown or planted by the present generation. *Impatiens parviflora*, not far from Ryde, on the road to Upton; *Actinocarpus Damasonium?*, *Villarsia nymphæoides*, *Hydrocharis Morsus-rana*,—see Bromfield, 476, who writes, “abundantly naturalized in a pool on Barrett’s Common, two miles and a half from Ryde,”—*Stratiotes aloides?* These plants, or some of them, were seen in a small pond between Upton and St. Helen’s, several years ago. There was no doubt about the *Villarsia*, but there is a doubt hanging to the others. It is now several years since we were there, and our memoranda are mislaid. It was unknown to us at that period, that they were not as common on the Isle as they are on the mainland.

The geographical relations of plants have been very much altered in modern times. The list of extinct plants and of the new arrivals in this island, shows that the laws which have been supposed to affect the distribution of plants, are not universally applicable. Observation and history both teach us that we must liberalize our *vegetable creed*.

We are not apprehensive that these critical remarks will be misunderstood; our object is simply to do justice both to the subject and to the author. In reference to the former, it is hinted that a more liberal use of the English appellatives might

have been made, and that when it was either necessary or expedient to employ the scientific names, all needless synonymy should have been avoided.

In this periodical it has never been the practice "to look a gift-horse in the mouth," and we are disposed rather to be thankful for what we get, than to fret ourselves and our readers because we have not got more.

All tourists and residents, and especially botanical visitors, will appreciate the accurate and comprehensive lists of interesting species here recorded.

We can vouch for the accuracy of much that is here stated about the botany of the island, because we have been there, and have seen the plants growing, and "seeing is believing;" many of our friends and correspondents have been there also, and they have told us what they saw; and besides all this, there is the unimpeachable authority of the late Dr. Bromfield, than whom a more careful, trustworthy, and conscientious observer and faithful narrator never lived. It is self-evident also that the grouping of the species into maritime, marsh, heath, and wood plants, is a great improvement on the mere systematic arrangements. The connection of certain species with certain soils, as *Saginas* and sand, *Trefoils* with shingle, *Orchids* with chalk, etc., binds together the two sciences *Geology* and *Botany*, which mutually elucidate each other.

We are obliged to the author and publisher for setting before us an example of a really useful guide to one of the most popular resorts of our migratory and pleasure-seeking population; and we hope that the publisher will be encouraged to publish a series of handbooks to the other favourite localities, of which we have so many in our kingdom.

BOTANICAL NOTES, NOTICES, AND QUERIES.

DATES OF FLOWERING OF PLANTS IN THE VICINITY OF PLYMOUTH.

As the 'Phytologist' for June gives the dates of flowering of spring plants observed in the vicinity of Ross, I send the dates at which the following were observed in flower in the neighbourhood of Plymouth, thinking it may interest some of the readers of the 'Phytologist' to compare the two lists:—

Primula vulgaris,	Jan. 25	Ranunculus acris	April 20
Ranunculus Ficaria, L.	" 26	Geranium dissectum	" 22
Cardamine hirsuta, L.	Feb. 4	Vicia sepium	" 22
Potentilla Fragariastrum,	" 4	Veronica montana	" 22
Chrysosplenium oppositifolium, L.	" 19	Orchis mascula	" 22
Vinca minor	" 19	Agrophis nutans, Link	" 22
Tussilago Farfara	" 19	Medicago maculata	" 23
Narcissus Pseudo-Narcissus	" 20	Medicago lupulina	" 26
Mercurialis perennis	" 25	Lysimachia nemorum	" 26
Cochlearia danica, L.	" 26	Lithospermum arvense	" 26
Sisymbrium thalianum, Hook.	" 26	Allium ursinum	" 26
Viola odorata	" 26	Barbarea vulgaris, Br.	" 27
Adoxa Moschatellina	" 26	Lepidium Smithii, Hook.	" 27
Nepeta Glechoma, Benth.	" 26	Lotus corniculatus	" 27
Oxalis Acetosella	March 9	Poterium Sanguisorba	" 27
Ribes Grossularia	" 9	Potentilla reptans	" 27
Veronica serpyllifolia	" 9	Hypochoeris radicata	" 30
Ranunculus hederaceus	" 9	Hieracium Pilosella	" 30
Mœhringia trinervia	" 14	Cratægus Oxyacantha	May 2
Stellaria Holostea	" 14	Lithospermum officinale	" 2
Viola sylvatica, Fries	" 15	Anagallis arvensis	" 2
Viola hirta	" 15	Diploxaxis muralis	" 7
Saxifraga Tridactylites	" 15	Potentilla anserina	" 7
Alchemilla arvensis	" 21	Melampyrum pratense	" 8
Veronica Chamædrys	" 21	Rhinanthus Crista-galli	" 8
Luzula campestris	" 25	Bunium flexuosum	" 8
Myosotis collina, Hook.	" 25	Pyrus Aucuparia	" 13
Linaria Cymbalaria	" 25	Trifolium pratense	" 14
Fedia olitoria, Vahl.	" 30	Arabis hirsuta, Br.	" 14
Geranium robertianum	" 30	Berberis vulgaris, L.	" 16
Geranium lucidum	" 30	Cotyledon Umbilicus	" 16
Plantago lanceolata	" 30	Digitalis purpurea	" 16
Alliaria officinalis, Hook.	April 2	Orchis latifolia, L.	" 16
Ranunculus bulbosus	" 4	Papaver dubium, L.	" 18
Anthriscus sylvestris	" 6	Chrysanthemum Leucanthemum	" 18
Lychnis diurna, Sibth.	" 6	Polygonum Bistorta	" 21
Myosotis arvensis, Hook.	" 6	Tamus communis	" 23
Anchusa sempervirens	" 9	Malva sylvestris	" 23
Barbarea præcox, Br.	" 12	Rubus cæsius, L.	" 23
Prunus spinosa	" 12	Cnicus palustris	" 25
Ranunculus repens	" 17	Viburnum Opulus	" 25
Scandix Pecten	" 18	Sambucus nigra	" 25
Myosotis versicolor, Hook.	" 18	Apargia hispida	" 25
Geranium molle	" 18	Stachys sylvatica	" 28
Ajuga reptans	" 20	Jasione montana	" 30
Geranium rotundifolium	" 20	Hypericum humifusum	" 30
		Orobanche major, Hook.	" 30

I enclose a specimen of *Tillæa muscosa*, obtained from the locality mentioned in my last communication.

T. R. ARCHER BRIGGS.

9, Torrington Place, Plymouth, June 4, 1861.

DWARF FORM OF *ENANTHE LACHENALII*.

(See 'Phytologist' for July, 1861, p. 208.)

Enanthe Lachenalii grows (or rather did grow, being fearful that from the effects of draining, its habitat is destroyed) in Caughton Marsh, near Ross, a freshwater marsh, contiguous to the Wye river, and at least twenty miles

from the tidal part of that river. I have, I believe, gathered the two forms from this marsh, but not on the same part. This plant attracted my notice some nine years since, and I have found it each year, except the last. I purpose searching, this season, another marsh in the vicinity of Ross, where possibly it may be growing, but has hitherto escaped notice.

UTILE ET DULCE.

Sir,—In your journal for the last month, page 155, you make a remark “that even the pictorial is not always relished by the strictly scientific *simplers*.” I hope however you will not hold your excellent journal bound by this. If we wish botanical science to advance, we must unite the *utile* and *dulce*; and few articles excite a deeper interest than well-told botanical rambles, forming little Registers of Botanical Facts, which attract attention and lead to others. As one of your readers I have been much pleased by the occasional notes of your excellent correspondent, Mr. Sim, of Perth, many of the facts which he has adduced from time to time, could be borne out by similar ones in other districts. During some leisure moment, I may drop you a string of them.

Please, Mr. Editor, be not too liberal in the use of dry technicalities. Let us all avoid a misty, cloudy style, and do our best to make botany as accessible and useful as it is pure, delightful, and ennobling.

A BOTANICAL WANDERER.

Campbelltown, Argyleshire, 4th May, 1861.

ELEVATION OF DARTMOOR.

I send a communication in answer to W. P., and it is as follows:—

Hypericum elodes. In the last number of the ‘Phytologist,’ your correspondent W. P. asks if there be any part of Dartmoor more than a thousand yards high; he will find, on looking at the undermentioned works, that no part is near the height he mentions. I give the following notes with pleasure, being the highest in the Devonian range of hills:—

<i>Highest point.</i>	<i>Reference.</i>	<i>Page.</i>	<i>Author.</i>	<i>Height.</i>
Cawsand Hill.	Geography Generalized.	186	Sullivan.	1782 ft.
Cawsand Hill.	Introduction to Geography.	59	Sullivan.	1782 ft.
Cawsand Beacon.	Manual of Geography.	86	Hughes.	1792 ft.
Cawsand Beacon.	Manual of British Geography.	20	Hughes.	1792 ft.
Cawsand Beacon.	Map of England and Wales.		Hughes.	1792 ft.
Cawsand Beacon.	Physl. Map of Eng. and Wales.		Chr. Knowl. So.	1792 ft.

DARTMOOR HILLS.

Rippon Tor.	Geography Generalized.	186	Sullivan.	1549 ft.
Rippon Tor.	Saturday Magazine, vol. xiii.	114	Sullivan.	1549 ft.

W. W.

RÆMERIA HYBRIDA (*Glaucium violaceum*).

This plant, which is stated in ‘Phytologist,’ vol. v. p. 124, to be peculiar to Cambridge, grows in certain fields which are not far from Castle Acre Priory, about four miles from Swaffham; also at Cressingham, about three miles from Watton. It grows, at or near Swaffham, in some

fields belonging to Colonel Mason, and sparingly at Little Cressingham. All the above-named places are in the county of Norfolk, and the fields where this rare plant grows are on gravelly hills, and it was in flower before the end of June. I have no personal records of its occurrence in the adjoining county of Suffolk.

W. WINTER.

TILLÆA MUSCOSA AND SCROPHULARIA VERNALIS.

Sir,—As I am not aware that the occurrence of *Tillæa muscosa* and *Scrophularia vernalis* in Devonshire has been hitherto recorded, it may interest some of the readers of the 'Phytologist,' to hear that on the 13th May, 1861, I found the former of these plants growing on slaty soil near an old quarry on Colwell Estate, not far from the Plym, in the parish of Egg Buckland. On the 18th May, I was delighted to find a few plants of the rare *Scrophularia vernalis* in full flower, growing in a hedge-bank in a shady situation below Ham Wood, near the hamlet of Weston Mills, a few miles from Plymouth.

T. R. ARCHER BRIGGS.

ARCTIC PLANTS

Now on Sale by Mr. Brocas, Botanist, 25, Hart Street, Bloomsbury, W.C.

These specimens, which are in a very good condition, were collected in 1860, by a gentleman who visited Greenland on professional business and for scientific purposes. These Arctic species, besides being well dried and pressed, and consequently in excellent preservation, are indorsed by Mr. Bennett of the British Museum, by Mr. Watson, and other competent judges, as most valuable things of this kind, of exceeding rarity, and of special interest.

Some of these specimens are examples of genera and species determined by the late Mr. Robert Brown, and published in his Appendix to the History of Arctic Discovery under Captain Parry. There is an account of some of them in the Report of the British Association for the Advancement of Science, held at Aberdeen in 1859.

Another attractive feature is added to these Arctic species, viz. tickets which contain a more than ordinary detailed account of the localities where they were collected, such as latitude, longitude, soil, elevation, etc.

Mr. Brocas showed the Editor of the 'Phytologist' a sample of the collection, and he has much pleasure in reiterating the testimonials given in their commendation by the eminent botanical authorities above mentioned.

Communications have been received from

John Lloyd; W. Pamplin; J. S. M.; F. Y. Brocas; B. M. Watkins; Sidney Beisly; John Sim; G. Macfarlane; Archibald Jerdon; W. Richardson, Junr.; W. P.; H. Boswell; T. Johnson; G. C. Oxenden; H. C.; W. Richardson; Harriet Beisly; Dr. Windsor; F. B. W. White; Professor Babington; C. J. Ashfield.

BOTANY OF HUMPHREY HEAD.

By C. J. ASHFIELD.

Having often heard of the botanical treasures of Humphrey Head, a bold promontory of limestone jutting out into the Bay of Morecambe, near the crossing-place over Lancaster Sands, and having read Whitaker's and several other interesting descriptions of Cartmel and its fine old church, a friend of mine and myself during this present month of July resolved upon taking a trip to those places. As we were successful in our botanical researches, it occurred to me that an account of the latter might not be unacceptable to the readers of the 'Phytologist.' We reached Cark station between eight and nine; and as the weather appeared to be rather doubtful, we determined to get through the botanical portion of our programme in the early part of the day, leaving our antiquarian investigations until the afternoon. On our arrival at Cark, therefore, we inquired our way to Humphrey Head, and of the two roads which were mentioned to us, we took the one (though considerably the longer of the two) by the coast, expecting to meet with some seaside plants. We found none, however, except a few of the common species, such as *Statice Armeria*, *Plantago maritima*, etc. After walking a few miles we came to some romantic sea-worn rocks of some twelve or fifteen feet elevation, which were beautifully festooned and crowned with plants of various kinds, such as *Helianthemum vulgare*, *Centaurea Scabiosa*, *Campanula rotundifolia*, etc. A very short distance from these rocks brought us to the western side of Humphrey Head. The side of the hill facing us was very precipitous, and of considerable elevation, and among a great variety of trees and shrubs which clothed it, we saw a great number of fine specimens of *Taxus baccata* (these apparently truly wild), which formed a striking contrast to the silvery leaves of the *Pyrus Aria* with which it was occasionally intermingled. We ascended the hill at its northern end, at which point it can be climbed without difficulty, and made our way along the top at its western edge. We soon spied out *Helianthemum canum* in great quantities, a good many specimens of *Spiraea Filipendula*, plenty of *Thymus Acinos*, here and there some plants of *Geranium sanguineum* and *Juniperus communis*,

lots of *Rosa spinosissima*, and near the southern end of the hill a considerable quantity of *Veronica spicata*, var. *hybrida*. This last-named plant grew on ledges on the face of the hill, in several instances in inaccessible places. We returned along the eastern side of the hill, which is considerably more sloping than the other, and much more bare of vegetation. We observed *Glau-cium luteum*, *Sedum Telephium*, and *Silene maritima* between the foot of the hill and high-water mark. In due time we arrived at the point where we commenced our ascent; and having had a very early breakfast before leaving Preston, we resolved to take as direct a path as possible to the Cavendish Arms at Cartmel, and order dinner.

Before, however, taking our final leave of Humphrey Head, we should mention that we found the following among many other common species of plants dispersed about the hill:—*Clinopodium vulgare*, *Carlina vulgaris*, *Thymus Serpyllum*, *Asplenium Adiantum-nigrum*, *Helianthemum vulgare*, *Anthyllis Vulneraria*, *Solidago Virgaurea*, *Malva moschata*, *Erica cinerea*. We did not find *Hypochaeris maculata*, which is said to grow on Humphrey Head, and we were unable to examine a portion of the lower part of the western side of the promontory, owing to the state of the tide. A very pleasant walk of three miles through rural shady lanes redolent of woodbines, newly mown hay, etc., brought us to Cartmel. Our anxiety to realize our anticipations of dinner did not however prevent our botanizing upon our way, or turning a short distance out of it for the purpose of inspecting Wraysholme Tower, an ancient “fortified house of a junior branch of the Harringtons of Aldingham in the fourteenth century, but now degraded into a cowhouse,” which lay a little to the right of the road. On the top of the Tower we saw a quantity of *Parietaria officinalis*, and on the walls adjacent we found *Saxifraga tridactylites* and *Asplenium Ruta-muraria*. An old wall by the wayside, between Humphrey Head and Cartmel, was literally covered with luxuriant specimens of *Sedum acre*, *Asplenium Trichomanes*, and *Polypodium vulgare*. The hedges abounded with *Tamus communis*, interspersed occasionally with *Ligustrum vulgare* and *Lonicera Perichymentum*. In the ditches were large quantities of *Agrimonia Eupatoria*, *Enanthe crocata*, *Valeriana officinalis*, *Sium nodiflorum*, and occasional specimens of *Lythrum Salicaria*, *Sparganium ramosum* and *simplex*. In one place we

saw several plants of *Hippuris vulgaris*, and in another a large patch or two of *Anagallis tenella*. On the hedge-banks we not unfrequently met with *Lysimachia vulgaris*, *Geranium lucidum*, and *Scolopendrium vulgare*; the last being in its normal form and two or three of its varieties.

On the banks in the village of Allithwaite we saw *Verbena officinalis*, *Malva sylvestris*, *moschata*, and *rotundifolia*. *Campanula latifolia* made its appearance in one place near Cartmel, and *Chenopodium Bonus-Henricus* flourished by the side of the churchyard wall in that town. Our botanical researches finished here, and as we were within a few yards of our hostelry, we very shortly sat down to dinner; and, as it may be imagined, did full justice to the good things which were set before us. After dinner we sallied forth to inspect the fine old conventual church of Cartmel; but a description of this, however agreeable it might be to the individual tastes of many of the readers of the 'Phytologist,' would be out of place in the pages of that work. Suffice it to say that we returned to Preston in the evening, thoroughly pleased with our jaunt, and only puzzled to decide whether our botanical, or antiquarian and architectural tastes had received the most gratification. One word should be said for the scenery, which possessed all the charms that mountain and valley, wood and water could bestow upon it.

VISIT TO HUMPHREY HEAD, ETC.

By JOHN WINDSOR, M.D., F.L.S.

Leaving Manchester by rail on the afternoon of June 20, 1861, on a short visit to some relatives in the neighbourhood of Morecambe Bay, I reached Flarkeburgh, in Cartmel, the same evening.

On the following morning, accompanied by two of the other sex, both near relations, I started for Humphrey Head, aided, for the first time on my visits there, by a vehicle, which conveyed us quite to the spot, thus saving much time as well as fatigue, and enabling us to leave the Cark station for Ulverstone about half past eleven A.M.

The fruits of my explorations, however, on this occasion,

although I trust not less attentive than on former ones, were not quite so satisfactory, perhaps, as on my first visit, chiefly owing, I believe, to the tide being up to the very base of the impending cliff for a considerable portion of its extent.

On the beach below the nether portion of the promontory, I picked up in plenty *Triglochin maritimum*, *Glaux maritima*, *Plantago maritima*, *Armeria maritima*, *Cochlearia danica*, *Samolus Valerandi*, *Juncus supinus*, etc.

Passing further on, as far as the tide permitted, I saw on the rocks, *Sesleria cærulea* out of flower, *Hieracium pallidum*, *H. murorum*, *Arabis hirsuta*, *Arenaria serpyllifolia*, *Prenanthes muralis*, *Lactuca Prenanthes*, *Pimpinella Saxifraga*, etc. Of *Hypochaeris maculata* I saw some specimens in full flower, but somewhat out of reach, though I was half-inclined to make the dangerous attempt, but was dissuaded by my companions. Had the tide permitted a further advance along the base of the rock, I doubt not that I might have collected specimens, as I did last year, both of it and of *Veronica hybrida*, *Silene maritima*, etc.

Compelled thus to retrace my steps, I scaled the wall skirting the wood, and passing up it by an imperfect, craggy path, pointed out to me last year, I was enabled readily, though not without some scrambling, to reach the summit, and thus avoided a very circuitous route, involving much time and labour. I regretted not having time for a more protracted research of the wood, and in passing up only observed *Paris quadrifolia* in great abundance, *Polystichum aculeatum*, and the white-flowered form of *Orchis maculata*.

I may remark that I unsuccessfully sought for *Atropa Belladonna* near the wall, where your fair and intelligent correspondent, some months ago, speaks of having found it. I believe it is still found about the ruins of Furness Abbey, some distance off.

Having gained the summit, I found most of its old occupants: as *Spiræa Filipendula*; *Helianthemum canum* in flower, near the brink of the precipice, in several places, but still rare in comparison with *H. vulgare* near it; *Asperula cynanchica*, which I collected abundantly last year, and transmitted to the Thirsk Botanical Exchange Club, seemed to be entirely supplanted by *Galium pusillum*, probably from my earlier visit on this occasion. The surface of the mount was

decorated with *Helianthemum vulgare*, *Thymus Serpyllum*, *Euphrasia officinalis*, *Polygala vulgaris*, etc.

The nearer, bushy, and craggy parts of the hill afforded, copiously, *Geranium sanguineum*, *Anthyllis Vulneraria*, *Ligustrum vulgare*, *Rhamnus Frangula*, *Rubus saxatilis*, etc.

Being met again by my friends just as I had completed my researches, we returned direct to the Cark station in time for the train to Ulverstone, where I had occasion to stay a few hours, and left there, about four P.M., by the train for Coniston, passing the venerable remains of Furness Abbey, which I had visited on a former occasion.

After enjoying a beautiful day at Flarkeburgh, Humphrey Head, Ulverstone, etc., the sky began to darken, and a storm appeared impending as we reached Coniston. At the latter place the railroad ceased, and we entered the coach for Ambleside. We were scarcely seated, before the rain began to fall very heavily, accompanied by almost incessant thunder and lightning, which did not cease until we were about alighting at the end of our day's travelling.

Early the following morning, before breakfast, I visited Stockgill-Force Wood.

Here I found *Impatiens Noli-me-tangere* in tolerable plenty in two places, though not yet in flower. *Crepis paludosa* abounded throughout the wood; also *Galium saxatilis*, *Lysimachia nemorum*, and *Melampyrum pratense*, etc. I had hoped to find *Melampyrum sylvaticum*, which I thought I had collected there on a former occasion, but certainly on this I could only meet with the commoner species.

Myrrhis odorata I found a large patch of, in a lane skirting the south-easterly side of the wood, and apparently as truly indigenous as I have often formerly seen it in some places near Settle, Yorkshire.

Leaving Ambleside soon after breakfast, the morning being very fine, we sailed down Winandermere lake to Bowness, but the train not starting for Manchester for some time, we took advantage of a boat, and were rowed round Curwen's Island, but in this pleasant trip *Lobelia Dortmanna* was the only plant collected.

In conclusion, I may remark that, although looked for about Flarkeburgh and Cark on the Cartmel road, not being quite up

to the places where it grew, and where I had formerly seen it, I failed to meet with *Sedum anglicum*, which grows abundantly in many places in the north of Lancashire and Westmoreland, on rocks and stones, especially on grit, rather than on limestone, and nowhere, perhaps, more abundantly than in Langsleadale, above Kendal.

[Our very kind correspondent sent subsequently the following addendum:—"My son, Joseph Windsor, visited the station of *Noli-me-tangere* about a month later than the time when I was there. He found, he reports, that the plant is abundant there and in full flower, 27th July."]

OXFORD MOSSES.

Additions to the List of Oxford Mosses. By H. BOSWELL.

In a few preliminary remarks to a list of Mosses sent you last autumn, I hazarded an opinion that the number of species still to be found in this neighbourhood over and above the hundred and twenty therein enumerated, would probably not exceed ten. In this I have under-estimated the richness of our local Flora, and undervalued the bryological riches of the district; for since that time myself and my friend Mr. Holliday have discovered as many as thirteen species additional to those before given; and if so many have been found in nine months, it would seem not unreasonable to hope for yet more, especially as some of these present are by no means such as would have been deemed most likely to form part of the supposed ten. As it is probable that I shall have less time to devote to the subject in future, I now beg to offer you a list of the addenda, as the best reparation in my power to make for the disparagement cast upon the productiveness of the neighbourhood; and likewise as an encouragement to such of your readers, if any such there be, as may be, like myself, young in the study, to persevere, and still hope for greater success, however great or however little they may have hitherto found, and to induce them to think nothing done while aught remains to do.

Besides the new species, five others, formerly given as occurring only in a barren state, have since been found in fruit.

In addition to these, four species, which I have failed to meet with in this district or county, have been communicated from the vicinity of Faringdon, by Mrs. Milne. From the close resemblance in respect to soil, etc., between the two counties, and their close proximity, it may perhaps be expected that some or all of them may occur in Oxfordshire, as well as in Berkshire.

Phascum alternifolium. Hedge-banks between Shotover and Cuddesden, opposite the windmills; near, but not mingled with *P. subulatum*. Fruit, April, May.

Phascum crispum. Roadside between Gosford and Weston-on-the-Green, near Islip. One small tuft was brought by Mr. Holliday, but no more could be found. Fruit, April, May.

Gymnostomum tenue. On stones in the canal bank near Wolvercott, in tolerable plenty. Fruit, June.

Gymnostomum microstomum. Between Shotover and Cuddesden, mingled with *Phascum alternifolium*. Roadside through Bagley Wood. April.

Pottia truncata, var. *major*. South Hinksey; scarce. March.

Didymodon flexifolius. Powder Hill Copse, fruiting plentifully; growing in company with *Leucobryum glaucum* and *Campylopus torfaceus*. February, March.

Tortula vinealis. Headington Hill; fruit very scarce. June. Barren in one or two other places.

Tetraphis pellucida. North side of Shotover Hill, with numerous *cyathuli*, or cups bearing *gemmae*, but no fruit.—These *gemmae*, or buds, are an admirable provision for continuing the existence of the plant in the absence of fruit, and very interesting objects for the microscope. Schimper thus speaks of them:—"Cyathuli nullam affinitatem morphologicam habent cum capitulis pseudopodiorum Aulacomnii quæ e foliis abortivis efformantur, dum cyathuli laudati e foliis perigonalibus hypertrophis æque antheridiis deformatis originem ducunt."

Bryum pallescens. Dry bank by the road between Gosford and Weston; small. Moist bank in a field by the Cherwell, near Parktown; growing among grasses and *Carex glauca*, and more than twice as large. Fruit, June, July.

Fissidens exilis (*T. Bloxami*). Copse near Watcreaton, intermingled with *F. incurvus*. Clay bank near Bagley Wood, in company with *F. bryooides*. Fruit, February, March.

Fissidens incurvus (*F. viridulus*, ϵ *incurvus*, Bryol. Brit.; *F. incurvus*, in part, Schpr. Synopsis Musc.). Copse near Watereaton. Thicket near Bagley Wood. Near Cumnor. Fruit, February, March.—This seems to be quite distinct from *F. viridulus*, though Schimper unites them and *F. tamarindifolius*. Specimens of *F. viridulus*, communicated from Lancashire by Dr. Wood and Mr. Nowell, have synoicous flowers.

Hypnum radicale. Shotover Plantations, very sparingly, with *H. filicinum*, etc. Fruit, April.

Hypnum palustre. Stones in several places along the canal; sometimes mingled with *H. riparium*. Fruit, April, May.

Hypnum fluitans. By the road from Gosford to Watereaton; plentifully. Frequent about Woodstock, *Mr. Holliday*, Barren.

Hypnum Kneiffii. Deep ponds near Bagley Wood, with a few female flowers. Further edge of Bullingdon. Lane between Marston and Headington Copse; growing among grass with *H. cuspidatum*. Near Weston-on-the-Green, *Mr. Holliday*. Some stems two feet in length.—The Marston locality agrees with that given by Sibthorp for *H. fluitans*, and this probably is his plant.

Species found in fruit since the former List.

Polytrichum piliferum. Wootton Heath; sparingly. May.

Hypnum Swartzii. Headington Copse, near Marston. Copse near Watereaton. Near Cumnor. December, February.

Hypnum purum. Coombe Wood, near Cuddesden. Wootton Heath. Winter.

Hypnum tamariscinum. Headington Wick Copse. Copse near Watereaton. Winter.

Hypnum squarrosum. Coombe Wood, near Cuddesden. Winter.

Berkshire Species. (MRS. MILNE.)

Mnium cuspidatum. Woods near Buckland.

Splachnum ampullaceum. Near Pusey.

Hypnum albicans. The Warren, Buckland.

Hypnum undulatum. The Warren, Buckland.

CHAPTERS ON FUNGI.

By ARCHIBALD JERDON.

CHAPTER VII.

I now come to the fourth Order of the Fungi, viz. that of HYPHOMYCETES, which is characterized by the spores growing on threads or flocci, which are generally erect, and often accompanied by a creeping (or horizontal) mycelium, formed of similar threads, called an *hyphasma*. Many of the Fungi of this division are popularly known under the general name of "Moulds," and are found in all parts of the world. They are very destructive to all organic substances, inducing or hastening decay, and even inorganic substances are not free from their ravages.

Suborder 1. ISARIACEI.

Common receptacle or stem compound; spores terminating the threads (or cells), pulverulent.

A small but interesting group of Fungi, in some instances approaching the *Hymenomyces*. I shall notice the genus *Anthina*, which approaches *Clavaria* in form, though not in structure.

ANTHINA.

Stroma vertical, elongated, dilated upwards, contiguous with the at length rigid somewhat attenuated stem, floccose, covered with sporiferous flocci, free only at their apices.

ANTHINA FLAMMEA, Fr. *Flame-coloured Anthina*. Attenuated downwards, smooth, bright red-saffron, dilated above, plumose, yellow.

On dead sticks, leaves, etc.

A pretty little Fungus, about an inch or so in height, and of a beautiful red colour, with yellowish tips. It is not common, and requires to be sought for among dead leaves, etc., in damp woods.

Suborder 2. STILBACEI.

Mycelium floccose or cellular; stem or receptacle composed of compacted threads or cells, the tips of which produce minute diffluent spores.

In this group the stem (or stroma) is compound, as in the last,

but the spores are moist and diffluent, instead of being dry and volatile.

I shall take as examples the genera *Stilbum* and *Tubercularia*.

STILBUM.

Spores collected into a solid head, involved in jelly. Flocci forming a solid stem.

STILBUM TOMENTOSUM, Schrad. *Glandular Stilbum*. White; head globose; stems equal, glanduloso-tomentose.—*Grev. Sc. Crypt. Fl. t.* 281.

Parasitic on different species of *Trichia* (a genus of the Order *Gasteromycetes*).

A curious microscopic plant, not of common occurrence. It appears as minute white dots on the affected Fungus, and requires a considerable magnifying power to determine its structure.

TUBERCULARIA.

Spores simple, subglobose, closely packed upon an erumpent, distinct, more or less stemlike disk.

The genus is now considered to be a spurious one, and the different so-called species to be, in all probability, immature or undeveloped states of species of *Sphaeria*.

TUBERCULARIA VULGARIS, Tode. *Common Tubercularia*. Erumpent; stratum of spores red, margin naked.

On dead sticks and branches; extremely common.

One of the commonest of our Fungi, occurring on almost every kind of dead or dry wood (except that of Coniferous trees). It forms small, pale red, raised dots or spots, about a line in breadth, on the branch affected, and affords, when examined by the microscope, a multitude of minute oblong spores. It is now considered to be a state of *Sphaeria cinnabarina*, of which Fungus it undoubtedly in many cases forms the stroma or base.

Suborder 3. DEMATIEI.

Mycelium floccose or cellular, mostly sparing; fertile threads erect, carbonized, and rigid; spores whorled or collected in heads, often large and septate.

Many curious forms occur in this suborder, which is distinguished by its carbonized (or dark-coloured) threads. These are generally of a dark brown, approaching to black, but often have a shade of olive. I take the genus

CLADOSPORIUM.

Spores arranged in short moniliform branchlets, at length falling off. Flocci septate above.

CLADOSPORIUM HERBARUM, Lk. *Common Cladosporium*. Tufts effuse, soft, dense, green, then olive-black; fibres collapsing, pellucid, as well as the olivaceous spores.

On all sorts of decaying substances. Very common.

Forming a short dense stratum, or scattered tufts of a dark olive-green colour, generally extending over a considerable surface. The spores, which are somewhat variable in size, become at length uniseptate. Mr. Berkeley says, "This is perhaps the commonest of all Fungi, growing on all decaying substances, and in consequence assuming various forms."

A variety, *Cladosporium Fumago* of authors, attacks the living leaves of fruit-trees, and does much mischief.

Suborder 4. MUCEDINES.

Mycelium generally abundant, giving off erect fertile threads, which are mostly white or coloured. Spores generally simple, scattered, or collected into little heads, sometimes forming simple or branched moniliform threads.

A large group, comprehending most of the productions known under the common name of "Moulds." They attack living structures, as well as those in a state of decay, and are often very injurious to man. It is still a question whether parasitic Fungi are the cause or the effect (or rather the accompaniment) of decay; but there can be no doubt of this fact, that decaying substances afford a favourable *nidus* for these plants.

I shall notice two genera of this suborder, *Aspergillus* and *Botrytis*.

ASPERGILLUS.

Spores simple, globose, more or less disposed in moniliform rows, closely packed upon the apices of the fertile flocci.

ASPERGILLUS GLAUCUS, Lk. *Blue Mould*. Sterile flocci effused, white, fertile, simple, their apices capitate; spores rather loosely packed, at length glaucous.

On various decaying substances, as bread, cheese, etc.

This is the common "Blue Mould," and too well known to need any further description.

BOTRYTIS.

Spores simple, collected in little sori (or heaps) on or towards the apices of the flocci and their branches.

BOTRYTIS EFFUSA, Grev. *Spinach Mould*. Pale purplish-grey; spreading fertile flocci branched above; branches short, divaricate; spores large, oval.

On the under side of the leaves of the garden Spinach; common.

Forming effused pale purplish-grey spots on the under side of the leaves, and rendering the leaf attacked yellow, especially over the spots.

Another species, *Botrytis infestans*, is generally considered to be the cause of the potato-disease.

Suborder 5. SEPEDONIEI.

Mycelium predominant. Spores arising immediately from the mycelium, or from very short fertile threads, very abundant, generally large.

A small group of Fungi, characterized by the high development of the spores, while the fertile threads are much reduced, and the plants therefore appear to consist almost wholly of spores.

I take the typical genus *Sepedonium* as an illustration.

SEPEDONIUM.

Spores globose, pellucid, at first covered by the flocci of the fleecy mycelium.

SEPEDONIUM CHRYSOSPERMUM, Lk. *Yellow Sepedonium*. Flocci fleecy, dense, white, spores golden-yellow, not appendiculated.—Grev. *Sc. Crypt. Fl. t.* 198.

On decaying Fungi, common, frequently penetrating the whole Fungus, and converting it into yellow dust.

It is found principally on *Boleti* and some Agarics, and its presence may be known by the unhealthy appearance of the plant, and in particular by a white cottony web or coating which covers the affected part. When this is broken open the yellow spores are seen filling the interior. They are very minute, and it requires a high power of the microscope to render them distinct.

PLANTS OF INVERMAY.

Seven Hours' Botanizing in the Den of Invermay.

By JOHN SIM, A.B.S.Ed.

The "Birks of Invermay," so finely celebrated in Scottish song, I have long wished to visit; not so much with a view to admire the scenery as to explore the botany.

The Den of Invermay, which contains the "Birks," extends from about a mile below Invermay House until the Ochil Hills, from which the small river May has its source. This rapid stream traverses the entire Den from beginning to end, until within a mile of its junction with the Earn, where the ground is flat on both its banks.

The May, unlike the sluggish Earn, is a pure and rapid stream, abounding in trout, and adorned with the most exquisite scenery imaginable. The small river comes bounding down along a rocky channel, at one time purling gently along amongst boulders, at another leaping over precipitous rocks and falling in deep pools, again rapidly pursuing its course onward, confined in deep fissures worn by its waters during the lapse of countless ages already gone by. This is a theme for a geologist, who will find much in these water-worn rocks to amuse and instruct.

The banks of the May are well wooded with "Birk" (Birch), Oak, Hazel, and Ash, etc., the three former undoubtedly planted by Nature and not by man. The fragrant Birch-trees are certainly of great antiquity, as their immense size plainly indicates. The Oaks too are often large, and well bound with Ivy.

The river May traverses the parish of Forteviot, and after a course of about nine miles from its source in the Ochil Hills, falls into the Earn, near the bridge of Forteviot, about six miles south-west of Perth.

As I said, I had long intended to visit the Den of Invermay, but I never, from some cause or other, accomplished my design until the 4th of June, 1861, when I and a young friend took train for Forteviot station, and on arriving there we steered our course directly up the left bank of the May, for the purpose of collecting and examining the wild-flowers which grew in the vicinity of this little river. What we got there during our seven hours' ramble, you shall now see. In sheep-pasture, a little to the south of Forteviot station, we saw an immense quantity

of *Astragalus hypoglottis*; in fact the grassy turf was literally blue with this plant in many places: being a rather rare species we gathered a good supply. Nearer the river's brink grew plenty of *Lotus corniculatus*, *Anthyllis Vulneraria*, *Cardamine amara*, *Lychnis diurna*, and *Artemisia vulgaris*; by the roadside, *Cerastium arvense*; and on the pasture, near Forteviot bridge, *Briza media*; near the riverside we collected a few examples of *Hesperis matronalis*. About three-quarters of a mile from Forteviot station we entered into the woods of Invermay, and after passing onward about a quarter of a mile further, came into the Den, where a pathway has been kindly constructed by the proprietor. Our first capture worthy of record was *Campanula latifolia*, it is plentifully and widely distributed all along the Den; we also collected *Carex sylvatica* and *C. pallens*, neither properly developed. *Arenaria trinervia* was frequent. *Asperula odorata* was in super-abundance; so was *Geranium sylvaticum*, *Lychnis diurna*, and *Agraphis nutans*; these plants were in profusion. *Anemone nemorosa* seemed to be equally abundant, but had gone out of flower. *Geum intermedium* and *G. rivale* were also plentiful, but *G. urbanum* very rare. *Asplenium Trichomanes* in some places fringed the rocks abundantly, and our common *Polypodium* and *Lastræa Filix-mas* grew everywhere. *Polystichum lobatum* adorned the deep rocky ravines, and *Cystopteris fragilis* hung its delicate fronds within the spray of the roaring linn. *Helianthemum vulgare* and *Thymus Serpyllum* garnished the rugged cliffs, and the "bonnie Broom" adorned with its golden blossoms their summit.

The music of the feathered race saluted the ear, and by their mellow music rendered our happiness complete. The cuckoo's monotonous lay was heard in the distance, while the strains of the mavis, deliciously varied, resounded throughout the neighbouring trees.

Passing still upwards, we all at once came upon a fearful ravine, spanned by a narrow wooden bridge. Many feet below, the river, almost hid by rocks, drove rapidly along. A few yards above the bridge, a fine cascade tumbled its waters into a frightful abyss. The scene was grand and solemn: not a sound to be heard but the "roar of the linn;" not a thing to be seen but the umbrageous canopy of the surrounding trees and the huge walls of rock above, and the yawning chasm with its waters

below. We crossed this wooden pile, and soon, under the trees, discovered *Rubus saxatilis* and *Neottia Nidus-avis*, the latter certainly a rather rare and very local plant. There were only a few plants of it, which we took with us.

I here subjoin a list of the most of the plants I observed and collected during my seven hours' ramble by the river May. Those plants whose occurrence I consider universal are omitted.

<i>Adoxa moschatellina.</i>	<i>Festuca duriuscula.</i>	<i>Petasites vulgaris.</i>
<i>Agraphis nutans.</i>	<i>Fragaria vesca.</i>	<i>Phalaris arundinacea.</i>
<i>Aira flexuosa.</i>	<i>Galium uliginosum.</i>	<i>Pimpinella Saxifraga.</i>
<i>Ajuga reptans.</i>	<i>Geranium lucidum.</i>	<i>Polygala vulgaris.</i>
<i>Anemone nemorosa.</i>	<i>Geranium sylvaticum.</i>	<i>Polypodium vulgare.</i>
<i>Anthyllis Vulneraria.</i>	<i>Geum intermedium.</i>	<i>Potentilla reptans.</i>
<i>Aretium Lappa.</i>	<i>Geum rivale.</i>	<i>Primula vulgaris.</i>
<i>Arenaria trinervia.</i>	<i>Geum urbanum.</i>	<i>Prunus communis.</i>
<i>Artemisia vulgaris.</i>	<i>Helianthemum vulgare.</i>	<i>Pteris aquilina.</i>
<i>Asperula odorata.</i>	<i>Hesperis matronalis.</i>	<i>Pyrola minor.</i>
<i>Asplenium Trichomanes.</i>	<i>Hypericum hirsutum.</i>	<i>Ranunculus auricomus.</i>
<i>Astragalus hypoglottis.</i>	<i>Hypericum perforatum.</i>	<i>Reseda Luteola.</i>
<i>Athyrium Filix-fœmina.</i>	<i>Hypericum pulchrum.</i>	<i>Rhinanthus Crista-galli.</i>
<i>Betula alba.</i>	<i>Iris Pseudacorus.</i>	<i>Rosa spinosissima.</i>
<i>Brachypodium sylvaticum.</i>	<i>Lamium album.</i>	<i>Rosa villosa.</i>
<i>Briza media.</i>	<i>Lastrea Filix-mas.</i>	<i>Sambucus nigra.</i>
<i>Bunium flexuosum.</i>	<i>Listera ovata.</i>	<i>Sanicula europæa.</i>
<i>Campanula latifolia.</i>	<i>Luzula campestris.</i>	<i>Sarothamnus scoparius.</i>
<i>Cardamine amara.</i>	<i>Luzula pilosa.</i>	<i>Saxifraga granulata.</i>
<i>Cardamine sylvatica.</i>	<i>Luzula sylvatica.</i>	<i>Scrophularia nodosa.</i>
<i>Carex pallescens.</i>	<i>Lychnis diurna.</i>	<i>Silene inflata.</i>
<i>Carex præcox.</i>	<i>Melica uniflora.</i>	<i>Stachys Betonica.</i>
<i>Carex sylvatica.</i>	<i>Mimulus luteus.</i>	<i>Stellaria nemorum.</i>
<i>Cerastium arvense.</i>	<i>Neottia Nidus-avis.</i>	<i>Stellaria Holostea.</i>
<i>Cystopteris fragilis.</i>	<i>Orchis maculata.</i>	<i>Thymus Serpyllum.</i>
<i>Digitalis purpurea.</i>	<i>Orchis mascula.</i>	
<i>Festuca ovina.</i>	<i>Oxalis Acetosella.</i>	

Bridge End, Perth, June 1861.

BOTANICAL LETTERS FROM ARGYLESHIRE.

By JAMES LOTHIAN.

No. I.

Sir,—Permit me, in the first place, to give you a general idea of this district, on the botany of which I propose to send you an occasional letter, as opportunity occurs.

If you look for a moment on Black's map of Argyleshire, you will see that this district consists of a long peninsula, forming the southern division of the county of Argyle. It extends north and south. Its average length between Loch Tarbert and Southend will be about forty-five miles, and its average breadth about seven miles. This is the district of Cantyre proper. The peninsula extends however beyond Loch Tarbert some fourteen miles further, terminating at the Crinan Canal. This district north of Loch Tarbert is termed Knapdale, and forms the northern division of the peninsula. Properly speaking, the peninsula of Cantyre is bounded on the north by the Crinan Canal, on the east by the Sound of Killbrandon and part of Loch Fine, on the south by St. George's and the North Channel, and on the west by the Atlantic Ocean. Its average length may be quoted roughly at sixty miles, and its breadth nine miles; its geographical position about 55° N. and $5^{\circ} 36'$ W.

This district is partly hilly and partly level. A chain of hills extend along the centre from the south to the northern extremity, and it is intersected by beautiful heaths, plains, and glens. The district around Campbeltown, the principal town in the county, consists of fine level tracks, which extend along the west and east shores for fifteen or twenty miles, and stands at a small elevation above sea-level. The north-eastern portion, as you approach the Crinan Canal, is finely wooded. The north-west and south-west is mountainous and rugged. At the latter point stands the well-known light-house of the Mull of Cantyre, the guiding star of the mariner coming in the North Channel.

The district of Kintyre proper is rather defective in wood; nevertheless some plantations of Larch, Fir, Oak, and Hazel coppice are met with, as at Limecraigs, Carradale, Carskey, Largie, and on both sides of Loch Tarbert, which is well wooded and very picturesque. The Elm, Laburnum, Turkey Oak, and *Pinus maritima*, perhaps above all others, thrive best at these places. Further north the Birch and Oak as well are magnificent.

This district contains many small rivers, and numerous fresh-water lakes, but not of any magnitude, of which I may make further mention in the course of our correspondence.

The climate is humid, but generally mild, still visited not unfrequently by severe and stormy gales from the south, west, and south-west.

There is some scope for the student of history and antiquarian lore, from its having been in former times the field of battles and feudal warfare between the Campbells and M'Donalds, lords of the isles, and some of the Celtic chieftains of the Emerald Isle. It has also been the scene of the labours of some of the early apostles of the Christian Reformation, and at a later period formed an asylum to the persecuted Covenanters. Here also King Robert Bruce sought shelter and found it. There are some ancient castles and burying-grounds; of the latter at least eighteen or twenty, possessing more or less interest to the antiquary and student of history. One of the most interesting objects of this description is an ancient stone cross which stands in the centre of the town of Campbeltown. It is elevated some five feet or six feet above the level of the street, on a platform, to which a flight of steps leads. Underneath the platform is a fine spring, which supplies this section of the town with water. The cross itself is a fine piece of workmanship, consisting of Runic knots and wreaths, and bears an inscription in raised Saxon characters on one side, telling who the owners were, and who erected it. It was conveyed from the island of Iona to its present site, where it is a great ornament to the town, and is an object of interest to all visitors.

Kilkenan Castle stands also in the vicinity, said to have been erected by King James V. of Scotland. Close to this ancient Castle there is a beautiful and picturesque country, laid out about two years ago, designed by Mr. J. Lothian, garden architect and surveyor. It forms a fine promenade, and is much visited by inhabitants and strangers. In an old burial-ground adjoining the cemetery there are some monuments of considerable antiquity.

I may mention in passing that agriculture is brought to high perfection in this district. In some departments of this science it is perhaps second to none in Scotland, and for which we are chiefly indebted to the enterprising, intelligent, and energetic commissioner to his Grace the Duke of Argyle, who is the chief proprietor in the district, ample communication being afforded between the highland and the lowland districts by steamers daily. The harbour of Campbeltown is one of the best in the kingdom, and the first on the west coast of Scotland.

Cantyre is a field for the sportsman and lover of the gun, good game being abundant. Most of the lands are occupied for

this purpose by English gentlemen. It is also good for the lovers of the rod, although for fresh-water fishing far inferior to such as the lake districts of Perthshire. Sea fishing can be enjoyed to perfection.

The ornithologist, entymologist, and geologist will each find here considerable scope for research. To the botanist it forms a fair field for exploration. Hitherto it has not been much visited by professional botanists, with the exception of Professor Balfour of Edinburgh. Some years ago the learned Professor, with a party of his students, made an excursion through the district, with the neighbouring district of the island of Islay, and published the results of this botanical excursion, but for private circulation only, which, with my own knowledge of the botany of our district, enables me to report it to my botanical brethren as a fair field for exploration. In cryptogamic plants it is very interesting.

I should have added that the islands of Sanda and Gigha on the coast forms part of this district, and can be easily explored, particularly during the summer months.

In my anxiety to give an idea of the district, I am afraid I have extended this epistle beyond reasonable bounds, and for the present must content myself by a bare indication of the botany of the district by simply naming a few of the plants to be met with.

Among phænogamous plants I may mention the following, viz. *Convolvulus Soldanella*, *C. sepium*, *Saxifraga oppositifolia*, *Anagallis tenella*, *Galeobdolon lutea*, *Linum catharticum*, *Prunella vulgaris alba*, *Epilobium latifolium*, *Nymphæa alba*, *Ranunculus aquatilis*, *Sagittaria sagittifolia*, *Rubus saxatilis*, etc.

Among Ferns the genus *Scolopendrium*, *Asplenium*, and *Aspidium* are well represented. We have also the *Hymenophyllum tunbridgense* and *Osmunda regalis* abundantly; and the student of marine botany will find our shores an interesting field for practice. Meantime I must reserve further details until my next.*

* Some readers of the 'Phytologist' would be obliged to Mr. Lothian for specimens of *Epilobium latifolium*.—ED.

BOTANICAL NOTES FOR MALVERN.

The Vernal Flora.

“ Let Mother Earth now decked with flowers be seen,
And sweet-breath'd zephyrs curl the meadows green.”

I have no intention so to load these “ Botanical Notes ” with technical scientific definition or verbiage, as to render them unreadable ; for I rather design to glance at the face of Nature pictorially, picking up a flower here and there, when it gives a colouring to the scene, and thus inciting the wanderer to a study of the beautiful and curious from the appearance it makes, seemingly to invite attention. I once met a rustic working man in one of my excursions in South Wales, who had got some not very common plants in his hand, which caused me to inquire if he was a botanist. “ Why, Sir,” was his reply, “ I can't tell the learned names that you botanists give to flowers ; but as I go along the lanes, and look under the hedges, the opening blossoms seem to speak to me, and I can't help plucking them to examine their loveliness, and hear what they have to say.” There nature spoke out, and the simple, unsophisticated Welshman opened his heart to those influences that are supposed to be most powerful when addressed to the cultivated mind, though this is not invariably the case. But people in general would study botany more, and like it better, if they paid attention to the minute objects that make up the local colouring of a scene, and tried to understand them in all their bearings. Even if they got but little beyond *artistic* knowledge, this would be worth possessing, and they could go into botanical nomenclature if the charm carried them on to do so. Yet, how few, comparatively, could account for the tints upon a rock standing forth out of the Malvern Hills, and, from recollection, give it the proper hues, or know what plants contributed to the local colouring the rock possessed ; perhaps even a pre-Raphaelite painter would be puzzled : but if he knew anything of botany, what an insight into correct form and changing colour, under different circumstances, would he possess ! The rock that is black as charcoal in the midst of summer, with the dry burnt-up skins of the *Umbilicaria* lichen, looks very different when all those innumerable crowded thalli are olive-green under the influence of the vernal rain ; and where the purple

investiture of the *Jungermannia* covers the base of rocks with a regal robe, the tinting that prevails is and must be very different to that where the bare syenite is merely studded with circles of the white "Crab's-eye" lichen, or the irregular green patches of the *Lecidea graphica*. So also Flowering Plants, when in sufficient abundance, present artistic features that vary according to the season of the year, so that a drawing or painting ought really to denote at what period the view is taken; and when photography gives colour as well as form, a view will correctly denote this. As remarked in the 'Botany of the Malvern Hills,' by E. Lees, F.L.S., to which in our Notes we must of necessity refer as a text-book of the plants of the district, it is thus remarked:—"In summer the immense quantities of Foxglove (*Digitalis*) give a rich pink hue to the rocky slopes they cover, often mixed with the tall golden torches of the great Mullein, *Verbascum Thapsus*; while in other spots a bright purple mantle is created by the flowering of the wild Thyme. As autumn slowly approaches, the gorsy patches sparkle most refulgently, though their golden splendour is somewhat chastened by the burnt-umber of the withered brakes extending far and wide, and scorched by the blaze of August. In May, the Hawthorns and Mountain Ashes wave on the sides of many of the ravines in milk-white purity, while in autumn their pendent coral berries give another phase of beauty to the inspiring and diversified scene." Much more might be said on plants and flowers thus considered pictorially, and the subject is so interesting and suggestive that I may possibly recur to it again. The latest improvements in the laying out of flower-gardens and ornamental grounds have now reference to colour, and thus whole parterres of the same flower placed together are now brought to display spreads of crimson, lilac, azure, or gold, contrasting or combining in the most alluring manner. For a natural display of this kind we again commend a sight of the beds of wild lemon-tinted Daffodils in Eastnor Park, which, once seen, will long live in the memory.

I must now advance to the Vernal Flora, which is beginning to unfold in all its varied lustre, notwithstanding that cold winds will blow, and that what country people call "blackthorn weather" is sure to annoy the explorer about the time that the Sloe or Blackthorn, *Prunus spinosa*, comes into flower, and "that is now," as the song testifies.

The Vernal Flora may be considered as introduced by the "Lady-smock," *Cardamine pratensis*, or Cuckoo-flower, which in warm spots is in flower by Lady Day, March 25th, though its culmination or general flowering does not take place before a month afterwards. Now it is that, according to Shakspeare,—

"Cuckoo-buds of yellow hue
Do paint the meadows with delight ;"

these "cuckoo-buds"—so called in an opened state, as we have ascertained is still the Warkwickshire term for them—becoming when the sun breaks forth at noon the resplendent golden stars of the Pilewort, *Ranunculus Ficaria*. In damp, oozy spots, as before remarked, the Marsh Marigold, *Caltha palustris*, becomes pre-eminently splendid, and dazzles from afar; while the well-known jagged-leaved Dandelion becomes very numerous among the springing grass, to which its yellow composite flowers offer a brilliant contrast, while a later period of the vernal floral region is marked by their conspicuous white clocks. Now, it is that the exquisitely beautiful

"Love-sick Cowslip that the head inclines,"

and that gives out so pleasing a fragrance, scatters its pale-yellow clusters over the pastures; and on the margin of woods the early Purple Orchis, *Orchis mascula*, becomes a brilliant object of attraction, distinguished as much almost by its spotted leaves as its broad purple spike of flowers. This merits poetical as well as botanical notice by being the "Long Purples" that fair demented Ophelia held in her hand among the "Dead Nettles" and other emblematic flowers of the spring that she gathered and contemplated ere the "envious sliver broke" that plunged her delicate form in the fatal waters. Willie Shakspeare knew the vernal flowers of Warwickshire pretty well as to their vernacular names, whether handled by "cold maids" or "liberal shepherds." But more anon on the vernal flowers, when we can get a truly bright vernal day to rejoice among them, as we have done of yore, among friends dead, changed, or lost—though still embalmed in the memory of pleasant excursions.

Just one glance on the turf of the hills, to show the tints that come and go, variable as the hues on beauty's cheek, or those that stern Time himself gives to human prospects, or the changes that, alas! brighten up for a moment or shadow the mind. "Early

in the spring," to quote again from the 'Botany of the Malvern Hills,' we find "the Wood Spurge, *Euphorbia amygdaloides*, throws a light-green verdure about the declivities, contrasting well with dead Grasses, withered Brakes, and the dark tufts of yet unflowered Gorse; soon after, tufts of Broom, *Sarothamnus scoparius*, in many spots vein the hillside with golden gleams; and still later the rising and uncurling fronds of the Brake give a verdant cincture to the then arid masses of rock bearded with crisp Lichens. But on the rocky masses themselves much depends upon a showery season, as then minute plants are well developed, scarcely observable at any other time."

The Mosses remain at their acme of perfection, and should now be studied and collected by those fond of that elegant tribe of the cryptogamic plants. The species that presents itself at present so abundantly on the rough stone walls, and with its crowded green thecæ, or stalked urns, gives them such a pleasant verdant colouring, is the *Bryum cæspitium*. A beautiful little *Byrum*, with star-like tufts of leaves, called *Byrum roseum*, grows in the little beech-wood on the hillside at Malvern Wells.

Note.—We have this week received information from an esteemed and acutely observant botanical friend now visiting Malvern, that he has lately found a considerable quantity of that delicate little plant the *Adoxa Moschatellina* in the space between the well-known Purlicu Lane and Mathon Lodge, late the residence of Canon Cocks. In such a beautiful locality an enthusiastic wanderer might well exclaim—

" Ah! little *Adoxa*, they say
Thy flower possesses no glory,
But I'll at thy habitat stay
And prove 'tis a palpable story."

I might, indeed, whisper in the ear of curious botanical visitors to or residents of Malvern, If you want to find any rare plants, search the vicinity of Purlicu Lane.

(To be continued.)

Reviews.

Flora of Preston. By CHARLES JOSEPH ASHFIELD.—Parts I. and II., reprinted from the Transactions of the Historic Society of Lancashire and Cheshire, Vols. X. and XII. Read 21st January, 1858, and 16th February, 1860.

Botany is well represented in Lancashire, though there is no county list of its floral productions extant. There are excellent Floras of Manchester and Liverpool, and a complete list of the plants growing near Preston may be confidently expected. The two parts now before us give promise of a more comprehensive work on this subject.

Our object in giving publicity to what is now doing in Preston is twofold; first, to invite those botanists who reside in Lancashire, or who have botanized about the lower part of the river Ribble or along the shores of its estuary, or on the banks of the Irish Sea, to assist the compiler of this new Flora with all the information they can supply about the plants and localities of the district; second, to induce such of our readers as mean to visit Lancashire and the lakes of Westmoreland and Cumberland, to take Preston in their way thither, and to spend a day or two investigating the vegetation of the sandhills about Lytham, Blackpool, the Naze Point, etc., or to look into the peat bogs, or hunt the moors which are so plentiful in this part of the county.

We hope that the following list of rarities will be a sufficient inducement to them to take our counsel.

Our author tells us that *Chelidonium majus* is now scarce in the immediate vicinity of Preston, "being much sought after by herbalists." We thank Mr. Ashfield for this useful hint; though there is naturally on our part a desire that no plant should be extirpated and lost in any part of the country, yet we are pleased to hear that there are some who find uses in plants generally deemed worthless. This species in bygone times was an herb of renown; but now, like many other plants, it is neglected. It is more than probable that the faculty *now* can obtain many more potent remedies for the numerous bodily ailments to which poor humanity is subject; still it is satisfactory to know, from the experience of a more enlightened age, that the reputation of our ancestors is not a modern delusion, and that their knowledge and wisdom were not mythical.

Aquilegia (Columbine) is occasionally found in woods by the side of the river Brock, between its source and the railway station. It is much to be desired that the learned author would give us a map of the country with the stations where his plants grow prominently marked. It would be very gratifying to us to tell our readers where this wood is, but we hope they will get a better informed guide to this locality than the writer of this notice. The other rare plants of *Ranunculaceæ* and its kindred Orders, are *Ranunculus Lingua*, between Blackpool and Kirkham; and one of the two British Hellebores, *H. viridis*, "a thicket by the side of a foot-path leading from the wood, Plumpton road to Cottam Hall." *Trollius europæus* is not a rare plant in the Craven district, and in this Flora it is localized "near the Liverpool Waterworks, in Heath Charnock;" also "at Plymouth bridge, near Chorley." *Corydalis lutea* is found both as a weed in gardens and on old walls. We have seen it cultivated in cottage gardens, and sometimes spreading through the hedge or paling fence, but it is more partial to walls.

Asarum and *Aristolochia*, both renowned and very scarce plants, are found in this district, the former at Barton the latter at Warton, on the right side of the road to Lytham.

Geranium phæum is also one of the Preston plants, and here, as in most if not in all other parts of England, a doubtful native. It is reported as found in a meadow and in an orchard, localities that will not pass muster among some botanists. To *G. pratense*, *G. sanguineum*, and *G. lucidum* there is no objection. As *G. sylvaticum* abounds in pasture-fields in Craven, it may turn up not far from Preston: probably much nearer than Pendle Hill, where *Primula farinosa* is said to grow, and where *Pinguicula vulgaris* certainly grows. As the former is found on the Lancashire side of the Ribble, somewhat further north than Skipton, it may be expected on the Pendle Hills, which are much higher than any of the hills near Settle, about which *Primula farinosa* grows abundantly.

Utricularia vulgaris and *U. minor* occur here, the former at Martinmere and the latter on Leyland Moss. *Hottonia palustris* is found with the former, and the queen of British aquatics, *Nymphaea alba*; also *Hippuris vulgaris* and other more common aquatic plants.

If we were asked by a farrier, or perhaps we should write

by a cowleech or a horse-doctor (forgive us, ye practitioners of the noble art of healing the many ills flesh is heir to) where grows Hound's-tongue? We should answer unhesitatingly, Between New Brighton and the mouth of the Dee, along the sandhills which skirt the Wirral sea-ward. It appears that the plant is quite as abundant on the sandhills between Lytham and Blackpool. This is a fact worth knowing; for the species, though not to be accounted scarce in the interior of our island, would not, in many counties, afford an unlimited supply of the article. It is the root which the Surrey leeches employ, and they can get but a little of it, and in the winter cannot find it at all. They might soon procure a cartload from the Wirral at any period of the year.

Hyoscyamus niger is another valuable officinal plant of this district. It is not stated that it is plentiful here, but it is very abundant in the counties of Huntingdon and Northampton.

The *Cruciferae* and the *Umbelliferae* are well represented in this Flora. The rarer plants of the first-mentioned group are *Lepidium Smithii*, *Cochlearia danica*, *Cakile maritima*, *Brassica monensis*, *Sisymbrium Sophia*; most of these occur near Lytham: also *Cardamine amara*, *Nasturtium sylvestre*, near Preston. *Erysimum cheiranthoides* and *Sinapis nigra* grow in cornfields here as everywhere else; although some writer in the 'Phytologist' says it, *S. nigra*, is not a field plant but a waysider. At all events, whatever may be its habitat in Middlesex, here it grows in cornfields, and no mistake. Plants are probably as capricious in their localities as some people are in their dispositions; allowance will be made by those who have a moderate share of the milk of human kindness in their composition; or, what is better, a trace of charity, which is slow to think ill either of men or of plants. The rare Umbellifers muster strong, as we may say in these days of volunteering; *Caucalis latifolia*, *Myrrhis odorata*, *Bupleurum rotundifolium*, *Smyrnium Olusatrum*, *Enanthe peucedanifolia*, *Apium graveolens*, *Pimpinella magna*, *Eryngium maritimum*, *Sison Amomum*, *Conium maculatum*, and several humbler, commoner species appear in these lists. One of them, *Caucalis*, is probably a straggler, and it will be a question with some critical botanists whether *Enanthe peucedanifolia* be genuine, or whether it be not the commoner *E. Lachenalii*. Those who are

on the spot can most satisfactorily decide this point: we give no opinion, because we have no specimens.

Verbascum virgatum is another plant about which the author is not quite positive that it may not be a stray, like the *Caucalis*, *Borago*, *Anchusa sempervirens*, etc. He does not indicate a doubt about the genuineness of the localities for *Ornithogalum umbellatum*, *Gagea lutea*, *Galanthus nivalis*, *Crocus vernus*, *Narcissus Pseudonarcissus*; nor does he hesitate about that of *Saxifraga umbrosa*; he merely says that his belief is that this form should be called *S. hirsuta*.

The *Gentianaceæ*, as might be expected, abound here. The most remarkable are *Gentiana Pneumonanthe*, *G. campestris*, *Chlora perfoliata*, *Menyanthes trifoliata*, *Erythræa littoralis*, (*E. linariæfolia*). Is *Erythræa latifolia* absent? We have seen what is so called, from the vicinity of Liverpool. Possibly our author may agree with some botanists who cannot discover good distinctive characters whereby they can satisfactorily separate *E. pulchella*, *E. linariæfolia*, and *E. latifolia* from *E. Centaurium*.

The rarer *Compositæ* are *Senecio saracenicus* and *S. viscosus*; *Hieracium murorum* is reported as "frequent on old walls, and on heaps of rubbish." We have never seen it on walls. Our belief is that the plant which is so common on the walls of Chester is *H. sylvaticum*, var. *maculatum*, or *H. vulgatum*. We are pretty certain that the *Hieracium* on old walls about Beckenham and Sydenham is *H. vulgatum*; and we further believe that this *Hieracium* received its name of *murorum* because it never grows on walls, as *lucus à non lucendo*.

Pyrola rotundifolia is one of the most interesting plants of the district, and here it abounds. *Bartsia viscosa*, a still greater rarity, grows at Lytham, at the back of the sandhills. *Butomus umbellatus*, with *Stratiotes aloides*, grows near Preston. *Mentha piperita* and *M. rotundifolia*, *Drosera anglica*, *D. intermedia*, and *D. rotundifolia*, *Andromeda polifolia*, *Vaccinium Vitis-idaea*, *V. Oxycoccus*, *Potentilla verna*, *Epipactis palustris*, *Hydrocharis Morsus-ranæ*, etc., grow in this part of Lancashire. Our list is not nearly exhausted, but our readers' patience will not last for ever. Enough has been told to induce botanists to pay a visit to Preston, where they will have far more enjoyment in seeing and collecting the floral treasures of the district, than in merely being informed whereabouts they are to be found. R.

A Priced and partially Descriptive Catalogue of Stove, Greenhouse, and Hardy Exotic and British Ferns, Selaginellas, and Lycopods, offered for sale by Abraham Stansfield and Sons, Todmorden. December, 1860.

The varieties of Ferns are steadily increasing; the supply is stimulated by the demand; for this commercial maxim is of universal application. We reviewed Mr. Sim's Fern Catalogue several months ago, not without some wonderment at the numbers of new forms; and again we have to admit as our belief, that curiosities in vegetation will never cease. The varieties, the named varieties alone, of the common Lady-Fern, amount in the Catalogue before us to upwards of two score. The different forms of *Blechnum Spicant* are now 24. Such of our readers as want to know something more definitely about these plants will send for the Catalogue. This brief notice is printed to call their attention to the fact that there is in the north of England an extensive establishment for the cultivation, keeping, and sale of a stock of these charming plants, of which the worthy owners may be justly proud.

It may also be stated that the named varieties of *Scolopendrium vulgare* are above 60. The prices of these not expensive novelties of cultivation, as some of them may perhaps be justly called, vary from a shilling to ten and sixpence. Few indeed—from three to half-a-dozen—reach the last-entered quotation; while fewer still reach the somewhat formidable figure of twenty-one shillings. The buyers can hardly grumble at the prices.

The number of British Ferns in this List, with their varieties all named and priced, is 304 (including the Lycopods).

The hardy exotic Ferns, with their varieties, are above 40. The prices of these vary from one shilling to seven and sixpence.

The greenhouse and stove exotic Ferns, number upwards of 320, and the prices vary from one shilling to thirty shillings.

Since the above was written, a second edition of this interesting Catalogue has been sent by Messrs. Stansfield, and in this amended reprint, several of the typographical errors have been corrected. We should feel obliged to our respected contributors to tell us if *Cystopteris virens* be a species or a variety; in either case a specimen would be acceptable. Again, it may be asked if *lonchititoides* is not a misprint of *lonchitidoides*; see p. 8.

DEATH OF DR. ANDREW SINCLAIR.

(From the 'Lyttelton Times,' April 3, 1861.)

Among all the records of accidental death which have darkened the columns of this journal almost without intermission since the foundation of the settlement, none can be found so lamentable as that which it is our painful duty now to register. News has reached town that Dr. Andrew Sinclair, who passed through Christchurch and Lyttelton but a few weeks ago, to assist Mr. Julius Haast in his exploration of the interior of this island, perished by drowning in the upper waters of that fatal Rangitata river, on Monday the 25th of March. An authentic account which we have received states that on the day mentioned the exploring-party were about to proceed to the sources of the eastern and middle branches of the Rangitata, having finished the survey of the western branch, when an accident rendered necessary the return of a man and horse to Mr. Butler's station (Mesopotamia); Dr. Sinclair determined to return with them, his object being to collate the large quantity of valuable specimens of botany he had collected, to complete various drawings, and to recruit his health, which had suffered from the hardships to which he had been exposed. Having one horse between them, Dr. Sinclair and the man who accompanied him, named Richard Stringer, adopted the plan, where the river-crossings were bad, of letting the horse take over one of them at a time, and sending him back for the other. At one spot, where the river divided, leaving an island in the middle, Dr. Sinclair went over first, selecting a not very favourable crossing. On reaching the island he endeavoured to send the horse back, but the animal refused to return, and set off by himself to cross the next stream towards Mr. Butler's station. Dr. Sinclair followed the horse into the second stream, which was fleet and broad, and Stringer, after watching him for some time, went down the bank a little to find a better crossing for himself. On reaching an elevated spot which commanded a complete view of that part of the river, Stringer turned round, and to his surprise failed to catch sight of his fellow-traveller. He at first paid little attention to the circumstance, thinking that Dr. Sinclair having crossed, was resting, or gone in search of the horse; but after watching for some time longer the painful reality began to force itself upon him, and he returned to the camp—not two miles distant—and related his sad story. Mr. Haast hurried to the spot, where on the following day he was joined by Mr. Butler and the rest of the party. About sundown on this day the body of the unfortunate gentleman was discovered, about three hundred yards below the place where he had crossed, in a position which gave every indication that he had left the water alive. The body was some yards from the stream, and the head was resting on the arm. No time was lost in conveying the remains to Mr. Butler's, where, a coffin having been prepared, the solemn ceremony of interment took place in a spot carefully selected and fenced round. A document was prepared and attested by those present, detailing the circumstances of his death, in precise language, in case legal investigation (which could not be had on the spot) were not required. We learn, however, that steps will be taken for securing the observance of the desirable forms of law.

Dr. Andrew Sinclair, whose untimely end we have thus recorded, has left a name and a character behind him to which we regret that we must fail to do justice. He was a surgeon in the Royal Navy, and had served with credit afloat, visiting almost every corner of the world in the course of his duty. His experience and his scientific attainments, especially as a botanist, brought him into communication with many leading men in the world of science at home, with several of whom he formed a lasting friendship. After leaving the regular service, his professional abilities secured him employment on several occasions as Surgeon-Superintendent of ships bringing convicts to the Australian colonies, in the performance of which most difficult duty he was eminently successful, and most so in the most trying of all, the charge of female convicts. In 1843 he came down to New Zealand on a botanizing tour, the second which he made to this country, and happened to be a fellow-traveller with Captain Fitzroy, then coming to Auckland to assume the duties of Governor of the colony. He landed at Auckland on the 23rd of December in that year, at a time when local party spirit ran high, and a difficult task was set before the new Governor to steer with safety between the contending political factions. It happened that, on the resignation of Mr. Willoughby Shortland, the task of appointing a Colonial Secretary devolved upon the Governor; and he, believing it to be utterly futile to name one of the local leaders of party, offered the appointment to Dr. Sinclair, who long refused it, though repeatedly pressed upon him. Alleging a consciousness of want of qualification for the post, he for some time resisted the Governor's entreaties, and at last only accepted office to relieve the Government of the Colony from embarrassment. As an official Dr. Sinclair worked hard and attended regularly to his duties; and though he has not left the reputation of ability as a secretary, there is no doubt that he rendered as valuable service as the system of government, which left the Governor all-powerful, and his highest subordinates but clerks, permitted any official to render. He held his office until the introduction of responsible government, within these last five years, released him, with a pension, from serving the colony in one way to benefit it in another way no less important.

Dr. Sinclair was the first collector of specimens of New Zealand natural history, in botany, conchology, and entomology. He sent home such a variety of plants, shells, and insects, as to induce Dr. Gray, of the British Museum, to commence the first scientifically arranged catalogue, which may be found appended to Dieffenbach's work on New Zealand. He was of late years again closely occupied by his botanical researches, and spent a large portion of his time in the investigation of the natural productions of this country. It was in the prosecution of his favourite pursuit that he fell a victim to the perils which beset the explorers of nature among our inhospitable Southern Alps. But the passion for science by no means closed the heart of Dr. Sinclair to human sympathies. If he earned a reputation at a distance as a natural historian, he was better known in his immediate neighbourhood as a true philanthropist. In 1843, 1844, and 1845, the population of Auckland underwent severe privations and distress, such as the settlers of this part of the colony have never known. Many an industrious and honest man received then at Dr. Sinclair's hands that assistance which he wanted to tide him over the crisis; and not a few

prosperous men of the present day have reason, in recalling that time, to name him as the man who caused them to be what they are. Having no family of his own, his generosity also gathered round him relations not a few in number to share in the prosperity which he had earned, and late in life enjoyed in the neighbourhood of Auckland.

In private life Dr. Sinclair was a true Christian gentleman, liberal in the expression of opinions, pleasant and courteous in manner; as an official he was honest, upright, scrupulous, and laborious; as a man of science he was ardent but painstaking. The loss of one of his attainments and character, with the means and leisure which he possessed, is a public calamity; for there are few among us with his advantages, and fewer still who can use them as he did. His age we do not know; but though far from a young man, he had much of the vigour of youth still remaining, and might in all probability have enjoyed many years of life agreeably to himself, and usefully to his fellow-colonists, had not the melancholy accident which it has been our duty to narrate carried him off from the midst of his labours.

BOTANICAL NOTES, NOTICES, AND QUERIES.

HOW TO DESTROY CUSCUTA.

Another of man's enemies is said to lie at his mercy. *Cuscuta* is no longer to be dreaded; chemistry has done for her. What the first Darwin calls her "dangerous charms" have ceased to be dangerous; and the growers of Flax, Clover, and Lucerne may sleep in peace. A French chemist, M. Ponsard, having remarked that *Cuscutas* contain "an enormous quantity of tannic acid," bethought him of iron-salts as a fatal enemy, and called them to his aid. He mounted on wheels a barrel filled with water, and introduced into it as much green vitriol (sulphate of iron) as would saturate it; the proportion is immaterial, as water will only take up a fixed quantity. To his barrel he adapted a tap and india-rubber hose, with a nozzle. In the field he cut away most of the *Cuscuta* and Lucerne attacked by it, so as to lay the soil completely bare. The part mowed off was put in heaps and burnt, or else drenched with the sulphate of iron. The spaces whence the *Cuscuta* had been removed were also well watered to some distance all round, so as to be sure that every thread was reached. The effect was admirable; in an hour or two every morsel of *Cuscuta* was destroyed, or, more correctly speaking, "mineralized," and nothing remained but a heap of black threads twisted and entangled in all manner of ways. A tannate of iron had been formed inside her. As for the Lucerne, it is greedy of green vitriol, and pushed with the utmost vigour after the operation.

HELLEBORUS VIRIDIS

Is undoubtedly wild in the locality mentioned in your number for July, vol. v. p. 221. It grows in straggling plants about the edges of the oak (unfenced) copses and hedge-sides, not near any garden or inhabited place or pleasure-grounds. I have lately been told by one who is able to distinguish it, that the green Hellebore occurs sparingly in Threapland Wood, and also in Plumland Wood, both in this county.

The former place is a rugged ravine of natural copse, with beds of mountain limestone jutting out here and there, and is most unlikely to have had this or any other plant inserted, as the whole has been open to the pasturage of cattle, where practicable, as far back as memory serves.

I am not aware of any other Cumbrian locality.

W. DICKINSON.

ANEMONE RANUNCULOIDES.

I have collected the above-named plant at Scoulton, about five miles from Watton. In this locality it grows in a wood, on the right side of the road, next the turnpike, and close by the public-house. It also grows on the road to Thetford from the same place. This last station is now a meadow, but was *once* a wood as I have heard. In this place there is a pit, where edible frogs are said to be, but I never found any, though I have searched dilligently. But the plant is there, with many others, especially Orchids (*Listera ovata* for example), also some *Junci*, *Carices*, and Grasses.

W. WINTER.

PYROLA ROTUNDIFOLIA.

In answer to the question in the April number of the 'Phytologist;'—in the Flora appended to Horsfield's 'History of Sussex,' Charlton Forest, near Chichester, is stated to be the habitat of the above-mentioned plant.

G. D.

THINGS NOT GENERALLY KNOWN.

As the pages of the 'Phytologist' often give its readers the derivation of the English names of British plants, I wish to call your attention to a note in 'Notes and Queries' respecting the derivation of our friend Jack-by-the-hedge, or Sauce-alone (*Alliaria officinalis*). As this note is incomprehensible to me, I give it verbatim, that *you* may see what is done, in other quarters by other periodicals, upon the subject of botany.

"*Sauce*.—Sarce, vegetables; Essex. (Halliwell's Dictionary.) This word is used in Norfolk and Suffolk, in the same sense as in Essex. Reading yesterday in Luther's Bible, Exodus xii. 8, I found the words "mit bitterm Salsen," which our translation renders "with bitter herbs." Probably, then, the East-Anglian word is a remnant of the Saxon. I find in Flügel's Dictionary, part ii., Whittaker's edition, "Salse, f. (pl. n. sauce)." But in part i. (English-German) I do not find "sauce" translated "Salse." We have the word applied to one of the popular names of *Alliaria officinalis*, Jack-by-the-hedge, or Sauce-alone. May not Sauce-alone mean Sauce-à-lane, *i. e.* sauce (herb) a (at or by) lane?—G. E. FRERE.

"*Roydon Hall, Diss.*"

S. BEISLY.

MORE MATERIALS FOR THE MANUFACTURE OF PAPER.

A Company has recently been formed with a view of obtaining cotton, flax, hemp, and jute from India, and also for the purpose of making use of certain fibres which it is expected will produce materials of great value to the silk, linen, mohair, and paper trades. The fibres have been sent to different manufacturers and subjected to their processes, and in all cases with satisfactory results. One house asked for 50,000 tons this year, and

100,000 tons for five succeeding years, and others for very large supplies. 40,000 acres of land had been offered to the Company in one part of India, and 15,000 acres in another part, and many thousand more could be obtained if the Indian Government would grant facilities. The principal fibres referred to are the Rhea of Assam (one of the strongest and best fibres known); the Neilgherry Nettle, the Aloe, the Pine-apple, and the Plantain. The most important is the Rhea, which can be grown to any extent, and imported into this country at highly remunerative prices. The Company propose to turn their attention in the first place more particularly to the Punjab and north-western provinces of India for flax and hemp, and to Assam and the Sunderbunds for Rhea and Cotton. Mr. Ewart said the principal object of the deputation was to show Sir Charles Wood the fibres out of which paper could be made. Mr. Spensley then presented various portions of the Rhea fibre, both in its raw and manufactured state, and explained the mode adopted in preparing it. Various specimens of paper, lace, hemp, substitutes for horsehair, etc., were exhibited, and it was stated that if the fibre was operated upon while young, eighty per cent. of flax could be obtained.—*Times*.

CLAYTONIA ALSINOIDES.

This plant is perennial, and it is very hardy. It is now in blossom in a shady, cool part of my garden, where the same plant flowered last season (1860) from May to October.

J. SIM.

NOTICE.

Mr. B. M. Watkins, of Glewstone, Ross, Herefordshire, hereby intimates that he did not undertake to supply applicants generally with fresh specimens of the Luzulas *L. Borreri*, *L. pilosa*, and *L. Forsteri*, because recent examples are not procurable at all seasons; but he suggests, that as fresh examples are more satisfactory than dried ones, botanists should avail themselves of the facilities afforded by the Post-office for their exchange. He will undertake to supply specimens in a recent state to those who wish to compare them, if early application is made, and the address of the botanist transmitted accompanied with a postage-stamp.

Communications have been received from

Archibald Jerdon; J. S. M.; W. Richardson, Jun.; Dr. Windsor; W. Pamplin; Miss E. Stackhouse; the Rev. Mr. Williams; F. Y. Brocas; W. P.; the Rev. R. H. Webb; John Sim; Ed. Lees, F.L.S.; Joseph Croucher; William Richardson; T. R. A. Briggs; C. J. Ashfield.

BOOKS, ETC., FOR REVIEW.

The Chemist and Druggist, July 15th.

The Alwicks Mercury, June 1st.

Berrow's Worcester Journal, July 20th.

Dundee, Perth, and People's Journal, August 3rd.

ERRATUM.

In No. 74, n.s., for June, 1861, in list of plants near Ross, p. 189, for *Arabis verna* read *Draba verna*.

NOTES ON NORFOLK PLANTS.

By W. WINTER.

Nat. Ord. RANUNCULACEÆ.—*Thalictrum minus* I find about Cortin, in Suffolk?, about three miles from Lowestoft; also at Garlestone; in both places sparingly, on sandhills.

Anemone ranunculoides. This very rare species has been long known to grow in various woods, meadows, and even by roadsides, in Norfolk (see 'Phytologist' for September, 1861). The learned author of the 'English Flora,' though connected with this county (Norfolk), does not refer to any of the stations which have been long known, but only recently published. He asserts the true nativity of the plant in strong terms:—"This having never, as far as can be learned from old writers, been a garden plant in England, cannot safely be asserted to have escaped from gardens. I have wild specimens from the excellent author of the 'Flora Anglica,' and from the late Mr. G. Anderson, two men whose accuracy and judgment are as unimpeachable as their honesty" (Eng. Fl. vol. iii. pp. 38, 39). Sir J. E. Smith enters King's Langley, Herts, and Wrotham, Kent, on the authority of Hudson; and Abbot's Langley on that of Mr. G. Anderson. Sir W. J. Hooker quotes these three stations without the authority, and subjoins "scarcely a native." Honourable knights occasionally differ, as do learned doctors. It is worthy of remark that both the honourables were, at all events in early life, connected with Norfolk, if not natives of this county. Mr. Dawson Turner, another botanical notability, does not appear to have been aware of the existence of this rarity in his native county.

This *Anemone* has very recently been detected in another locality in Herts, but several miles from either of its two recorded stations. The writer of this has seen a specimen which grew at Scot's Bridge, near Rickmansworth. In this last-mentioned locality there is abundance of the plant, associated with the blue *Anemone*, *A. apennina*, which is said to grow at Wimbledon, but on authority not unimpeachable (see Eng. Fl. p. 38). "In Wimbledon woods (where it still grows), *Mr. Rand*." Hooker says, "In Wimbledon woods, growing with *Eranthis hyemalis*." I have seen it in Wimbledon garden growing with the winter Aconite (*E. hyemalis*), and I should like much to see

it growing in Wimbleton woods. N.B. The fact of its growth in Wimbleton woods is not at all startling, but the authority is not sufficient for the establishment of its sylvan station.

One of the Norfolk localities for this rare plant is in the grounds of Wheatacre Rectory, a place about three miles from Gillingham.

In 'Cybele,' vol. i. p. 75, there occurs the following notice of this species:—"Alien. Scarcely a naturalized plant in Britain, though introduced into Hudson's 'Flora Anglica,' and retained by succeeding authors. The counties of Kent, Hertford, Suffolk, Salop, and Nottingham have been indicated for this species; that of Berwick turning out to be an error, through the mistaking of *Ranunculus auricomus* for the present plant."

This, it must be admitted, is an odd mistake, and probably is a rare example of taking for granted what any discoverer would wish to be true; but it is not a solitary *mistake*. In the work, wherein it is so considerately and kindly recorded, there are many such evidences of overweening confidence in the observative, reflective, and ratiocinative abilities of the amiable author.

In Leighton's 'Flora of Shropshire,' the plant is localized, "Woods; rare. Badger Dingle, *H. Bidwell, Esq. !*"

A remark on the situation of Badger Dingle may be useful to some plant-hunters.

This locality is the station of more rare plants, though not of any so rare as the yellow Anemone, viz. of *Geranium lucidum*, which is entered on Mr. Bidwell's authority; also of *Chrysosplenium oppositifolium*, and others of less note. Its situation is five miles south-east of Shiffnal. See 'Flora of Shropshire,' pp. 186, 256, 331, 534, etc.

Trollius europæus is found at Norton, but it is rare.

This will constitute an item in some future supplement to the 'Cybele Britannica;' or, as the learned Secretary of the Thirsk Natural History Society elegantly and truly describes such awkward facts, "new to the Ouse province." Though it has probably grown there ever since the eastern lowlands, Norfolk and all, emerged from the humid lap of old mother *Thetis*.

Aquilegia vulgaris occurs sparingly in woods about Ranworth, a very wild tract of country, and an obscure village about nine miles from Norwich, intersected by sluggish rivers, or dikes or drives (the provincial names of huge open drains), and abounding

in rare aquatics, and in such as love to grow on the brink of deep waters.

Nat. Ord. PAPAVERACEÆ.—*Chelidonium majus* is very common about Ranworth and Aldeby.

Rœmeria hybrida: this plant is not peculiar to Cambridge-shire, as stated in the 'Phytologist' for April, 1861, p. 124; it is found in several places in Norfolk, though nowhere very plentiful, as at Fritton, two miles from Long Stratton (see 'Phytologist' for August, 1861, p. 255). Hudson's authority is confirmed as far as it probably can be by a manuscript account, *penes me*, of a specimen of *Glaucium phœniceum* from this very locality, preserved in the herbarium of a Llangollen botanist. This veteran recommended a renewed search for the plant; but the search was productive of no result but disappointment.

Nat. Ord. CRUCIFERÆ.—*Cakile maritima* grows on the sea-shore, between Yarmouth and Lowestoft.

Hutchinsia petraea, which is found on the ruins of St. Benedict's Abbey?, Norwich, is another rarity, and an example of a very local species. But this fact, which is new to science, though not to nature, is corroborative proof of the genuineness of the Eltham locality for this plant. Let the assumption be granted that the monastic orders planted and propagated many foreign plants, this was not one of a sort which they would be likely to patronize, for it is neither useful nor ornamental; and like many other minute rupestral or mural plants, it is not very readily naturalized. It is not improbable that its apparent predilections for the western parts of England originate in its finding there both a moister climate and a more rocky surface.

Teesdalia nudicaulis is not scarce on banks near the sea, about Yarmouth and Lowestoft. In this locality it was in flower last season, 1860, on the 16th June. (It was in flower at least two months earlier on Barnes Common, near London.)

Lepidium latifolium, in salt-marshes by Breydon, in this district, and at Reedham, but sparingly. The history of this plant in England tells a doleful tale to the lovers of British botany, and forebodes the total disappearance of this species. About a century ago it was not uncommon in the marshes and about the creeks near Faversham, in Kent. It has not been seen there, or, more correctly, no record of its appearance there has been published, for probably more than half a century. *Lepi-*

dium Draba is taking its place in our lists, and possibly it appears in some of the ancient localities for this fine plant.

Lepidium Smithii and *Nasturtium sylvestre* grow sparingly by hedges near Ranworth. *Cochlearia danica* appears among stones at Breydon, near Yarmouth, and also at Burgh Castle, though rare. Is found by watersides.

Note. The common *Crucifers* are omitted in the above enumeration; those quoted are very favourable representatives of the Order in a county which is nearly flat, and possesses no rocky elevations. Further, *Iberis amara*, which occurs, was introduced from Berkshire, probably among seed-wheat, and *Brassica oleracea*, from Torquay, Devon.

The following are not grouped in Orders, because there are so few under each Order that to enter them as above would occupy more space than is necessary.

Reseda alba grows on sandhills at Gisleham, near Lowestoft. A great many plants like those observed at Wandsworth, are reported from this locality. (Will some obliging friend send a list of them to the Editor or to the Publisher of this magazine?)

Viola odorata is plentiful about Ranworth and Aldeby, in woods and on hedge-banks. The white variety of this early favourite is found occasionally in these parts.

Frankenia levis grows in salt-marshes, near Yarmouth, in abundance. It is one of our frequent maritime species.

The following rare Caryophyllaceous plants (would Dr. Lindley call them *Caryophyllads*?) occur in this district (a strip of coast between Lowestoft, Yarmouth and Norwich), viz. *Dianthus prolifer*, in pastures, near Norwich; also at Thorpe and Catton occasionally. (Is it plentiful in pastures?—ED.) *D. Caryophyllus*, on an old wall near the Cathedral Close, Norwich, August 1st, 1856. I have not seen it since. Of *Silene Otites* I found some tiny plants in flower at St. Faith's, near Norwich, August 15th, 1855, and again July 28th, 1859. I found a few plants of *S. anglica*, in flower, about Whit-Sunday, 1857, in some fields belonging to Sir R. Mitton, near Thetford, and also at Brandon in the same year.

Mænchia erecta is common.

Stellaria nemorum is another addition to the Ouse province, as a Cybelian or a Watsonian would enter this species, that is, if he condescended to enter it at all in his records of new discoveries.

The probability is that, like his great leader, the *magnus Coryphaeus* of British phytogeographers, he would ignore the plant because of the humility of its first printed record in this district. But the fact would be still a fact, but it would be as if it *were not* to the readers of the 'Cybele,' and especially to such of its few readers as rely upon the fidelity of its reports, viz. such as pin their botanical faith to its pages. This northern species of Stitchwort (*S. nemorum*) does grow, notwithstanding, in moist woods near Ranworth.

Note. A specimen was sent to the Editor of the 'Phytologist,' and anybody may see it. It probably has grown there since the creation.

Cerastium arvense is not scarce on sandy hills in the same vicinity, viz. near Ranworth.

Geranium pyrenaicum grows on a hilly pasture at Aldeby, and it is one of the rarities of the neighbourhood.

It is entered in the 'Cybele' as a naturalized alien; and this may be so, or it may not. Who would *now* venture to affirm or to deny that the author of the 'Cybele' himself is or is not a naturalized alien? We may be allowed to differ without bitter hatred about the nativity or the alienism of certain humble plants which are so utterly unheeded as to be called weeds by the million, and the question about their nationality is scouted by the majority of those who take some little interest in the science of plants. But what does the author mean by the nativity of the localities upon which doubt is thrown by the scanty numbers of the plants, by the proximity of gardens, etc.? He cannot mean that we have imported the hilly pastures of Norfolk, nor the rocky precipitous elevation of Arthur's Seat, in the Queen's Park, Edinburgh, where this plant grows! What does he mean? Simply that all the quoted localities for *G. pyrenaicum* are near gardens, and that in these subhortulan localities there are but few plants to be found; both of which are pure assumptions, and as far from truth as the mountains of North Wales are distant from the hills of Dartmoor.

The eminent and learned author of the 'English Flora,' whose religious belief was not deemed very comprehensive by his orthodox contemporaries, might have stated, if the question about the nativity of this plant had been agitated in his days, that the old authors on plants do not inform us that this Gera-

nium was ever a garden species, and that therefore it could be no escape from cultivation. Whether there be any validity in this argument or not I will not try to determine, but it is certain that this plant is not *now* one of our cultivated productions. There is no good reason for believing that it ever enjoyed this honour, except in botanical collections, and no marvel, seeing there are so many hardy herbaceous members of the same family far more showy and far more common than this one is.

Although this plant was well known, and not unaptly described by Hudson, ('Flora Anglica,' p. 65, ed. i.: *G. perenne habitat in pratis montosis*, it grows in upland or hilly pastures, also *prope* (near) Enfield; *et inter* (and between) Hyde Park and Little Chelsea), yet it is not noticed by Ray nor by his learned editor Dillenius. It is the large-flowered *G. molle* of Curtis, who, like Linnæus, combined it with *G. molle* of more recent authors.

Althæa officinalis is very common in marshes about Ranworth?, and in other parts near the coast.

The rare *Leguminifers* are well represented in our district: for example, we have *Medicago falcata*, frequent in pastures and fields near Ranworth; and the white flowers of *Melilotus vulgaris* are very conspicuous and ornamental on the sandhills about Yarmouth, where this suspected alien is very abundant. *Trifolium subterraneum* grows at Ranworth, but it is not one of our frequent plants. *T. medium* is plentiful in our pastures, and *T. maritimum* also on the seashore, especially in salt-marshes near Breydon, Yarmouth. *T. procumbens* abounds everywhere; *passim occurrit*, as the ancient botanists used to describe the frequency of very common plants. *T. suffocatum* grows on the sandy shores near Lowestoft, but it is not common nor even frequent. *Lathyrus palustris* is found sparingly in the Ranworth bogs; and *Astragalus Glycyphyllus* occurs here and there in the woods near Aldeby. The above is a highly respectable company of the members of one family, all found in a corner of a very flat, uniform county, with as little variety of surface-elevation as any of our English counties.

Spiræa Filipendula grows sparingly in pastures near Fritton?, and is in flower in July. *Geum rivale* and *Comarum palustre* are common in wet and boggy parts. *Fragaria elatior* is found in the grounds (? what grounds, woods or wastes?) at Wheatacre

Rectory. *Epilobium angustifolium* is a Ranworth plant, and a very conspicuous one: it flowers in August. (This species has a predilection for peat-bogs and for fens. It also thrives well on rocks above Killin, Breadalbane, a situation probably above 2000 feet in altitude; here it is on a level with the coast.)

Bupleurum rotundifolium grows sparingly in chalky-marly cornfields about Crostwer and Korstead. It is one of the rarest of our plants.

We are comparatively rich in rare *Compositæ*; for example, we have *Crepis paludosa*, a plant which a *neophytogeographer* would describe as *new* to the Ouse province. It has probably been here since Noah's Flood; it is certainly here now, in moist woods near Knapton and Cromer, and it bears no marks of being a recent importation, like the *Iberis amara*, *Arenaria balearica* at Moncrieffe, etc., and some of the species lately reported from Wandsworth.

Diotis maritima is indeed a gem, a rare flower of our Suffolk shore, near Orford. May its numbers never be fewer, but on the other hand may it increase and multiply along both the southern as well as on the eastern coasts!

Senecio paludosus is only occasionally found in bogs at Ranworth. It is a large handsome plant, with conspicuous flowers, and easily distinguishable from our other British *Ragweeds*. (We wish some Norfolk correspondent would tell us, or rather the readers of the 'Phytologist,' where *Senecio palustris* (*Cineraria palustris*) and *Sonchus palustris* grow in their bounds. They have been recently told of a good locality for the latter.)

Artemisia campestris is found, though rarely, on heaths near Yarmouth. Is this a new station for this rare plant? The Thetford locality has been long known.

Campanula latifolia has been detected in an osier-bed?, or alder-wood, called Laseys, at Ranworth, a fine plant with large, handsome, pale-blue flowers. I first observed it here in July, 1857.

Andromeda polifolia occasionally appears at Ranworth. I observed it in June 28th, 1855, and 1857, when it was in flower.

I also found *Pyrola rotundifolia* in flower, October 19th, in a wood by the side of a lake at Fritton, south-west of Yarmouth; also in bogs at Bardwell, among seeds, and growing out of what are called gnat-hills. Here there are large tumps of *Carex paniculata*, where *Lastrea spinulosa* abounds. Sometimes *L.*

cristata and *L. Thelypteris* are to be found growing together in one hassocky, bunched elevation.

Gentiana Pneumonanthe I found, though rare, on moory heaths, at Herringfleet, two miles from Mildenhall, Suffolk, and at Beltin, Suffolk, five miles south-west of Yarmouth, on September 28th, 1860.

Villarsia nymphæoides I saw in some muddy ditches at Ranworth, growing with *Sagittaria sagittifolia*.

Anagallis tenella is common in the bogs about Ranworth.

Rumex pratensis occurs occasionally at Ranworth, Horning, and Fritton, associated with *Epipactis palustris*.

Verbascum Lychnitis is on the East Suffolk railway, and *Lysimachia thyrsiflora* at Surlingham Broad side, Norwich.

Habenaria viridis grows on hilly pastures near Aldeby. It is rare here as it is everywhere. I saw it in flower July 19th, 1860.

Fritillaria Meleagris is occasionally seen in meadows, Burgh St. Peter's.

Colchicum autumnale is common in meadows near Ranworth, and occasionally in meadows at Burgh St. Peter's and Aldeby.

Carex dioica grows in springy bogs, at Ranworth; it flowers in May. It is associated with *C. curta* and other *Carices*.

Setaria viridis is now and then observed in fields about Thorpe, near Norwich, but it is not common; it flowers in August.

Gastridium lendigerum is found sparingly near foul, mephitic ditches at Gillingham, near Beccles. (It is to be hoped that the sanitary commissioners will attend to this matter.)

This rare grass is also met with near a railway crossing at Aldeby.

Poa bulbosa abounds at Yarmouth in May.

Lastrea cristata grows sparingly in bogs at Fritton, and near the *Broad*, at Surlingham, near Norwich.

BOTANY OF SPAIN.

A Few Days' Botanizing in the North-Eastern Provinces of Spain, in April and May, 1860.

NO. II. TARRAGONA, VALENCIA, ZARAGOZA.

The place in Spain which added most to my Barcelona stock

of plants, was Tarragona; a fortified town, picturesquely situated on a hill overlooking a broad space of sea from north to south, and commanding westward a wide stretch of uneven rocky ground, in which cultivation and waste are blended in varying proportions. I will not lengthen the record by speaking again of any plant mentioned in my former paper, except *Dorycnium suffruticosum*, *Lonicera implexa*, and *Phagnalon saxatile*, all of which I here found in flower; and except the Prickly Pear and Palmetto, which I have already mentioned that I first saw at this place. Here too was another *Cistus*, with large white flowers, *Cistus umbellatus*, a *Helianthemum* of some writers; and growing copiously on a wild rocky hill, the original *Gladiolus* of our flower-gardens, *G. byzantinus*, far more beautiful, to my thinking, than the spotted ones of modern introduction. This plant I had only before seen wild at Florida, near Syracuse. It is not a plant of the French Flora, though France can boast of several species of this fine genus. The one I best know, *G. communis* of Bertoloni, *segetum* of Grenier and Godron, which grows profusely in the corn at Avignon and elsewhere, is of a paler colour than *G. byzantinus*, with petals of more unequal length, and hung more loosely together. The *G. communis* of the French botanists I do not know.

But Tarragona supplied too great a harvest of botanical treasures to be catalogued without some sort of arrangement. To begin, then, at the beginning, I will first mention *Clematis Flammula*, the decumbent though climbing species of the south of Europe; where however the more luxuriant *Clematis* of our own hedges and thickets is also not unfrequent. This last I do not remember seeing in Spain, except at Monserrat. Of Fumitories there were two, the *parviflora*, and a less common plant, with a dense oval head of dark flowers, *γ. spicata*. The remaining *Thalamifloræ* which I noticed were those common *garrigue* *Helianthemums*, the white *H. pilosum* (allied to *polifolium*) and that very variable plant, the bright-yellow *H. italicum*; three species of *Silene*, *S. quinquevulnera*, *S. hispida* (I believe) of Desfontaines, recognized by the 'Flore de France' only as a Corsican plant, and a third (*S. turbinata*), not in the French Flora at all, which will be more particularly mentioned hereafter; *Allhæa hirsuta*, a plant rather general in the South; *Erodium romanum*, still more common, resembling a large-flowered *E.*

cicutarium, without a stem; and one of the common Rues of the south of France (with the characteristic odour), *Ruta angustifolia*. Of *Leguminosæ* there was still greater variety. To many of the Barcelona species were added *Lotus edulis*, with its thick curved pods, a plant which I had found in Sicily; and a *Melilotus*, I believe *sulcata*; the densely downy *Medicago marina*, the only beach plant in flower here at this period of the season; a *Scorpiurus*, probably the common species, *S. subvillosa*, though its backward condition disables me from speaking positively; and a *Hippocrepis*, much more curious than the *comesa*, *H. ciliata*, whose slender, jointed, crescent-shaped pods are scooped out on the inner side in bay-like, nearly circular indentations, penetrating beyond the middle of the breadth, and justifying the title of Horse-shoe Vetch. This plant was long confounded with *H. multisiliquosa*, L., which it seems is a different species; but those who have seen our plant side by side with *H. unisiliquosa*, will feel tempted to persist in giving it the contrasted name. The next in order of the plants which I noticed, is the blue *Asperula arvensis*. The *Compositæ* included the common Immortelle of the *garrigues*, *Helichrysum Stæchas*; a *Santolina* (I believe) which I also found further north, but which I will not venture to name; the brilliant *Chrysanthemum coronarium*, only coming into flower; a most delicate little plant, the annual Daisy (*Bellis annua*), more daintily coloured but more humble-looking than even its better-known sister; and lastly, one of the most curious of the *Cynarææ*, *Leuzea conifera*, not six inches high, with a flower occupying half its length, like a yellowish-white cone, with a small opening at the top. The *Corollifloræ* were many and interesting: the exquisitely coloured *Anagallis cærulea*; the splendid *Convolvulus altheoides*, in size resembling *C. sepium*, L., in colour, *C. arvensis*; the creeping *Echium calycinum*, one of the least beautiful of its handsome tribe; our common Snapdragon, *Antirrhinum majus*, which here and in Languedoc is as splendid as in English flower-gardens; *Linaria triphyllos*, a plant of cultivated ground, and its taller but less conspicuous sister, *L. simplex*; one of the handsomest of the genus *Orobanche*, *O. speciosa*, in the same field as the *Linaria* first mentioned; *Plantago Lagopus*, and the rarer and more curious *P. albicans*; and six of the family *Labiataæ*, being *Mentha rotundifolia*; the common Lavender, *Lavandula Spica*; that common plant of the

south of Europe, *Sideritis romana*; *Salvia clandestina* (otherwise *horminoides*), an ally of *S. verbenaca*; *Micromeria græca*, one of a small-leaved, wiry genus, detached from *Satureia*, and characteristic of the extreme south of Europe; and, last of all, the magnificent *Phlomis Lychnites*, covered with a grey down all over, except the large bright-yellow flowers. This genus counts, I believe, only three European species, which are at the head of European *Labiatae* in the size and brilliancy combined with the multitude of their flowers. One of the species, *P. Herba-venti*, is widely and rather concisely branched, forming, though herbaceous, a kind of small bush; it is found at Montpellier and other places in the south of France. Our species, *P. Lychnites*, has a simple stem, with great whorls of flowers, like those of the taller and still more magnificent ornament of Sicily and Greece, *P. fruticosa*. The *Apetalae* I noticed were *Euphorbia flavicoma*, *digitalis*, and *Paralias* (the last not yet in flower); an *Urtica* of the *pilulifera* section, possibly *pilulifera* itself, which I did not stop to determine; and the picturesque *Passerina hirsuta*, not a beach plant, but seldom or never found far from the sea, and which in February hangs in profusion from the cliffs of Bagnoli, on the approach to Pozzuoli from Naples. Of Monocotyledonous plants the handsomest I saw, except the *Gladiolus*, was a plant looking like a *Scilla* or *Hyacinthus*, and with small pendent flowers, of a bluish colour (if I remember right) while growing, but turning red in drying. The petals, which are united at the base, consist of three shorter and broader, alternating with and included within the same number of longer. This I decided to be *Uropetalum serotinum* (*Lachenalia serotina* of some authors). I found but one specimen. A more singular plant was an Asparagus, of which more hereafter. These, with *Juncus acutus*, on wet ground near the sea, and two grasses, *Gastridium lendigerum* and the beautiful *Lamarckia aurea* (which, in spite of its name, is, at least until withered, rather silvery than golden), complete the record of the best and richest herborization (that of Monserrat excepted) which I have made on Spanish soil. Properly however it was not one, but two herborizations on the same ground, at an interval of about a fortnight.

From each of the other centres at which I halted in my journey, I made but one botanizing expedition. The results however were not without interest.

The plain, well named Huerta (garden) of Valencia, has been often described. It is a rich mass of cultivation, fertilized by the elaborate system of irrigation for which it is indebted to the Moors, consisting of canals traversing the country above its level, from which large or small ramifications are carried into or along the edge of every field. The rivers, which from the shortness of their course are nowhere considerable, are so drained by the canals that in summer they may be crossed dry-shod as they approach the sea. A region of this character is seldom favourable to the botanist; and the mountains, if that name may be given to the heights which support the great plateau of Castille, are too far off to be within reach of an ordinary excursion. The wild plants therefore were chiefly those of cultivated ground, or of the damp borders of streams; of the former class, two were especially abundant and conspicuous: *Allium roseum*, which had delighted me on the hills of Patras and elsewhere, with its umbels of brilliant flowers; and a tall large-flowered *Silene*, with something of the port and colour of the elegant *Lychnis Viscaria*. This plant, which is not in the French Flora, I make out to be *S. turbinata* of Gussone. Of more common plants I observed *Anagallis arvensis*, and a frequent corn plant in eastern and southern Europe, *Saponaria Vaccaria*. The waterside species which I remarked were *Euphorbia pilosa*, a large species, in a dense greyish coat, which frequents similar situations in the valley of the Rhine, and other parts of the South; the universal *Iris Pseudacorus*; and a gigantic *Thalictrum*, which I had not the means of determining. This is a poor tale of plants for so southern a region; but after about an hour's walk, I came to a patch of rocky ground, which, being above the region of the irrigation, had remained in the state of *garrigue*, or had only vines and olives growing on it, and this furnished me with plants of a different order and greater variety. Here I first saw the lurid and night-odorous Stock of English greenhouses, *Matthiola tristis*, a plant which also grows in Provence. The *garrigue* abounded with the narrow-leaved and silvery *Convolvulus Cneorum*, bringing reminiscences of Megara and Corinth. A *Hedysarum*, I believe *H. humile*, made its appearance in small quantity, as did the uniformly grey and downy *Mercurialis tomentosa*, unlike the dark-green hue of the two English species, and with its fructification not spiked but clus-

tered or solitary. Here I again saw *Hippocrepis ciliata* and *Smilax aspera*. The decumbent *Alkanna tinctoria* (formerly a *Lithospermum*) spread out as usual its stems close to the ground, with their terminal clusters of blue flowers, and their thick covering of leaves, incrusting underneath with the dense calcareous soil in which the plant delights. In the herbarium it sometimes stains the paper with a violet dye. I found here, though in small quantity, a species not French (*angustifolia*, I believe), of the very southern genus *Sideritis*, which, by its wiry look and the spinous induration of its sepals, speaks plainly of the arid climates in which it flourishes. But the strangest plant I saw was a bushy mass of Thorns, exactly resembling a small furze-bush in winter, when without traces of leaves; until, on looking for the yellow papilionaceous blossoms, I perceived instead a profusion of small greenish hexandrous flowers, pendent on short thin footstalks from near the axillæ of the wiry and thorny sprays projecting from the stem. By the aid of Persoon I identified this as a plant of Spain, and especially of this part of it, *Asparagus horridus*. It is the same which I afterwards found, in my way back, at Tarragona.

The only other noticeable plant which I saw at Valencia was the stately *Asphodelus ramosus*, of which I had seen at Tarragona a few roots (as I believed) still far from flowering. It does not seem to be a common plant in these parts of Spain, though widely spread in the Mediterranean region. It abounds in many parts of Languedoc and Provence, near Rome and in some other parts of Italy; and in Sicily it, together with the Palmetto, covers nearly all the uncultivated ground. I am afraid, indeed, that the meadows, celebrated by poets, from which Proserpine was carried off while gathering flowers with her attendant maidens, were in truth no other than these Asphodel wastes, which, notwithstanding the beauty of the plant, are by no means so pleasing to the eye or the mind as a real English or mountain meadow. This Asphodel is now called by French botanists *A. microcarpus*. It is confined to the hotter districts of Europe. There is another species or race, called by them *A. subalpinus*, which covers in large masses the middle regions of some of the higher Pyrenees, and it is said also of the Alps. On a superficial view this is not distinguishable from the former. *A. albus* is also a French species, and there is another allied to

it, which has only of late become known in France itself, for it is not mentioned by De Candolle. It was seen by the present writer in its native place before the publication of the third volume of Grenier and Godron, in which it is for the first time distinguished and described. It has been named by them *A. sphaerocarpus*, and I will venture to make it the subject of a short digression.

Perhaps English botanists may some day turn their steps towards a region not yet much frequented by them, but which has many claims to their notice,—the peninsula of Brittany. The tour of this province is one of the most attractive short Continental excursions which an Englishman can make. In the first place, it is about the cheapest; a consideration no less important to botanists than to others, their pursuit not being one of those which bring in a golden harvest. The inn charges, when once fairly within the peninsula, are (or were half-a-dozen years ago) less than two-thirds of the ordinary scale of travelling in France. Besides being the cheapest, this excursion is one of the most beautiful of those which are easily and quickly accessible, and its style of beauty is that which English people usually prefer. The interior resembles, more nearly than anything else on the Continent, the wilder and rockier parts of England, while the coast scenery rivals that of Cornwall. The journey also naturally combines with a visit to that corner of the British dominions so interesting to an English botanist and to a political economist, the Channel Islands. The north coast of Brittany has not, as far as I could observe, much of botanical attraction, if we except the neighbourhood of Dinan, which produces *Galeopsis villosa*, *Gratiola officinalis*, *Sinapis Cheiranthus*, *Sedum album*, *reflexum*, and *rubens*, *Tragopogon porrifolius*, and others. But the southern coast, from the peninsula of Penmarch to the Loire, unites the attraction of rare plants with that of its unrivalled Druidical remains. Among these last, the traveller will scarcely fail to visit those of the peninsula of Lœmariaker; and if he does so, it should not be from Auray, but from Vannes, in a boat down the river, and across the gulf or inland sea known as the Mer de Morbihan. Among the numerous islands (the popular imagination reckons three hundred and sixty-five) with which the sea is studded, he will doubtless land on a small one bearing the name of Gâvr Innis, and containing

one of the rarest of Druidical monuments, a chamber entirely covered in, smaller certainly than the remarkable one near Saumur, but excelling it in being subterraneous, and (what is still more important) solitary. This island is full of the Asphodel in question. I was told that it grows on several of the other islands, and that its white flowers (replaced where I saw it in June by red fruits) are the glory in spring of this marine region. The authors of the 'Flore de France' enumerated four other localities, all in the west or west centre of France, but three of these four have a mark of interrogation attached to them by the authors.

(To be continued.)

BOTANY OF BEN LAWERS.

Scarce Alpine Plants met with during a recent Ten Days' Ramble among the Breadalbane Mountains. By JAMES BACKHOUSE, Jun.

Gentiana nivalis. This plant was found in great profusion on Ben Lawers; not, as heretofore, scattered sparingly upon the cliffs, but in hundreds; as many as a dozen sometimes occurring in a square yard. Though rather past its best, some of the brilliant blue flowers were expanded in the morning sunshine.

Woodsia alpina. Thirty-seven tufts of this Fern were counted in about fifteen minutes. Some of the fronds were four inches long.

Phleum alpinum. A solitary example was gathered from a wet ledge on one of the peaks of Ben Lawers. In the same vicinity—

Veronica saxatilis and

Erigeron alpinus were luxuriant.

Saxifraga cernua. Two fine specimens of this species were gathered on the same mountain with *expanded blossoms*. Three or four others had partially developed flowers, and several plants were four to six inches high. It was very abundant, associated with

Draba rupestris and a

Cerastium, which has long been confounded with *C. alpinum*,

but is, I have no doubt, specifically distinct. It is downy, not silky; much more rambling in habit, and has flowers equally large. It is scattered over a large district, including the highest peak of Ben Lawers, and down to the lake on the east of the summit.

Cerastium alpinum occurs in the same region, and in countless thousands over the micaceous mountains of the district; but where mingled with the above-mentioned, it retains its usual characters, and does not, so far as I noticed, show any tendency to intermediate forms.

Juncus castaneus. Sparingly, in very wet places on the Ben Lawers range, and in Glen Lochay; always (?) having a northern aspect.

Myosotis alpestris adorns the high ledges on Ben Lawers with a grand display of its unrivalled blossoms.

Arenaria rubella was abundant among the micaceous shale of the highest "corries" of Ben Lawers.

Cystopteris montana. This Fern was met with on Ben Lawers, occupying the moist ledges of a crag, where access was rather difficult. The fronds were short, not fertile, and but sparingly scattered over a distance of fifty to a hundred feet. On a cliff overlooking Glen Lyon, we found it in great profusion, covering the mossy ledges, for nearly a quarter of a mile, with thousands of fronds. The largest specimens were twelve inches high; one was six to seven inches in width, and several were in fine fructification. Its range of altitude was apparently three to four hundred feet. On the same rocks were *Bartsia alpina* (very luxuriant), *Pyrola rotundifolia*, *Pyrola secunda*; and countless masses of *Saussurea alpina*, *Salix reticulata*, *herbacea*, and *venulosa?*; *Saxifraga oppositifolia*, *S. aizoides*, *Cerastium alpinum*, *Silene acaulis*, *Cherleria sedoides*, *Carex capillaris*, *Dryas octopetala*, and *Sagina saxatilis*.

The micaceous crags of this district are mainly carpeted with *Silene acaulis*, *Sax. oppositifolia* and *aizoides*, *Cerastium alpinum*, and *Cherleria sedoides*. They form the principal herbage; hanging in fine sheets from the rocks, or densely carpeting them with soft green cushions. Intermingled with them may often be seen the nodding heads of *Luzula spicata*, or tufts of the tall and elegant *Carex atrata*, waving in the wind. Close search on the wettest ledges will frequently be rewarded with abundance

of *Juncus biglumis*, while the bogs above yield the black-headed *Carex saxatilis*, *Epilobium anagallidifolium*, and many other interesting things, which amply compensate the botanist for the rain and storms that frequently assail him.

Polystichum Lonchitis abounds almost everywhere in the crevices of rocks, at an elevation of two thousand feet and upwards, frequently associated with

Pseudathyrium alpestre; and on Ben Lawers, with a

Lastrea, of which the fronds are highly divided, so as almost to resemble *Cystop. montana*.

COLLINSON'S NOTES.

(To the Editor of the 'Phytologist'.)

Dear Mr. Editor,—From the same source as that from which I sent you a few notes upon Harefield and other Orchises, viz. some original manuscript notes by the Collinsons (Peter and Michael), I now have the pleasure of communicating a sort of supplement to that paper (see 'Phytologist' for June, 1861, p. 171). The present relates chiefly to many Orchises observed during a visit to and sojourn in Rome, in the year 1770. This paper appears to be entirely in the handwriting of, and is signed by, Michael Collinson. It follows here in the order and in the exact words of the journal.

“June, 1770.—Observed in the gardens of the Capuchin Convent, near Albano, in the wood within the enclosure, the *common Bee Orchis* in full flower, not the least variation from our English kind, and this was the only place in all Italy where I saw it.

“May, 1770.—About a mile or two before we entered Rome, as also at a place a little more remote, and not far from a monument called Nero's Tomb, I observed the *green-winged Bee Orchis*, the same as our English kind, only higher and stronger, and nearly out of flower, growing on the green banks close to the side of the road, where there also grew a noble tall species of *Asphodel*, branched with white flowers in full bloom.

“ June 10th.—About eight miles from Rome, in the road to Tivoli, on the left-hand, a little short of the Solfaterra river, I found the *green-winged Bee Orchis*, in full bloom, growing close to the road, among the bushes. Could perceive no difference between this and the English sort. Brought home roots and specimens with me. It is a most extraordinary circumstance that a *green-winged Bee Orchis* should be in flower so late as the above period in so warm a latitude as the Roman one; it is therefore obvious that there must be some difference between this described species and that I observed before, on the Ronciglione side of Rome, as well as our English species, though I was not able to perceive it.

“ Not far from the above spot, in our way to the Solfaterra lake, famous for its floating islands (though I think very insignificant ones), I was struck with a glorious kind of *Bee* or *Fly Orchis* growing among the bushes, of which I brought away many roots and specimens. The flower was more of the *Fly Orchis* shape than the *Bee*; the wings of a violet-pale-purple; the lip very long; of the *Fly* shape, of a yellowish, rich dark velvet, the middle crossed with a dark purple zone; the leaves resembled those of the *Bee Orchis*, but rather larger. Another very singular *Orchis*, of the *Spur* kind, and with palmated roots, grew in company with the above, of a sweet scent and dingy-purple colour.

“ In May we observed, growing on the banks beside the road leading from Ronciglione into the Campagna of Rome, and just at the entrance into it, a very beautiful kind of *Orchis*, of a rich crimson colour, bulbous-rooted, a most rare species, unlike any known to us. Brought away roots and specimens. As the plant dried, the richness of the colour faded, to my great concern.

“ *Orchis papilionacea?*—In May, 1770, in a noble forest of Oak, Beech and Chestnut, just beyond the lake and town of Bolsena, on the left-hand, in the road to Viterbo, I observed a most curious kind of bulbous-rooted *Orchis*, *O. provincialis?*, of a brownish-yellow colour, a most glorious spike of flowers, growing on the mossy banks in the little glades, at the roots of the trees. Observed the same species a few miles on the other side Bolsena, between that town and Aquapendente, growing in the banks by the roadside, in which banks was also abundance of a

beautiful *Cyclamen*, in full flower about the middle of May. Near Aquapendente, the Honeysuckles that hung on the ever-green Oaks and other trees by the roadside (which harboured numbers of nightingales), dispensed their sweets in abundance. They seemed to be of the early, sweet-scented kind. Near Florence we saw the *yellow Spring Aconite*, and also the *Soldier Orchis* of Parkinson, the same, I mean, which grows in Darent woods, near Dartford, in Kent.

“April 1770.—Observed the *Trago Orchis*, growing close to the Pont du Gard, in Languedoc; and in June we also saw it in full flower among the privet-bushes about one mile from Albano, near Rome. In May, found a most curious crimson bulbous-rooted *Orchis* near Lake Agnano, at Naples.*

“At Valdagno, under the Alps, a few miles north of Vicenza and Verona, where we resided some weeks, I found, about one mile from the town, on the left-hand, in the road to Recoara, about the middle of July, 1770, a very elegant kind of *Bee Orchis*, with a yellowish lip, and crossed by a zone of a still deeper colour, with white wings, at the ends a little tinged with purple, *Ophrys scolopax*? This beautiful plant, notwithstanding the advanced season of the year, was in full bloom. I also met with it in another place, nearer to the town, not far from the cross, growing upon the dry green banks, above which in many places the rock shows itself. The *broad-leaved Man Orchis* I also saw the seed-vessel of; and a kind of yellow or orange-coloured Lily grew among the bushes, a little higher than the cross.”

Z.

Kew, July 1861.

A brief Notice of William Williams, Botanical Guide to Llanberis, Snowdon, Twll Ddu, etc.

The untimely and melancholy fate of the late W. Williams, of the Victoria Hotel, Llanberis, has been lately noticed in our pages, and must be still fresh in the recollection of our readers. The following statements have been communicated to us by the

* “The roots of this fine plant, which are sent over from thence, have continued to flourish in England for many years.”—(M.C.)

Rector of Llanberis, and by a brother of the deceased, through the medium of our reverend friend the clergyman above-mentioned.

The brother of the deceased supplies the account of his first entrance into active life, and it is here given in his own words, in reply to one which the Rev. Mr. Williams of Llanberis wrote requesting information.

“Llanfair, near Ruthin, July 4th, 1861.

“Rev. Sir,—In reply to your favour respecting my late brother, I can inform you that he was born in the year 1805, in the parish of Llanfwrog, Denbighshire, and went to service at the age of thirteen, and was chiefly engaged as a sub-groom. He served Mr. M. Turner, of Abbot’s Bromley, Staffordshire, as a groom, and here he stayed four years.

“Subsequently he was employed at hotels and inns, viz. by the proprietor of the White Lion, Ruthin, and afterwards at the Black Lion Hotel, Mold, as a general driver. He served in the same capacity at the Penrhyn Arms, Bangor, and also at the Liverpool Arms.

“When he resided at Bangor, he went to school for about six months, and this was all the education he had, and it was obtained at his own expense.

“I feel greatly obliged to you for your inquiries about my late brother. My poor and aged mother is in tolerable health, and desires me to send her best thanks to you for your kindness.”

The Rev. Mr. Williams sent to our Publisher the following particulars, which we offer to our readers as the best account we can give them about W. Williams, the late botanical guide, of Llanberis.

“Llanberis, July 19th, 1861.

“My dear Sir,—I enclose a letter which I have received from a brother of William Williams, containing some particulars of his early life. I have not been able to learn when he first turned his attention to botany; but I have been informed that he received great help from Mr. Babington and the Rev. Mr. Butler in acquiring a knowledge of the rarer plants of this neighbourhood. The oldest guide here tells me that when Mr. Williams began to act as guide, insects and crystals were his *hobby*. He

had resided at Llanberis nearly thirty years, and had ascended Snowdon occasionally three times in the course of the same day.

“I always found him straight-forward, truth-telling, and honest. A different impression of his character from this might be left on the minds of some, who may have read a communication from Mr. John Barton, in the ‘Phytologist’ of January, 1857. But this may be easily explained. Mr. Williams was jealous about the rarer Ferns: not from any mercenary motive; he was jealous for the character of the locality, and did not like it to be robbed of what proved a great attraction to many visitors. To persons whom he *knew*, he never hesitated to show the habitats of the rarer plants.

“He was always ready to assist a poor neighbour, and very charitable. I don’t think he could refuse, if it was in his power, to relieve a fellow-creature in distress. On the last Sunday of his life, he attended the night service at the Independent Chapel. A collection was made for a poor widow, and when the plate was handed to W. Williams, he put down a half-crown and a penny. The holder of the plate, thinking that he had made a mistake, called his attention to the money he had deposited. Williams however said it was all right. It appeared afterwards that he had given all the money he had in the world.

“He was also an affectionate and dutiful son. He visited his aged parents every winter. Somehow or other he was prevented last winter from going to see his mother (his father died about three years ago), but he was very anxious to do so before the busy part of the season commenced. He could not for some time before his death mention her name without shedding tears, and had his life been spared him another week, the last fond wish of his heart would have been gratified. But an all-wise Providence overruled it otherwise. He met with his death by falling from Clogwyn y Garnedd, and his remains were interred close by those of Mr. Frodsham, who was killed by falling from Clogwyn ddu yr Arddu, August, 1859.”

A COMPARATIVE LIST OF BRITISH PLANTS.

Showing the different Names and Species adopted in the four best-known English Works.

The order here followed is that of Babington's 'Manual' (ed. 4), from which the names are in the first instance taken, omitting the species enclosed in brackets.

BABINGTON.	LOND. CAT.	HOOKE & ARNOTT.	BENTHAM.
<i>Rosa rubella.</i>	(Omitted.)	<i>R. rubella.</i>	<i>R. spinosissima.</i>
<i>Rosa spinosissima.</i>	<i>R. spinosissima.</i>	<i>R. spinosissima.</i>	<i>R. spinosissima.</i>
<i>Rosa hibernica.</i>	<i>R. hibernica.</i>	<i>R. hibernica.</i>	<i>R. villosa.</i>
<i>Rosa Wilsoni.</i>	<i>R. Wilsoni.</i>	<i>R. Wilsoni.</i>	<i>A var. (omitted.)</i>
<i>Rosa involuta.</i>	<i>R. involuta.</i>	<i>R. involuta.</i>	<i>R. spinosissima.</i>
<i>Rosa Sabini.</i>	<i>R. Sabini.</i>	<i>R. Sabini.</i>	<i>R. villosa.</i>
<i>Rosa villosa.</i>	<i>R. villosa.</i>	<i>R. villosa.</i>	<i>R. villosa.</i>
<i>Rosa tomentosa.</i>	<i>R. tomentosa.</i>	<i>R. tomentosa.</i>	<i>R. villosa.</i>
<i>Rosa inodora.</i>	<i>R. inodora.</i>	<i>R. inodora.</i>	<i>A var. (omitted.)</i>
<i>Rosa micrantha.</i>	<i>R. micrantha.</i>	<i>R. micrantha.</i>	<i>R. rubiginosa.</i>
<i>Rosa rubiginosa.</i>	<i>R. rubiginosa.</i>	<i>R. rubiginosa.</i>	<i>R. rubiginosa.</i>
<i>Rosa sepium.</i>	<i>R. sepium.</i>	<i>R. sepium.</i>	<i>R. rubiginosa.</i>
<i>Rosa canina.</i>	<i>R. canina.</i>	<i>R. canina.</i>	<i>R. canina.</i>
<i>Rosa bractescens.</i>	<i>R. canina.</i>	<i>R. bractescens.</i>	<i>A var. (omitted)</i>
<i>Rosa cæsia.</i>	<i>R. canina.</i>	<i>R. cæsia.</i>	<i>R. canina.</i>
<i>Rosa systyla.</i>	<i>R. systyla.</i>	<i>R. systyla.</i>	<i>R. canina.</i>
<i>Rosa arvensis.</i>	<i>R. arvensis.</i>	<i>R. arvensis.</i>	<i>R. arvensis.</i>
<i>Cratægus Oxyacantha.</i>	<i>C. Oxyacantha.</i>	<i>C. Oxyacantha.</i>	<i>C. Oxyacantha.</i>
<i>Cotoneaster vulgaris.</i>	<i>C. vulgaris.</i>	<i>C. vulgaris.</i>	<i>C. vulgaris.</i>
<i>Mespilus germanica.</i>	<i>M. germanica.</i>	<i>M. germanica.</i>	<i>M. germanica.</i>
<i>Pyrus communis.</i>	<i>P. communis.</i>	<i>P. communis.</i>	<i>P. communis.</i>
<i>Pyrus Malus.</i>	<i>P. Malus.</i>	<i>P. Malus.</i>	<i>P. Malus.</i>
<i>Pyrus Aucuparia.</i>	<i>P. Aucuparia.</i>	<i>P. Aucuparia.</i>	<i>P. Aucuparia.</i>
<i>Pyrus fennica.</i>	<i>P. Aria.</i>	<i>P. Aria.</i>	<i>P. Aria.</i>
<i>Pyrus Aria.</i>	<i>P. Aria.</i>	<i>P. Aria.</i>	<i>P. Aria.</i>
<i>Pyrus scandica.</i>	<i>P. Aria.</i>	<i>P. Aria.</i>	<i>P. Aria.</i>
<i>Pyrus torminalis.</i>	<i>P. torminalis.</i>	<i>P. torminalis.</i>	<i>P. torminalis.</i>
<i>Lythrum Salicaria.</i>	<i>L. Salicaria.</i>	<i>L. Salicaria.</i>	<i>L. Salicaria.</i>
<i>Lythrum hyssopifolium.</i>	<i>L. hyssopifolium.</i>	<i>L. hyssopifolium.</i>	<i>L. hyssopifolium.</i>
<i>Peplis Portula.</i>	<i>P. Portula.</i>	<i>P. Portula.</i>	<i>P. Portula.</i>
<i>Tamarix anglica.</i>	<i>T. anglica.</i>	<i>T. anglica.</i>	<i>T. gallica.</i>
<i>Epilobium angustifolium.</i>	<i>E. angustifolium.</i>	<i>E. angustifolium.</i>	<i>E. angustifolium.</i>
<i>Epilobium rosmarinifolium.</i>	<i>E. rosmarinifol.</i>	(Excluded.)	(Omitted.)
<i>Epilobium hirsutum.</i>	<i>E. hirsutum.</i>	<i>E. hirsutum.</i>	<i>E. hirsutum.</i>
<i>Epilobium parviflorum.</i>	<i>E. parviflorum.</i>	<i>E. parviflorum.</i>	<i>E. parviflorum.</i>
<i>Epilobium montanum.</i>	<i>E. montanum.</i>	<i>E. montanum.</i>	<i>E. montanum.</i>
<i>Epilobium lanceolatum.</i>	<i>E. lanceolatum.</i>	<i>E. lanceolatum.</i>	<i>E. roseum.</i>
<i>Epilobium roseum.</i>	<i>E. roseum.</i>	<i>E. roseum.</i>	<i>E. roseum.</i>
<i>Epilobium tetragonum.</i>	<i>E. tetragonum.</i>	<i>E. tetragonum.</i>	<i>E. tetragonum.</i>

BABINGTON.	LOND. CAT.	HOOKE & ARNOTT.	BENTHAM.
<i>Epilobium obscurum.</i>	<i>E. tetragonum.</i>	<i>E. tetragonum.</i>	<i>E. tetragonum.</i>
Epilobium palustre.	E. palustre.	E. palustre.	E. palustre.
Epilobium alpinum.	E. alpinum.	E. alpinum.	E. alpinum.
<i>Epilobium anagallidifol.</i>	<i>E. alpinum.</i>	<i>E. alpinum.</i>	<i>E. alpinum.</i>
Epilobium alsinifolium.	E. alsinifolium.	E. alsinifolium.	E. alsinifolium.
Ceuthera biennis.	Ce. biennis.	Ce. biennis.	Ce. bicunis.
<i>Isnardia palustris.</i>	<i>I. palustris.</i>	<i>I. palustris.</i>	<i>Ludwigia palustris.</i>
Cirecea lutetiana.	C. lutetiana.	C. lutetiana.	C. lutetiana.
Cirecea alpina.	C. alpina.	C. alpina.	C. alpina.
Myriophyllum verticillatum.	M. verticillatum.	M. verticillatum.	M. verticillatum.
Myriophyllum spicatum.	M. spicatum.	M. spicatum.	M. spicatum.
<i>Myriophyllum alterniflor.</i>	<i>M. alterniflorum.</i>	<i>M. alterniflorum.</i>	<i>M. spicatum.</i>
Hippuris vulgaris.	H. vulgaris.	H. vulgaris.	H. vulgaris.
Bryonia dioica.	B. dioica.	B. dioica.	B. dioica.
Moutia fontana.	M. fontana.	M. fontana.	M. fontana.
Corrigiola littoralis.	C. littoralis.	C. littoralis.	C. littoralis.
Herniaria glabra.	H. glabra.	H. glabra.	H. glabra.
<i>Herniaria ciliata.</i>	<i>H. glabra.</i>	<i>H. glabra.</i>	<i>H. glabra.</i>
Illecebrum verticillatum.	I. verticillatum.	I. verticillatum.	I. verticillatum.
Polycarpon tetraphyllum.	P. tetraphyllum.	P. tetraphyllum.	P. tetraphyllum.
<i>Lepigonum rubrum.</i>	<i>Spergularia rubra.</i>	<i>Spergularia rubra.</i>	<i>Spergularia rubra.</i>
	<i>Spergularia rupestris.</i>	(Omitted.)	(Omitted.)
<i>Lepigonum marinum.</i>	<i>Spergularia marina.</i>	<i>Spergularia marina.</i>	<i>Spergularia rubra.</i>
Spergula arvensis.	S. arvensis.	S. arvensis.	S. arvensis.
Scleranthus annuus.	S. annuus.	S. annuus.	S. annuus.
Scleranthus perennis.	S. perennis.	S. perennis.	S. perennis.
Tillea muscosa.	T. muscosa.	T. muscosa.	T. muscosa.
Sedum Rhodiola.	S. Rhodiola.	S. Rhodiola.	S. Rhodiola.
Sedum Telephium.	S. Telephium.	S. Telephium.	S. Telephium.
<i>Sedum purpureum.</i>	<i>S. Telephium.</i>	<i>S. Telephium.</i>	<i>S. Telephium.</i>
Sedum villosum.	S. villosum.	S. villosum.	S. villosum.
Sedum album.	S. album.	S. album.	S. album.
Sedum dasyphyllum.	S. dasyphyllum.	S. dasyphyllum.	S. dasyphyllum.
Sedum anglicum.	S. anglicum.	S. anglicum.	S. anglicum.
Sedum acre.	S. acre.	S. acre.	S. acre.
<i>Sedum reflexum.</i>	<i>S. reflexum.</i>	<i>S. reflexum.</i>	<i>S. rupestre.</i>
Sedum rupestre.	S. rupestre.	S. rupestre.	S. rupestre.
<i>Sedum Forsterianum.</i>	<i>S. Forsterianum.</i>	<i>S. Forsterianum.</i>	<i>S. rupestre.</i>
Cotyledon Umbilicus.	C. Umbilicus.	C. Umbilicus.	C. Umbilicus.
Ribes Grossularia.	R. Grossularia.	R. Grossularia.	R. Grossularia.
Ribes alpinum.	R. alpinum.	R. alpinum.	R. alpinum.
Ribes nigrum.	R. nigrum.	R. nigrum.	R. nigrum.
Ribes rubrum.	R. rubrum.	R. rubrum.	R. rubrum.
Saxifraga umbrosa.	S. umbrosa.	S. umbrosa.	S. umbrosa.
<i>Saxifraga elegans.</i>	<i>S. Geum.</i>	<i>Var. or hybrid.</i>	<i>S. Geum.</i>
<i>Saxifraga hirsuta.</i>	<i>S. hirsuta.</i>	<i>Var. or hybrid.</i>	<i>S. Geum.</i>
Saxifraga Geum.	S. Geum.	S. Geum.	S. Geum.

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<i>Saxifraga stellaris.</i>	<i>S. stellaris.</i>	<i>S. stellaris</i>	<i>S. stellaris.</i>
<i>Saxifraga Hireulus.</i>	<i>S. Hireulus.</i>	<i>S. Hireulus.</i>	<i>S. Hireulus.</i>
<i>Saxifraga aizoides.</i>	<i>S. aizoides.</i>	<i>S. aizoides.</i>	<i>S. aizoides.</i>
<i>Saxifraga cæspitosa.</i>	<i>S. cæspitosa.</i>	<i>S. cæspitosa.</i>	<i>S. cæspitosa.</i>
<i>Saxifraga hirta.</i>	<i>S. hirta.</i>	<i>S. hypnoides.</i>	<i>S. hypnoides.</i>
<i>Saxifraga affinis.</i>	<i>S. affinis.</i>	<i>S. hypnoides.</i>	<i>S. hypnoides.</i>
<i>Saxifraga hypnoides.</i>	<i>S. hypnoides.</i>	<i>S. hypnoides.</i>	<i>S. hypnoides.</i>
<i>Saxifraga latevirens.</i>	<i>S. hypnoides.</i>	<i>S. hypnoides.</i>	? <i>A var. (omitted.)</i>
<i>Saxifraga pedatylida.</i>	(<i>Excluded.</i>)	<i>S. geranoides, or error.</i>	
<i>Saxifraga tridactylites.</i>	<i>S. tridactylites.</i>	<i>S. tridactylites.</i>	<i>S. tridactylites.</i>
<i>Saxifraga granulata.</i>	<i>S. granulata.</i>	<i>S. granulata.</i>	<i>S. granulata.</i>
<i>Saxifraga cernua.</i>	<i>S. cernua.</i>	<i>S. cernua.</i>	<i>S. cernua.</i>
<i>Saxifraga rivularis.</i>	<i>S. rivularis.</i>	<i>S. rivularis.</i>	<i>S. rivularis.</i>
<i>Saxifraga nivalis.</i>	<i>S. nivalis.</i>	<i>S. nivalis.</i>	<i>S. nivalis.</i>
<i>Saxifraga oppositifolia.</i>	<i>S. oppositifolia.</i>	<i>S. oppositifolia.</i>	<i>S. oppositifolia.</i>
<i>Chrysosplenium alternifol.</i>	<i>C. alternifolium.</i>	<i>C. alternifolium.</i>	<i>C. alternifolium.</i>
<i>Chrysosplenium oppositifol.</i>	<i>C. oppositifolium.</i>	<i>C. oppositifolium.</i>	<i>C. oppositifolium.</i>
<i>Hydrocotyle vulgaris.</i>	<i>H. vulgaris.</i>	<i>H. vulgaris.</i>	<i>H. vulgaris.</i>
<i>Sanicula europæa.</i>	<i>S. europæa.</i>	<i>S. europæa.</i>	<i>S. europæa.</i>
<i>Astrantia major.</i>	<i>A. major.</i>	(<i>Excluded.</i>)	<i>A. major.</i>
<i>Eryngium maritimum.</i>	<i>E. maritimum.</i>	<i>E. maritimum.</i>	<i>E. maritimum.</i>
<i>Eryngium campestre.</i>	<i>E. campestre.</i>	<i>E. campestre.</i>	<i>E. campestre.</i>
<i>Cicuta virosa.</i>	<i>C. virosa.</i>	<i>C. virosa.</i>	<i>C. virosa.</i>
<i>Apium graveolens.</i>	<i>A. graveolens.</i>	<i>A. graveolens.</i>	<i>A. graveolens.</i>
<i>Petroselinum sativum.</i>	<i>P. sativum.</i>	<i>P. sativum.</i>	<i>P. sativum.</i>
<i>Petroselinum segetum.</i>	<i>P. segetum.</i>	<i>P. segetum.</i>	<i>P. segetum.</i>
<i>Trinia vulgaris.</i>	<i>T. vulgaris.</i>	<i>T. vulgaris.</i>	<i>T. vulgaris.</i>
<i>Helosciadium nodiflorum.</i>	<i>H. nodiflorum.</i>	<i>H. nodiflorum.</i>	<i>H. nodiflorum.</i>
<i>Helosciadium inundatum.</i>	<i>H. nodiflorum.</i>	<i>H. inundatum.</i>	<i>H. inundatum.</i>
<i>Sison Amomum.</i>	<i>S. Amomum.</i>	<i>S. Amomum.</i>	<i>S. Amomum.</i>
<i>Ægopodium Podagraria.</i>	<i>Æ. Podagraria.</i>	<i>Æ. Podagraria.</i>	<i>Æ. Podagraria.</i>
<i>Carum Carui.</i>	<i>C. Carui.</i>	<i>C. Carui.</i>	<i>C. Carui.</i>
<i>Carum verticillatum.</i>	<i>C. verticillatum.</i>	<i>C. verticillatum.</i>	<i>C. verticillatum.</i>
<i>Bunium flexuosum.</i>	<i>B. flexuosum.</i>	<i>B. flexuosum.</i>	<i>B. flexuosum.</i>
<i>Bunium Bulbocastanum.</i>	<i>Carum Bulbocast.</i>	<i>Carum Bulbocast.</i>	<i>Carum Bulbocast.</i>
<i>Pimpinella magna.</i>	<i>P. magna.</i>	<i>P. magna.</i>	<i>P. magna.</i>
<i>Pimpinella Saxifraga.</i>	<i>P. Saxifraga.</i>	<i>P. Saxifraga.</i>	<i>P. Saxifraga.</i>
<i>Sium latifolium.</i>	<i>S. latifolium.</i>	<i>S. latifolium.</i>	<i>S. latifolium.</i>
<i>Sium angustifolium.</i>	<i>S. angustifolium.</i>	<i>S. angustifolium.</i>	<i>S. angustifolium.</i>
<i>Bupleurum tenuissimum.</i>	<i>B. tenuissimum.</i>	<i>B. tenuissimum.</i>	<i>B. tenuissimum.</i>
<i>Bupleurum aristatum.</i>	<i>B. aristatum.</i>	<i>B. aristatum.</i>	<i>B. aristatum.</i>
<i>Bupleurum falcatum.</i>	<i>B. falcatum.</i>	<i>B. falcatum.</i>	<i>B. falcatum.</i>
<i>Bupleurum rotundifolium.</i>	<i>B. rotundifolium.</i>	<i>B. rotundifolium.</i>	<i>B. rotundifolium.</i>
<i>Œnanthe fistulosa.</i>	<i>Œ. fistulosa.</i>	<i>Œ. fistulosa.</i>	<i>Œ. fistulosa.</i>
<i>Œnanthe pimpinelloides.</i>	<i>Œ. pimpinelloides.</i>	<i>Œ. pimpinelloides.</i>	<i>Œ. pimpinelloides.</i>
<i>Œnanthe Lachenalii.</i>	<i>Œ. Lachenalii.</i>	<i>Œ. Lachenalii.</i>	<i>Œ. pimpinelloides.</i>
<i>Œnanthe silaifolia.</i>	<i>Œ. silaifolia.</i>	<i>Œ. silaifolia.</i>	<i>Œ. pimpinelloides.</i>

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<i>Œnanthe crocata.</i>	Œ. <i>crocata.</i>	Œ. <i>crocata.</i>	Œ. <i>crocata.</i>
<i>Œnanthe Phellandrium.</i>	Œ. <i>Phellandrium.</i>	Œ. <i>Phellandrium.</i>	Œ. <i>Phellandrium.</i>
<i>Œnanthe fluviatilis.</i>	Œ. <i>fluviatilis.</i>	Œ. <i>fluviatilis.</i>	Œ. <i>Phellandrium.</i>
<i>Œnanthe Cynapium.</i>	Œ. <i>Cynapium.</i>	Œ. <i>Cynapium.</i>	Œ. <i>Cynapium.</i>
<i>Fœniculum officinale.</i>	<i>F. officinale.</i>	<i>F. vulgare.</i>	<i>F. vulgare.</i>
<i>Seseli Libanotis.</i>	<i>S. Libanotis.</i>	<i>S. Libanotis.</i>	<i>S. Libanotis.</i>
<i>Haloscias scoticum.</i>	<i>Ligusticum scotic.</i>	<i>Ligusticum scotic.</i>	<i>Ligusticum scotic.</i>
<i>Silaus pratensis.</i>	<i>S. pratensis.</i>	<i>S. pratensis.</i>	<i>S. pratensis.</i>
<i>Meum athamanticum.</i>	<i>M. athamanticum.</i>	<i>M. athamanticum.</i>	<i>M. athamanticum.</i>
<i>Critillum maritimum.</i>	<i>C. maritimum.</i>	<i>C. maritimum.</i>	<i>C. maritimum.</i>
<i>Angelica sylvestris.</i>	<i>A. sylvestris.</i>	<i>A. sylvestris.</i>	<i>A. sylvestris.</i>
<i>Peucedanum officinale.</i>	<i>P. officinale.</i>	<i>P. officinale.</i>	<i>P. officinale.</i>
<i>Peucedanum palustre.</i>	<i>P. palustre.</i>	<i>P. palustre.</i>	<i>P. palustre.</i>
<i>Peucedanum Ostruthium.</i>	<i>P. Ostruthium.</i>	<i>P. Ostruthium.</i>	<i>P. Ostruthium.</i>
<i>Pastinaca sativa.</i>	<i>P. sativa.</i>	<i>P. sativa.</i>	<i>P. sativa.</i>
<i>Heraeleum Sphondylium.</i>	<i>H. Sphondylium.</i>	<i>H. Sphondylium.</i>	<i>H. Sphondylium.</i>
<i>Tordylium maximum.</i>	<i>T. maximum.</i>	<i>T. maximum.</i>	<i>T. maximum.</i>
<i>Daucus Carota.</i>	<i>D. Carota.</i>	<i>D. Carota.</i>	<i>D. Carota.</i>
<i>Daucus gemmifer.</i>	<i>D. maritimus.</i>	<i>D. maritimus.</i>	<i>D. Carota.</i>
<i>Caucalis daucoides.</i>	<i>C. daucoides.</i>	<i>C. daucoides.</i>	<i>C. daucoides.</i>
<i>Caucalis latifolia.</i>	<i>C. latifolia.</i>	<i>C. latifolia.</i>	<i>C. latifolia.</i>
<i>Torilis Anthriscus.</i>	<i>T. Anthriscus.</i>	<i>T. Anthriscus.</i>	<i>Caucalis Anthriscus.</i>
<i>Torilis infesta.</i>	<i>T. infesta.</i>	<i>T. infesta.</i>	<i>Caucalis infesta.</i>
<i>Torilis nodosa.</i>	<i>T. nodosa.</i>	<i>T. nodosa.</i>	<i>Caucalis nodosa.</i>
<i>Scandix Pecten-Veneris.</i>	<i>S. Pecten.</i>	<i>S. Pecten.</i>	<i>S. Pecten.</i>
<i>Anthriscus sylvestris.</i>	<i>A. sylvestris.</i>	<i>A. sylvestris.</i>	<i>Cherophyllum sylv.</i>
<i>Anthriscus Cerefolium.</i>	<i>A. Cerefolium.</i>	<i>A. Cerefolium.</i>	(Cultivated.)
<i>Anthriscus vulgaris.</i>	<i>A. vulgaris.</i>	<i>A. vulgaris.</i>	<i>Cherophyl. Anthris.</i>
<i>Cherophyllum temulum.</i>	<i>C. temulentum.</i>	<i>C. temulentum.</i>	<i>C. temulum.</i>
<i>Myrrhis odorata.</i>	<i>M. odorata.</i>	<i>M. odorata.</i>	<i>M. odorata.</i>
<i>Echinophora spinosa.</i>	(Excluded.)	<i>E. spinosa.</i>	(Excluded.)
<i>Conium maculatum.</i>	<i>C. maculatum.</i>	<i>C. maculatum.</i>	<i>C. maculatum.</i>
<i>Phyospermum cornubiense.</i>	<i>P. cornubiense.</i>	<i>P. cornubiense.</i>	<i>P. cornubiense.</i>
<i>Smyrnum Olusatrum.</i>	<i>S. Olusatrum.</i>	<i>S. Olusatrum.</i>	<i>S. Olusatrum.</i>
<i>Coriandrum sativum.</i>	<i>C. sativum.</i>	<i>C. sativum.</i>	<i>C. sativum.</i>
<i>Adoxa Moschatellina.</i>	<i>A. Moschatellina.</i>	<i>A. Moschatellina.</i>	<i>A. Moschatellina.</i>
<i>Hedera Helix.</i>	<i>H. Helix.</i>	<i>H. Helix.</i>	<i>H. Helix.</i>
<i>Cornus sanguinea.</i>	<i>C. sanguinea.</i>	<i>C. sanguinea.</i>	<i>C. sanguinea.</i>
<i>Cornus suecica.</i>	<i>C. suecica.</i>	<i>C. suecica.</i>	<i>C. suecica.</i>
<i>Viscum album.</i>	<i>V. album.</i>	<i>V. album.</i>	<i>V. album.</i>
<i>Sambucus Ebulus.</i>	<i>S. Ebulus.</i>	<i>S. Ebulus.</i>	<i>S. Ebulus.</i>
<i>Sambucus nigra.</i>	<i>S. nigra.</i>	<i>S. nigra.</i>	<i>S. nigra.</i>
<i>Viburnum Lantana.</i>	<i>V. Lantana.</i>	<i>V. Lantana.</i>	<i>V. Lantana.</i>
<i>Viburnum Opulus.</i>	<i>V. Opulus.</i>	<i>V. Opulus.</i>	<i>V. Opulus.</i>
<i>Lonicera Caprifolium.</i>	<i>L. Caprifolium.</i>	<i>L. Caprifolium.</i>	<i>L. Caprifolium.</i>
<i>Lonicera Periclymenum.</i>	<i>L. Periclymenum.</i>	<i>L. Periclymenum.</i>	<i>L. Periclymenum.</i>
<i>Lonicera Xylosteum.</i>	<i>L. Xylosteum.</i>	<i>L. Xylosteum.</i>	<i>L. Xylosteum.</i>

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<i>Linnæa borealis.</i>	L. borealis.	L. borealis.	L. borealis.
<i>Sherardia arvensis.</i>	S. arvensis.	S. arvensis.	S. arvensis.
<i>Asperula cynanchica.</i>	A. cynanchica.	A. cynanchica.	A. cynanchica.
<i>Asperula odorata.</i>	A. odorata.	A. odorata.	A. odorata.
<i>Galium boreale.</i>	G. boreale.	G. boreale.	G. boreale.
<i>Galium cruciatum.</i>	G. cruciatum.	G. erneiatum.	G. Cruciatum.
<i>Galium tricorne.</i>	G. tricorne.	G. tricorne.	G. tricorne.
<i>Galium Aparine.</i>	G. Aparine.	G. Aparine.	G. Aparine.
<i>Galium spurium.</i>	(Excluded.)	G. spurium.	G. Aparine.
<i>Galium parisiense.</i>	G. anglicum.	G. parisiense.	G. parisiense.
<i>Galium erectum.</i>	G. erectum.	G. erectum.	G. Mollugo.
<i>Galium Mollugo.</i>	G. Mollugo.	G. Mollugo.	G. Mollugo.
<i>Galium verum.</i>	G. verum.	G. verum.	G. verum.
<i>Galium saxatile.</i>	G. saxatile.	G. saxatile.	G. saxatile.
<i>Galium montanum.</i>	G. sylvestre.	G. saxatile.	G. saxatile.
<i>Galium commutatum.</i>	G. sylvestre.	G. saxatile.	G. saxatile.
<i>Galium sylvestre.</i>	G. sylvestre.	G. pusillum.	G. saxatile.
<i>Galium uliginosum.</i>	G. uliginosum.	G. uliginosum.	G. uliginosum.
<i>Galium palustre.</i>	G. palustre.	G. palustre.	G. palustre.
<i>Galium elongatum.</i>	G. palustre.	G. palustre.	G. palustre.
<i>Rubia peregrina.</i>	R. peregrina.	R. peregrina.	R. peregrina.
<i>Centranthus ruber.</i>	C. ruber.	C. ruber.	C. ruber.
<i>Valeriana officinalis.</i>	V. officinalis.	V. officinalis.	V. officinalis.
<i>Valeriana sambucifolia.</i>	V. officinalis.	V. officinalis.	V. officinalis.
<i>Valeriana pyrenaica.</i>	V. pyrenaica.	V. pyrenaica.	V. pyrenaica.
<i>Valeriana dioica.</i>	V. dioica.	V. dioica.	V. dioica.
<i>Valerianella olitoria.</i>	Fedia olitoria.	Fedia olitoria.	V. olitoria.
<i>Valerianella carinata.</i>	Fedia carinata.	Fedia carinata.	V. carinata.
<i>Valerianella Auricula.</i>	Fedia Auricula.	Fedia Auricula.	V. Auricula.
<i>Valerianella dentata.</i>	Fedia dentata.	Fedia dentata.	V. dentata.
<i>Valerianella eriocarpa.</i>	(Excluded.)	F. dentata.	V. dentata.
<i>Dipsacus sylvestris.</i>	D. sylvestris.	D. sylvestris.	D. sylvestris.
<i>Dipsacus pilosus.</i>	D. pilosus.	D. pilosus.	D. pilosus.
<i>Knautia arvensis.</i>	K. arvensis.	K. arvensis.	Scabiosa arvensis.
<i>Scabiosa succisa.</i>	S. succisa.	S. succisa.	S. succisa.
<i>Scabiosa Columbaria.</i>	S. Columbaria.	S. Columbaria.	S. Columbaria.
<i>Eupatorium cannabinum.</i>	E. cannabinum.	E. cannabinum.	E. cannabinum.
<i>Petasites vulgaris.</i>	P. vulgaris.	P. vulgaris.	Tassilago Petasites.
<i>Tussilago Farfara.</i>	T. Farfara.	T. Farfara.	T. Farfara.
<i>Aster Tripolium.</i>	A. Tripolium.	A. Tripolium.	A. Tripolium.
<i>Erigeron canadensis.</i>	E. canadensis.	E. canadensis.	E. canadensis.
<i>Erigeron acris.</i>	E. acris.	E. acris.	E. acris.
<i>Erigeron alpinus.</i>	E. alpinus.	E. alpinus.	E. alpinus.
<i>Bellis perennis.</i>	B. perennis.	B. perennis.	B. perennis.
<i>Solidago Virgaurea.</i>	S. Virgaurea.	S. Virgaurea.	S. Virga-aurea.
<i>Linomyris vulgaris.</i>	Chrysocoma Linomyris.	L. vulgaris.	L. vulgaris.
<i>Iunla Helenium.</i>	I. Helenium.	I. Helenium.	I. Helenium.

BABINGTON.	LOND. CAT.	HOOKE & ARNOTT.	BENTHAM.
<i>Inula Conyza.</i>	I. Conyza.	I. Conyza.	I. Conyza.
<i>Inula erithmoides.</i>	I. erithmoides.	I. erithmoides.	I. erithmoides.
<i>Pulicaria vulgaris.</i>	<i>P. vulgaris.</i>	<i>P. vulgaris.</i>	<i>Inula Pulicaria.</i>
<i>Pulicaria dysenterica.</i>	<i>P. dysenterica.</i>	<i>P. dysenterica.</i>	<i>Inula dysenterica.</i>
<i>Bidens tripartita.</i>	B. tripartita.	B. tripartita.	B. tripartita.
<i>Bidens cernua.</i>	B. cernua.	B. cernua.	B. cernua.
<i>Anthemis arvensis.</i>	A. arvensis.	A. arvensis.	A. arvensis.
<i>Anthemis Cotula.</i>	A. Cotula.	A. Cotula.	A. Cotula.
<i>Anthemis nobilis.</i>	A. nobilis.	A. nobilis.	A. nobilis.
<i>Achillea Ptarmica.</i>	A. Ptarmica.	A. Ptarmica.	A. Ptarmica.
<i>Achillea tomentosa.</i>	(Excluded.)	A. tomentosa.	(Excluded.)
<i>Achillea Millefolium.</i>	A. Millefolium.	A. Millefolium.	A. Millefolium.
<i>Achillea tanacetifolia.</i>	(Excluded.)	A. tanacetifolia.	(Excluded.)
<i>Diotis maritima.</i>	D. maritima.	D. maritima.	D. maritima.
<i>Chrysanthemum Leucanth.</i>	C. Leucanthemum.	C. Leucanthemum.	C. Leucanthemum.
<i>Chrysanthemum segetum.</i>	C. segetum.	C. segetum.	C. segetum.
<i>Matricaria Parthenium.</i>	<i>Pyrethrum Parth.</i>	<i>M. Parthenium.</i>	<i>Chrys. Parthenium.</i>
<i>Matricaria inodora.</i>	<i>Pyrethrum inodora.</i>	<i>Matricaria inodor.</i>	<i>Chrysan. inodorum.</i>
<i>Matricaria Chamomilla.</i>	M. Chamomilla.	M. Chamomilla.	M. Chamomilla.
<i>Artemisia Absinthium.</i>	A. Absinthium.	A. Absinthium.	A. Absinthium.
<i>Artemisia campestris.</i>	A. campestris.	A. campestris.	A. campestris.
<i>Artemisia vulgaris.</i>	A. vulgaris.	A. vulgaris.	A. vulgaris.
<i>Artemisia maritima.</i>	A. maritima.	A. maritima.	A. maritima.
<i>Tanacetum vulgare.</i>	T. vulgare.	T. vulgare.	T. vulgare.
<i>Filago germanica.</i>	<i>F. germanica.</i>	<i>F. germanica.</i>	<i>Gnapha. german.</i>
<i>Filago apiculata.</i>	<i>F. apiculata.</i>	<i>F. germanica.</i>	<i>Gnapha. german.</i>
<i>Filago spathulata.</i>	<i>F. spathulata.</i>	<i>F. germanica.</i>	<i>Gnapha. german.</i>
<i>Filago minima.</i>	<i>F. minima.</i>	<i>F. minima.</i>	<i>Gnapha. arvense.</i>
<i>Filago gallica.</i>	<i>F. gallica.</i>	<i>F. gallica.</i>	<i>Gnaph. gallicum.</i>
<i>Gnaphalium luteo-album.</i>	"Sarnian."	G. luteo-album.	G. luteo-album.
<i>Gnaphalium uliginosum.</i>	G. uliginosum.	G. uliginosum.	G. uliginosum.
<i>Gnaphalium sylvaticum.</i>	G. sylvaticum.	G. sylvaticum.	G. sylvaticum.
<i>Gnaphalium norvegicum.</i>	<i>G. norvegicum.</i>	<i>G. sylvaticum.</i>	<i>G. sylvaticum.</i>
<i>Gnaphalium supinum.</i>	G. supinum.	G. supinum.	G. supinum.
<i>Antennaria dioica.</i>	<i>Gnapha. dioicum.</i>	<i>Antennaria dioica.</i>	<i>Gnapha. dioicum.</i>
<i>Antennaria margaritacea.</i>	<i>Gnapha. margarit.</i>	<i>Antennaria marg.</i>	<i>Gnapha. margarit.</i>
<i>Doronicum Pardalianches.</i>	D. Pardalianches.	D. Pardalianches.	D. Pardalianches.
<i>Doronicum plantagineum.</i>	D. plantagineum.	D. plantagineum.	D. plantagineum.
<i>Senecio vulgaris.</i>	S. vulgaris.	S. vulgaris.	S. vulgaris.
<i>Senecio viscosus.</i>	S. viscosus.	S. viscosus.	S. viscosus.
<i>Senecio sylvaticus.</i>	S. sylvaticus.	S. sylvaticus.	S. sylvaticus.
<i>Senecio squalidus.</i>	S. squalidus.	S. squalidus.	S. squalidus.
<i>Senecio eruceifolius.</i>	<i>S. eruceifolius.</i>	<i>S. tenuifolius.</i>	<i>S. eruceifolius.</i>
<i>Senecio Jacobæa.</i>	S. Jacobæa.	S. Jacobæa.	S. Jacobæa.
<i>Senecio aquaticus.</i>	S. aquaticus.	S. aquaticus.	S. aquaticus.
<i>Senecio paludosus.</i>	S. paludosus.	S. paludosus.	S. paludosus.
<i>Senecio saracenicus.</i>	S. saracenicus.	S. saracenicus.	S. saracenicus.

BABINGTON.	LOND. CAT.	HOOKE & ARNOTT.	BENTHAM.
<i>Senecio palustris.</i>	<i>Cineraria palustris.</i>	<i>Senecio palustris.</i>	<i>Senecio palustris.</i>
<i>Senecio campestris.</i>	<i>Cineraria campest.</i>	<i>Senecio campest.</i>	<i>Senecio campestris.</i>
Saussurea alpina.	S. alpina.	S. alpina.	S. alpina.
Carlina vulgaris.	C. vulgaris.	C. vulgaris.	C. vulgaris.
<i>Arctium tomentosum.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>
<i>Arctium majus.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>
<i>Arctium intermedium.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>
<i>Arctium minus.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>
<i>Arctium pubens.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>	<i>A. Lappa.</i>
Serratula tinctoria.	S. tinctoria.	S. tinctoria.	S. tinctoria.
Centaurea nigra.	C. nigra.	C. nigra.	C. nigra.
<i>Centaurea nigrescens.</i>	<i>C. nigrescens.</i>	<i>C. nigrescens.</i>	<i>C. nigra.</i>
Centaurea Cyanus.	C. Cyanus.	C. Cyanus.	C. Cyanus.
Centaurea Scabiosa.	C. Scabiosa.	C. Scabiosa.	C. Scabiosa.
Centaurea solstitialis.	C. solstitialis.	C. solstitialis.	C. solstitialis.
Centaurea Calcitrapa.	C. Calcitrapa.	C. Calcitrapa.	C. Calcitrapa.
Onopordum Acanthium.	O. Acanthium.	O. Acanthium.	O. Acanthium.
Carduus nutans.	C. nutans.	C. nutans.	C. nutans.
<i>Carduus crispus.</i>	<i>C. acanthoides.</i>	<i>C. acanthoides.</i>	<i>C. acanthoides.</i>
<i>Carduus tenuiflorus.</i>	<i>C. tenuiflorus.</i>	<i>C. tenuiflorus.</i>	<i>C. pycnocephalus.</i>
<i>Carduus lanceolatus.</i>	<i>C. lanceolatus.</i>	<i>Cnicus lanceol.</i>	<i>Carduus lanceol.</i>
<i>Carduus eriophorus.</i>	<i>C. eriophorus.</i>	<i>Cnicus eriophorus.</i>	<i>Carduus eriophorus.</i>
<i>Carduus arvensis.</i>	<i>C. arvensis.</i>	<i>Cnicus arvensis.</i>	<i>Carduus arvensis.</i>
<i>Carduus palustris.</i>	<i>C. palustris.</i>	<i>Cnicus palustris.</i>	<i>Carduus palustris.</i>
<i>Carduus pratensis.</i>	<i>C. pratensis.</i>	<i>Cnicus pratensis.</i>	<i>Carduus pratensis.</i>
<i>Carduus tuberosus.</i>	<i>C. tuberosus.</i>	<i>Cnicus tuberosus.</i>	<i>Carduus tuberosus.</i>
<i>Carduus acaulis.</i>	<i>C. acaulis.</i>	<i>Cnicus acaulis.</i>	<i>Carduus acaulis.</i>
<i>Carduus heterophyllus.</i>	<i>C. heterophyllus.</i>	<i>Cnicus heterophyll.</i>	<i>Carduus heterophyll.</i>
<i>Silybum Marianum.</i>	<i>Carduus Marianus.</i>	<i>Carduus Marianus.</i>	<i>Carduus Marianus.</i>
Lapsana communis.	L. communis.	L. communis.	L. communis.
<i>Arnoseris pusilla.</i>	<i>A. pusilla.</i>	<i>Lapsana pusilla.</i>	<i>Arnoseris pusilla.</i>
Cichorium Intybus.	C. Intybus.	C. Intybus.	C. Intybus.
Hypochæris glabra.	H. glabra.	H. glabra.	H. glabra.
Hypochæris radicata.	H. radicata.	H. radicata.	H. radicata.
Hypochæris maculata.	H. maculata.	H. maculata.	H. maculata.
<i>Thrinicia hirta.</i>	<i>T. hirta.</i>	<i>T. hirta.</i>	<i>Leontodon hirtus.</i>
<i>Apargia hispida.</i>	<i>A. hispida.</i>	<i>A. hispida.</i>	<i>Leontodon hispidus.</i>
<i>Apargia autumnalis.</i>	<i>A. autumnalis.</i>	<i>A. autumnalis.</i>	<i>Leontodon autumn.</i>
<i>Tragopogon minor.</i>	<i>T. pratensis.</i>	<i>T. pratensis.</i>	<i>T. pratense.</i>
Tragopogon pratensis.	T. pratensis.	T. pratensis.	T. pratense.
Tragopogon porrifolius.	T. porrifolius.	T. porrifolius.	T. porrifolium.
Pieris hieracioides.	P. hieracioides.	P. hieracioides.	P. hieracioides.
Helminthia echiioides.	H. echiioides.	H. echiioides.	H. echiioides.
Lactuca saligna.	L. saligna.	L. saligna.	L. saligna.
<i>Lactuca virosa.</i>	<i>L. virosa.</i>	<i>L. virosa.</i>	<i>L. Scariola.</i>
Lactuca Scariola.	L. Scariola.	L. Scariola.	L. Scariola.
Lactuca muralis.	L. muralis.	L. muralis.	L. muralis.

BABINGTON.	LOND. CAT.	HOOKE & ARNOTT.	BENTHAM.
<i>Leontodon Taraxacum.</i>	<i>Taraxicum officinale.</i>	<i>Leontodon Tarax.</i>	<i>Tarax. Dens-leonis.</i>
<i>Sonchus oleraceus.</i>	<i>S. oleraceus.</i>	<i>S. oleraceus.</i>	<i>S. oleraceus.</i>
<i>Sonchus asper.</i>	<i>S. asper.</i>	<i>S. asper.</i>	<i>S. oleraceus.</i>
<i>Sonchus arvensis.</i>	<i>S. arvensis.</i>	<i>S. arvensis.</i>	<i>S. arvensis.</i>
<i>Sonchus palustris.</i>	<i>S. palustris.</i>	<i>S. palustris.</i>	<i>S. palustris.</i>
<i>Mulgedium alpinum.</i>	<i>M. alpinum.</i>	<i>M. alpina.</i>	<i>Sonchus alpinus.</i>
<i>Crepis taraxacifolia.</i>	<i>Borkhausia tarara.</i>	<i>Borkhausia tarara.</i>	<i>Crepis taraxacif.</i>
<i>Crepis fetida.</i>	<i>Borkhausia fetida.</i>	<i>Borkhausia fetida.</i>	<i>Crepis fetida.</i>
<i>Crepis virens.</i>	<i>C. virens.</i>	<i>C. virens.</i>	<i>C. virens.</i>
<i>Crepis biennis.</i>	<i>C. biennis.</i>	<i>C. biennis.</i>	<i>C. biennis.</i>
<i>Crepis succisæfolia.</i>	<i>C. succisæfolia.</i>	<i>C. succisæfolia.</i>	<i>C. hieracioides.</i>
<i>Crepis paludosa.</i>	<i>C. paludosa.</i>	<i>C. paludosa.</i>	<i>C. paludosa.</i>
<i>Hieracium Pilosella.</i>	<i>H. Pilosella.</i>	<i>H. Pilosella.</i>	<i>H. Pilosella.</i>
<i>Hieracium aurantiacum.</i>	<i>H. aurantiacum.</i>	<i>H. aurantiacum.</i>	Not established.
<i>Hieracium alpinum.</i>	<i>H. alpinum.</i>	<i>H. alpinum.</i>	<i>H. alpinum.</i>
<i>Hieracium holosericeum.</i>	<i>H. holosericeum.</i>	<i>H. alpinum.</i>	<i>A variety.</i>
<i>Hieracium eximium.</i>	<i>H. eximium.</i>	<i>H. eximium.</i>	<i>A variety.</i>
<i>Hieracium calenduliflorum.</i>	<i>H. calenduliflorum.</i>	<i>H. eximium.</i>	<i>A variety.</i>
<i>Hieracium gracilentum.</i>	<i>H. gracilentum.</i>	<i>H. gracilentum.</i>	<i>A variety.</i>
<i>Hieracium globosum.</i>	<i>H. globosum.</i>	<i>H. globosum.</i>	<i>A variety.</i>
<i>Hieracium nigrescens.</i>	<i>H. nigrescens.</i>	<i>H. nigrescens.</i>	? <i>H. murorum.</i>
<i>Hieracium lingulatum.</i>	<i>H. lingulatum.</i>	<i>H. lingulatum.</i>	<i>A variety.</i>
<i>Hieracium senescens.</i>	<i>H. senescens.</i>	<i>H. chrysanthum.</i>	<i>A variety.</i>
<i>Hieracium chrysanthum.</i>	<i>H. chrysanthum.</i>	<i>H. chrysanthum.</i>	<i>A variety.</i>
<i>Hieracium cerinthoides.</i>	<i>H. anglicum.</i>	<i>H. cerinthoides.</i>	<i>H. cerinthoides.</i>
<i>Hieracium iricum.</i>	<i>H. iricum.</i>	<i>H. Iricum.</i>	<i>H. murorum.</i>
<i>Hieracium pallidum.</i>	<i>H. pallidum.</i>	<i>H. pallidum.</i>	<i>A variety.</i>
<i>Hieracium lasiophyllum.</i>	<i>H. lasiophyllum.</i>	<i>H. lasiophyllum.</i>	<i>A variety.</i>
<i>Hieracium Gibsoni.</i>	<i>H. Gibsoni.</i>	<i>A. Gibsoni.</i>	<i>A variety.</i>
<i>Hieracium argenteum.</i>	<i>H. argenteum.</i>	<i>H. argenteum.</i>	<i>A variety.</i>
<i>Hieracium nitidum.</i>	<i>H. nitidum.</i>	<i>H. nitidum.</i>	<i>A variety.</i>
<i>Hieracium aggregatum.</i>	<i>H. aggregatum.</i>	<i>H. aggregatum.</i>	<i>A variety.</i>
<i>Hieracium murorum.</i>	<i>H. murorum.</i>	<i>H. murorum.</i>	<i>H. murorum.</i>
<i>Hieracium cæsiuum.</i>	<i>H. cæsiuum.</i>	<i>H. cæsiuum.</i>	<i>A variety.</i>
<i>Hieracium cæsiuum.</i>	<i>H. obtusifolium.</i>	<i>H. cæsiuum.</i>	<i>A variety.</i>
<i>Hieracium stelligerum.</i>	<i>H. flocculosum.</i>	<i>H. stelligerum.</i>	<i>A variety.</i>
<i>Hieracium vulgatum.</i>	<i>H. vulgatum.</i>	<i>H. sylvaticum.</i>	<i>H. murorum.</i>
<i>Hieracium gothicum.</i>	<i>H. gothicum.</i>	<i>H. gothicum.</i>	<i>A variety.</i>
<i>Hieracium tridentatum.</i>	<i>H. tridentatum.</i>	<i>H. tridentatum.</i>	<i>A variety.</i>
<i>Hierac. prenanthoides.</i>	<i>H. prenanthoides.</i>	<i>H. prenanthoides.</i>	<i>H. prenanthoides.</i>
<i>Hieracium strictum.</i>	<i>H. strictum.</i>	<i>H. strictum.</i>	<i>A variety.</i>
<i>Hieracium umbellatum.</i>	<i>H. umbellatum.</i>	<i>H. umbellatum.</i>	<i>H. umbellatum.</i>
<i>Hieracium crocatum.</i>	<i>H. crocatum.</i>	<i>H. crocatum.</i>	<i>A variety.</i>
<i>Hieracium rigidum.</i>	<i>H. rigidum.</i>	<i>H. rigidum.</i>	<i>A variety.</i>
<i>Hieracium corymbosum.</i>	<i>H. corymbosum.</i>	<i>H. corymbosum.</i>	<i>A variety.</i>

(To be continued.)

BOTANICAL NOTES, NOTICES, AND QUERIES.

MAIANTHEMUM BIFOLIUM.

I met with this plant in abundance early this summer, in the locality near Hackness (a few miles from Scarborough), where it was discovered two (?) years ago. It is growing in the utmost profusion, among *Trientalis europæa*, *Vacciniums*, *Luzulas*, etc., on the slope of a steep brow covered with scattered trees. I purposely omit giving a definite description of the place. Suffice it only to say that before knowing *where the plant was*, I decided where, *if it were a native*, it "ought to be." This was determined partly by the aspect, partly by the general configuration of the country, and partly by the kind of vegetation clothing the district; and proved quite correct. Never, in Norway, did I see it more abundant or finer, that I remember. For a considerable distance the hillside is carpeted with it. It is not however the quantity merely, but, as said before, the general circumstances and position of the locality, which leave no doubt whatever on my mind of its being a genuine native.

JAS. BACKHOUSE, Jun.

[It may here be remarked that the question about the nativity of *Maianthemum* is now settled. It may also be inferred that all the other recorded localities, viz. Ken wood, near Hampstead; Woburn woods, in Bedfordshire; the woods at Howick, Northumberland; and even Dingley wood, six miles from Preston in Aundernisse; and "Harwood, neere to Blackburne" likewise, are or have been genuine stations where this rare species either grows or has been seen growing. One or both of these anciently known localities are recommended to the attention of our botanical correspondents in Preston and Lancashire.]

HERBARIUM OF NORTH GERMAN PLANTS.

By W. Lasch and C. Bönit. (First and Second Fascicles.)

The cryptogamic portion of this work has just reached us, and we have much pleasure in recommending it to British botanists in general, and to the readers of the 'Phytologist' especially.

The specimens are well dried and pressed, and carefully strapped on white paper. The attached tickets are neatly printed, and contain the name of the species, with the authority, the habitat, the soil, the census, the time, the special locality, and the name of the collector.

This publication is marvelously cheap, even in these times of cheap publications. The price of the two parts before us is five shillings, and the number of specimens is forty-nine. In addition there is a printed index, and a preface to the whole.

The paper on which the specimens are fixed, and the boards in which all are placed, with the printed sheet, surely cannot cost the publishers much less than a shilling. Hence the price of each specimen is rather less than a penny. Surely this is a bargain.

But cheapness is not the sole quality of the work, it will be eminently useful, especially to societies and to botanists whose herbarium is not very comprehensive. The north of Germany produces nearly all our British plants, and several species which are not natives of our kingdom, and consequently this issue of specimens accompanied with the modern names

will be a convenient herbarium for reference to all who study the native plants of the British Isles.

NOTE ON *HYPERICUM HIRsutUM*.

(See 'Phytologist' for July, 1861, p. 203.)

Last Wednesday, the 12th of June, 1861, while we were walking along the Finchley road which unites the Great North Road by Barnet with the north-west of London, and about a mile below Finchley, and about as far from Golder's Green on the Hampstead road to Hendon, there is a deep depression in the surface, with a small brook at its bottom, on the side of which we saw several plants of *Hypericum hirsutum*, not then in flower. We went down from the road in hopes of seeing *Myosurus minimus* in a cornfield on the left-hand side of the road: cornfields are rarities in this part of Middlesex. The Mousetail was invisible, but the St. John's-wort was not; and the *Scirpus sylvaticus* was plentiful, and not much shorter than two yards of good measure.

BOTANY OF MAURITIUS.

(From the 'Gardeners' Chronicle,' Jan. 1861.)

I will take the liberty of asking you, as you have adverted to the subject, to inform the public that a Flora of Mauritius is in progress, and that it will be completed with as much speed as is consistent with correctness, and as my public duties will permit. I am quite certain that none but a resident botanist can give good descriptions, for I find every now and then considerable errors in De Candolle, Sprengel, and other books, arising from the descriptions having been drawn up from dried specimens. The Cryptogamous Flora below the Ferns is almost uninvaded by former botanists, and will afford to me a very rich harvest in my favourite division of the Vegetable Kingdom, of which I know most of the British species. The Fungi are interesting from their similarity to those of England. I have found numbers of my old friends. The climate is delicious; the winter about the temperature of June, and in the summer the thermometer in the shade rarely rises above 87° Fahr., so that an Englishman with an Englishman's energy can readily go about throughout the entire year, and, as malaria is absolutely unknown, without danger. The fears I have seen expressed that the native Flora of Mauritius will be extirpated by the progress of cultivation is absurd. A few localities may be lost, but from the mountainous character of a considerable part of the island, it is incapable of cultivation, and the majority of the species will always be preserved. Neither do I fear that the island will become barren by destruction of the forests, as it is the mountain-tops that break the clouds, and the rainfall remains the same; but should the forests be destroyed to a large extent, it will then be necessary to have recourse to the storage of water in tanks, which would be readily made by damming the ravines, the sides of the ravines forming three sides of each reservoir, and these sides are often 150 to 200 feet high, and of solid basaltic rock.—P. B. AYRES.

WORCESTERSHIRE NATURALISTS' CLUB.

The July meeting of this Club was held on Wednesday last, upon the breezy platform of Bredon Hill, but the recent precarious weather acted as a damper upon the ardent volunteers who lately showed such zeal in

the cause of practical science at Witley Court, and on the ramparts of Holt Castle. The Rev. D. Melville was, from ecclesiastical business, obliged also to depute Mr. E. Lees, V.P., to act on his behalf, so that with rather a fatiguing route before them, only the more determined and enthusiastic appeared in the field. Among these we observed Dr. Buchanan Holl (Cheltenham), Messrs. J. D. Jeffery, Josiah Jones, G. Beck, H. Lines, E. Gillam, Haywood, Jeffery, Jun., etc.

The upper barren portion of Bredon Hill, bordering on the precipice, displays a natural *Thistlery* unexampled in a highly-cultivated county like Worcester, for whole squadrons of the Great Woolly-headed Thistle (*Carduus eriophorus*) covered the crests of the oolitic escarpment, while the beautiful nodding purple heads of *Carduus nutans* crowded the undulating grounds by hundreds in close spinous array at the foot of the precipice. The Spear Thistle (*Carduus lanceolatus*) also grew peculiarly horrent, while wherever the native turf appeared on the table land of the top of the hill, the Stemless Thistle (*Cnicus acaulis*) was seen in flower in great abundance and luxuriance. Of course *Carlina vulgaris*, rather dwarf, exhibited itself on the heights. Other plants characteristic of Bredon botany that presented themselves, were Squinancy-wort (*Asperula cynanchica*), not found elsewhere in the county, though abundant here; *Acinos vulgaris* (both purple and white flowers), *Scabiosa Columbaria*, *Specularia hybrida*, *Spiræa Filipendula*, *Sedum acre*, *Geranium columbinum*, *Onobrychis sativa*, and *Brachypodium pinnatum*, the latter in excessive quantity on the higher ground. The Bladder-Fern (*Cystopteris fragilis*) was also gathered in crevices of the oolitic precipice. Not a single specimen of Foxglove (*Digitalis*) or *Ulex* was observed anywhere on the hill, though they are so common at Malvern.

CYNOGLOSSUM SYLVATICUM.

I have now, for a period of four or five consecutive seasons, seen this plant in this neighbourhood put forth from the same root, buds and blossoms, and if this fact is not sufficient to prove its perennial duration, I should like to know what is.

JOHN SIM.

Bridge End, Perth, May 1861.

Communications have been received from

W. T. Dyer; Sidney Beisly; Professor Babington; John Sim; J. Backhouse, Jun.; Berthold Seemann, Ph.D., F.L.S.; T. W. Gissing; H. Boswell; M. A. Walker; J. S. M.; G. Lamond; Rev. H. A. Walker; William Pamplin, etc.

RECEIVED FOR REVIEW.

The Preston Chronicle, August 7th and 14th.

Ferns, Lycopods, etc. (See p. 318).

Notes on Books.

ERRATA.

In the number for September, 1861, p. 260, line 12, for *Lactuca Prenanthes*, read *L. prenanthoides*; and value it as a synonym of *Prenanthes muralis*. Also in p. 274, line 17, for *forms* read *form*.

NORFOLK AND SUFFOLK BOTANY.

On the Botany of the Borders of Suffolk and Norfolk, near the Source of the River Waveney. By C. J. ASHFIELD.

On the 13th of September, 1861, being then on a visit in the neighbourhood, I went on a botanical expedition to the locality named in the title of this article; and the following account of the success I met with, will probably not be unacceptable to the readers of the 'Phytologist.' The chief scene of my investigations on the occasion referred to, was a considerable tract of marshy and fenny land, in some places tolerably dry, and in others abounding in pools of water, from a few inches to several feet in depth, known by the name of Lopham Fen, and situated partly in Norfolk and partly in Suffolk.

The rivers Waveney and Little Ouse owe their origin to two copious springs which rise in the neighbourhood, and the former river runs eastward to Yarmouth, and the latter, westward to Thetford and Lynn; and both form the boundary of Norfolk and Suffolk. On the banks of these streams, Lopham Fen is situated. The spot is a few miles westward of Diss, in Norfolk, where there is a station on the Eastern Counties Railway.

The route I took is as follows:—I left the railway at Mellis, which is the next station to the south of Diss, and a walk of about five miles from thence, through portions of the villages of Mellis, Burgate, Wortham, and Redgrave, brought me to the Fen.

Before I enumerate the floral treasures I discovered in the latter place, I must devote some space to the mention of certain noteworthy plants, which are to be met with on the way thither.

I must premise, that I have been well acquainted with the whole district for many years, and that although I did not find quite all the plants mentioned, in the late occasion, yet I have seen most if not all of them growing in the places named, at some time, and have in my possession dried specimens of all of them except one or two.

The first plant I have on my notes is *Rosa rubiginosa*, of which there are several specimens in the hedges on each side of the road to Burgate; indeed, it is anything but an uncommon plant in the district.

A short distance will bring one to the road leading to the Glebe Farm, belonging to the Rectory of Burgate; and in the field next the road may be found an abundance of *Habenaria viridis*, while in the pasture-field beyond the farm-house, and also in the field adjoining to and south of the Rectory garden I have frequently found *Ophrys apifera*.

After passing the Rectory, the road leading to Burgate church is shortly reached; and I should here advise a divergence from the direct road to the Fen as far as Burgate wood, which is situated a little beyond the church, and contains many scarce and interesting plants.

One of the chief of these is *Pulmonaria officinalis*, which is tolerably plentiful, and, I should say, certainly wild. It grows on the left of one of the principal openings through the wood; I found it in the same place as much as twenty years ago, and also during my late visit.

The greatly lamented Professor Henslow does not include this plant in his 'Flora of Suffolk,' and, indeed, gives few or no habitats of plants in this part of the county. I fully intended to write to the Professor relative to the *Pulmonaria* and two or three other Burgate plants; but the news of his death prevented my doing so.

Neottia nidus-avis, *Melampyrum cristatum*, *Scutellaria galericulata*, *Habenaria bifolia*, *Paris quadrifolia*, *Peplis Portula*, *Lythrum Salicaria*, and many other plants will, at the proper seasons, reward a search of Burgate wood.

There are several ways from the wood to Wortham Green, across which the road to the Fen passes. By the direct road from Mellis to Wortham, *Sison Amomum* is frequently to be met with; indeed, it is very general here, and is a common weed in the Rectory garden at Burgate. *Convolvulus sepium* and *Humulus Lupulus* are very frequent and graceful ornaments of hedges in Burgate. *Ononis arvensis* is abundant by the side of the road near Wortham Green. *Sagina nodosa* grows on the right-hand side of the Green; and *Potamogeton densus* and *Hydrocharis Morsus-ranae* are abundant in the same locality. Further on, in a hedge to the left, *Tamus communis* and *Bryonia dioica* are frequent, and *Verbascum Thapsus* is not otherwise.

After leaving Wortham Green, *Calamintha Clinopodium* and *C. officinalis* (*C. acinos*, in a cornfield near the Fen) are com-

mon on hedge-banks on each side of the road, and in the hedges *Evonymus europæus* is frequent. On a bank to the right, about halfway between Wortham Green and Redgrave church, I found a few specimens of *Dipsacus pilosus*, which plant also grows by the side of another road in the same neighbourhood. In Redgrave churchyard grow *Galium verum*, and *Salvia verbenaca*, and in the immediate neighbourhood is an abundance of that handsome plant, *Verbascum nigrum*.

Before leaving the neighbourhood of the church, I would suggest that the botanist forsakes his particular avocations for a few minutes, for the purpose of inspecting the interior of the building, which contains two such monuments as few country churches can boast: one of them is to the memory of Sir Nicholas Bacon (the Premier Baronet) and his wife, and the other to that of Chief Justice Sir John Holt; both former owners of Redgrave Hall. Continuing along the road beyond the church a short distance, brings one to a footpath on the right, which leads directly through several fields to the Fen. In these fields the following plants are to be met with:—*Orobanche minor*, *Cichorium Intybus*, *Reseda Luteola*, *R. lutea*, *Sarothamnus scoparius*, *Carduus nutans*, *Scabiosa arvensis*, *Trifolium procumbens*, *T. arvense*, *Hypericum*, several kinds, *Linaria vulgaris*, and *Echium vulgare*. *Rosa rubiginosa* is very plentiful in a hedge bordering on the Fen.

Arrived on the Fen itself, the first plant which attracts one's attention, at this season especially, is *Parnassia palustris*, which is abundant there. Bearing to the right from the spot where I entered the Fen (on the side nearest to Redgrave church), and continuing two hundred yards or so, and at a short distance from a small fir plantation, I found several plants of the Orchid family in an immature state, which was, doubtless, either *Malaxis paludosa* or *Liparis Loeselii*. I have heard that the latter plant has been found in this district. On the border of the fir plantation alluded to, I found a quantity of a plant of the Aster tribe, very much resembling, in its foliage and mode of growth, the Michaelmas Daisy of the gardens, the blossom being purple with a yellow disk. The plant has every appearance of being wild, and I found it in the same place some fifteen years since; it is not described in any botanical work to which I have referred. I will not particularize the localities in which I found the other Fen plants, as they were distributed generally either in the pools or

about their margins, or in the two rivers, or on the heathy portions of the Fen.

The plants which I noted down were the following :—*Cladium Mariscus*, frequent ; *Schœnus nigricans*, very abundant ; *Lemna*, the four British kinds ; *Chara hispida*, *Menyanthes trifoliata*, *Myriophyllum verticillatum*, *Rumex Hydrolapathum*, *Lythrum Salicaria*, *Alisma ranunculoides*, *Hydrocharis Morsus-ranæ*, *Hottonia palustris*, *Sparganium ramosum*, *Samolus Valerandi*, *Calluna vulgaris*, *Sium angustifolium*, *Eupatorium cannabinum*, *Scabiosa succisa*, *Hydrocotyle vulgaris*, *Epipactis palustris*, *Comarum palustre*, *Lycopus europæus*, *Pinguicula vulgaris*, *Ranunculus Flammula*, *Potamogeton*, several kinds, but these were mostly too far decayed to distinguish them ; *Utricularia vulgaris* was plentiful, and *U. minor* equally so, *Anagallis tenella*, *Drosera rotundifolia*, *D. longifolia*, (I am not quite sure whether *D. anglica* is there or not,) and *Cœnanthe Lachenalii*. These are all that I found on my late visit to Lopham Fen. I have no doubt that a botanical expedition to the locality earlier in the season would be amply rewarded. I believe several of the Orchid family are to be found there. I gathered the pretty little *Genista anglica* there some years since, and I have seen a specimen of *Lysimachia vulgaris* which came from thence.

A walk through the beautiful Park of Redgrave would agreeably vary, though somewhat lengthen, the return to Mellis station ; but the gratification of seeing the fine old Oaks which abound in the Park, would alone, in my opinion, compensate one for the extra exertion. The way to the Park is opposite to Redgrave church.

In conclusion, I may state that the following are some of the scarcer plants to be found in the parish of Burgate :—*Ophrys muscifera*, *Orchis pyramidalis*, *Erigeron acris*, *Senebiera Coronopus*, *Orchis conopsea*, *Spiræa Filipendula*, *Erysimum cheiranthoides*, *Hottonia palustris*, *Lithospermum officinale*, *Galeopsis Ladanum*, *Linaria minor*, and *Caucalis nodosa*. *Sambucus Ebulus* some time since grew in Burgate churchyard, but I believe is now lost there. I have a specimen of *Delphinium Consolida* marked “Wheat-field, Mellis, Suffolk, September, 1841 ;” and another of *Conyza squarrosa*, marked “Hedgebank, Mellis, Suffolk, July, 1841.” *Hottonia palustris* grows more luxuriantly, and with more numerous whorls of blossoms, in pits about Mellis Green,

than I have ever seen it elsewhere. *Daphne Laureola* grew in a hedge by the side of the road from Mellis to Burgate some years since, and probably grows there still, although I did not observe it on the occasion of my late visit. It had every appearance of being wild in the locality referred to.

Preston, October 2nd, 1861.

LIBBARD'S-BANE.—LEOPARD'S AND OTHER
"BANE PLANTS."

Doronicum Pardalianches.

Mr. Gissing, in his note in the 'Phytologist' for March, says it is customary with nearly all British botanists to consider the *Doronicum* as alien to this country; and he speaks of one place, near Bewdley in Worcestershire, which "is some distance from a house, but in conveying manure to fields or meadows, seeds of garden plants may be taken to very unlikely places for garden plants to grow." In this habitat an escape from a garden (in the true sense) it certainly is not; and he then refers to a passage in Ben Jonson's 'Masque of Queens,' 1609, and quotes some lines in which *Libbard's-bane* is noticed with other wild plants, and hence infers that *Libbard's-bane* may be properly termed a wild plant.

I see nothing unreasonable in this inference, but am inclined to agree with Mr. Gissing; and I would ask why, instead of its having been cast out of the garden to take its place in the field, it may not have been taken out of the field to be cultivated in the garden.

If so many of the seeds of our garden plants have been so cast out with refuse and manure into the fields, I should like to know how it is that there are so few of the garden plants growing in the fields. The process has been, in my opinion, *vice versá*; for if all plants were originally what are termed wild plants (or plants formed to grow naturally without particular cultivation), the cultivation of them would be more likely to produce our garden plants, than the garden plants cast out to produce wild plants. Take for instance the Celery, the Spinach, Beet, and many others, which in a wild state being found palatable, would attract

the attention of man to their greater care and cultivation, by which they would become increased in size and flavour; and I doubt not that if the power of cultivation were arrested, these plants would fall back into their wild state; but I must leave the solution of this to wiser heads than mine.

I give however, for the benefit of the curious, some information from old writers on this plant, which may aid in the decision of the question. In Du Bartas' 'Divine Weeks,' translated by J. Sylvester, I find the following lines, in his notice of poisonous plants:—

“Only the touch of *choak-pard** aconite
Bereaves the scorpion both of sense and might.”

This plant was by some of the old writers called *Aconite*, as well as *Libbard's-bane*. Cole's Dictionary says, “Libbards bane, *Aconitum*.” Dr. William Turner (who has received such ample justice in the 'Phytologist,' see “Chapters on British Botany”) has the Libbard's-bane, of which he says, “The herbe that hath been taken for Libbard's-bane groweth plenteously beside Morpeth in Northumberland, in a wood called Cottingwood.”

In Topsell's 'History of Four-footed Beasts,' under the description of Panther, he says, “There is a kind of Henbane which is called *Pardalianches*, or Libbard's-bane, which the inhabitants of Pharnaeus and Mount Ida were wont to lay in the Mountains for the destroying of Leopards, Bardols and Panthers.” See Leopard's-bane in Gerarde's History of Plants, which he calls *Doro-*

* I find in Nares's 'Glossary,' edited by Halliwell and Wright, the following:—

“*Choak-wort, a Plant.*

“The Libians called it *Reena*, which implies
It makes them dye like birds 'twixt earth and skyes;
The name of Choak-wort is to it assigned,
Because it stops the venom of the mind.”

Taylor's Works, 1630.

In the same work is given “Choak Pear,” a coarse kind of pear; and the author refers to Lilly's 'Euphuus and his England,' 1623,—“instead of a pill to purge his hot blood, he gave him a choke pear, to stop his breath,” etc.

There is also “Choke-plum, a similar plum,” which in Heywood's 'Spider and Flie' is called a choking “choke plum.”

The description of Choke-pear in the Glossary is not satisfactory; if the authors had referred to Parkinson's 'Orchard,' they would have found the following:—“The choke-pears and other wild pears, as they are not to furnish our orchard, but the woods, forests, fields, and hedges, so we leave them to their unknown places and to them that keep them and make good use of them.”

ronicum, and says, "Of this plant there be sundry kinds, whereof I will touch four;" and the figures of the plants are given. He also adds, that he had two kinds growing in his garden, one of which, "Great Leopard's-bane, *Doronicum majus officinarum*, has been found and gathered in the cold mountains of Northumberland by Dr. Penny, lately of London, a man of much experience and knowledge in samples, whose death myself and others do greatly bewail."

Was this *Doronicum* which grew on the cold mountains of Northumberland, an outcast from the garden?

S. B.

BOTANY OF SPAIN.

A Few Days' Botanizing in the North-Eastern Provinces of Spain, in April and May, 1860.

No. III.

From Valencia to Madrid we travelled all the way by railroad, and had no opportunity of botanizing, except an hour's walk at the point where the Valencia branch meets the Alicante line. This point is Almansa, in the kingdom of Murcia, and the railway-station is in the very field of battle, where the English arms sustained one of the few defeats they underwent in the war of Marlborough and Queen Anne. To write the name Almanza is in every way a mistake; it is spelt with an *s*, and that letter in Spanish is never sounded like *z*. The shabby-looking little country town, which I only saw from outside, is still, probably, much what it was then. The adjacent country was mostly, at this season, in a freshly-ploughed state, and my botanizing was limited to a strip of ground between two lines of cultivation. There, however, I found *Adonis autumnalis*, *Sisymbrium Irio* and *Sophia*, *Erysimum perfoliatum*, a *Camelina* (I believe *sylvestris*), *Hypocoum procumbens*, a single plant of another *Hypocoum*, *H. pendulum*, the curiously podded *Enarthrocarpus arcuatus*, and the fine dark-coloured Poppy, *Rœmeria hybrida*. It is remarkable (and could scarcely have happened at any season but early spring) that all the plants I saw were of the three neighbouring families, *Ranunculaceæ*, *Papaveraceæ*, and *Cruciferæ*.

While at Madrid I did not botanize; the time we passed there was occupied with the town itself, and especially its almost unrivalled picture-gallery, which they who have not seen are unacquainted with one of the two great schools of painting of the world. The neighbouring country is a treeless and bushless expanse of corn—a uniform green in spring, a melancholy stubble in autumn—comprising the lofty plateau of Castille, of which the mountainous swell has neither the variety of hills nor the imposingness of a real plain. It is as unpromising to the botanist as it is unattractive to the lover of nature, to whose eye everything about the capital of *todas las Españas* is wearisome, save at the few points from which he can look over the north edge of the plateau, across a broad valley, to the snowclad mountains of Guadarrama, by the blasts from which sentries are said to have been frozen to death at the gates of Queen Isabella's palace.

My next botanizing was in a walk in the dusk near Guadalaxara, the place where the railway from Madrid towards Zaragoza at that time terminated; it has since been extended further. This little town is made imposing by the vast château of the Mendozas, a building which tells of Spain in what are called her great ages, being in reality the ages by which she was ruined. The only new plant which met my eye was *Reseda undata*, now identified with *R. alba*, a plant of our gardens, sometimes found in England as an escape from culture, to me indissolubly associated with the place where I first saw it, the ruins of Nero's Golden House.

I was more successful at Alcolea, the small village mentioned in my former paper, halfway between Guadalaxara and Calatayud, the first considerable town in Aragon. The plants which were here in flower, were those of a much earlier time of year, owing to the great elevation of the plateau on which, though now drawing near to its eastern boundary, we still were. Though it was the 1st of May, *Genista scorpius* (which near Avignon begins to flower in February) had not yet expanded its buds. *Erysimum perfoliatum* also, was not yet in flower. *Hutchinsia petrea*, the plant of St. Vincent Rocks and Eltham churchyard, was there; *Potentilla verna*, another Clifton plant; two Crucifers which grow near Rome and flower in March; *Arabis verna* and the less beautiful *Calepina Corvini*; another *Arabis*, probably *ciliata*; two *Veronica* of the earliest spring, *hederifolia* and *tri-*

phyllos; an *Alyssum*, new to me, which I believe to be *A. peruvianum*, a plant noted in the 'Flore de France,' with only one habitat (in the Eastern Pyrenees); *Ceratocephalus falcatus*, formerly classed as a *Ranunculus*, whose small flower gives birth to an oval head of scythe-shaped carpels, sometimes equalling in dimensions all the rest of the plant; and last of all, abounding among the young corn, a plant of the Order *Primulaceæ*, with a small bright flower sunk in the hollow of a very large calyx, which I did not at first see to be a lowland species of the highland genus *Androsace*; it is *A. maxima*, which I found again at Zaragoza, and the seeds of which are said in the country to be edible. Of plants not in flower I noted only a *Euphorbia* and the formidable Thistle *Picnomon Acarna*.

From Zaragoza, the prosperous capital of a backward province, noted for its glorious siege and for its two splendid cathedrals, I made a successful herborization. The immediate vicinity contains abundance both of waste and cultivated land, dry rocky garrigue, and low arable, fertilized by water tumbling in cascades from sluices in a broad canal carried along a very high embankment. Of plants already mentioned I noted *Ræmeria hybrida*, *Fumaria spicata*, *Mathiola tristis*, *Lepidium Draba*, *Sisymbrium obtusangulum* and *Iris*, two *Helianthema*, *Genista Scorpius*, and I believe *Calycotome spinosa*, *Hippocrepis ciliata* and *comosa*, *Vicia triflora*, *Paronychia argentea*, *Helichrysum Stæchas*, *Thymus vulgaris* (a variety with a lemon scent), *Plantago Lagopus* and *albicans*, *Mercurialis tomentosa*, *Asphodelus fistulosus*, and a small variety of *A. ramosus*. I have hardly anywhere seen *Ranunculus repens* so magnificent. The following were new to me, in Spain at least:—an *Adonis*, I believe *A. microcarpa*; *Papaver hybridum* in profusion; the richly-coloured *Glaucium corniculatum* (otherwise *phæniceum*), a plant also of Avignon; a cruciferous siliculose plant of dried-up appearance, not unlike in aspect to an advanced state of *Alyssum campestre* or *calycinum*, but which proved on examination to be *Berteroa incana*; a tall *Reseda* allied to *lutea*, I believe *R. fruticulosa*; to *Hippocrepis ciliata* was added a larger species, with pods similarly jointed and scooped out, *H. unisiliquosa*; the spreading *Hedypnois polymorpha*, with its clumsy club-like peduncles; the red-flowered and downy-coated *Cynoglossum cheirifolium*, one of the handsomest of its tribe; a fine dark-flowered *Teucrium*, not in the French Flora,—I made it

out to be *T. thymifolium*; lastly, a tiny grass, with a round, rather prickly head, *Echinaria capitata*.

At Lerida my botanizing was limited to a single field, but in that small space (besides *Alyssum calycinum* and the beautiful *Anchusa italica* of our gardens, a common cornfield plant in Spain and all over southern Europe as high up as Burgundy on the east and La Vendée on the west) I found four plants which I did not see elsewhere in Spain; two species of *Silene*, *S. conica*, and the rarer, more stately, and larger-flowered *S. conoidea*; a less handsome, not to say ugly, Boragineous plant, *Nonnea ventricosa*, one of the roughest of its rough tribe, without the usual lustrous beauty of their flowers; and the rather vulgar-looking sister of an otherwise most elegant race, *Malcolmia africana*.

Between Lerida and Tarragona I saw from the diligence the following plants, scattered in abundance over the country:—*Ræmeria hybrida*, *Lepidium Draba*, *Cistus* (if I mistake not) *umbellatus*, *Ulex parviflorus*, *Convolvulus althæoides*, *Cynoglossum cheirifolium*, *Mercurialis tomentosa*, a *Gladiolus*, and the blue *Aphyllanthes monspeliensis*. To these I will subjoin the following, which seemed universal in the parts of Spain which I have botanically visited:—*Adonis autumnalis*, *Lychnis vespertina*, *Agrostemma Githago*, *Vicia sativa*, *Scandix Pecten-Veneris*, *Maruta Cotula*, *Podospermum laciniatum*, *Hieracium sylvaticum*, or some of the many species (or supposed species) allied to it, *Anchusa italica*, *Lycopsis arvensis*, *Lithospermum arvense* and *officinale*, *Plantago Coronopus* and *lanceolata*. And here ends Spanish botanizing, with the exception of a visit to Monserrat, and two days at the end of May in the Spanish Pyrenees, of which I will endeavour to give some account in a future number of the 'Phytologist.'

THE RESULTS OF A DAY'S BOTANIZING NEAR METHVEN, PERTSHIRE.

By FRANCIS B. W. WHITE.

First, near the village of Pitcairn, *Campanula rapunculoides* grows by the roadside, where the hedges are festooned with *Solanum Dulcamara*, *Vicia Cracca*, *Lathyrus pratensis*, and other climbing plants.

In a wood near the river Almond, grow the following rare species, viz. :—*Campanula latifolia*, *Carduus heterophyllus*, *Circæa lutetiana*, *Epilobium angustifolium*, *Carex sylvatica*, *Polypodium Dryopteris*, *Asperula odorata*, *Solidago Virgaurea*, and other interesting species.

Rosa rubiginosa, *R. tomentosa*, and *R. arvensis*, are not uncommon in the hedges and on the bushy, furzy, open wastes.

Saxifraga aizoides fringes the margins of the rills that descend from the heights into the river.

Mentha sylvestris, *Hypericum hirsutum*, *H. humifusum*, *Gentiana campestris*, *Agrimonia Eupatorium*, *Calamintha Clinopodium*, *Linaria vulgaris*, *Sedum Telephium* and *S. reflexum* out of reach, etc., grow by the roadside not far from Methven, and several Orchids in open parts of the same locality; the chief of these were *Habenaria chlorantha*, *H. bifolia*, and *Gymnadenia conopsea*. The rocky parts were adorned with the pretty *Antennaria dioica*.

The bogs afforded *Potamogeton oblongus*? and *P. natans*, also *Triglochin palustre*, *Veronica scutellata*, *Equisetum sylvaticum*?, *Narthecium ossifragum*, *Sedum villosum*, *Hydrocotyle vulgaris*, *Comarum palustre*, *Carex curta* and *C. ampullacea*, *Alismu rannunculoides*, *Drosera rotundifolia*, *Sparganium simplex* and *S. ramosum*, and other rarities too numerous for entry.

The Ferns which I observed in addition to that already noted, were *Lastrea Oreopteris*, *L. aculeata*, var. *lobata*, and *Cystopteris fragilis*.

After a long walk, in weather which did not increase the pleasure of being on unsheltered wastes, or in the rocky channels of mountain torrents, or under the drip of Scotch Firs, Elms, and Larches, I reached home thoroughly tired; but well pleased with the result of my day's botanizing.

Perth, July 10th, 1861.

BOTANICAL LETTERS FROM ARGYLESIRE.

By JAMES LOTHIAN.

No. II. LIMECRAIGS AND CROSSHILL.

Sir,—To a resident botanist, or a party arriving in Campbelltown on a botanical tour, the above localities form an easily reached

and pleasing short excursion, well suited for an evening's exploration after the arrival of the steamer from Glasgow. The party can get refreshed at the White Hart Hotel or Argyle Arms, after which they can easily search those localities in two or three hours.

Leaving town by Argyle Street and Killkerran road, ten minutes will enable them to reach Limecraigs, an old residence of the Argyle family. Shortly after entering the avenue, the mansion, an old square building, appears through the fine old trees which line both sides of the approach, meeting overhead like a Gothic arch. The house is occupied as a shooting-lodge by a sportsman, who possesses the extensive range of shooting to the rear, extending about ten miles southwards. The lands surrounding the house are laid out in pasture, grazed by flocks of sheep and cattle, which give animation to the scenery. Surrounding the house there are fine old specimens of trees, and throughout the park their huge trunks and beautifully formed heads, and rich tints of foliage, are objects of attraction. To one of these I must more especially direct the attention of the botanical wanderer. This specimen stands at the end of a small bridge in close proximity to the house, exhibiting the most remarkable natural union of two branches that has come under my own observation. The tree in question in its early stages has evidently grown forked, that is, with two leading top branches, and after growing in this manner for a series of years, one of them appears to have started away ahead of its companion; the latter, as if seeing that it was to be left behind, has turned its head inwards and ingrafted itself with its neighbour, and so completely has it effected this, that no mark or scar appears giving the least indication of how it has been effected. There it stands, forming a complete ellipse of some two yards long, with the union as perfect above as at the fork below. Probably another similar instance is not to be met with in the kingdom, and most certainly not in Kintyre. It is one of those freaks of Nature which seem to put Philosophy to defiance. Immediately in front of the mansion there is a fine formed specimen of variegated Sycamore, representing very completely the class of round-headed trees.

A short distance from the house, away to the rear, as you cross the park in the direction of Crosshill, you reach a belt or small plantation of Oak, Firs, etc. There, during the time of flowering,

I have met with *Lysimachia nemorum*, *Geranium Robertianum*, *Aspidium Filix-mas*, *Marchantia polymorpha*, *Chrysosplenium oppositifolium*, *Scabiosa succisa*, abundantly. The *Oxalis Acetosella* and the *Hyacinthus nonscriptus* grow at this spot in great profusion; and among the dense blue masses of it, I have year after year picked up here the *H. nonscriptus alba*. Three species of the genus *Rubus* appear very abundant, viz. *R. corylifolius*, *R. fruticosus*, and *R. suberectus*. To these I may add the *Ranunculus granineus*,* *Spiræa Ulmaria*, *Iris Pseudacorus*, *Myosotis palustris*, *Stellaria glauca*, and several of the Grasses.

Crossing the boundary of Limecraigs policies, Crosshill is reached. It is a range of fine green knolls, partly covered with natural pasture, and part of it has been subjected to the plough. Ascending from the north side, as you stand for a moment to draw your breath, the first object that attracts the eye is the splendid blaze of the Foxglove, *Digitalis purpurea*, which grows in great masses here; where also upon one or two occasions I have met the *D. purpurea*, var. *alba*. The *Viola canina*, *Polygala vulgaris*, several varieties, the *Pinguicula vulgaris*, the yellow Primrose, *Jasione montana*, *Tormentilla repens*, *Potentilla reptans*, *Galium verum*, *G. saxatile*, *Orchis maculata*, *Lotus corniculatus*, *Plantago lanceolata*, and *P. maritima*, are everywhere, and as you reach the top, the *Alchemilla vulgaris* and *A. arvensis* are found, and *Linum catharticum* in great abundance.

On a fine summer evening, this is a spot, fragrant with the wild Thyme, where the lover of Nature and her manifold charms may enjoy a rest and a beautiful bird's-eye view of the town of Campbelltown, its harbour and shipping, and the country around it; as well as a fine distant view of Arran, *Islay*, *Jura*, with her lofty Pass, Mackrehanish bay, and a part of the Atlantic Ocean. As he sits gazing around him with pleasure,—if poetical, with rapture,—he may not be aware that he sits on the top of a mine. A tunnel passes right through the centre of this knoll, through which the water supply of the town is conducted from a large reservoir, or rather a lake, situated in the deep green glen behind him, by which I may now conduct you.

Descending the south side of Crosshill to the reservoir, im-

* Will our obliging correspondent send to 45, Frith Street, Soho Square, London, a few specimens of this *Ranunculus*, which has been often reported as a British plant? Has any reader ever seen an example collected in these isles?

mense masses of the *Ulex europæus* are everywhere, as well as the Sloe Thorn, diffusing the fragrant perfume of its snowy blossoms on every breeze. Trout are leaping in the lake, and various kinds of water-birds are flying about. Reaching the east bank, which is an artificial one, a deep glen at the south end of the tunnel meets the eye, where a delicious little spring flows from the base of the limestone rock. Here the *Prunella vulgaris* is very abundant, and where I have also found the *P. vulgaris alba*; on the marshy banks of a rivulet that flows down through Knockbay glen, are found the *Calltha palustris* and several species of the more common Ferns, *Lychnis dioica*, etc. Ascending from this glen, the rambler can proceed a few hundred yards southwards and take a homeward direction by Knockbay Farm; on his way he would meet with *Ajuga reptans* and *Anagallis tenella* abundantly. He may deck his cap with the badge of the clan M'Donald, *Erica cinerea*, and his breast with the fragrant Honeysuckle, found here in dense thickets. He shortly reaches Killkerran road, when a quarter of an hour will bring him to his quarters.

But I must close for the present. I am afraid I have encroached upon your time and space, beyond what my vasculum of wild-flowers will warrant, on this occasion. I hope my next will be better filled, and that I may be able to inform you of a greater and a rarer catalogue of our local rarities, which while we search for them and study our beautiful wild-flowers, may we be made better and wiser; may we ever sing with the bard,—

“ Instruct us, Lord,
Thou Father of the sunbeam and the soul,
E'en by the simple sermon of a flower,
To live to Thee.”

KENTISH BOTANY.

Walk from Folkestone to Lydden Spout, under the Cliff by Eastwear Bay, and back to Sandgate, Shornecliff, Seabrooke, and Hythe.

The morning of the 7th of September was very fine, and soon after six o'clock we were abroad, and wending our way back again by the martello towers, over the cliff to Eastwear Bay, retracing our steps to Lydden Spout, prepared to return over the ground which we had passed unprofitably the previous night.

On the undercliffs surrounding or enclosing Eastwear Bay, a most productive locality, we observed many of the plants which had been previously seen and collected in other parts of our journey, and we only report specimens of the following as actually collected, viz. *Juncus obtusiflorus*, *Iris fœtidissima*,—which to us bore no disagreeable smell, although its name denotes as much as if it stunk like asafœtida,—(the odour of that to which the smell of this plant is compared would have been anything other than offensive to our olfactory organs, for we had not yet broken our fast, and our digestive apparatus wanted some object whereon to operate: roast beef is not procurable in Eastwear Bay, nor roast mutton either,)—*Trifolium striatum*, and *T. medium*: the latter Professor Buckland demonstrates to be identical as a species with *T. pratense*; the learned Professor does not tell us on what evidence, axioms, or postulates his demonstration is founded; is it proved on *à priori* or on *à posteriori* principles?

Eastwear Bay also produced *Lithospermum officinale*, *Lactuca virosa*, and *Potamogeton oblongus* or *natans*. This fine aquatic was far beyond our reach; it might have been procured by swimming. Most of the remaining rare plants of this locality, and they are numerous, had been previously observed, except *Rosa rubiginosa*, which was scented at a considerable distance on this fine morning, when the dew hung long on the luxuriant vegetation of this undercliff. Here were also noticed gigantic specimens of *Hippophaë rhamnoides*, more than six feet high.

This locality will well repay the expense of a visit, in the month of June or in the beginning of July; we were here a couple of months too late. In ordinary seasons very little would have been seen worth collecting so late as the 7th of this month, but this year the weather and the state of vegetation were exceptional, and the vegetation of August was still existing in September.

On the face of the steep cliff, on our way to the Spout, *Brassica oleracea* again appeared, and in a fissure down which trickled a tiny rill, there was seen *Scolopendrium vulgare*. Ferns were by no means common in the course of our tour. At the base of the cliff *Papaver somniferum* appeared quite at home, very far from a cottage or garden, but probably not very far from a cornfield.*

* There is some cultivation on the cliff here and there, and we passed through a field which is not probably more than a mile from Eastwear Bay. We did not see *Papaver somniferum* during our long walk from Canterbury, through Sandwich,

There are no cottages under the cliff, but about a mile from the Spout there is the hull of a ship, removed a little distance from the sea, and fitted up for the abode of coastguardmen and their families.

On the shingle, not far from this semi-marine residence, some fine plants of *Cakile maritima* introduced themselves, and from these we replenished our vasculums. *Crithmum maritimum* was also plentiful, and within reach. About Eastwear Bay and the Lydden Spout the gathering of Samphire is not so formidable a process as it was on Shakspeare's Cliff in the days of good King Lear. There were no samphire-gatherers here but ourselves, and our wants were soon supplied; we had no occasion to risk limb or lith to procure all that was wanted for our purposes.

Near the Spout there were some plants of *Frankenia levis*, well grown, barely in flower, just enough to enable us to state positively that the plant grows here. We spent half an hour looking for *Euphorbia Paralias*, which we could hardly have overlooked if it had been there when we were, and then we ascended the undercliff and gathered some large plants of *Orobancha Caryophyllacea*, all quite withered. This rare Kentish plant is nearly as tall as *O. major*, and it was invariably found near *Galium Mollugo*; hence it was inferred, naturally enough, that it grows on the roots of the latter plant. This however we did not stay to determine, for our appetite reminded us that we had not yet breakfasted, and it was now eleven o'clock, and we had four good miles to walk before we could reach our hotel; therefore we left the *Orobancha*, ascended the four hundred and forty-four steps, inclined planes and all, reaching the top of the cliff in about fifteen minutes after we commenced the ascent by the steps.

Our nearest way to Folkestone was along the top of the cliff, across some fields to the Dover road, by which we entered this ancient town the second time, but the first time in broad daylight.

The situation of Folkestone is very similar to that of Dover, only the combe in which the former is built is not nearly so deep nor so extensive as that which contains the latter; or, in other words, the hills about Dover are considerably steeper and higher

Deal, and Dover, to Folkestone; but as it is a cornfield plant, it may possibly have tumbled or was blown over the cliff, as the Isle of Wight Stock may have been driven by the storms into the sheltered nooks where it grows.

than they are at Folkestone. Thecombe of Folkestone does not bear the deep basin-like form of that of Dover. The cliffs and entire scenery about the latter town are remarkably striking, unlike those of any other part of the south-eastern coast observed by the reporter.

Folkestone is certainly an enjoyable town, though not so agreeable as its more celebrated and better-known rival.

Our destination, on this the fifth and the last day of our botanical excursion, was from Folkestone to Hythe, through Sandgate, Shornecliff, Scabrooke, etc.

Our way was along the undercliff, which has now become less productive, in a botanical sense, than it was in the time of the Rev. G. E. Smith, who botanized here about thirty years ago. Enclosures and cultivation have produced this alteration. *Phalaris canariensis* was more plentiful here than in any part of our previous journey—one of the many proofs that the centre of its distribution is not where it is cultivated. *Petroselinum sativum* was well established on these steep banks; and *Tamarix gallica*, though probably planted here, thrives amazingly. No shrub braves and endures the keen sea air better than this; few shrubs have a more handsome, bushy, and lively appearance. It is not only an ornament to the cliff, but it might be used as a nurseling or a protector for sheltering and raising more valuable but not so hardy shrubs and trees.

There is a small beach between Sandgate and its castle—for castles are plentiful in this part of the country, all built upon one plan or after one model; they are circular, like a stumpy cylinder, or a torso, *i.e.* a human figure deprived of its head, arms, and legs, the height of which does not much exceed its breadth. The martello towers are in proportion and figure not unlike a Stilton cheese, and they are not very ugly; but the proportions of Sandown, Deal, and Sandgate castles are exactly those of a double or thick Gloucester, the diameter is about twice the height. Let not the curious reader fancy that the south of England is ornamented and fortified with such noble erections as Windsor Castle, or even like the smaller castellated edifices of Aberdeenshire. These Kentish castles have no beauty to boast of; of their defensive or their offensive capabilities, the less that is said the better for them: for as picturesque objects they do not enhance the attractiveness of the coast scenery; their defensive capabilities

have never happily been proved by aggressive attacks. They however have their botanical uses, in marking off the coast into portions of moderate dimensions, and by their help localities are definitely described. Between Sandgate and Sandgate castle there is a pretty considerable portion of the raised beach well covered with grassy turf. Here were seen large forms of *Trifolium striatum*, and still larger examples of *T. ornithopodioides*. In most parts the latter is only a very diminutive plant; here it is at least a foot long. We have seen cultivated specimens as large as these, but we never saw the wild plant so large as those we collected at Sandgate. At the village of Sandgate we observed *Circaea lutetiana* not an uncommon species, but this was the first we met with it since setting out on our present botanical travels.

From Sandgate we ascended the cliff to Shorne, and along the brow of the hill, opposite the barracks and artillery-ground, we collected enormously large specimens of *Trifolium subterraneum*. These were at least three feet long, with stems not quite so thick as a goose-quill, but quite as thick as strong pack-thread. The plant was still growing; it had fruit at one end and flowers at the other; and if left long enough, and if the weather had been favourable, it might have rivalled the length of the *Sargassum*, the weed of the Gulf-stream, or in plainer terms, it might have gone forward from Shornecliff to Hythe, if it had met with no interruptions or accidents by the way.

At Seabrooke we met with our first and sole botanical disappointment, which was borne with considerable equanimity and firmness, even though our success on this our last day's botanizing had not been very decided.

We had long cherished the idea of seeing *Cyperus longus*, one of the rarest ornaments of Flora's brow, in the county of Kent. Seabrooke, its "unpromising warren-hills," Whiting Brooks with its "black boggy track," were all reached and satisfactorily identified. The graphic description of this district given by the reverend author of the 'Botany of South Kent,' had been read, re-read, considered, and mentally digested so much and so intensely, that we could then have repeated it from beginning to end, long though it be, without missing a word, a stop, or a hyphen. We were now within reach of realizing our hopes of acquiring a treasure so long coveted and so much valued.

We ascended the hill's brow, and perceived a wood, small and picturesque enough, on our left, which we deemed likely to contain the precious prize; but, alas! further on and straight ahead two other copses or woods made their appearance, both of them in provokingly picturesque positions. We passed by the first-seen wood and went to those more remote, and found them both quite impenetrable. From these copses we went up to the farmhouse on the brow on the left, and inquired for Whiting Brooks, the name of the depression where both the wood and the copse, so well defined by our reverend guide, are situated. We were directed back to the wood and copse first seen when reaching the brow of the hill. The open boggy part of the wood we found, and everything corresponded to the description which we had carefully perused and studied till it hung to our memories like the burden of some favourite old ballad, or like a piece of good luck which only happens once or twice in a long lifetime. Everything was there except, *horresco referens*, "the tall, graceful *Cyperus*, spreading around its slender branches, tufted with chestnut spikelets, like a delicate exotic or miniature Palm, wandering from its native clime to adorn this secluded spot," was—what shall I say?—was, in dog Latin, *non est inventus*. Like weary, hungry pedestrians as we were, we left the secluded spot, *minus* the sweet Galingale, consoling ourselves with the assurance that we had found the place though not the plant, brooding over our disappointment, and speculating on the cause of our ill-success.

Between Seabrooke and Hythe we met abundance of *Salvia verbenaca*, one of the last of the plants to be recorded as the produce of this journey. It was plentiful on the roadside between Seabrooke and Hythe.

Next morning, before leaving for London, we strolled up the town into the churchyard, (not of Hythe, but of Folkestone, for the crowded state of the former compelled us to return a third time to Folkestone,) where several fine healthy plants of *Henbane* were growing about the tombstones on the east end, that nearest to the town. The esplanade on the cliff was just looked at, and the situation was much commended. The views from this part of Folkestone are very good and extensive. In front there is the sea; the downs are in the rear; on the left Shakspeare's Cliff, Eastwear Bay, and Folkestone Harbour; and on the west Hythe, Romney Marsh, and Dungeness.

This is probably a very healthy situation ; for these houses on the top of the cliff have the benefit of the fresh and cool morning gale from the downs, and also of the sea-breeze which blows steadily from some point of the south during the day.

Thus at Folkestone ended one of the most agreeable and successful botanical excursions either of us ever had, though we were far from being novices in this way of holiday-spending and plant-seeking. Before commending to our readers particular parts of the country to their special notice, some observations remain to be made on certain species, especially in reference to their distribution.

It is assumed by some botanical observers whose opinions on the distribution of species are entitled to much deference, that certain plants are native to the valley of the Thames, which means that there is no suspicion of foreign origin or introduction attaching to them ; and that others are only entitled to rank as denizens, which means that their claims are doubtful, or that they occupy a neutral position, or lie between the unsuspected and the suspected natives, like Mahomet's coffin suspended in the air between earth and heaven.

Mercurialis annua is plentiful in the valley of the Thames, both above and below London, and it was almost if not quite as abundant at and below Canterbury. This species passes muster as a native, though not frequent in England. In all these localities *M. annua* is associated with *Diploaxis muralis*, and this latter plant is called a "denizen." The late Dr. Bromfield, in vol. iii. of the 'Phytologist,' o. s., p. 823, produced many reasons why *M. annua* should not be reckoned a true native.

This plant, the annual or French Mercury (see 'Phytologist,' o. s., vol. iii. p. 823), was profusely distributed by waysides, in cultivated places, as well as on rubbish and in gardens, in villages and towns in all parts of our route from Canterbury to Folkestone.

Another plant of cultivation which we found, it may be said, everywhere, is *Diploaxis muralis*, probably long overlooked and mistaken for a state of *D. tenuifolia*. This plant is extending in all directions, and it appears, like several other species, to evince a special predilection for railways. Only the other day, September 18th, it was observed plentifully on the gravel adjoining the platform at Wraybury station of the South-Western, London and Windsor line.

Reference has already been made to the Wallflower, which is extending itself about Dover, and though it has a decided preference for walls and rocks, yet on this coast, where there are neither of these habitats, it appears well contented with a humbler station. The Wallflower, in its choice of location, bears a considerable resemblance to *Diploaxis tenuifolia*. This latter plant, like the Wallflower, prefers walls when they are within reach; and when they are not, it grows on the ground. At Dover, Southampton, and Chester, it looks particularly happy on walls, and about these towns it is not particularly abundant, except on walls and roofs.

Linaria purpurea and *Antirrhinum majus* prefer walls, but the former has been seen growing vigorously and increasing greatly in cultivated ground about Yarmouth, Isle of Wight, where walls are about as scarce as walls and hedges are on the South Downs, in the south-east of Kent. We have a specimen from sandy fields near Windlesham in Surrey. *Diploaxis muralis* does not select walls for its habitat; about Wandsworth and Battersea walls are as common as cabbage-grounds once were, yet this species, unlike its near British relation, shows no preference for such places.

Sinapis nigra is exceedingly common in Kent, and it is not rare in some parts of Surrey, especially by the river Thames, near London. On the contrary, *Sinapis alba*, which is uncommon in Kent (we did not observe it in more than one place?), is frequent in the cultivated fields of Surrey. Perhaps botanical geographers will tell us why a plant, such as white Mustard, abounds in one county, and is scarce or almost absent from another lying exactly between the same parallels.

Common Parsley prefers walls and rocks, but it was frequently seen thriving well on the flat ground, where there were no rocks nor old crumbling rotten walls near it.

Fennel is almost universal in those parts of the county through which we passed. Near the sea it may be said to be universally distributed. It was quite at home in the fenny parts of our route, on banks about the ruins of Richborough, where it was particularly fine; and also on the chalk, where it was equally luxuriant and plentiful.

Several plants were quite unexpected where they were found. Among these may be named *Geranium pyrenaicum* near Wingham, *Polypogon monspeliensis* in the salt-marshes near Sandwich or

Pegwell Bay, close to the houses of the coastguard, and *Papaver somniferum*, which is plentiful in some cornfields in North Kent, and also on dike-banks in the Fens (eastern lowlands); in Eastwear Bay it seemed content with its situation at the base of the lofty cliffs.

Veronica Buxbaumii is extending its range. Its stations are increasing, and it follows from this increase of centres of distribution that its area is gradually increasing.

So much for the distribution of the plants seen in this excursion, about which some remarks appear necessary.

About the identification of species, all was accomplished that we expected. There were only two plants about which there has been any difference of opinion among British botanists.

The Dover Catchfly, *Silene nutans*, which was first observed at St. Margaret's, between Kingsdown and the South Foreland, is the first. This had flowered a long time, probably two months, ere we visited South Kent; but judging by the radical leaves of the plant, it seems to be nothing else but a very decided variety of the common form. It certainly is not the same as the Isle of Wight form, which we observed on the lofty cliff east of Sandown Bay, four years ago. This was one of the botanical doubts which were cleared up in our late journey.

The second is the Dover Statice. Two forms of *Statice spathulata* (like other notabilities it has a long array of aliases) have been known on the south-east coast, ever since the publication of the Rev. G. E. Smith's work on the plants of South Kent. The large form, which abounds between Kingsdown and St. Margaret's, differs very much in size and appearance from the form which is equally abundant in Eastwear Bay, and especially near the Lydden Spout. The plants of this variable species on the east of Dover, are, at an average, about two feet high, more or less. Those on the west of Dover, in the aforesaid localities, vary from a few inches to above a foot; say from three to fifteen inches. The large specimens on the east of Dover have many barren branches; and the small examples of this plant in and near Eastwear Bay have no barren branches. But there are numerous intermediate forms, which serve as connecting links between these two extremes, and show that these differences do not constitute a variety.

There are some parts of the coast, partly examined by us, which might be worth a more complete exploration at an earlier

part of the season; and there are certain parts, both of the coast and in the interior of this county, not visited by us, but which we are firmly persuaded would amply repay the labour of investigation.

Of the first class of localities, viz. on the coast traversed by us, that part of the undercliff between Kingsdown and St. Margaret's should be explored about Midsummer or at the beginning of July. The same may be said of the extensive undercliff of Eastwear Bay, which possesses greater variety of soil, and probably bears a richer Flora, than the cliff at Kingsdown, which is entirely formed of the débris of the incumbent chalk. That at Eastwear Bay possesses ponds, and has rills of fresh water trickling here and there down the cliff.

But besides these there is the shore, and the ditches of Romney Marsh, unexplored probably for a century. This would be a somewhat monotonous sphere of botanical labour, but it would not be entirely unproductive.

We observed no rare forms or species of *Atriplex*. At the first blush we imagined that we had detected *A. laciniata*, *A. rosea*, and *A. Babingtonii*. After a careful comparison, all the three above named were easily reducible under one description, viz. *A. Babingtonii*, with which description they all agreed passably well. *A. rosea*, as we called it, was a little more frosted than *A. Babingtonii*, while *A. laciniata* had its leaf a little more elongate and more toothed than either of the two other forms. Its stem differed entirely from what is called *A. laciniata* by Continental botanists.

There are also some inland localities celebrated in the annals of botany worth visiting, viz. Elham and its environs, especially the Roman road between Hythe and Canterbury. In woods or copses not very far from Hythe or Cranbrook, *Cyclamen hederæ-folium* was said to grow, and it would be very gratifying to be able to confirm this tradition, for it is little more. If it had been found there in recent times, it would have been entered in the Rev. G. E. Smith's work on the plants of this district, which was within a few miles of his residence, or by the careful author of the 'Faversham Flora,' Mr. Cowell.

There is another rarity recorded as having been met with, by Mr. Oxendon, between Charing and Walmer, a rather indefinite locality. Charing is on a range of chalk hills some miles from

Ashford, which is very accessible by the South-Eastern Railway. See 'Phytologist,' n.s. vol. iii. p. 268.

These two rare plants, viz. *Cyclamen hederæfolium* and *Orchis hircina*, with other pickings, would well repay a journey to South Kent.

PLANTS NEAR TURVILLE, BUCKS.

In the 'Phytologist' for June last, your correspondent on the Botany of Burnham Beeches says,—“ Buckinghamshire has the reputation of being rich in vegetable rarities,” and he wishes some correspondent to make a note of them. I have not seen the Botanists' Guide for this county, and cannot say whether this notice of mine may be worth insertion, but such as it is I send it, that you may know what plants can be seen by any one who will walk three miles in this district, and use his or her eyes in looking for them. The country for some miles round this spot is on the chalk, and abounds in scenery of the most beautiful and picturesque character; high hills and long deep vales, mostly covered with beech-wood, intersected by cornfields, heaths, and pastures. Some of the valleys are from five to six hundred feet deep, very spacious, with gentle sloping sides, affording extensive views from the hills, but no streams run through them. In these fields and pastures I found in blossom the *Iberis amara* in great abundance; *Fumaria capreolata* spreading its full size; *Sinapis arvensis* covering broad acres with its golden blossoms; *Viola tricolor* plentiful; *Linum catharticum*, *Myosotis arvensis*, and *Spergula nodosa* in great abundance; *Reseda lutea* and *Tragopogon pratensis* (John Go-to-bed-at-noon) fast asleep; *Sanguisorba officinalis*, and *Poterium Sanguisorba*. In the woods grows the Columbine, *Aquilegia vulgaris*, which I now believe to be the plant which Izaak Walton called Culverkeys, and which one of our early poets, George Chapman, calls “a thankless flower.” It was this flower Ophelia gave to the King of Denmark in her madness upon the death of her father Polonius. Near to this grows the *Pyrola media*, *Habenaria bifolia*, *Paris quadrifolia*, *Oxalis Acetosella* out of bloom, *Orchis maculata*, *Arctium Lappa* stout and tall, *Lysimachia vulgaris* plentiful, *Tamus communis*, *Bryonia dioica* (the English Mandrake), *Epipactis rubra*, *Viburnum Opulus*, etc. Mrs. Beisley gathered specimens of most of

the above. Some of the fields were glowing like burnished copper with the blossoms of the *Onobrychis sativa*, and the Heaths were profuse, with *Digitalis purpurea*, Furze, and wild Thyme. The hedges by the roadsides were enriched with Dog-roses, Honeysuckles, Clematis, and Cornel.

I must not forget to mention that on Turville Heath is an avenue of Lime-trees, a quarter of a mile in length, and which for magnitude and beauty I should say are unsurpassed.

This part of the county of Bucks borders on the eastern side of Oxfordshire.*

S. BEISLY.

Review.

The Canadian Naturalist and Geologist, and Proceedings of the Natural History Society of Montreal. Montreal: B. Dawson and Son. London: Sampson Low and Co. No. I. No. II. No. III. No. IV. Vol. 6.

In this miscellany the first article of a botanical kind is an account of the *Cornus florida*, a little tree generally distributed through the United States, said to be of extreme beauty,—the neatest and showiest species of its genus. It is figured in the ‘Botanical Magazine,’ t. 526, and is probably not unknown to the nurserymen of the United Kingdom. This is a very good article.

The “Physical Geography of the Appalachian Mountain System” is an elaborate essay on the directions or bearings of this central chain, the elevation of its peaks, table-lands, the depressions of its valleys, gaps, etc.

Among the miscellaneous reviews there is one on the Botanical Society of Canada, or rather, an abstract of recent discoveries

* This part of the county appears to me to be situated between the bounds defined in the Act of Parliament of 23 Elizabeth, 1581, which prohibited cutting of wood and timber to convert into coal or other fuel for the making of iron, or iron metal in iron mills, within twenty-two miles from the City of London, or within twenty-two miles of the river Thames, from Dorchester, Oxon, downwards the said river; and it is worthy of remark that charcoal-burning is *now* carried on in the woods of this district.

communicated to that flourishing association. One of these is entitled "Seaweed as a Manure," an article that cannot be much known practically in Upper Canada, and cannot be expected to excite much interest; potash or its refuse, if there be any, would be more likely to rouse the attention of West Canadian farmers. The writer relates its utility in fertilizing the sandy hills of the east coast of Scotland. But the learned Professor must know that its application there is easy, because these sandhills (sand dunes, he calls them) are contiguous to the shore. It would be expensive to convey a bulky material like seaweed a distance of a thousand miles. Possibly the author intended that the phosphates and other manureal materials should be extracted before its conveyance to the Upper Province.

In the April number of this periodical there is a list of plants collected in the counties of Argenteuil and Ottawa in 1858, by W. S. M. D'Urban. This gentleman was five months in the district, and probably observed most of the plants growing there. His list is arranged systematically, and he prefixes an asterisk to the introduced or naturalized species.

The entire catalogue of phænogamous and cryptogamous plants observed by him during a residence of five months, consists of 362 species, viz. 276 of the former and 86 of the latter. A comparison of the species common to both Britain and America (Upper Canada) may be interesting to those who study the distribution and relations of plants, or to phytogeographers, as they delight to call themselves.

Among the 276 phænogamous plants of Canada enumerated in this list, there are 38 common to both Europe and America, viz. *Ranunculus Flammula*, *Caltha palustris*, *Actæa spicata*, *Cardamine hirsuta*, *Drosera longifolia*, *Oxalis Acetosella*, *Spiræa salicifolia*, *Agrimonia Eupatoria*, *Fragaria vesca*, *Epilobium angustifolium*, *Ænothera biennis*, *Circæa alpina*, *Ribes rubrum*, *Linnaea borealis*, *Viburnum Opulus*, *Erigeron canadensis*, *Vaccinium Oxy-coccus*, *Andromeda polifolia*, *Pyrola rotundifolia*, *P. secunda*, *Monotropa Hypopitys*, *Utricularia vulgaris*, *Veronica scutellata*, *Prunella vulgaris*, *Scutellaria galericulata*, *Menyanthes trifoliata*, *Polygonum aviculare*, *Myrica Gale*, *Acorus Calamus*, *Typha latifolia*, *Sparganium simplex*, *Juncus tenuis*, *J. bufonius*, *Eleocharis palustris*, *Scirpus sylvaticus*, *Carex tenella*, *Agrostis vulgaris*, *Poa pratensis*, *Milium effusum*.

Besides these there are 22 introduced British plants, or they assumed to be such, viz. *Ranunculus acris*, *Capsella Bursa-pastoris*, *Silene noctiflora*, *Agrostemma Githago*, *Oxalis stricta*, *Trifolium pratense*, *T. repens*, *Achillea Millefolium*, *Leucanthemum vulgare*, *Tanacetum vulgare*, *Cirsium lanceolatum*, *C. arvense*, *Taraxacum Dens-leonis*, *Plantago major*, *Verbascum Thapsus*, *Galeopsis Tetrahit*, *Cynoglossum officinale*, *Chenopodium album*, *Polygonum Persicaria*, *Rumex Acetosella*, *Phleum pratense*.

Thus there are, it appears, 60 of the 276 phænogamous species in the Ottawa district, common to both hemispheres, either by nativity or introduction, or rather more than one-fifth, and fewer than one-fourth, are found growing spontaneously in both continents.

This is a large proportion of plants common to the two continents of Europe and America, and especially when it is considered that there is a wide ocean between them.

The number of Ferns and Fern allies recorded as found in this district is 33, and nearly the half of them, or 15, are common both to the British Isles and to America. Of the lower families nearly all the registered species are common to both continents.

It would be an interesting question for botanical geographers to solve, viz. whether or not there be as many British plants in an equal area of Independent Tartary as there are in the small section of Upper Canada of which a botanical list is given in the 'Canadian Naturalist' now before us. The question is—Are there as many British plants as one-fourth or one-fifth of the entire vegetation in the district round the Sea of Aral, and in the countries known by the names of Turkistan and Bucharía? This tract is about as far east as the basin of the Ottawa is west of London. In solving the question about the migration of plants westward, as the great wave of population has flowed from the east to the west, it should be taken into consideration that land is almost continuous from Asia through Europe from east to west, or *vice versâ*, while between Europe and America the continuity is interrupted by the Atlantic Ocean.

This would probably be productive of more interesting and more practical results than the futile attempts to assign geographical limits to objects which are as liable to change in their relations as the earth's surface, which is altered by the increase of population, migrations of people, and the like. The idle disputes

about the nativity of plants will continue to serve as stimulants to pigmy intellects, and even be amusements to minds of a higher order and more catholic tendencies, till the subject is treated in a general, comprehensive, and philosophical manner. Then the geography of plants, like other departments of physical geography, will be studied in a way worthy of its importance, and divested of what renders it both repulsive and ridiculous; the abortive attempts to classify species into natives, denizens, colonists, etc., will be superseded by investigations founded on facts, not on baseless assumptions.

It is gratifying to know that our British Isles are not like thankless recipients, scapegraces who take and give nothing in return. For the ornamental *Mimulus luteus*, *Oenothera biennis*, *Diervilla trifida*, etc., we have sent to America the useful Timothy-grass, *Phleum pratense*, Dandelion, and Hound's-tongue, with several things for which the colonists will not thank us, such as Thistles, Buttercups, etc.

The Vegetable Kingdom is not exempted from the general law to which all created things must submit, viz. that of continuous change.

BOTANICAL NOTES, NOTICES, AND QUERIES.

BOTANICAL SOCIETY OF CANADA.

An extra meeting of the Society, called for the purpose of disposing of an accumulation of interesting papers, was held on Thursday evening, 28th March. There was a full attendance of members and subscribers. The Very Rev. Principal Leitch, President, occupied the chair. Letters were read from Sir William Hooker, K.H., Director of the Royal Gardens, Kew, and from Dr. J. H. Balfour, Professor of Botany in the Edinburgh University.

The following communications were read:—

1. Suggestions for Observations to be made by the Members of the Botanical Society of Canada, during the ensuing summer, with reference to a Colonial Flora, proposed to be published by the British Government. By Sir William J. Hooker, K.H., Director of the Royal Gardens, Kew, in a letter to Professor Lawson. Botanists will be gratified to hear that a series of Colonial Floras are in preparation, and one of them, that of Hong-kong, is published. We have not room for the letter sent to the Secretary by Sir W. J. Hooker on the interesting subject of a new Canadian Flora, which will be a welcome addition to our literature. On the motion of Judge Logie, of Hamilton, seconded by Andrew Drummond, Esq., of the Montreal Bank, the Society's thanks were voted to Sir William Hooker, and the Secretary was requested to communicate to him the desire of the

Society to aid in every possible way in carrying out his wishes, and especially in forwarding the important object of a Canadian Flora.

2. On the Fibre of *Asclepias incarnata*. By Judge Logie, of Hamilton. An interesting series of specimens, showing the fibre in various stages of preparation, etc., were shown.

3. On the Flora of Hamilton and its vicinity. By Judge Logie. On the motion of Dr. Dickson, a cordial vote of thanks was accorded to Judge Logie.

4. On the History, Properties, and Cultivation of Cotton. By F. R. Stanton. Communicated by Dr. H. Yates. Mr. Briggs moved a vote of thanks, which was warmly accorded.

5. List of Plants observed in the Neighbourhood of Prescott, C. W., chiefly in 1860. By B. Billings, Jun., F.B.S. Thanks were voted and the paper ordered to be printed in the Society's Annals.

6. On the Sugar Maple, and the Preparation of Sugar, and Saccharine Solutions from Maple Sap. By John May, B.A. Dr. Lavell moved a vote of thanks, which was seconded by Mr. Paton, and given with applause.

7. Notices of the Effects of Frost on Vegetation in Britain during the present winter, in letters from Professor Balfour and Dr. John Lowe, to the Secretary.

The above communications will show that this new Society does not neglect the one thing needful in these our days, viz. utility.

SHAMROCK.—CLOVER (*Trifolium repens*).

“*To live in Clover.*”—I think it is now generally agreed that the true Shamrock which St. Patrick gathered to illustrate the doctrine of the Trinity was the *Trifolium repens* (white Clover), although some of the contributors to the ‘Phytologist’ have supposed the *Ovalis Acetosella* to have been the saint’s plant. It is nevertheless true that the *Irishman* gives his patron saint the credit of having selected the *Clover*, as he wears a piece of this plant in his hat, or in the button-hole of his coat, on the *saint’s day* (17th March). There is an expression often used by us, “To live in clover,” or “To be in clover,” and Webster, in his dictionary, says, “To live in clover is to *live luxuriantly or in abundance*, a phrase borrowed from the luxuriant growth of clover, and the feeding of cattle in clover.” But I think this definition is not quite satisfactory. I find in reading ‘Euphues and his England,’ where he speaks of fidelity, the following:—“For as safe being it is in the companie of a trustie mate, as *sleeping* in the grass *Trifole*, where there is no serpent so venemous as dare venture.” From this I should be inclined to conclude that “to live in clover,” or “to be in clover,” originally meant a state of security or safety, rather than a state of luxuriance. But it is worth remarking that the word clover is derived from the Dutch *claver*, and this word signifies a club,—hence claver or *clubgrass*. Most of the clovers when in bloom are club-shaped; but is there any analogy between the *club* and the idea of *safety*?—if so, we might in support of this refer to the accounts which history relates of the exploits of Hercules with *his club*, and the general use of the *club* in early times of warfare. The club was also the origin of the sceptre as a badge of royalty.

S. B.

HERBARIA.

Sale of the Herbaria of the late Mr. J. D. SALMON, F.L.S.

1. The Flora of Surrey, in six portfolios, all named and arranged in painted deal case, with MS. district catalogues and map, £4. 15s.
2. The Flora of Godalming, named, and arranged in six portfolios, £1. 7s.
3. Four parcels of plants, Surrey, Essex, and Kent, 12s.
4. Two parcels of British Lichens, Mosses, etc., 7s.
5. Parcel of Swiss plants and ditto of Musci, from the Alps, 3s.
7. Duplicate plants, *ex Herb.* W. H. Campbell, Edinburgh, and W. Gourlie, Jun., Glasgow; in thirty-five brown-paper parcels, £1. 15s.
8. Surrey plants, *ex Herb.* Walter Reeves, Farnham, three parcels, 3s.
9. Musci, named, two parcels, £1. 1s.
10. Ditto, not named, two parcels, 6s.
11. Ditto, named, three parcels, *ex Herb.* Wm. Gourlie, Jun., Glasgow, 14s.
12. Lichens, named, three parcels, ditto, £1. 4s.
13. Cryptogamia, named, Hepaticæ and foreign Musci, three parcels, ditto, 14s.
14. Algæ, *ex Herb.* W. H. Campbell, Edinburgh, two parcels, 13s.
15. Miscellaneous plants, etc., six parcels, 4s.
17. Box containing Ferns, Grasses, etc., 4s.
18. British duplicates, flowering and cryptogamic, partly named, ten thick parcels, 15s.
19. British herbarium, about 1000 species, named and localized, 300 mounted on demy cartridge paper, many collected by Balfour, Syme, and other well-known botanists, £1. 11s.
20. European and other exotic plants, mostly named, five parcels, 9s.
21. One hundred rare British plants, 10s.
22. Good collection of British Ferns, 4s.
23. Parcel of dried plants, 6s.
24. A collection of British Grasses, about 110 species, named and mounted, 12s.
25. A collection of British and European Carices, 100 species, named, localized, and mounted, 16s.
26. A collection of British Mosses (about 200), in three cases, named and neatly mounted, £1. 8s.
27. Two large bundles of British and European plants, from various localities, 8s.

The interesting lots, No. 1, No. 2, and No. 19, deserve a remark.

The first lot consisted of specimens that had been selected from a general herbarium of British specimens; and they were the finest obtainable, in the best possible condition, and very neatly mounted as described. Surely somewhat less than five pounds was a very low price for this collection. The paper on which they were mounted cost nearly double the sum at which they were sold.

The next lot, viz. the specimens illustrating the Flora of Godalming, were also in an excellent condition, but mounted on a paper of smaller dimensions. It is to be wished that this excellent collection may be transferred to the custody of the Guildford Institute, or to that of Godalming, if this wealthy town has such an institution.

The nineteenth lot, as above said, was the original collection from which the Flora of Surrey was selected. This set contained excellent plants, and was sold very cheap—at less than three shillings a hundred.

It is not desirable that dried plants should command a ready and remunerative sale; for if they did, most of our rare plants would speedily be extirpated. Upon the whole, it is better for scientific purposes that they should bear a high value in the eye of the possessor, but should fetch only a nominal price when submitted to public competition.

A NEW USE FOR APPLES.

We are threatened with a cider famine, not from the failure of the apples, although a partial crop, but because they are likely to be applied to a more profitable purpose (so far as the growers are concerned) than in making a household beverage. It seems that the Manchester calico dyers and printers have discovered that apple juices supply a desideratum long wanted in making fast colours for their printed cottons, and numbers have been into Devonshire and the lower parts of Somersetshire buying up all the apples they can get, and giving such a price for them as in the dearest years hitherto known has not been offered. We know of one farmer in Devonshire who has a large orchard, for the produce of which he never before received more than £250, and yet he has sold it this year to a Manchester man for £360. There can be no doubt that the discovery will create quite a revolution in the apple trade.—*From the 'Times,' October 1, 1861.*

Devonshire, September 27th, 1861.—The quantity of cider is not likely to be so great this year as formerly, in consequence of the sale of many orchards to manufacturers, who are about, it is said, to use the juice in some colouring processes.—*From the 'Times,' September 30th, 1861.*

DR. TORREY'S HERBARIUM.

Through the 'American Medical Times,' we learn that Dr. Torrey has presented "his immense *herbarium*, the fruit of forty years' assiduous labour, together with his valuable botanical library," to the trustees of Columbia College, who have provided accommodation for them, and also a residence for Dr. Torrey, in the College. This collection is said to embrace examples of nearly all the collections of Government expeditions, from that of 1819, under Major Long, to the recent results. Besides, the collection embraces numerous specimens from the Floras of Europe, Asia, Australia, and South Africa. Dr. Torrey does not propose abandoning his botanical pursuits; but hopes, under the auspices of the College, to prosecute them under more favourable circumstances.

SCROPHULARIA VERNALIS.

This interesting plant was known as British at an earlier date than we are generally disposed to assign to it. Sir J. E. Smith, who worked up the origin of our British Flora with scrupulous care, seems to have overlooked the earliest record of this plant, as I perceive by a manuscript note in my copy of Smith's 'English Flora,' as follows:—Sir James says, vol. iii. p. 139, "Neither Dillenius nor Ray takes notice of this species." My annotated copy of the 'English Flora' adds,—"but William How does." See 'Phytologia Britannica,' p. 110 (Lond. 1650), under the old name, *Lamium Pannonicum aliud*, Clusius.

W. P.

CREPIS BIENNIS.

A friendly critic has pointed out a slight inaccuracy in a notice of Kentish plants, p. 207, vol. v. Instead of writing, "and in 'English Botany,' both in the original work and in the Supplement," it should have been "in 'English Botany,' and the confusion of the two species is admitted in the supplement to that valuable work."—See *Crepis taraxacifolia*, E. B. S. 2929.

CINCLIDIUM STYGIUM.

Sir C. Bunbury, Bart., exhibited a specimen of *Cinclidium stygium*, a rare Moss, discovered on Tuddenham Heath, near Mildenhall, in November last, by Mr. Edmund Skepper, a zealous and intelligent botanist of Bury St. Edmund's. This Moss is new to the Flora of Suffolk. Tuddenham Heath was long since noted as the locality of several rare plants, and especially of *Liparis Læselii*.—From the 'Gardeners' Chronicle' of December 15, 1860.

ADDENDA TO THE LIST OF OXFORDSHIRE MOSSES.

The *Bryum pallescens*, near Parktown, proves on closer examination to be *B. uliginosum*, with the operculum larger and less oblique than usual. Fruit, July.

Bryum inclinatum was accidentally omitted. One large tuft grew on a decayed Willow, near Sparsey Bridge. Fruit, June. H. BOSWELL.

Oxford, August 5, 1861.

VERBASCUM THAPSIFORME.

Some readers of the 'Phytologist' have heard from private sources that this rare British *Verbascum* was discovered last August not far from Ashford, Kent. A correspondent has promised to supply a detailed notice of the history, relations, and recent discovery of this species; and it is hoped that his account will appear in the next monthly issue.

OTHELLO, Act 1, Scene 3.—*Iago to Roderigo* (speaking of Othello): "These Moors are changeable in their wills: fill thy purse with money. The food that to him now is as *luscious as Locusts*, shall be to him shortly as bitter as *Coloquintida*."

Communications have been received from

W. Pamplin; John Sim; Sidney Beisly; H. Beisly; W. P.; C. J. Ashfield; T. R. A. Briggs; W. Winter; T. Stansfield; W. Marshall; W. Richardson; the Rev. G. Mackfarlane; H. C.; W. Richardson, jun.; J. S. M.; Rev. R. H. Webb.

BOOKS, ETC., RECEIVED FOR REVIEW.

The Queen, September 14.

The Canadian Naturalist and Geologist, for February, April, June, and August.

Cleghorn's Forests and Gardens of South India.

The Todmorden Post, October 12th.

ERRATA.

Page 297, line 10 from bottom, for γ . *spicata*, read *F. (Fumaria) spicata*.

Page 299, line 10, for *concisely* read *copiously*; line 15, for *digitalis* read *segetalis*.

Page 300, line 25, for *Rhine* read *Rhone*.

BOTANY OF THE MEUSE.

Botany of the Fond de Leffe, near Dinant, Belgium.

The Fond de Leffe is a small valley, or rather gorge, running up from the Meuse, just below the Dinant, some five or six miles in the direction of Ciney. The Dinantais proudly name it their "petite Suisse;" and though its scenery is scarcely grand enough to warrant the appellation, still there is sufficient picturesque beauty to please and satisfy stay-at-home travellers, who are unable to make invidious comparisons.

The hills rise abruptly on either side, now exhibiting masses of rugged rocks, whose forms and tinting would delight the eye of a painter, now wooded to their summit, while at their base flows a little sparkling rill, gurgling over pebbles, or forming tiny rapids where it encounters large stones. Lower down the valley it is converted into a "water-power," and instead of "wandering at its own sweet will," is dammed up, and forced to turn the wheels of paper-mills and "*polissoirs*," these latter used for smoothing and polishing the marble, of which several different kinds are quarried here, and form a very lucrative branch of commerce. These mills, with the cottages and gardens of the workpeople, give life to what, without them, would be a wild and lonely glen. Our valley has various attractions. Its bold masses of weather- and lichen-stained rocks, alternating with dense woods or fresh green meadows, offer charming subjects for the artist's pencil; the geologist would find matter for study in its singularly contorted stratification, and in the fossiliferous deposits, occasionally laid bare by the quarrymen; nor is it without interest for the archæologist. About two miles up the valley, on the side of a hill, is the so-called "Chemin des Géans," along which the rock is distinctly marked by a groove, apparently worn into it by wheels.

Popular belief ascribes these tracks to the Romans, who are said to have had a military road here. I was even shown the spots where posts were placed at regular intervals, no doubt to support some kind of rail; a necessary precaution, for the road runs along an almost perpendicular slope, a fact that sadly tests my credulity; for I cannot understand how any vehicle could have preserved its centre of gravity on such an inclined plane;

unless indeed the Romans adopted that ingenious mechanical contrivance in such general use in the backwoods of Australia, of having a long and a short pair of wheels, which are changed from side to side as occasion requires.

But I am neither artist, geologist, nor antiquary, therefore it is not the pursuit of any of these objects, that draws me to the Fond de Leffe. For me it has a twofold interest,—first, as being the residence of some dear members of my family, with whom I have spent many a long, pleasant day, during the past summer; and secondly, that while thus “visiting my relations,” I had the opportunity of making acquaintance with its rich and hitherto little-known Flora. The following list of a few of its rare plants will be sufficient to prove what an interesting field is here open to the researches of the botanical tourist. Spring-time brought us *Phalangium (Anthericum) Liliago*, *Lunaria rediviva*, *Arabis arenosa*, *Ophrys apifera*, *Cardamine impatiens*, *Myrrhis odorata*, *Globularia vulgaris*, etc. Later in the season the rocks (limestone) were literally covered by the large white umbels of *Seseli (Libanotis) montana*, among which *Lactuca perennis* displayed its pretty purple, star-like flowers, together with *Allium sphaerocephalum*, *Verbaſcum Lychnitis*, *Vincetoxicum officinale*, *Dianthus Carthusianorum*, *Asperula cynanchica*. Near the water grew *Epilobium roseum*, *Dipsacus pilosus*, *Mentha rotundifolia*. I could lengthen my list by adding the names of many other, though less rare, species. But what will give the Fond de Leffe a lasting fame in the annals of Belgian botany, is the discovery we have lately made there of a plant quite new to our Flora. Some weeks ago, my nephew sent me a sprig of an *Artemisia* he had met with in his walks, which, though in too young and imperfect a state for determination, I saw immediately was new to me, and fancied might prove to be *A. campestris*, which has hitherto only been found in one locality in Belgium, namely between Sougnez and Aiwaille, in the province of Liége.

On the 27th of September, as we were spending the day in the valley, my nephew proposed to escort me to the spot where his plant grew. We started, accompanied by his young sister, who shares my taste for botany, all three much excited at the prospect of a rare acquisition for our herbaria. After walking some distance, a turn of the road brought us to the object of our

search. There was the *Artemisia*, in immense quantities, covering the entire surface of the limestone rock, and peeping out of every chink, for the space of several hundred yards, to the exclusion of all other vegetation, excepting a little parched-up grass. It was just beginning to flower, but we were able to select a sufficient number of specimens for examination at home. Having consigned these safely to the vasculum, we strolled on up the valley to a hillside, whose scanty herbage was enlivened by the bright-purple blossoms of *Gentiana germanica*. Is this species identical with, or distinct from, our English *G. Amarella*? I collected the latter some years ago on the downs near Dover; but, except for its smaller size and paler colour, cannot perceive any essential distinction between them. Not far from the Gentian, among a heap of loose stones, its favourite habitat apparently, was a goodly patch of *Polypodium calcareum*, the fronds varying from little more than an inch to five or six inches in length and breadth. On consulting our watches we now found that we had barely time to reach home by the dinner hour, and therefore turned to retrace our steps, determined not to loiter, nor to look right or left. We kept our resolution till we came to some little ponds, pools I should rather call them, verdant with Duckweed, and promising a fine harvest of the vegetable "marvels of pond life." This was a temptation too strong to be resisted. My companion, nothing daunted by the uninviting appearance of the decaying mass, tucked up his sleeve, dipped in his hand, and drew forth, first *Chara foetida* in fructification; next *Potamogeton densus*, and *P. crispus*, in seed; and lastly a hard, bony substance, having neither root nor branches, only an axis, surrounded by three or four toothed, broad leaves. These treasures were all stowed into the vasculum for further examination, and then we hurried back to dinner.

My first work after this meal, was to refer to my books in order to identify the *Artemisia*. A first glance sufficed to convince me that it differed entirely from *A. campestris*. Further study seemed to prove it *A. camphorata*, but this species did not figure in any of the Belgian Floras, so to make assurance doubly sure, I forwarded some specimens to my correspondent, M. Crépin (author of the 'Manuel de la Flore de Belgique'), and in a few days had the satisfaction of receiving from that gentleman a full confirmation of my surmise, that we had been so for-

tunate as to detect a species previously unknown in Belgium, though it had been found growing abundantly on the rocks near Givel, on the French frontier.

What strange freaks plants play with the theories of botanical geographers! And what a Puck-like spirit of mischief seems to direct them in thus overleaping the lines and boundaries set to their wanderings, by these *savans*! Last year it was the appearance of *Arenaria balearica* in Britain, that gave rise to so much angry discussion; and lo! here is another South-European species, which has skipped from Dauphiné to the valley of the Meuse, between the fiftieth and fifty-first degrees of north latitude. What a theme for learned speculation!

Having settled the question of the *Artemisia*, we had next to ascertain the nature of the hard bodies taken from the pond. They proved to be gems (what are called in German *Knospenskeime*), a secondary mode of propagation of *Potamogeton crispus*. I found them figured in Reichenbach's 'Deutschlands Flora,' (the half-coloured edition) vol. v. f. 30, as *P. crispus*, var. *gemmifer*. They are also figured and described by Treviranus, in a number of the 'Botanische Zeitung' for 1857. Thinking they may be new to other readers of the 'Phytologist,' as they were to me, I have translated and subjoin his note and a copy of his drawing.

H. C.

Hou.v-sur-Meuse, October 13th, 1861.

BOTANY OF SPAIN.

A few Days' Botanizing in the North-Eastern Provinces of Spain, in April and May, 1860.

NO. IV. MONSERRAT.

The celebrated mountain Monserrat (which there is no good reason for writing with the French orthography, Montserrat), consists of a long range of many summits, which from their peak-like and serrated appearance, when seen from far off, might be supposed to be of slate. The greater is the surprise of the traveller when he finds on approach, that the whole mountain is composed of pudding-stone, and that the turrets and pinnacles are not pointed, but rounded. The highest summit is stated to

be 3800 feet above the sea, from which its distance is not great, and the mountain is a conspicuous object from the coast road, south of Barcelona. From the northern, or rather north-eastern coast, it could also be seen for a considerable space, were not the view intercepted by intervening high ground. From the range behind Barcelona, a fine view of it may be had; but at an angle which does not give it the advantage of its entire length. It is only from the Tarragona road, at a considerable distance from Barcelona, that it can be seen spread out lengthwise in its full dimensions. On a ledge in a receding hollow (or coomb) of the mountain, nearly in the middle of its length, and seemingly about the middle of its height (though really much lower), stands the famous monastery. Like the other monasteries of Spain, once so wealthy and powerful, it is now shorn of its glories; but it is still inhabited by a few monks, though in a number disproportioned to the size and aspect of the edifice, and their hospitality is extended to travellers to the extent of lodging, but not of food; which last is supplied at a tolerable *restaurant* within the precincts of the convent, the utility of which establishment atones for its violation of the *religio loci*. The lodging in the convent itself is gratuitous; but travellers who can afford it, make a donation (also gratuitous) to the funds of the convent. The sleeping chambers, or cells, are neat, sufficiently commodious, beautifully clean, and the views from their windows magnificent. The one which I occupied looked across the hollow of the mountain, upon the splendidly wooded other horn of the crescent, then vocal with numerous nightingales. A copious spring, which issues from the mountain just outside the gateway, had, no doubt, a share in originally deciding the locality of the convent.

The easiest way to Monserrat from Barcelona is by the Mauresa railway, one of the four which diverge from that city. From the railway station to the mountain there is a broad and good carriage-road, by means of which tourists and pilgrims are landed in the very yard of the convent, from that universal symbol and instrument of modern civilization, an omnibus. If this commodious mode of access makes the expedition less romantic, it does not make the place less beautiful. The prosaic vehicle winds its way up the mountain-side through, for the South, a rather dense wood, which, more or less open, according as the woodcutters have been more or less recently in operation, covers a great part

of the mountain, both in its higher and lower regions. There is another mode of approach at the southern end of the mountain from the Martorell station of the Valencia railway; but on this side there is neither carriage nor road, but a mule-path only, and travellers must make their way up the mountain and along its side to the convent, either on foot or mounted. Beyond the monastery there is no road higher up; but mountain paths are not deficient. The path to the top, after a stiff climb, leads for a considerable distance along a wooded ravine hemmed in by summits of a pillar-like or sugar-loaf character. The view from the highest of these includes the greater part of Catalonia, northward to the Pyrenees, westward and southward towards the Segre and the Ebro.

I can hardly speak in sufficiently strong terms of the profusion and variety of the flowers, southern and northern, Mediterranean, subalpine, and almost alpine, which covered the mountain-side when I saw it; not always in separate regions, but often mixed together on the same spot. It is fitting to begin with the trees and shrubs, which, still more than flowers, give the general character to a landscape. The *Quercus Ilex* and *coccifera* of the South (the latter not so plentiful as in many other places) are combined with the Holly (*Ilex Aquifolium*) of the North. A denizen of both equally, the Box-tree (*Buxus sempervirens*), here attains a lofty growth. The Juniper of our chalk downs (*Juniperus communis*) is joined with *J. phœnicea*, a Southern and a *garrigue* plant. With *Celtis australis*, the *Micocoulier*, a Mediterranean tree, is found the Mountain Ash (*Pyrus Aucuparia*) of the North. Another flowering rosaceous shrub, *Amelanchier vulgaris*, abounds, as it usually does where there are clefts in calcareous rocks, from the stony hills of Provence to the chalk cliffs above the Seine in Normandy. The Laurustinus (*Viburnum Tinus*), a plant of Italy and the south of France, is side by side with another of the same genus, *V. Lantana*, the Wayfaring-tree of our chalk hills. *Phillyrea media* and *Rhamnus Alaternus*, natives of the *garrigue*, which reach English shrubberies, are accompanied by the Mastic, *Pistacia Lentiscus*, the Terebinth, *P. Terebinthus*, and the universal *Hedera Helix*.

But the flowers of Monserrat are more various and remarkable than the wood products. I have seen few places in the South where the vernal wood-flowers are so abundant. The blue colour is that

which predominates. The lovely *Hepatica*, of which the pink is rare compared with the far more beautiful blue variety, glistens from under every thicket. A flower of still deeper blue, our early *Polygala calcarea*, helps perhaps even more to colour the mountain-side. *Viola canina* is in like profusion; as is also, in the barer places, the peculiarly Southern *Aphyllanthes monspeliensis*, a leafless plant (as the name indicates), of the Order *Junceæ*, but which, wherever it grows, studs the ground with ornamental blue flowers, each division of the corolla marked by a midrib of a deeper blue. In the lower regions of the mountain, *Linum narbonense* expands its still finer and larger blue flowers, the most magnificent of their tribe. In the shady woods, our Columbine, *Aquilegia vulgaris*, is not unfrequent. Another of the most abundant flowers is *Globularia vulgaris*, a plant unknown to England (though not requiring a very Southern climate), whose round heads are also blue, though of a less beautiful tint. Another plant of the same genus, *G. Alypum*, is also here met with, a more decidedly Southern species, though rarer even in the South than *G. vulgaris*. Of flowers other than blue, one of the most plentiful—it is so indeed wherever it grows in the Pyrenees, the Cevennes, or the burning rocky wastes of the Mediterranean—is the rosy *Saponaria Ocymoides*, with its masses of blossom carpeting the ground. *Anthyllis Vulneraria* is frequent; that is, its red-flowered variety, much the commonest in the South. Of *Cisti* I only saw the purple *C. albidus*, the most beautiful of the common species, and only matched by the very similar *C. villosus*, which supplies its place in Sicily and Greece. But there were numerous *Helianthema*, among which one white (probably *H. apenninum*) and several yellow, which, not feeling quite certain that I have determined them rightly, I forbear to name. The red Valerian, *Centranthus ruber* (which we possess, though probably naturalized, in Greenhithe chalk-pits and other places in Kent), here showed its dark-red masses; a fact rather exceptional, for I have found *C. angustifolius* much more common, both in the French Alps, the Pyrenees and the mountains of the south of France. On a turfy part of the mountain-side, at a considerable elevation, I found *Ranunculus gramineus*, a handsome and rather rare plant allied to *R. Flammula* and *Lingua*; and at a height above that, *Arbutus Uva-ursi* (now *Arctostaphylos*) spread out its luxuriant stems and pitcher-like flowers. The small

yellow Narcissus, *N. juncifolius*, formerly confounded with *N. Jonquilla*, grew copiously in the same region; and near the summit of the mountain (on the grassy ledge on which are the ruins of the highest hermitage, that named after St. Jerome), *N. biflorus*, more beautiful than even *N. poeticus*, filled the air with rich fragrance.

But the plant most associated with Monserrat is *Ramondia pyrenaica*, known to those who have botanized at Gavarnie, Esquierry, and other places in the Higher Pyrenees, as one of the most exquisite vegetable productions of that mountain chain. This plant, the only European representative of the Order *Cyrtandraceæ*, was earliest known and described (under the name *Verbascum Myconi*) as a Monserrat plant; these excepted, it has, I believe, no other known habitat. I was fortunate enough to find in a rock, a plant or two already in flower; not on the higher part of the mountain, but on its lower slope, very near the carriage-road. Though I possessed far more beautiful specimens collected on the rocky side of the torrent at Gavarnie, it gave me great pleasure to find it in what, if not its first abode, is at least the first place in which it was scientifically recognized.

The remaining plants which I observed on Monserrat I shall enumerate in the usual order. They are doubtless but a small part of the botanical riches of the mountain, so many plants being, at this early time of the year (the second week of May, in a very backward season), not only not in flower, but not yet recognizable. Of *Ranunculaceæ*, there were *Clematis Vitalba* and two *Thalictra*; one of these had not even begun to flower; another, in the lower region of the mountain, and in very small quantity, had barely begun, and I could not with certainty determine it. Its appearance is not the usual one of a *Thalictrum*, and if a French species, it must be *T. tuberosum*. *Ranunculus gramineus* I have mentioned, to which add *R. bulbosus* and *Helleborus fetidus*. Of Crucifers, I saw *Arabis sagittata*, *Gerardi*, and *Turrita*; *Cardamine hirsuta*; *Biscutella lævigata* abundantly, the smooth, though hard form, which justifies the name (not *B. ambigua*, the common one of the South, now generally accounted a variety of the former); an *Erysimum*; *Sisymbrium Irio*, *Columnæ*, and *obtusangulum*; *Diplotaxis erucoides*; and, of course, *Alyssum calycinum*, and *Lepidium Draba*. The *Resedæ* were represented by *R. Phyteuma* and *R. fruticulosa*. The *Caryophyllææ*, by *Silene italica*, with other large and small

species of that genus, not in flower; and an *Arenaria* unknown to me. Of *Oxalideæ*, I noticed *O. corniculata*; of *Geraniaceæ*, only two *Erodiums*, *E. ciconium* and *malachoides*. *Leguminosæ* were, as usual, abundant. Besides *Calycotome spinosa* and *Genista Scorpius*, there was a light-green dwarf *Genista*, one of several species which have leaves on the upper part and only thorns on the lower part; the real Spanish broom, *S. hispanica*. The *Cytisi* were *C. argenteus*, and that bush of golden flowers, *C. sessilifolius*. The *Astragali* were *A. monspessulanus*, and a species with pods like large hooks, *A. hamosus*. Besides these, and the *Anthyllis* already mentioned, there were *Dorycnium suffruticosum*, *Lotus corniculatus*, *Psoralea bituminosa*, *Coronilla Emerus*, *Hippocrepis comosa* (unless I mistook *H. glauca* for it), *Arthrobotium scorpioides*, and *Lathyrus setifolius*. Of *Rosaceæ*, besides several *Roses* not yet in flower, there were *Pyrus communis*, *Potentilla verna*, the wild Strawberry (*Fragaria vesca*), and *Poterium Sanguisorba*. Umbellifers, at this season, I could scarcely expect to find, I only noticed, of course, not in flower, the common Fennel (*Fœniculum vulgare*) and the tall *Bupleurum fruticosum*, with its large, entire, coriaceous leaves. I observed *Momordica Elaterium*, the European representative of the Cucumber tribe; several Honeysuckles, *Lonicera implexa*, *Xylosteum*, and perhaps others; various Sedums, one apparently *altissimum*, and a *Rubia*, probably *peregrina*; none of these however were in flower. Several Galiums were, but I did not stop to determine them. The *Compositæ* which I was able to recognize at this season were, *Pullenis* (formerly *Bupthalmum*) *spinosa*, *Calendula arvensis*, *Urospermum Dalechampii* and *picroides*, (all common plants); *Crepis albida*, a fine mountain plant, which seemed as much at home here as in the Pyrenees; a *Santolina*, and, I believe, a *Phagnalon*; the last two not yet in flower. The Heaths were *Erica arborea*, and another (probably *multiflora*) out of flower. Of *Primulaceæ*, I only noticed *Anagallis arvensis*. Of *Boragineæ*, an early-flowering Order, there were several: *Asperugo procumbens* exhibited its ugly form in luxuriant tangled masses, under the walls of the convent. On the mountain-side the handsome *Lithospermum fruticosum* put forth its blue funnel-shaped flowers. *Echium vulgare* and *Borrago officinalis* make up the list. Of the Order *Solaneæ* I only remarked *Hyoscyamus niger*, a plant very widely diffused, though seldom abundant in

any of its localities (an English station, the chalk-hill near Boxley, is an exception). There was a *Verbascum*, resembling *V. Thapsus*, *Antirrhinum majus*, and an *Orobanche* of a blood-red colour. *Labiatae*, a numerous Order on the calcareous wastes of the South, were rather frequent, and later in the year there are, no doubt, many more. *Lavandula Spica* and *Phlomis Lychnites* were there, but not yet in flower; *Thymus vulgaris* and *Rosmarinus officinalis* of course; *Salvia clandestina*; a *Teucrium* not in flower, I believe the dark-coloured one which I had found near Zaragoza; *Siderites hirsuta*, one of the goodliest of its stiff genus. Of Plantains, I saw only the common *Plantago Cynops*. Of *Apetalae*, only *Daphne Laureola*, and four *Euphorbiae*, *E. Characias*, *serrata*, *amygdaloides*, and another. The *Mono-cotyledoneae*, besides those previously mentioned, were *Orchis mascula*; *Gladiolus byzantinus* (in the hot lower regions); the furze-like *Asparagus (A. horridus)*, which I first found at Valencia; *Tamus communis*; *Smilax aspera*; *Ruscus aculeatus*, a plant which looks more congenial to the South than to the damp thickets which shelter it in our own country; *Convallaria Polygonatum*; *Asphodelus ramosus* and *fistulosus*, and lastly, though not yet in flower, *Lilium Martagon*, that ornament of mountain woods on the continent of Europe, which though existing in profuse abundance in several similar localities in our south-eastern counties, an idle scrupulosity so long kept out of our British Floras.

Here I am obliged to end what is no doubt a very scanty sample of the treasures by which, a botanist able to visit Monserrat repeatedly and at various seasons, might hope to have his labour rewarded. There only remains to be recorded a two days' excursion in the Spanish Pyrenees, and my memoranda of Spanish botany will have been exhausted.

Verbascum thapsiforme, Schraderi. History of the Species or Variety?

Mr. Hudson, in his excellent 'Flora Anglica,' 3rd ed. 1798, is the first English author who has described and localized this plant, about which there are so many different and conflicting opinions, both among the ancients and among the moderns.

The following is the account of this species, if it be a species, given by the judicious author of the 'Flora Anglica':—

"*Verbascum thapsoides*, foliis decurrentibus, caule ramosa.—Sp. Pl. 1670.

Verbascum angustifolium ramosum, flore aureo, folio crassiore.—B. Hist. 111, 856.

Verbascum album mas, flore luteo.—Dalech. Hist. 1301.

Verbascum angustius.—Dod. Pempt. 148.

Verbascum foliis viridibus crassioribus.—Hist. Ox. ii. 436.

Anglis, *bastard Mullein*.

Habitat in pratis et pascuis cretaceis et arenosis, in comitatu Cantiano, passim; ♂. vii., viii. (Flowers in July and August.)"

Dr. Withering in his third edition of the 'Botanical Arrangement of the British Plants,' quotes Hudson as his authority for the locality of the plant (vol. ii. p. 249). And further states that it is a "hybrid plant produced in the gardens of Upsal, in the year 1761, from the seeds of *V. Lychnitis*, impregnated by the pollen of *V. Thapsus*, both of which grew in the same bed." The learned author quotes Gerarde, p. 773, fig. 2, who says that "the floures are white, the special mark to know it from the male kinde, being like in every other respect." It may be a question whether this be the present plant under consideration, which has yellow and *not* white flowers. The plant described in Gerarde, on p. 775, fig. 4, agrees better with *V. thapsiforme* of modern authors. Gerarde calls his plant *Verbascum Lychnite minus* (Small Candlewick Mullein), and tells us that "it differs little from the last rehearsed (*V. Lychnitis*), saving that the whole plant is of a better savour, . . . the floure also is much larger, and of a straw or pale-yellow colour."

Withering, who informs his readers that this plant originated in Sweden in 1761, quotes Fuchsius, Dodoens, Gerarde, and J. Bauhin, as the authorities for his *V. thapsoides*, although these authors lived centuries before this species existed, if we are to credit the account of its first appearance. *Aliquando bonus dormitat Homerus*: the most vigilant are now and then caught napping.

Sir J. E. Smith, under *Verbascum Lychnitis*, quotes Hudson, Withering, and the ancient authorities, together with Schrader, Willdenow, Hoffmann, etc., and observes that the "mule variety β he has never seen wild, nor is there any authentic specimen in the Linnæan Herbarium."

The next British authority is Dr. Lindley, who is quoted by Hooker, as his authority for the plant; and the latter observes that it grows "by roadsides in Kent."

Here it may be observed, that by several living authorities on this subject the plant has been ignored; some being doubtful of its very existence, and others sceptical about its being a British or a Kentish plant.

The writer of this notice has much pleasure in notifying to all British botanists that there is such a plant, viz. a species, it may be said, universally recognized by Continental botanists, among whom it will be sufficient to mention De Candolle, Fries, Willdenow, who calls it *V. thapsoides*; Meyer, who enters it as *V. Thapsus*, while the *V. Thapsus* of English botanists, and of most Continental authors, is by him called *V. Schraderi*; and this nomenclature is followed by Cosson and Germain, in their excellent 'Flore des Environs de Paris.' Whether the Kentish plant be estimated as a species or as a variety, all Continental authors describe it as a species. My first acquaintance with this plant is of a very recent date. About two or three years ago, Mr. Atwood, of Rouen, sent me seeds of many Norman plants, and among these, some of *Verbascum thapsiforme*, and of *V. phlomoides*. These were distributed among several botanists and cultivators; some succeeded in rearing plants, and some failed.

I was in doubt, till my plants flowered, whether I had *V. thapsiforme*, or only *V. thapsus*. And even after they were in flower I was still dubious, as I had never seen *V. thapsiforme*, if my plant was what is generally so called, or some nearly allied form, *V. phlomoides*, for example.

A Liverpool botanist, who did me the honour of giving me a call, and to whom I had sent seeds of the plant, recognized my plants as the same as his, raised from seeds, and which he had decided to be the plant in question. Soon afterwards I was informed by a very kind friend, to whom I gratefully acknowledge my obligations, for helping me to the names of many continental species, that there was no question about my plants raised from the Norman seeds; that they were what foreign botanists unani- mously call a species, and name it *V. thapsiforme*.

My scepticism about the plant was now entirely removed, but there were still doubts hanging to it as an English or a Kentish plant. These were very unexpectedly, very satisfactorily, and

much to my gratification, cleared away, during the course of the last month (August, 1861). For this we are indebted to the fortunate discoverer of *Sonchus palustris*, in Plumstead marshes (see 'Phytologist' for 1860, vol. iv. p. 310), to whom the readers of the said magazine should be very grateful; for he has communicated the localities of many rare British plants, from time to time, during the last twenty years; probably more than have been contributed by any other individual botanist during the above-named period.

In giving a precise description of the locality where the *Sonchus* grows, there was no danger to the future existence of the plant; but the same definite description of the spot where the *Verbascum* grows, might be the means of its destruction in the locality where it was seen on the 16th of last August. It is hoped that the readers of this notice will be pleased to accept of the information that *Verbascum thapsiforme* grows not very far from Ashford, in Kent. It is not considered prudent to point out the exact spot, for fear of the eradication of the plant.

Within living memory the plant has been seen plentiful in another part of the county, twenty miles at least from Ashford. The publisher of the 'Phytologist' saw it at Cuxton, probably more than thirty years ago; and he was informed by the late Mr. Anderson, the then Curator of the gardens of the Apothecaries' Company, at Chelsea, that the *V. thapsiforme* grew there (at Cuxton), and that *V. pulverulentum* grew in the same part of the county.

Mr. Pamplin remembers very distinctly that he saw the branched variety, *V. thapsiforme*, but he does not vouch for *V. pulverulentum*. He however asserts that the latter was in the Chelsea Collection, and that Mr. Anderson told him that he (Mr. A.) brought it from Kent.

It is to be wished that the discovery of this also may reward the perseverance of some future discoverer.—*From a Correspondent.*

Note to "Verbascum thapsiforme."

I will here add a few diagnostic marks to help all future discoverers of this rare plant to decide whether they have detected the genuine species, or a variety of *V. Thapsus*, which sometimes varies in the size of the flowers, and has also, in very luxuriant forms, a tendency to produce a branching spike.

There is little obvious difference between the stems and leaves of *V. Thapsus* and those of *V. thapsiforme*. Both the plants are tall, from four to six feet high, with woolly leaves. Only the bracts of the latter-mentioned are more acuminate than they are in the former, which are like the leaves, only more pointed. The points in *V. thapsiforme* are elongated. In this species the sepals (lobes of the calyx) are hairy and pointed. The prominent distinction is in the corolla, which is very much larger than in any form of *V. Thapsus*, and the two lobes of the corolla contiguous to the two long stamens are much larger than the three opposite lobes, and of a different shape, being elongated. In *V. Thapsus*, the lobes are equal. These two characters are constant in all the examples seen. The two more elongated stamens are quite smooth, and the anthers are attached throughout; the latter are deep-orange, and the stamens and hairs are yellowish-green.

In *V. phlomoides*, for this plant has recently established itself near the middle of Clapham Common, the leaves are not woolly on the upper side, but of a very light green colour, and are much smaller than they are either in *V. Thapsus*, or *V. thapsiforme*. The bracts are not acuminate, and the lobes of the corolla are equal. The corolla is not so large as that of *V. thapsiforme*, but larger than in *V. Thapsus*. The longer stamens are also quite smooth, and the anthers are attached, as in *V. thapsiforme*. *V. phlomoides* is but a small plant when compared with its two relatives, being not above half a yard high in the recently observed station. *Note*.—This rare plant, *V. phlomoides*, was first observed on Clapham Common, the 29th August, 1861, and again on September 13th. Here it was spread over about a couple of rods or so, and there might have been then from thirty to forty plants, some of them in flower, but the greater part of them only with radical leaves.

*A List of Plants found near Slough, Stoke, and Burnham Beeches,
Bucks. By W. T. DYER.*

Alchemilla arvensis. Stoke.

Anagallis cærulea. Stoke.

Asplenium Trichomanes. Stoke.

- Asplenium Adiantum-nigrum.* Stoke.
Athyrium Filix-femina. Black Park.
Blechnum boreale. Burnham Beeches.
Butomus umbellatus. Thames, Eton.
Campanula Trachelium. Lane near Burnham Beeches.
Carlina vulgaris. Chuck Quarry, Burnham Beeches.
Cheiranthus Cheiri. Stoke walls.
Cuscuta Epithymum. Stoke Common.
Drosera intermedia. Stoke Common.
Drosera rotundifolia. Stoke Common.
Erigeron acris. Walls of Windsor Castle.
Eriophorum angustifolium. Stoke Common.
Euphorbia amygdaloides. Burnham Beeches.
Equisetum limosum. Thames, Eton.
Equisetum palustre. Burnham Beeches.
Equisetum sylvaticum. Burnham Beeches.
Fedia dentata. Stoke.
Fedia olitoria. Stoke.
Geranium pratense. Eton meadows.
Geranium pyrenaicum. Waste ground near Stoke Green.
Hydrocharis Morsus-ranæ. Windsor Park.
Hypericum humifusum. Burnham Beeches.
Inula Conyza. Stoke.
Juncus squarrosus. Stoke Common.
Lactuca muralis. Windsor Castle walls.
Lamium Galeobdolon. Stoke.
Lastrea dilatata. Black Park.
Linaria Cymbalaria. Walls; Stoke.
Linaria minor. Wall opposite South-western railway-station,
Windsor.
Linaria repens. Hedge near Sefton Arms, Stoke.
Lycopodium inundatum. Stoke Common.
Lysimachia nemorum. Burnham Beeches.
Lysimachia Nummularia. Burnham Beeches.
Lysimachia vulgaris. Eton meadows.
Molinia cærulea. Stoke Common.
Nuphar lutea. Thames, Eton.
Nymphæa alba. Thames, Eton.
Osmunda regalis. Burnham Beeches.
Polygonum Fagopyrum. Stoke; escaped from cultivation.

- Polystichum aculeatum*. Stoke.
Polystichum angulare. Stoke.
Pyrethrum inodorum. Stoke.
Rhinanthus Crista-galli. - Stoke.
Rhyncospora alba. Burnham Beeches.
Rosa rubiginosa. Chalk quarry, Burnham Beeches.
Ruscus aculeatus. Burnham Beeches.
Sagittaria sagittifolia. Thames, Eton.
Salix repens. Stoke.
Sanicula europæa. Burnham Beeches.
Scolopendrium vulgare. Stoke.
Scutellaria minor. Burnham Beeches.
Sinapis tenuifolia. Windsor Castle Terrace.
Sison amomum. Stoke.
Trifolium incarnatum. Stoke ; escaped from cultivation.
Verbascum Thapsus. Stoke.

PLANTS OF PLYMOUTH.

Localities of some Uncommon Plants and of Varieties of Common Species within twelve miles of Plymouth. By T. R. ARCHER BRIGGS.

Ranunculus hirsutus. Fields between Torpoint and St. John's. July, 1860.

Ranunculus parviflorus. Common between Plymouth and Yealmpton. Near Plymstock ; Egg Buckland.

Berberis vulgaris (L.). Bank above a small creek from St. John's Lake, between Torpoint and St. John's village. Apparently quite indigenous in two or three spots.

Papaver Argemone (L.). Field between Torpoint and St. John's. July, 1860.

Cardamine pratensis, flore pleno. Abundant in a meadow between Plymouth and Plympton St. Mary's Church. Yealm Bridge, very sparingly.

Erysimum cheiranthoides (L.). Not very common. In tolerable plenty in a field between Buckland Monachorum and Roberough Downs. August 3rd, 1861.

Thlaspi arvense (L.). Cultivated ground near St. Budeaux

village. The only locality of this plant I know of in the neighbourhood of Plymouth.

Silene anglica (L.). Shaugh. A single plant, in a cornfield between Torpoint and St. John's. July 23rd, 1861.

Malva rotundifolia (L.). Not common. Near the Devil's Point, Stonehouse; Yealmpton village.

Hypericum dubium (Lcercs). Common Wood; Fursdon; Egg Buckland.

Hypericum montanum (L.). Abundant. On limestone by the Yealmpton road, within a few miles of Plymouth. Plymstock; Fordbrook.

Acer Pseudo-Platanus. A variety with variegated leaves grows by the tram-road between Crabtree and Cressbrook Farm.

Geranium pyrenaicum. Cutting by the Plymouth and Yealmpton road, near the turning to Elburton village. Abundant; but probably an escape, as *Petroselinum sativum* grows at the same place.

Geranium pusillum. Not common. Pomphleet, and near Plymstock, 1860.

Radiola millegrana (Sm.). Roborough Down.

Euonymus europæa (L.). I have found a variety with dirty-white seed-vessels, growing between Plymouth and Manadon.

Medicago sativa. Between Plymouth and Saltash Ferry.

Trifolium ornithopodioides (L.). Pasture above Whitsand Bay, Cornwall.

Lathyrus latifolius (L.). Near a hedge-bank in a field adjoining the Plym Bridge road, between Fancy Corner and Plym Bridge.

Rubus saxatilis (L.). By the tram-road. Common Wood.—This plant is not mentioned in Ravenshaw's Flora.

Rosa rubiginosa (L.). A plant among coppice wood on Colwell estate, Egg Buckland. Near Allowpit, Egg Buckland.

Rosa tomentosa (Sm.). By the tram-road, Fancy.

Pyrus torminalis. In a hedge at Wembury.

Petroselinum segetum. Between Lipson and Laira.

Sison Amomum (L.). Plymouth and Yealmpton road, abundant. Between Crabtree and Plympton St. Mary Church.

Senecio erucifolius (L.). Waste ground and on rubble-heaps from limestone quarries, by the Plymstock and Yealmpton roads. Abundant in some spots. Catdown.

Centaurea Cyanus. Not general. Cultivated ground between Torpoint and St. John's, July, 1861.

Hieracium sylvaticum, var. *maculatum* (Sm.). Banks under trees at Manadon. Probably an escape.

Specularia hybrida (A. DC.). Field between Torpoint and St. John's, 1860. Common Wood, 1861.

Wahlenbergia hederacea (Reich.). Roborough Down; Hoo Meavy; Common Wood.

Erythræa pulchella (Fries). Fields between Torpoint and St. John's; Bovisand.

Linaria spuria. Field near Egg Buckland, 1858. Efford, 1860.

Linaria minor (Desf.). Near the limestone-quarries at Pomphleet and Billacombe. Cornfield between Jump and Tamerton Foliot, July 9th, 1861.

Pedicularis palustris (L.). Roborough Down, 1861. By the Leat, near Jump village, 1860.

Eufragia viscosa (Benth.). Springy place in a field between Torpoint and St. John's, 1860. Not there this season.

Sibthorpia europæa. Common. Near Bickleigh; Fursdon; Egg Buckland; Wembury; near Milton village; near Denham Bridge.

Mentha rotundifolia (L.). Honicknowle. Near Antony, Cornwall.

Mentha piperita. Near St. Budeaux.

Lamium amplexicaule. Gardens near Torpoint, Cornwall. Neighbourhood of St. Budeaux and King's Tamerton.

Lamium Galeobdolon (Crantz). Neighbourhood of Yealmpton; Morwell.

Pinguicula lusitanica (L.). Bog adjoining Fursdon estate, Egg Buckland.

Primula veris (L.). Leigham, Egg Buckland. Pasture near the Knackersknowle and Tamerton road; very sparingly.

Anagallis arvensis (L.). I found a variety with purple flowers, growing with some having flowers of the common colour, in a field below Shallaforde Lane, Egg Buckland, on June 13th, 1861.

Littorella lacustris (L.). I found a single plant in a pit on Roborough Down, on September 12th, 1859.

Chenopodium olidum (Curt.). Stoke Damarell. Torpoint, Cornwall, 1860.

Polygonum Bistorta. Goosewell Hill; Egg Buckland, in an orchard, and on a hedge-bank. Weston Mills.

Orchis pyramidalis (L.). Bank, and in a small pasture on the Yealmpton road, about three miles from Plymouth. In great plenty in July, 1858, since which the field has been in cultivation. On rubble-heaps, and in waste ground near Oreston Quarries; sparingly.

Narcissus biflorus (Curt.). In an orchard, and on a hedge-bank at Goosewell, Egg Buckland.

I have not named some other uncommon plants which occur in this neighbourhood, as I am aware their localities have been previously given by Mr. Ravenshaw and others. For a like reason I have also omitted other localities of some of the foregoing.

I have noted the following additional localities, in this neighbourhood, of *Anchusa sempervirens*, *Barbarea præcox*, and *Geranium rotundifolium* :—

Anchusa sempervirens. Crabtree; near Saltash, on the St. Stephen's Road; Thornbury; Egg Buckland.

Barbarea præcox. On a bank by Tamerton Creek; between Tothill and Laira; by the tram-road, near Marsh House, Egg Buckland.

Geranium rotundifolium. Between Tothill and Laira; abundant. Near Plympton St. Mary Church, by the Plympton road; sparingly. Catdown; Plymstock. Between Torpoint and Antony, Cornwall.

Plymouth, August, 1860.

KENTISH BOTANY.

Notes and Recollections about the Botany of North Kent, between Dartford and Bexley.

Our object in visiting this comparatively little-known tract was, first, to settle some doubts about *Fumaria parviflora*, which this summer (July, 1861) was abundant in a turnip-field near Darent, and to procure specimens of *Arnoseris pusilla* and of *Senecio viscosus*, which is plentiful at Bexley Heath.

The train by which we travelled left the London Bridge terminus at 9.20 A.M., and conveyed us comfortably to Dartford in less than an hour.

Botanists seldom walk as the crow flies, or, in other words,

rarely take the direct line between two points. Our course on this occasion was more than usually devious. To give an exact description of the places of interest which we visited would be impossible, unless we had travelled with the Ordnance map in our pocket and marked the spot where we found a rare plant.

We soon found the *Fumaria*, which is in a sloping field on the left-hand side of the Dartford and Sevenoaks road, about a mile from Dartford. The field was then doubly cropped, with peas and turnips, the former nearly ready for gathering, the latter were only coming forward to take the place of the peas when removed.

While here we observed to the south-west the heights near St. Mary Cray, and decided on going thither the best way we could *improvise*; and adopted the valley of the Darent for part of our route. We were induced to go this way in hopes of seeing *Epipactis palustris*; but this proud beauty did not condescend to gratify two of the most ardent of her admirers.

Orchids were scarce this season; they were remarkably so in the vale of the Darent, which surely produces *Orchis latifolia*, though we did not see it.

We saw only *O. maculata*. The river yielded *Ranunculus fluitans* and *Zannichellia palustris*; and the ditches and meadow drains produced *Potamogeton pusillus* with *Lysimachia Nummularia* and other commoner plants. The only thing we observed which by stretching our liberality may be called rather rare, was *Thalictrum flavum*, not far from the viaduct of the London, Chatham, and Dover Railway, which here crosses the valley which lies between the Crays and Farningham.

Before reaching the table land between Sutton and Chiselhurst, we met with a few small plants of *Hypericum montanum*. One of us remembered seeing it more than thirty years ago on the same banky tract, but nearer Farnborough, or, more correctly, on the hill between Eynsford and Farnborough.

Our road or path led us on past a solitary farm, of which the name is forgotten, but it lies between Sutton and a new church building, in a part of the country where there is not a house in sight. From this new church we descended one hill and ascended another in the direction of Bexley, and in a cornfield on the ascent, just one example of *Adonis autumnalis* was seen, and probably a dozen of *Bupleurum rotundifolium*. In a cloverfield on the same acclivity we looked for *Orobanchè minor*, which we

did not see, but saw plenty of *Ajuga Chamæpitys*. The only noticeable cornfield plants seen in our walk, besides the above, were Poppies. *Papaver hybridum* and *P. somniferum* were very abundant, the latter particularly plentiful.

Dartford Heath, which we crossed, supplied us with *Cuscuta Epithymum*; this was only, at this early period of the season, making its appearance. From the north end of this large tract of elevated open space, a path led us through fields to Bexley village, and another path led us through what may have once been Bexley Heath, but it is a heath no more. The land is now a great strawberry-bed, and between the rows of these plants, which bear the finest of our native fruits, grow the plants of which we were in quest. In one of the fields both the *Arnoseris* and the *Senecio* were quite eradicated, a consequence of careful cultivation. In the last of the fields crossed by the pedestrian coming from Bexley village to Bexley Heath, there is plenty of *Senecio viscosus* as well as *S. sylvaticus*; and in the last field but one there is no lack of *Arnoseris pusilla*.

We had now walked, since leaving Dartford station, a considerable way, and had been on foot nearly seven hours, viz. from about ten A.M. to five P.M., and when at Bexley were only two or three miles from Dartford, where our walk began. Probably we were, even when most remote, not more than four or five miles from the station. Judging by the time spent, our walk probably exceeded fifteen miles.

We had now completed our botanizing but not our walking, for we had from seven to eight miles further to trudge ere we reached home.

The easiest way by which the London botanist can reach Bexley Heath is by the North Kent line; and he may either go to Dartford or leave at Erith. Probably the distance from Dartford is less than it is from Erith; but the walk is neither so pleasant nor is the scenery so good as between the latter place and Bexley Heath. The heights above Erith are as picturesque as any part of North Kent; they equal the best of the scenery between Greenwich and Gravesend.

When he reaches Bexley Heath, he should inquire for the path across the fields to Bexley village; and after leaving the great road from London to Dover, in the first field, now in strawberry culture, he will find the *Senecio viscosus* between the rows, and in

the next field, and probably in the third from Bexley Heath, *Arnoseris pusilla* will be seen. If not in the field, it will probably be found about the borders.

Clean culture is detrimental to the botanist; although it be agreeable to see the evidences of care and the promise of success.

One of the remarks we made was that the officinal Poppy, *Papaver somniferum*, was extending its area. In some fields through which we passed it is now as plentiful as it has been for many years near Greenhithe. The scarcity of *Adonis autumnalis*, of which we only saw a single specimen in our long walk of the 12th of July, several miles of which was through corn-fields, is attributable to the season. The plant is both vernal and autumnal; it is plentiful in the very beginning and in the end of summer. We were too late for the spring state of this rare species and too early for the autumnal. I have seen it, many years ago, in considerable quantities in the stubble, on fields between Crayford and Dartford.

Apera Spica-venti was plentiful this year (1861), in a corn-field between Dartford Heath and Bexley village.

We were well satisfied with the results of this day's excursion, and hope that it may be the precursor of many more equally agreeable and successful. One of the objects of our ambition is to convey to the readers of the 'Phytologist' a sample of the vegetable riches of this county, which is, with the exception of a few limited spots, a *terra incognita* to the majority of English botanists.

A. B.

July 26, 1861.

Additional Remarks on the Botany of Kent.

To the Editor of the 'Phytologist.'

Sir,—Much of the district traversed by your correspondents, and commented upon by them, in the articles on Kentish Botany, in recent numbers of the 'Phytologist,' being familiar to me, I take the liberty of sending you a few remarks on the subject, premising, however, that I have no novelty to record, no distinguished stranger to announce.

The first plant I allude to, *Dipsacus pilosus* (which I have known in the spot you describe, near Canterbury, for at least

twenty years), simply for the purpose of mentioning its presence in a hedge bounding some meadows between Brockley and Lewisham. I am not aware whether this is one of the recorded stations for this plant or no; all I can say is, that I have specimens gathered by myself, at the spot in question, some two or three summers since. To the noticeable plants at Richborough may be added the Tansy (*Tanacetum vulgare*), which I gathered there in September, 1856, and which is probably still to be found there. Growing plentifully on Kingsdown beach, intermingled not unfrequently with the Sea Pea, is a form of *Solanum Dulcamara*, which may be worth noticing. The branches are prostrate, spreading on the beach in all directions, so as to form a circular patch; the bark of a dark olive-green or of a rich purple hue; the leaves small, lanceolate, few of them showing any tendency to become lobed at the base; the flowers occasionally destitute of the spot at the base of the lobes of the corolla. The same plant, further on in the undercliff, assumes its ordinary appearance, so that the variety on the beach would seem to be due to the peculiar circumstances under which it grows in the last-named situation. *Brassica oleracea*, so common along the cliffs near St. Margaret's Bay, and the stalks of which, eaten *au naturel*, were esteemed such a luxury in our school-boy days—what will not school-boys eat?—is mentioned, as last year, perhaps from the unusual amount of rain, numerous instances were found wherein the lowermost flowers of the cluster were absent, and their place supplied by a tuft of green leaves—a cabbage in miniature. This was the case all along the chalk range from Kingsdown to Eastwear Bay, and is certainly not so common in all years, at least so far as our observation goes.

At Lydden Spout, one of the most noticeable plants found on a visit, in August, 1860, was the *Hippocrepis comosa*, at that time bearing in profusion its singular pods, which at once suggest the idea that they are formed on the model of a pinnate or of a pinnately divided leaf.

Eastwear Bay! what naturalist, what geologist, what lover of beautiful scenery does not rejoice to find himself there? It matters not whether he roam along the summit of the lofty chalk hills, and gloat over the splendid prospect before him; whether *multo cum labore* he scale the chalky walls themselves, thread the intricacies of the Warren, cautiously tread the steeps of Copt

Point, or, with less risk, skirt the base of the undercliff along the beach, or leave the imprint of his foot on the sands and far-famed fossil bank beyond. Everywhere he will find much to interest and delight him. To the geologist and collector of fossils this district is especially interesting; every tide reveals fresh specimens, the constant falling of the gault brings to light others. To the marine zoologist and seaweed-lover the sands and rock-puddles afford, at low tide, never-ceasing sources of interest. Your correspondents have told us what to expect in the botanical way, and to their record I beg to add a few words.

Papaver somniferum not only grows at the base of the cliff, but also, as your present correspondent knows to his cost, in less accessible situations. Accompanied by the partner of his joys and woes, he was attempting to descend the cliff by a disused and rugged pathway; a small part of the descent had been accomplished, when a sudden squall of wind, rain, and hail—such hail!—attended by thunder and lightning, arrested their progress, and compelled them to remain on a little ledge of rock, overhung by a projecting block of chalk, a station which, under the circumstances, seemed anything but secure, not to say comfortable. However, while waiting here, to allow the storm to abate its fury a little, before retracing our steps, we caught sight of *Papaver somniferum* and *Iris fetidissima*, the latter in fruit. Specimens in our herbarium attest the fact, and compensate for the thorough soaking, and whitewashing to boot, that we got on that day. *Centaurea Calcitrapa* and a curious variety of *Origanum vulgare* are to be found hereabouts; the latter I think I have seen named as *O. vulgare*, var. *cylindrostachya*, or *prismatostachya*, I do not remember which; at any rate, the inflorescence, in place of being in globular masses, is lengthened out more into the form of a spike; the bracts, moreover, being increased in number, size, and intensity of colour, so that the appearance of the plant differs much from that of the ordinary form.

One of the most remarkable things to be noticed here, is the well-marked difference in the vegetation of the chalk and of the gault clay. Your geological readers who may have visited this charming spot, will know how clearly defined is the boundary between the two formations: the character of the vegetation is hardly less clearly definable. On the one side are the well-known chalk plants, in all their luxuriance and beauty, many of

which are noticed by your correspondents; on the other, at a distance of only a few feet, there is the Coltsfoot, the *Equisetum*, the rough tufts of Rushes, and little else beside; the special chalk plants are not to be found beyond the border. Some years since, when pursuing some investigations on the distribution of wild plants in Oxfordshire, I found equally trenchant distinctions between the vegetation of the oolite and that of the clay, and I arrived at the conclusion that the difference of the vegetation on the soils in question depended more upon the degree of moisture than upon the chemical nature of the soil, though of all varieties of soils those having a predominance of lime in them have the most especially-marked Flora. On the other hand, many plants which in this country are confined to chalky or limestone districts, occur on the Continent in widely different spots. *Chlora perfoliata*, one of the plants usually considered especially to belong to the chalk, may be found in Oxfordshire on the clay; and I have once gathered it on the gault of Eastwear Bay, but once only, whereas it is abundant on the chalk not a stone's-throw from the clay.

The presence of *Scolopendrium vulgare* at Eastwear Bay and at Lydden Spout seems to have attracted the notice of your correspondents (whose mask, by the way, hardly conceals their features), as also it did my own. Although familiar with the plant as occurring occasionally on chalk, greensand, and other limestone soils, I never before saw it so close to the sea. In the localities above mentioned, the plant was always seen by the present writer, close by the rills of fresh-water which ooze out from between the chalk and gault, while at Lydden Spout the water pours out *pleno rivo*.

Following the track of your correspondents, I may notice the abundance of that most elegant little plant *Anagallis tenella*, on the oozing ground at the base of the greensand cliffs between Folkestone and Sandgate, where also *Samolus Valerandi* and *Lavatera arborea* may be found—the latter an escape from gardens. At the top of the cliff, by the side of the pathway leading towards Sandgate, may be found the Thrift, *Armeria vulgaris*, in plenty; also *Sedum acre* and a white-flowered variety of *Geranium robertianum*. My search after *Cyperus longus* was as fruitless as that of your correspondents, while Newington Moor, another spot eloquently described by the botanical historian of this district,

the Rev. G. E. Smith, is much interfered with, both pictorially and botanically, by the ugly gash cut right through it by the railway. On both accounts, now even, it is still well worthy a visit.

To go a mile or two beyond your correspondents' range, but in the same district, I may add that a recent visit to Lympne (November, 1861) yielded *Smyrniium Olusatrum* and *Lavatera arborea*. At Lympne, the greensand range ends, or rather diverges from the coast line, and the flats of Romney Marsh begin; here moreover the antiquary may find much to interest him in the stalwart remains of the old Roman encampment, and of the mediæval castle and church,—the latter on the brow of the hill, the former nearly at the bottom,—a position due in some degree to the frequent landslips. A Rambler with natural-history tastes finds so much generally besides natural history to attract his attention, that I may be excused for adding a word or two on the Roman walls of Lympne, especially as your correspondents have had their say about Richborough. There the walls are mainly of flint with bands of tile, and here and there masses of tufa, brought probably from Italy as ballast: this at least is the suggestion of a practical geologist and naturalist. At Lympne the walls are of greensand, Kentish rag, and—sandwich-wise—layers of thick tile. The condition of the stone, especially of the rag, is seemingly as good as it ever was,—a fact for the House of Parliament Decay Commissioners to ponder over. At both Richborough and Lympne *Helix lapicida* may be found. M. T. M.

NOTES OF A BOTANICAL RAMBLE ON BEN LEDI.

On a beautiful morning, about the middle of July, a few ardent lovers of Flora left the Scottish capital for the purpose of exploring the botanical treasures of Ben Ledi. That noble mountain is about three miles west of Callander, in Perthshire, and rises nearly 3000 feet above the sea-level. It does not seem to be much noticed in botanical works in indicating the localities of Scottish alpine Flora. The party referred to, of which the writer was one, were resolved to see with their eyes what plants were really to be found on its rocky sides and bald grey summit. We ascended the mountain from the banks of Loch Lubnaig, and

crossing its summit descended on the village of Kilmahog. In Loch Lubnaig we found plenty of *Subularia aquatica* and *Loebelia Dortmanna*; and saw the *Nymphæa alba* and *Nuphar lutea*. On the banks of the loch the graceful *Galium boreale* was growing in profusion. Here we also gathered *Valeriana officinalis* in fine condition. On the meadows between the loch and the mountain, we collected in considerable abundance fine specimens of *Habenaria bifoliu*, *H. chlorantha*, *Gymnadenia conopsea*, *G. albida*, *Orchis latifolia*, *O. maculata*, *Geranium pratense*, and *Polygonum viviparum*. In a bog at the base of the mountain, among *Sphagnum obtusifolium* and *S. squamosum*, we found *Vaccinium Oxycoccus* in fruit, and *Narthecium ossifragum* coming into flower. In the same locality, *Parnassia palustris*, *Drosera rotundifolia*, *Geum rivale*, and *Comarum palustre*, were gathered. In a small plantation of Oaks and Birches, we stored our field-books with very large specimens of *Polypodium Phegopteris*, and saw *Geranium sylvaticum* in abundance. From the base of the mountain, all the way to its summit, the beautiful *Alchemilla alpina* met our eyes; and in mossy places, we gathered *Eriophorum angustifolium* and *E. vaginatum*. Like golden fringes, on the sides of all the hills, the *Saxifraga aizoides* appeared, accompanied by tufts of *Oxyria reniformis*; and in moist and springy places we collected lonely specimens of *Saxifraga stellaris* and *Sedum villosum*. Hanging over the moist shady rocks, in straggling tufts, mostly in fruit, but in a few instances in flower, was seen the *Saxifraga oppositifolia*. Under the shade of large blocks of rock, which at some period had been hurled from the summit of the mountain, we found fine fruited specimens of *Hymenophyllum Wilsoni*; and higher up, among the debris of the nearly perpendicular rocks, we collected *Allosorus crispus*, and saw *Polystichum Lonchitis*, but not fully developed. On the northern side, and near the summit, we met with abundance of *Saxifraga cernua*, *Gnaphalium supinum*, *Lycopodium alpinum*, *L. Selago*, *L. claratum*, and *L. selaginoides*; and among the moist rocks large patches of *Silene acaulis* still in flower: also *Sedum Rhodiola*, *Asplenium viride*, and *Cystopteris fragilis*. On the dry shady shelves of the rocks *Polypodium Dryopteris* was plentiful, while high among the cliffs fine plants of *Hieracium prenanthoides* were tempting us to danger. On the bare craggy summit, we found *Rubus Chamæmorus* in fruit. On heathy

places, all over the mountain, *Empetrum nigrum*, *Vaccinium Myrtillus*, and *V. Vitis-idea*, were plentiful. On the dry grassy slopes, we found plenty of *Festuca ovina*, *Antennaria dioica*, and *Gentiana campestris*. Of the more common Ferns, we collected during our ramble on the mountain *Lastrea Oreopteris*, *L. dilatata*, *Blechnum boreale*, *Polypodium vulgare*, *Asplenium Adiantum-nigrum*, and *A. Trichomanes*. We made a large collection of Mosses, of which the following are the most worthy of notice:—*Bartramia fontana*, *B. pomiformis*, *B. arcuata*, *B. halleriana*, *Bryum nutans*, *B. cuspidatum*, *B. capillare*, *Andreaea alpina*, *A. Rothii*, *Dicranum virens*, *Weissia acuta*, *Grimmia stricta*, and *Polytrichum alpinum*. Our time did not allow us to explore this famous mountain as we wished to have done, especially its rocky cliffs; and we have no doubt but should we have another opportunity of revisiting it, we will be rewarded by the discovery of several other alpine floral gems.

BOTANICAL NOTES, NOTICES, AND QUERIES.

EPIPACTIS PURPURATA IN MIDDLESEX.

A fair correspondent—but *one* who does not wish her name to be kept secret, like several of our correspondents, both of the softer and rougher sex—has sent me, among other matters, the following account of the unexpected appearance of the above species where it had not been previously seen, or if seen, had not been recorded in any recent publication:—

“I can assure you that this Orchid, whatever be its name, has never been brought here, and certainly is of spontaneous growth. I have resided in this place for thirty-one years, and never saw it till within the last few years anywhere about the grounds, nor in one particular locality till *two* years ago. Of this I am perfectly certain, and am quite willing you should attest the same as a fact on my authority. M. A. W.”

Note. The locality of the above is near Enfield.—ED.

LIST OF PLANTS FOUND WITHIN FIVE MILES OF LYTHAM, ON THE BANK OF THE RIBBLE.

In and about a ditch on the left-hand side of the footpath immediately after passing the new dock:—*Scirpus maritimus*, *Sium angustifolium*, *Apium graveolens*, all plentiful. Between high-water mark and the cultivated ground:—*Cakile maritima*, occasionally; *Melilotus officinalis*, occasionally; *Rumex maritimus*, scarce; *Geranium sanguineum*, Naze Point, scarce; *Atriplex laciniata*, occasionally; *Enanthe peucedanifolia*, salt-

marshes, abundant; *Silene maritima*, *Honckenya peploides*, *Plantago maritima*, *Aster Tripolium*, *Statice Armeria*, *Glaux maritima*, *Eryngium maritimum*, *Ononis arcensis*, *Arenaria marina*, *Triglochin maritimum*, *Juncus maritimus*, *J. compressus*, *Daucus Carota*, abundant; *Spergula nodosa*, not uncommon; *Samolus Valerandi*, occasionally; *Trifolium fragiferum*, frequent; *Erythraea Centaurium*, frequent; *Inula dysenterica*, occasionally; *Pimpinella Saxifraga*, in one spot plentiful—this is more uncommon than *P. magna*, in this neighbourhood; *Salsola Kali*, not uncommon; *Anagallis arcensis*, frequent. In the fields about Naze Point, there is an abundance of *Genista tinctoria*. In a hedge on the left-hand side of the road leading from the riverside to Freckleton, I saw for the first time in my life, a large quantity of *Convolvulus sepium*, of which the blossoms were a beautiful rose-colour, or pink. By the same road I discovered one very fine plant of *Chlora perfoliata*, which I left undisturbed. Its seed-vessels were mostly formed, so that the plant will probably increase in the situation referred to.

C. J. ASHFIELD.

DISCOVERY OF RUBUS LACINIATUS, WILLD., NEAR PLYMOUTH.

Since I last wrote I have again visited the locality of the above-named plant, which is situated near the village of Knackersknowle, a little beyond the third milestone from Plymouth, on the Plymouth and Tavistock road. The habitat is a hedge-bank, the bottom of which is now several feet above the level of the highway, as the hill has been "cut down." This is the only place where I have ever seen it, but I am glad to say there are several plants here, and that it appears to be on the increase, as some of them have rooting shoots several feet long; it now extends for about eight yards, and would furnish many dozens of specimens. I could send you more, (such as the one now forwarded,) if of any use to you.

T. R. A. BRIGGS.

Torrington Place, Plymouth, Oct. 29, 1861.

[Several years ago I received a specimen of the above species from an unknown correspondent, with a request to be told its name. I have further to state that there is a British-grown specimen in Sir W. J. Hooker's herbarium, with a note that it had been sent to him from Wales. It is hereby requested that the correspondent who sent a specimen to the Editor of the 'Phytologist,' will be so kind as to inform him where and under what circumstances the above-specified example was found.—ED.]

SEA-GRASS PAPER.

"A specimen has been laid before us of paper made by Mr. Hartnell, of the Isle of Wight, from common Sea Wrack. The specimen is from a first trial made by Mr. Hartnell, who is no paper-maker; nevertheless, we have no hesitation in saying that, though resembling straw paper in colour and texture, it is far superior to the best straw paper which the writer of this notice has ever been able to obtain for writing purposes. Into the question of relative cost and ultimate price we are not prepared to enter; but we believe that *Zostera marina*, or Sea Wrack, is a very abundant, and hence, probably, a cheap material. It is said particularly to abound on the

coasts of the Isle of Wight. The paper made from it is, as we have said, like straw paper, and hence not very white in colour, and more like India paper in that respect; but perhaps great improvements in the bleaching may yet be effected in the manufacture of such paper."—*Builder*.

Mr. Hartnell's paper, made of the new material, *Grass Wrack*, may be superior to the common straw paper now so extensively used; but unless the fibrous matter be in great plenty as well as of excellent quality, it will scarcely answer the purpose.

We fear the economical element is absent; for the natural supply would be soon spent. Would any material, to be used exclusively in the paper manufacture, pay the expense of cultivation and yield a fair profit to the cultivator?

TILLEA MUSCOSA.

In 'Phytologist,' vol. v. p. 256, *Tillea muscosa* is recorded as being recently discovered near Plymouth, in Devonshire. It is a Dorsetshire plant, according to the late Dr. Bell Salter's list of plants growing wild in that county. (Where is this list to be seen or had?) In 'Cybele,' vol. i. p. 395, there is the following statement about this rare species:—"Through cultivation as a botanical curiosity, it has become naturalized in places near London;" (what places?) "but I know not of any truly native habitat in the province of Thames?" Does any reader of this note, know any habitat in said district, either native or naturalized?

DIPLLOTAXIS MURALIS.

Another county, at least, should be added to the county census of this plant, on the authority of Ravenshaw's 'Flora of Devonshire,' and also on that of a list of early-flowering plants published in the 'Phytologist' for August, 1861, p. 254.

SCROPHULARIA VERNALIS.

Some grave doubts have been communicated in reference to the genuineness of the Plymouth locality for *S. vernalis*; and we beg to ask our readers to supply us with stations where it is apparently a true native. The Mitcham station, now, it is to be feared, no more, is or was not one without exception.

Probably the Scottish localities recently published are genuine. We have seen *Achusa sempervirens* truly wild in Scotland; but we have not yet seen it in England, in any place where it could be regarded as other than only spontaneous or naturalized. Is *Scrophularia vernalis* to be placed in the same category in England? We have seen *Lamium maculatum* thoroughly naturalized. Is this species to be added to this class of unacknowledged, or but partially acknowledged, naturalized plants?

"NATURALIZED ALIENS."

Accustomed as I have been for some years past, to botanize in the wilds of Derbyshire, I often meet with plants said to be *aliens*, which I am per-

suaded would not be thought so if the writers saw them growing here, some on rocks all but inaccessible even to a daring climber like myself, and others in the most dreary situations, far from the haunts of men, in the plains or dells lower down. These remarks were elicited by the perusal of your October number, in which *Geranium pyrenaicum* is branded with the name of *alien*. (See vol. v. p. 293.) I found this plant in great plenty, together with *Pimpinella magna*, on the 21st of last month, in the neighbourhood of Baslow, and in as wild a locality as the author of the 'Cybele' could wish. *Hutchinsia petraea*, too, is found at the foot of the limestone rocks in some places, (as well as under walls,) far away from human dwellings, in great abundance. *Achillea decolorans* is not, as has been supposed, confined to the neighbourhood of Matlock, for I found it, on the 10th of October, a great distance from that place. As I have not yet seen in your valuable periodical a list of the plants that occur in my beat, I may, at some future time, supply you with such a notice.

Sheffield.

W. ASHLEY.

[We hope our correspondent will speedily perform his promise.—ED.]

NOTICE TO MICROSCOPICAL OBSERVERS, ETC.

We have the pleasure of announcing to students of the minute objects of creation, whether vegetable or animal, that Mr. W. Winter, now of Aldeby, near Beccles, proposes during the ensuing year to devote his time and study to the microscopical productions of the undrained Norfolk Fens, a locality unsurpassed for the multiplicity and variety of its productions.

Mr. Winter, who is celebrated as the discoverer of several species of insects, either new to science or previously undiscovered in Britain, hereby offers his services to all interested in these investigations, as a collector of *Algae*, *Characeae*, *Infusoria*, *Insecta*, etc. He proposes to supply mounted specimens of the whole of his discoveries, in *sets*; the price to subscribers will be one guinea each. For this subscription, each member will be entitled to specimens of all the objects collected, which will be mounted in any way most convenient to the recipients, and will be ready for delivery next November.

As Mr. Winter's whole time will be spent in exploring these fens and in examining and mounting their interesting productions, he wishes that all those who mean to promote his undertaking will send their names, addresses, and subscription, as early as convenient, for it is intended to issue only a limited number of sets.

On the 3rd of December, a list will be sent to each subscriber and applicant, and the specimens will be issued on the 10th of November, 1862.

EXCHANGE OF SPECIMENS.

Having good duplicate specimens of several of the rarer Mosses (in fruit), I shall be glad to exchange for any of the following:—*Sphagnum molluscum*, *S. rubellum*, *S. contortum* and varieties, *Tortula latifolia*, *T. Muelleri*, *Orthotrichum pumilum*, *O. pallens*, *O. fastigiatum*, *O. rupestre*, *O. speciosum*, *O. Lyellii*, *O. Ludwigii*, *O. Drummondii*, *Timmia austriaca*, *Bryum demissum*, *Funaria hibernica*, *F. Muehlenbergii*, *Splachnum sphaericum*,

Tayloria serrata, *Edipodium griffithianum*, *Leucodon sciuroides*, *L. Lagurus*, *Hypnum arcticum*, *H. Oakesii*, *H. Kneiffii*, *H. hamulosum*, *H. ochraceum*, *H. demissum*, *H. micans*, *H. incurvatum*, *H. Muhlenbeckii*, *H. silesiacum*, *H. sylvaticum*, etc., in fruit. A list of duplicates, and other desiderata, will be sent on application.

T. W. B. INGLE.

4, Commercial Street, Huddersfield.

KESTON HEATH PLANTS.

On the 16th of this present July I visited the bog on Keston Heath, from which a copious list of plants, collected last September, appeared (from another hand) in the 'Phytologist.' Owing to the earlier time of year, I found several plants which were not included in the list. These were *Carduus pratensis*, *Eleocharis multicaulis*, *Carex stellulata*, *C. panicea*, and another which, looking to the straightness of the beak, would seem to be *C. Oederi*, but which, by the great distance between the lowest fertile spike and the others, answers better to the description usually given of *C. flava*. Prolonging my walk across Hayes Common, I found, at the angle next the camp, a considerable quantity of *Corydalis claviculata*. Descending the hill through the fine grove of old Oaks, and taking the track nearest to the foot of the Hayes Common ridge, in the direction of Keston church, I found several interesting plants. A large cultivated field was dotted over in almost its whole extent with great tufts of *Bromus* (or *Serrafalcus*) *arvensis*, a plant recognized as British in Sir J. E. Smith's 'English Flora,' but relegated by Mr. Babington to the class of plants "not even naturalized." If not yet naturalized where I saw it, this grass, I think, can scarcely fail of becoming so. Further on, at the commencement of the chalk, I crossed several cornfields in which *Papaver somniferum* is as abundant as *P. Rhæas*. In two of these grows, in tolerable abundance, *Camelina fetida* (as our form of *C. sativa* is now called) in great size and perfection. The same fields produced *Specularia hybrida*, and *Valerianella Auricula*. Is not *V. Auricula*, with the exception of *V. olitoria*, our only common species? Can any of your correspondents point out where the real *V. dentata* is to be found? I sought for the meadow in which, a few summers ago, I had seen three fine plants of *Isatis tinctoria*, but I was unable to find it. In the place where I believed it to be, a fine crop of wheat is now waving.

Communications have been received from

John Sim; C. J. Ashfield; T. Stansfield; W. L. Noteutt; Dr. Windsor; James Backhouse, jun.; W. Winter; W. Pamplin; T. W. B. Ingle; T. R. A. Briggs; W. P.; F. Y. Brocas; William J. H. Ferguson; W. Ashley; M. T. Masters.

BOOKS RECEIVED FOR REVIEW.

A Manual of British and Foreign Plants.
The Canadian Naturalist and Geologist, October, 1861.
Index Filicum, Parts 14 and 15.
Vorgefasste Botanische Meinungen, von Dr. J. Roeper.

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