Edward S. Marshall

1889

THE

PHYTOLOGIST.

A BOTANICAL JOURNAL.

EDITED BY

ALEXANDER IRVINE,

FELLOW OF THE BOTANICAL SOCIETY OF LONDON.

VOLUME THE THIRD.

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.

LONDON:

WILLIAM PAMPLIN, 45. FRITH STREET, SOHO SQUARE.

1858-9.

PRINTED BY
JOHN EDWARD TAYLOR, LITTLE QUEEN STREET,
LINCOLN'S INN FIELDS.

PREFACE.

Several of the earliest supporters of this Journal expressed a wish that the annual issues should be accompanied with the usual tables of Contents, List of Contributors, and the General Index, that the work should be completed with the first number for next January.

In accordance with this desire, the subscribers and purchasers of the 'Phytologist' will receive with the first Number for 1860, Title, Contents, Index, etc., to complete the Series for 1859.

Two years' numbers united would not make a very bulky volume. Those who prefer having a larger book than one year's issues will form, may bind both together, and the united volume will be either, 'Phytologist,' vols. iii. and iv. of the New Series, or 'Phytologist' for 1859 and 1860.

The General Table of Contents, together with the Index, will show that the present year has not been unproductive of results; but the summary of these is reserved, being intended to constitute the leading or opening Article of the next year's Series.

CONTENTS.

CONTRIBUTORS, CORRESPONDENTS, AND AUTHORS WHOSE BOOKS, &c., ARE REVIEWED.

THE PHYTOLOGIST.

1859.

Annual Address *to the Contributors, Correspondents, and Readers of the* Phytologist.

The Publisher and Editor, in the first place, tender their grateful thanks to the contributors, who have, during the past year, liberally filled our pages with the varied and interesting articles on Botany in general, and on British Botany in particular, now circulated and circulating among the select *few* who seek for information on such topics.

To our Anonymous Correspondents we are under great obligations; and all the recompense we can offer these is, that we are sensible of their kindness, and hereby thankfully acknowledge that their brief notes form the most interesting feature of our periodical. All the short articles, and some communications of considerable length, are from contributors who do not court publicity, who "do good by *stealth*, and blush to find it fame;" who write not for praise nor reward, but out of pure good-nature, from a disinterested desire of telling others what is pleasing and instructive to themselves. These modest correspondents are known either to the Publisher or to the Editor.

The Subscribers and the Readers are hereby thanked for their approbation, goodwill, and general support; and we look forward hopefully to a time when those who are here the objects of our good wishes and seasonable gratulations will, as heretofore, continue to increase and multiply till the 'Phytologist' and British Botany becomes as "familiar in the mouth as household words." This will not be in our day: and it is rather a success to be hoped for than expected.

Our grateful business is now to lay before our readers a statement of the botanical results of the past twelve months.

During the preceding year two new works on our native plants have been published. British botanists may be congratulated, not only on the extent, but also on the variety and excellence of their literature. There is no room for saying more on this head; and if there was, it is unnecessary. One of the works alluded to has been repeatedly noticed in our pages, and is in the hands of many of our readers; and a notice of the other is expected from a friendly correspondent. When it comes to hand, we shall have much pleasure in submitting it to publicity. "Better late than never." Both of these works profess to be plainer in style, or in some respect or other better adapted to the wants of the unlearned on scientific subjects, than the many excellent works we previously possessed. But those for whose use they were compiled, are better judges of their merits in this respect; and to their judgment they are therefore submitted.

The most important announcement to be made here is the publication of Professor Agardh's elaborate work on systematic botany, or, a new THEORY OF CLASSIFICATION. This is probably the most important contribution to botanical science issued since the days of Jussieu. It is not to be expected that all, or even most botanists will appreciate this work so highly as the writer of this notice is disposed to do. It is not probable that many botanists will undergo the heavy task of perusing and mastering its contents. Of those who may read it, few, it is apprehended, will abandon the methods with which they are conversant, and adopt, learn, and practise, an entirely new arrangement. We are not so sanguine as to predict that the work will be universally received as a satisfactory solution of the *vexata quæstio,* the *bête noire* of botany, "What is a Natural System?" But the attempt to solve the question is at least laudable, and it is a step in the right direction.

The readers of the 'Phytologist' may look, at no distant period, for a statement of the contents of this scientific work. If we be unable to judge of its merits, we can, at least, tell our friends what it is about. It would be more satisfactory to the botanical public if the great lights of the age, the learned Professors of Botany in London, Edinburgh, and Cambridge, would condescend to enlighten us on this new system of classifying

plants. Both in scope and detail, the work is so different from the usual routine of books we have to deal with, that it is with considerable misgivings that we undertake it. The subject is both difficult and laborious, and the results are by no means of a promising character. Nevertheless the work is seriously and urgently recommended to those who can spare time for its perusal, to those who are not afraid of innovation, to those who are unbiassed by favourite, pet schemes of their own or of their intimate friends; to all who are interested in progress, or who love truth, whether in science, politics, morals, or religion.

The learned author, who knows the merits of the work, is not very sanguine about its general reception. He does not anticipate that all botanists will embrace his views. His acquaintance with humanity might justly be reckoned very inferior to his acquaintance with botany, if he did indulge any such extravagant hopes. It is vain to expect unanimity about the arranging of large groups, such as classes, divisions, and orders, or even genera, when there are so many different opinions about smaller assemblages, viz. species, races, varieties, etc. Are all botanists agreed about the limits or the definition of species? The discrepancies among botanists even on this head are notorious. Some botanists doubt even the existence of species. These assert that Species is an abstraction or a conventionalism; a term expressive of an ideal entity, not the name of a real thing.

If there be no unity of opinion about species, can we reasonably look for unanimity about genera, orders, and larger groups of plants? What individual plant has ever been received, or indeed can be received, as the type or representative of a species? The abstract idea of a species includes every individual of that species that ever existed, is now in existence, or will come into being in the ages to follow. No individual plant exactly represents in all its possible modes of being every plant of the same sort or species that has been or will be. Even if the doctrine of Linnæus be admitted, that a single perfect plant, or a pair of imperfect or diclinous plants were originally created, this would not solve the difficulty. It may be asked, was the original plant the type of its descendants, as Adam was the representative of the human race? If the answer be affirmative, it may still be urged that there is no existing description of this original of the specific race. Which of the descendants is the typical species?

The absolute or perfect idea of a species is impossible, because the totality of the individuals composing the species is not yet filled up; and therefore a true description of the species is impossible. At the very best, there can only be given a description of the qualities of a greater or less number of individual plants. Any number of these may be defined and limited, and still the definitions of these individuals, or of the properties common to myriads of individuals, may be strictly and absolutely inapplicable to species. Botanists assume the existence of typical species, typical genera, and typical orders. Will any of them condescend to tell their doubtful brethren what is the type of a species? We suppose they assume that any individual of the species is an adequate representative of that species. This may readily be admitted. But may it not be admitted that every species is an adequate representative of a genus, and every genus a sufficient type or representative of an order? If so, what are typical species, typical orders, types of vegetation, distribution, etc.? Are they "*voces et præterea nihil,*" as the hungry Athenian called the cooked nightingale, served up for his supper? Until systematists can define typical plants, it is to be feared that a universal system deserving the name of *natural* is still *in nubibus,* and will be revealed only when the sun of science has dispelled the dense fogs by which the minds of ordinary mortals are *bemisted.* Typical plants will appear to plain men like ideal pictures, and they will, like artistic ideality, be rather phantoms, or dreams of the fervid imagination, nonentities, anything rather than realities. Suppose a jury of artists were empanelled to select a specimen of the human figure and face divine which should be typical of the human race; would they find a unanimous verdict? Scarcely, *teste* the Hottentot Venus and the Chinese exhibition in Hyde Park seven years ago.

It may be asked again, is not every single individual of a species, a just representative of that species? It ought to possess the characters of the species, or it has no business among them. If it be a just representative of the species, what need is there of a typical plant to represent the species? All botanists admit this without the least demur. But some of them assume the existence of typical species, though they deny or neglect typical individuals. But if typical individuals are useless, as they evidently appear to be, what need is there for types of orders and

genera? Is not every species an adequate representative of a genus, and every genus a sufficient representative of an order?

The man who bravely grapples with these knotty problems and who also brings to their solution a well-trained mind accustomed to observe, to combine, and distinguish; who is endowed with a sound judgment, patient endurance, a proper estimation of the labours of his predecessors in the same field, deserves encouragement at least, and his labours are entitled to the respectful consideration and admiration of all who are able to appreciate knowledge and ingenuity. Neglect, faint praise, sly sneers, and direct hostility, are not the way to encourage self-devoted students to labour in the too often unproductive fields of scientific investigation.

But our readers' patience had need to be as great as we hope their charity is, or they would not endure this dry lecture on a very barren theme; there is now something to be told which concerns ourselves, *i. e.* the writer and those for whose behoof he is writing. "Charity begins at home;" the adage was not forgotten. Our sympathies are, in the first place, engrossed by those who sympathize with us, viz. our friends, families, and firesides; but our charities are not confined to home and its constituents; they embrace more remote connections, *vide* our notice of Professor Agardh's learned volume; and finally, they should comprehend the entire human race; "*homo sum*," said the sage,—or, keeping up the metaphor, "*homines sumus*,"—"humani nihil à me alienum puto:" the plural form must be abandoned.

In the first place, it is proper to inform our patient, loving readers, as the old preface-makers very properly called those who dipped into their long learned preambles, that a recommendation by one of our very earliest contributors and firmest friends has been now long under consideration, viz. that the 'Phytologist' should, for the sake of more easy reference, be completed in a year; or that the pagination should not run on for twenty months, or two years, or any other indefinite period, as in our last and previous volumes of the New Series. He proposes that it should not extend beyond the twelve months; but should close with the closing of the year. In order to give general satisfaction, the following plan is proposed for the consideration of the purchasers of the work, viz. to provide a title, contents, and index, for the twelve numbers that will appear between January

and December, with distinct pagination: thus making each annual part complete by itself. New subscribers will not, as heretofore, have to purchase so many back numbers, in order to complete their volumes. They may however bind up in one volume as many of these twelvemonths' issues as they please. They will be supplied with a title, index, etc., to each yearly portion. If our subscribers offer no objection to this plan, it will be adopted, and carried out henceforth.

Courteous hints have reached us that the philological matter which occasionally fills up a small portion of our space is not precisely the matter which is expected in a journal expressly devoted to scientific objects. This is partly true; our readers are Botanists; some of them are Philologists also. Where are our correspondents to seek for information about the names of plants and the etymology of the current nomenclature? In botanical dictionaries and catalogues? These are very useful; but they do not always afford what is wanted. Others recommend sending all such inquiries to the 'Notes and Queries.' Many questions discussed in the 'Phytologist' would be quite as suitable to these learned pages as to ours, but this would entail upon the questioners an additional charge. Besides, botanical queries are often neglected in that useful journal. There may be several readers of our publication who have not Paxton's 'Botanical Dictionary' on their shelves; and if they had, it would often fail to give what is wanted, as many new names have been introduced and have become current since it was published.

The Editor of the 'Phytologist' hopes that no reader will hesitate to ask his help, either about the identification of species or etymological difficulties. He will do his best to help all who have exhausted their own means of determining doubtful questions. He knows that every botanist is not provided with an extensive library of books for reference. Those who are well supplied with good works on nomenclature and descriptive botany, will not ask questions which they could themselves answer. We promise to economize our space as much as possible, but mean *still* to answer all fair questions to the best of our ability.

A friend has reminded us that there is no English dictionary extant which gives the right names to our common plants; or rather, there is none which gives the proper scientific term, cor-

responding to the common or English name. This may be the case. But the 'Phytologist' is not exactly the medium for supplying the deficiencies of English dictionaries.

The propriety of the specific term *Spicant* has been settled, and we beg to adduce this as an evidence that the etymological articles have been successful, and their utility must still remain unquestioned. For these reasons, the uncommon etymologies will, as before, receive a moderate share of consideration. Such terms as are clearly and satisfactorily explained already, will rarely be sent to the 'Phytologist,' and if they are sent, they may be despatched in a few lines. Our readers are reminded that the 'Classical Journal,' the 'Museum Criticum,' and similar learned publications current in the times when we were youngsters, are now historical facts, to be numbered among things that were.

The Editor wishes one thing to be clearly understood, viz. that he is not responsible either for the facts supplied to him for circulation among his readers, nor for the style and manner in which these are communicated. He will use all due precaution against *canards*, notices of the discovery of mares'-nests, etc., and he will take care to let nothing be printed which can justly be considered offensive to good manners, or which might give pain or uneasiness to any other contributor. He does not volunteer this statement of his editorial duties and liabilities because of any complaints either against himself, or which have been aimed at any of his fellow-labourers; but because there was a slight misunderstanding about the intent of the short article on 'Things not Generally Known.' The printing of this article in the 'Phytologist' was not approved of by *all* our readers: in some quarters there was a misapprehension of its object. The correspondent who sent it did not quote the source whence it was taken. The Editor believed that the work from which it is an extract was so generally known, that it was superfluous to supply this omission. He thought that every one of the reading public would recognize the title as the name of a very popular work. The quotation had gone the round of the newspapers, and even appeared in some penny almanacs, and in tradesmen's almanacs, publications in which London tradesmen advertise tea, tobacco, sugar, spirits, wine, figs, nuts, etc. As it happened, the substance of the article had the appearance of *vraisemblance*, and unfortunately mingled

the true with the false; "vera falsis confudit." And hence it was offensive to some who did not perceive that it was only a jocular mode of warning readers not to pin their faith on every printed statement.

Possibly our correspondent may have intended o perpetrate a small pleasantry, or to make an experiment on the credulity of the Editor, who is like a wily old fox, not to be caught in such a clumsily-set and ill-baited trap. But whatever may have been the object of our contributor, the article was sent to the press neither to mislead nor to mystify, but simply to warn readers not to place implicit confidence in all that appears in print, whether it may originate with the clever compiler or author of 'Things not Generally Known,' or with the cleverer author of the 'Vestiges of Creation.' That it obtained universal credit with our brethren of the Fourth Estate is a fact, not a *great* one, but an important one. No one who knows the 'Phytologist' will believe that the doctrines so eloquently expounded in the 'Vestiges of Creation,' and which were generally known in late times by the term *Vestigianism,* will find much favour in our sight. They will find few advocates among our contributors.

The "Flowers of the Olden time" is another short paragraph taken from a contemporary publication, entitled 'A History of Progress,' and from which it does not appear that botany has made great progress. The writer of the chapter on our native and introduced plants, or the editor of the 'History of Progress,' does not appear to have made much progress in his botanical studies. Surely no reader of the 'Phytologist' is so green as to believe that the Honeysuckle of our woods and hedges is an introduced plant! It has always been esteemed, even by the most fastidious of *purists,* as one of the most orthodox or genuine aboriginal productions of our native land. Will the historian of Progress tell us when it was introduced?

The dispute about the change of the Wild or Sea Cabbage, *Brassica oleracea,* into Kail, Cauliflower, Broccoli, etc., or the escape of the cultivated plant, and its establishment on maritime cliffs, and subsequent degeneration into the Sea Cabbage, must for the present be considered as one of the things or facts not generally known, or rather a something about which there is not a unanimity of judgment among the writers of the 'Phytologist.' But on this point there is some vacillation in other quarters;

and if we cannot agree about the fact, we should do as opposing religionists propose to do, viz. "agree to differ."

It must be admitted that it is an all but universally accredited fact, that all cultivated or domesticated things (plants and animals) existed originally, or from the beginning, in a wild state, and that they were accidentally discovered, as "Anah found the mules in the wilderness, when he was herding the asses of Zibeon his father," and rendered useful by cultivation and domestication. Is this one of our time-honoured, hereditary beliefs, or is it capable of proof either by historical evidence or by *à priori* or *à posteriori* argument? Questions about the domesticity of animals, and the origin of useful and ornamental objects of agriculture, horticulture, and floriculture, are more easily asked than answered.

An apology is owing to several correspondents for an apparent, not a real neglect of their communications on cases of poisoning. The cases to which allusion is now made, had all been circulated in the newspapers, weeks before they could have appeared in our pages. It was too late to publish as news what all our readers knew already from other sources of intelligence. Every one who can and does read, knows that the berries of the Deadly Nightshade are a certain and speedy poison; would that all, and especially children, knew the plant when they saw it, and knew also its virulent qualities! The schoolmaster, as they say, does not appear to be at home on this subject. Surely the knowledge of poisonous plants cannot be said to be useless *knowledge!* The berries of the Woody Nightshade (*Solanum Dulcamara*) are suspicious, but they are not very tempting. Are there any known cases of persons poisoned by them? Are there any reported? The prevalent opinion that the berries of the Mountain Ash are poisonous is not easily accounted for. In the south of England, where this tree is commonly planted—and very ornamental it is—in shrubberies and in small gardens where it does not occupy much room, the berries hang unmolested by the smock-frocks of the country and the gutter-bloods or Arabs of the town-populations, till the birds have time to eat them at their leisure. The birds, in these parts, are better judges of wholesome fruit than the unfledged (wingless) bipeds. In Scotland the berries are sometimes kept till they are dry, like currants. In harvest they used to be thrown on or among the sheaves, on the cornricks,

and at Christmas, when the ricks were threshed out, the *roddins* as they are there called, were counted good fare. In Wales a kind of drink is brewed from them. Probably a brandy might be distilled from their juice. Nobody in Scotland or in Wales has the slightest doubt about the harmlessness of this fruit.

On this subject a brace of articles (not of bucks) have been in hand several months, and they will appear soon. We hope that none of our obliging correspondents will believe that we are not greatly indebted to them for sending us these and similar slips and cuttings containing current news. They are useful to us in one way or another.

It may be satisfactory to some of our friends to introduce a short paragraph about anonymous contributions,—articles which are not subscribed with the names of the writers. When the names are withheld, it is always done at the correspondent's special injunction. It would be always agreeable to us to give the author's name as a voucher; but we fully admit the right of a contributor to fix his own terms. The Editor begs to state positively that there is not a single fact recorded in the 'Phytologist' for which he has not sufficient authority. He knows the authors or authoresses of all communications that have appeared in its pages since its change of ownership. Further, he believes that there is not one of these anonymous contributors who would have the slightest scruple about having his or her name privately or confidentially divulged, if there were good cause for such recognition. Of course the Editor neither would nor could take such a liberty, without the permission of the respective parties duly transmitted to him. But he knows no party to whom he would not confidently apply for this permission, if he was formally requested, for important purposes, to make such application.

Before concluding, the Editor has something to tell the readers of the 'Phytologist' in general. The number of contributors and correspondents considerably exceeds a hundred. This might be considered an ample guarantee for at least a considerable diversity of matter. Yet some have complained that more variety might be expected,—that there is a lack of large comprehensive views of botany in general,—that our sympathies are too limited, —that we are not sufficiently catholic in our achievements and aims. The Editor's opinion has always been that local botany does engross too much of our attention and space,—that there

are other departments of the science deserving some notice,—as attractive to many as the lists of rare plants, or the notes about white Bluebells, blue Milkworts, etc. etc. Our readers are hereby honestly informed, that we must give them what we get from our contributors, and our contributors are, like ourselves, labouring for the sake of science, not for profit. As a commercial commodity, the 'Phytologist' is "stark naught;" as a means of disseminating some information and much good feeling among botanists, it is invaluable. Therefore the botanists of England, ay and of Scotland and Ireland too, cling closely to it, as to a standard, a sort of rallying-point, which fairly gives expression to all the variable and ever-varying shades of opinion on botanical subjects.

Some correspondents complain, on the other hand, that there is a deficiency of good articles on the localities of plants, or rather, good excursion-details, or rambles in search of rarities. These look back to the years of former times, when the 'Phytologist' was young, and was then generally full of "Day's Botanizings" in all parts, from the Lizard Point to Cape Wrath. The subject was fresh then; it is stale now. We do confess a want of sympathy with these regrets. The obligations of the present are too pressing to admit of much sentimental indulgence of the pleasing reminiscences "of days long past." While doing our best under existing circumstances, we look hopefully to the future, and endeavour not to regret "the days of auld lang syne."

Our object is to give general satisfaction, or to please all parties; and though not unmindful of the moral couched under the story of the Miller and his Ass, we feel obliged to our correspondents for the valuable hints that reach us, all sent with the laudable intent of improving the 'Phytologist.' All receive patient consideration, and our hope is to make them all in some way or other conducive to the improvement of our periodical.

We wish we could prevail on the botanical brotherhood of the Microscopical Society to tell us what they see when they have vegetable tissues at one end of their achromatic tubes, and a clear, steady eye at the other. The structure of all parts of a plant is instructive, from that of the pollen-granules to the more solid or denser tissues of the vegetative organs. This hint is thrown out at random, yet it may fructify and produce both edification

and pleasure to our readers. It is seriously hoped that it will not fall like seed on the bare and barren sands of the sea-shore.

Finally, the Editor has much pleasure in announcing that he is *now* able, through the kindness of a well-wisher to the good cause, to give some slight variety to the contents of the 'Phytologist.' A series of articles on the history of the British plants has been offered, and are conditionally accepted. They will not be a mere chronicle of botanical events, nor sketches of men illustrious in the science, nor a bibliographical account of botanical works, but a genuine history of the British species.

It was intended to give here the headings of a few of the earlier chapters, but our usual limits are already over-passed, and the above must be deferred. Yet we cannot entirely dismiss it from this Address, because we want both the approbation and assistance of our correspondents to aid us in carrying out the proposal. They can hardly be expected to approve till they have had a sample; and they cannot give any help till they know how. It is intended to trace the relations existing between the plants recorded in Holy Scripture, and those of our country; also the relations of Druidical, classical, medieval, intermediate, and modern botany, with that of Great Britain. It will, when finished, be a complete history of our native plants in connection with what was known of botany in all ages, from the earliest antiquity to the present time. The antiquities, utilities, and the distribution of native species will be the staple of these articles, while the botanists and botanical works will form an integral and important part of the series. What is wanted are contributions on the early records of plants, their common vernacular names in any of the existing languages *now* current in Great Britain and Ireland (no merely local names are desired); also the first mention of any plant or plants in any English, Welsh, or other work or herbal current in the British dominions.

The geography of the British species, or their distribution in regions beyond our four seas, is another object of research. Mr. Bentham's work will both show the way, and also afford some data which will admit of increase and classification. Valuable information on the introduction of exotics or on naturalized plants will be found in our number for June, 1858, p. 449 and the following. This article, for which we beg specially to thank the anonymous correspondent who furnished it, is from De Candolle's

'Géographie Botanique.' While we direct the reader's attention to this useful *résumé*, we do not advise them implicitly to adopt the results or statements of the eminent botanical geographer. They will, however, rely more on their own observations than on the theoretical deductions of the learned Professor.

Investigators will see that although our Flora has received numerous and important additions from foreign parts, both European and extra-European, yet that the great majority of new plants, entered as of spontaneous British growth, since the times of Ray and his contemporaries, consists rather in the separation of supposed species, or *splitting*, as some irreverently name this practice of modern botanists. Probably we have received from distant lands one hundred species, now naturalized, or generally reported as of British spontaneous origin (growth): but we have now (1859) about eight hundred plants not in Ray's 'Catalogus Plantarum Angliæ.' Whence have we got these? Were they all overlooked by Ray and his keen-eyed contemporaries? Supposing that we have given a home to a hundred aliens, whence have we obtained the remaining seven hundred new species? Probably the history of many or several of what we have flattered ourselves were genuine species, may be more instructive to our successors than flattering to ourselves. Some of these new comers are probably destined to "dumb forgetfulness," to be lost in oblivion, *quia sacro vate carent*. They do not deserve a divine poet to celebrate their virtues and to sing the celebrities of their uneventful lives. But we may learn something from the short and simple annals of these inglorious innocents who are now and then remorselessly sacrificed to appease the *lumping* portion of the amiable fraternity, as they are termed derisively by their species-splitting brethren.

The Editor, however, respectfully reminds the amiable correspondent who so liberally offers the result of his observations on this subject,—the condensed summary of what he has seen of the vegetable kingdom, in Europe, Asia, and the far west, during a quarter of a century,—that "life is short and art is long,"—*brevis vita, ars longa est*. It is possible for an author to exhaust himself while attempting to exhaust his subject; and it is not very improbable that the patience of the reader may be exhausted, before the writer has accomplished the exhaustion either of himself or of his subject. The exhaustive process, like some

other processes, may be carried beyond the limits of human endurance; it is not seldom exhaustive of the time and money, as well as the forbearance of the reader. Our correspondent's letter, in which he proffers this kind assistance, is not forthcoming: it has been lost or mislaid, which is just the same, or our readers should have had his proposal in his own words. All that can be prudently told our readers at present is what we have, in substance, stated to our contributor, viz. "Send a sample of your ware, show us what you can do in this line, and we will do as dealers in other and very different wares do, viz. judge of the stock by the sample." This procedure is recommended to all who read this, viz. that they should suspend their judgment on this proposal till they have had an example of what we are able to supply on this new subject.

Meyer, the great modern historian of Botany, several months ago completed his third volume of the history of the science, and he has only brought it down to the era of the Saracens, Charlemagne, and the establishment of the Medical School at Salernum (*Schola Salernitana*). How many more volumes the work may contain, or how many years it may be ere it is completed, we suppose the learned author cannot tell. But we can tell that the publishers of London would give small encouragement to a work so indefinite in magnitude and duration.

We promise that each section or chapter of the projected history shall be a complete account of some portion of the subject.

Our correspondents are specially invited to send us their opinions, views, remarks, and suggestions on the proposal now submitted to them for their consideration and patronage; and with our humble and sincere acknowledgments of their kind and disinterested assistance, we cordially wish them and all our readers the customary congratulations of the season.

Chelsea, January, 1859.

Some account of Rozel, in the Island of Jersey, with remarks upon the Plants growing upon the Island, indigenous and exotic. By John Lloyd.

At half-past eleven o'clock at night, on Monday, the 2nd of August, I embarked on board the steamer the 'Courier,' bound

for the port of St. Helier's, in the island of Jersey. Upon going into the fore-cabin, I found it inconveniently crowded; many of the berths were occupied, and those which were not were all of them marked as taken, so I was obliged to put up with sitting-room.

We started soon after one o'clock. The beautiful bay of Southampton Water was smooth as a mirror, and as the night was warm, many of the passengers preferred to go upon deck, and amongst them a gentleman who had secured a berth, but who had not the courtesy to relinquish it to any other individual, although there were several of the softer sex who stood much in need of that very necessary accommodation. However, as the sea was smooth, and all the passengers seemed disposed to be upon good terms with themselves and with each other, the few hours of darkness passed rather pleasantly. After passing the five other islands, we came in sight of the western coast of Jersey, and as you approach it, it has rather a barren appearance. The land falls rather precipitously towards the sea, and the table-land beyond is scantier of wood than is the island generally. As you turn the south-west corner, and approach towards St. Helier's, and have the Bay of St. Aubin before you, all the sterile appearance is gone. The land behind the town is well furnished with trees, which, with the numerous suburban villas and their well-laid-out grounds, gives an appearance of high cultivation.

The boat made the harbour, and we landed upon the quay about twelve at noon. In walking towards the town, I observed that very beautiful plant *Centranthus ruber:* it grows upon walls and cliffs in various parts of the island, and is frequently met with with a white flower. As it seems here quite at home, I would suggest to our botanists whether it may not be a true native; if so, the extent of its radius may be about the county of Somerset, and that it will not survive severe winters further north in its exposed habitat. I passed on to the Esplanade and entered the town. I soon came to Charing Cross. Here were no pillars, nor statues of kings, no heroes, no fountains, no National Gallery, no church renowned for its portico, but there was a "Golden Cross," into which I went. Now this is a much more humble hostelry than is its far-famed namesake on this side of the water; but I procured what I wanted, and that was a hearty meal.

I then went to visit the nurseries in the vicinity, and first, the very respectable establishment of Mr. Bernard Saunders, which, although in so remote a place, I found as well conducted as a first-rate London nursery. Mr. S. has paid much attention to the indigenous botany of the island; but what I consider to be the thing in which he most excels, is the cultivation of Cape bulbs in open borders. He is very sanguine in his opinion that they may be grown in the same manner in England; and no doubt they may in the extreme south and west; but I fear that in the vicinity of London there would be many difficulties to surmount before they could be grown to anything like the perfection which they attain in the Channel Islands. Certainly much may be done, as we are very far behind in the cultivation of these beautiful plants.

I next paid a visit to the nursery of M. L'Angelier, and saw the most extensive collection of Pears which I had ever seen. He professes to have, and I suppose has, upwards of a thousand varieties, all grown upon Quince stocks. I here observed *Yucca aloifolia, Hedychium coronarium,* and *Eucomis punctata,* grown as common border plants. I visited other smaller nurseries, but saw nothing in them worth recording. In returning towards the town, I observed *Agave americana* planted out, and growing luxuriantly in the open air. The Fuchsias are here large bushes; their branches survive the winter, and they were a mass of scarlet bloom. The Hydrangeas are also large shrubs; their flowers are all blue, perhaps from the quantity of iron in the soil.

At an early hour upon the following morning I started for Rozel, which is situated at the north-east corner of the island, and is somewhat more than five miles from St. Helier's. In passing along St. Saviour's road, and near to the Government House, I came to a bank on the right-hand, with *Sedum rupestre* growing upon it abundantly, as well as *Sedum anglicum,* which latter appears to be the most plentiful species upon the island; I saw also *Erythræa Centaurium, Umbilicus pendulus,* and the following Ferns:—*Polypodium vulgare, Lastrea Filix-mas, Asplenium Trichomanes,* and *A. Adiantum-nigrum.* Passing through St. Saviour's churchyard, I observed that nearly all the gravestones erected in the last century and the early part of the present one, bore French inscriptions, whilst those of more recent date had English ones. A little past the church, I came to *Polystichum*

angulare, and *Scolopendrium vulgare*, which appears to be the most generally distributed Fern upon the island; and near to Ronde-Porte Cottage, *Lastrea dilatata*, *Athyrium Filix-fœmina*.

OAK-LEAF FUNGUS; OR PROPERLY, OAK-LEAF SPANGLES.

By S. B.

I have again examined an oak-leaf with these objects on it, and I found that under almost all the spangles there was a small amber-coloured grub. The leaves I examined last autumn were much older, and as there were no grubs in them, I conclude that the process of insect-transformation had taken place, and the spangles vacated by their late occupants. Mr. Jerdan's answer to my note therefore appears to be correct. The *Fungi* I first observed in the vacated spangle were, I expect, performing the work of decomposition, acting like "Death's decaying fingers."

I have lately been much interested in the examination of the leaves of the *Viburnum Opulus*, which I found covered with small amber-coloured spots, giving off a peculiar odour, like the smell of pigs or turmeric. I also found the same on the leaves of other plants. This smell I had often noticed in walking by hedgerows in the autumn, but never till now did I learn its source.

The parasites of Oak and other trees, both animal and vegetable, are numerous, and a description of them would fill a volume. I would however recommend your readers to carry a powerful lens, and use it in the examination of every object they meet with on the leaves of trees, with a view of ascertaining more of this minute world of creation. There is much truth in what the author of the 'Journal of a Naturalist' tells us in p. 120, etc.: "As in the animal world, after disease or violence has extinguished life, the dispersion is accomplished by the agency principally of other animals or animated creatures, so in the vegetable world, vegetating substances usually effect the entire decomposition. *Fungi* in general, particularly those arranged as *Sphæria*, *Trichia*, *Peziza*, and *Boletus*, appear as the principal and most numerous agents; and we find them almost universally on substances in a certain state of decay or approximation

to it; though there are a few substances of this class which are attached to and flourish on living vegetation." He then refers to the agents which effect the decomposition of the leaves of the Laurel (*Prunus Lauro-Cerasus*), the Elm, the Sycamore, and the Beech. The first appears in the form of a small black speck, and when ripe, discharges a yellow powder from the centre. This is named by Lamarck, the two-fronted Uredo (*Uredo bifrons*). The dark-coloured blotches on the elm-leaf he calls "the plague-spot of its destruction," and this Lamarck names *Sphœria xylomoides*. The dark-coloured spots on the Sycamore (*Acer Pseudo-Platanus*) he calls *Xyloma acerinum*, which appear in autumn.

"These specimens," observes the author, "are only individuals among hundreds, which present us with a world of beauty, variety, and wonder."

I would recommend this interesting work for perusal, and I wish some of our other Naturalists would publish *their* journals.

I hope some of your readers will favour me with the name of the spots on the leaves of the *Viburnum Opulus*. I enclose a leaf for your inspection.

Note.—The spots on the leaves enclosed appear to discharge a *yellow powder*.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Friday, the 3rd of December. Miss Warren, of Flushing, near Falmouth, and Mr. Isaac Williamson, Lower Hillgate, Stockport, were admitted as members of the Botanical Exchange Club.

Mr. J. G. Baker announced the receipt of parcels from Misses Gifford and Warren, Mr. Samuel King, and the Rev. W. M. Hind; and that Mr. A. Irvine had kindly undertaken, for the convenience of the southern members of the Club, to take charge of whatever packets might be forwarded to his residence, and would send them in one cover to Thirsk, at the end of the year. He exhibited specimens and communicated notices as under:—

"*North-east Yorkshire.—Fumaria Vaillantii*, Lois.—Found by

Messrs. Brown, Davidson, and himself, at Cawton Heights, near Hovingham, in the summer of the present year. New to the county.

"*Galium insubricum*, Gaud.—Mr. T. I. Foggitt has communicated, from the vicinity of Sandhutton, near Thirsk, a supply of a *Galium* differing from the ordinary form of *Mollugo* by its slender stem, narrower leaves, more erect panicle, branches and pedicels as long and erect as those of *erectum*. It would appear to be identical with the plant of Gaudin, and not distinct from *Mollugo* specifically.

"*Gladiolus imbricatus*, L.—To the courtesy of Mr. J. T. Syme we are indebted for a specimen of this interesting novelty, collected in the June of the present year, in one of the previously registered stations in the vicinity of Lyndhurst, in Hampshire. Upon the Continent it is a plant of Russia, Austria, and Germany proper, but not of France or Switzerland. It much resembles the *Gladiolus* commonly cultivated in gardens (*G. communis*, L.), but is distinguished by its smaller size, closer flowers, and rounded seeds.

"*Athyrium Filix-fœmina, plumosum*, Moore.—The Messrs. Stansfield, of Todmorden, send from the vicinity of Whitby a very curious and interesting Fern. In the example forwarded the sori are non-indusiate, and placed upon the edge of the pinnules, as in *Davallia*, so that it looks very different to the ordinary forms of the Lady-Fern; but in a communication with which we have been favoured from Mr. Moore, of Chelsea, he expresses an opinion that it is a variety, or rather, condition, of that species."

Mr. J. H. Davies exhibited specimens from Mr. Nowell and others, in illustration of the bryology of the coast sandhills in the neighbourhood of Southport, in Lancashire. The series included *Catoscopium nigritum, Bryum uliginosum, B. calophyllum, B. Marratii*, and *B. warneum, Meesia uliginosa, Hypnum salebrosum, H. elodes*, and *H. polygamum*. Also *Campylopus brevipilus*, B. and S., East Yorkshire, Skipwith Common, between York and Selby, 1858, John Nowell: the third British station.

Brachythecium glaciale, Bryol. Eur., and *B. micropus*, Bryol. Eur., two new British species, allied to *Hypnum reflexum*, found by Mr. Wilson on Ben Lawers in 1855, sent by Miss Atwood.

Reviews.

The Transactions of the Malvern Natural History Field Club. Part II.

The readers of the 'Phytologist,' through the Editor, offer their thanks to the unknown correspondent who has kindly sent to us the above-named publication.

The anniversary address by the President, the Rev. W. S. Symonds, F.G.S., reviews the geological discoveries recently made in the district. These, as being beyond our province, require no further notice in the Journal of Botany. The botanical discoveries are neither few nor unimportant. New localities are recorded for *Echium vulgare*, a rare plant in the Malvern district; also for *Campanula latifolia*, in Cowleigh Park; also *Myosurus minimus*, in a fallow field, at Powick, near Ham Hill Cottage; *Narcissus biflorus*, plentiful in a field in the parish of Bromsberry (southern end of the Malvern chain),—a rather wide definition of a botanical locale; "*Gagea lutea*, Purlieu Lane, by the Rev. F. Dyson, and in a spot nearer Brockhill by the Rev. Dr. Craddock, Principal of Brazen-Nose College; *Ornithogalum nutans*, in considerable plenty at Bromsberrow; *Anemone apennina*, Tunnel Hill, near Upton-on-Severn, determined by Mr. Lees, and judged an escape from a garden by the same gentleman; *Lathyrus palustris*, *Lathyrus Aphaca*, Pendock Keuper-quarry, western side of Longdon Marsh. Mr. Watson has unaccountably omitted it in his 'Cybele Britannica,' though confirmed by all the best botanists of Worcestershire as a true native of the Severn valley. *Centaurea solstitialis*, in a fallow field near Great Malvern; *Quercus intermedia*, var. *variegata*, on a syenitic mound in Cowleigh Park. 'Those interested in the subject may be glad to know that the Oak with Mistletoe upon it yet exists near the middle lodge in Eastnor Park.' *Epipogium aphyllum* is expected to reward the pains of some close-searcher. It has not been observed since the period of its discovery (1854). *Polypodium Dryopteris*, western declivity of the Worcestershire Beacon."

The following extract will show that the Oak-gall is spreading. The readers of the 'Phytologist' are requested to observe

and report to the Editor the progress of this, which threatens serious consequences to young plantations. In the Isle of Wight, near Ryde, the *Cynips Quercus-petioli* was very common. Some of the specimens were very large and beautiful. When was it first detected?

"At the Tarrington meeting Mr. E. Lees exhibited specimens of the hard gall-nuts formed on the oak by the *Cynips Quercus-petioli* of Linnæus, which within the last three or four years have spread with such rapidity among the oak woods of this country. Till recently it had been confined almost to Devonshire and Somerset, and in 1855 Mr. Lees stated that having traced it to the banks of the Avon opposite Clifton, he had then inquired, through the 'Gardeners' Chronicle,' if it had been yet observed in the midland counties; but there was no response to that question, nor on inquiry could he hear that it was then known in Gloucestershire, Worcestershire, or Herefordshire. In 1856 a single specimen was met with by Mr. H. W. Lamb, near Malvern; and Mr. Lees next found it in Nunnery Wood, near Worcester; and Mr. Roberts, in 1857, at Broadwas. It was then however quite rare, but now (1858) it has been observed in abundance at Cowleigh Park and Broadwas. It has been also gathered in Herefordshire, in a wood near Haffield, and about Ross. Mr. G. E. Roberts has recently found it at Bellbroughton, Worcestershire, but even now it is unknown in the northern counties of England. It was remarked that some effort should be made to keep this gall within limits, as in Somersetshire the farmers had complained that these gall-nuts had supplanted the acorns by their enormous increase in the trees, so that they were now without the usual autumnal food for their pigs; while in young plantations the leading shoot of the oak being often attacked by the *Cynips*, was overpowered by the weight of the galls, and destroyed. Every year seems to add to the extent of the ravages of this insect pest.

"It was thought that as this gall-nut of the *Cynips Quercus-petioli* much resembled in appearance the gall-nuts of commerce imported from the Levant, made by *Cynips insectivora*, that some compensation for mischief done might perhaps be taken out in *ink* made from its galls, and the experiment has been tried. But the careful researches made by our Secretary, Mr. Walter Burrow, have proved so unsatisfactory in this respect from the weakness of the gallic acid, that after many trials he has given up the matter."

Mr. Lees reports a new *Alga* from a pond at Snead's Green, Mathon, which he proposes to name "*Palmella æstivalis?* Frond glutinous, thin, spreading irregularly on water or mud;

globules aggregated in a crimson gelatinous mass, soon discharging their granules, becoming colourless and non-persistent."

The other members of this family, reported by Mr. Lees as belonging to the Malvern district, are *Coccochloris protuberans*, Spreng., and *C. muscicola*, Menegh.; also *Ulva crispa* and *U. calophylla*. These singular plants are dignified with as many names or synonyms (surnames) as a Spanish grandee of the first rank.

Among the Funguses, a list of some of which are given as occurring about Malvern, there is an account, with a figure, of a new form, ? species, of *Mitrula*, found on a decaying Bramble near Powick. Mycologists may be on the out-look for it. New *Fungi* and new *Algæ*, now that we have got good microscopes cheap, may be as plentiful as brambles and damp walls and muddy ponds are on the earth, or as planets and comets undiscovered in the heavens.

Species Filicum. Descriptions of all known Ferns, illustrated with plates. By Sir Wm. J. Hooker, Director of the Royal Gardens of Kew. London: William Pamplin, 45, Frith Street, Soho Square.

Parts VII. and VIII., or Vol. II., Parts III. and IV., are now before us, and the intentions of the author to publish Part IX. are announced, an announcement which will be gratifying to all who wish to see a complete work on this very extensive subject. We only wish that the work had fallen into better hands than ours. But we will do our best to present our readers with an example of this eminent author's mode of dealing with our British species, which form a portion of the species described and illustrated in this elaborate work.

First, *Cryptogramma crispa*, or *Allosorus crispus*, or *Pteris crispa*,—for it has rejoiced in all these names since the reviewer knew it; and the learned author proposes to make a slight emendation, only to change *a* final into *η*, *Cryptogramme* for *Cryptogramma*; from γραμμη, a line, not γραμμα, a letter. This change will mend the grammatical form: the former is feminine, the latter neuter, and it has been usual to supply a feminine

adjective to the neuter noun, a practice offensive to Priscian's ghost, if that eminent grammarian concerns himself about sublunary matters. But we hope he is better employed than in fretting his heart about the solecisms of learned and unlearned botanists: if he does, his spirit can have no rest. The offences against grammatical purity and linguistic refinement are not few nor slight. We must not forget the Fern, nor merge it in the name. We are informed (see Hooker, Sp. Fil. 127) "that the first who separated this Fern from the genus *Pteris* was Bernhardi, and he included *Pt. crispa*, L., in his *Allosorus*, with the very imperfect character 'Sporangia cathetogyrata, sessilia, subaggregata. *Hyposporangia* subcommunia; margine libero, subpellucida;' but *Allosorus* has been made a receptacle for Ferns of very varied structure." Here follows a justification of the author's uniting some *quasi* species into one, for which there is not room here. "When an old plant (one previously known and described), is found in a very distant part of the world from its previously-known locality" [a queasy-conscienced grammarian would say, "in a part of the world very distant from its," etc.], "one is apt to look upon it as something new; and, as is the case with the Cedar of Lebanon and the Cedar of Himalaya, it is very difficult to remove the impression once made upon the mind, although no tangible character to distinguish them can be detected." The various forms known to the author are next enumerated and described. Here the latter is omitted.

"1. *C. crispa, a. forma Europæa.* Hab. General throughout middle and northern Europe, especially in moist districts; as far north as Lapland, and Lake Baikal, in Siberia; south to the Pyrenees, Spain, Asturias, altitude from coast-line 8–9000 feet.

"*b. Forma Indica.* I place this var. next to the European form, because in the aggregate of specimens before me, the sterile fronds are exactly as in our European plant, that is, of two kinds, the one kind with the obovate segments deeply divided, serrated, single-nerved; the other with the pinnules elliptical, deeply serrated, and pinnatedly veined, whereas the fertile pinnules more resemble those of the following (American) form. . . . Hab. N. India, elevation 12,000 feet; Alps of Kamoun, interior of Sikkim-Himalaya, elev. 1100–1300 feet, *Hooker and Thompson.*

"*c. Forma Americana.* Hab. N. and chiefly N. W. America, between 56° and 60° north."

The following quotation from the remarks on our common Brake, *Pteris aquilina*, may be new to some readers.

"Every one is familiar with the common Brakes (Braken, *Scottice*) of our hills and woods, *Pt. aquilina*, which I consider, in a more or less varied form, to be found almost all over the world. The figure, by 'nature-printing,' as given in the 'Ferns of Great Britain and Ireland,' by Thos. Moore, tab. xliv., we need not say *accurately* represents the normal state of a moderately-sized specimen of this plant. . . . No doubt many will be surprised to be told that our common *Brake* is the same genus and species as the famous edible species of the South Sea Islanders, but an intelligent and scientific gentleman has recently brought the properties of our *Pt. aquilina* to public notice, and has himself luxuriated upon this vegetable. See Dr. B. Clarke, F.L.S., on *Pt. aquilina* as an esculent vegetable, in Hook. Journ. of Bot. vol. ix. p. 212."

Enumeratio Plantarum Zeylaniæ. An Enumeration of Ceylon Plants. By G. H. K. Thwaites, F. L. S., Superintendent of the Royal Garden, Peradenia, Ceylon. Part I. London: William Pamplin, 45, Frith Street, Soho Square.

It is now upwards of a century since the celebrated Linnæus published his 'Flora Zeylanica,' in which he compares the productions of Sweden, the land of mists, snow, hail, and terrible tempests, with those of one of the fairest of the tropical islands. The portion of the work before us contains 59 Orders, and of these only Ranunculaceæ, Berberidaceæ, Nymphæaceæ, Cruciferæ, Polygalaceæ, Caryophyllaceæ, Linaceæ, Violaceæ, Droseraceæ, Malvaceæ, Tiliaceæ, Elatinaceæ, Hypericaceæ, Geraniaceæ, Oxalidaceæ, Balsaminaceæ, Celastraceæ, and Rhamnaceæ, have any representatives in Britain, or 18 Orders in the 59 already published. Of the genera, a smaller proportion is found in the British Isles. The Cingalese genera in Part I. may be about 225 or 230; of these the following are all the British genera observed as common to both Floras, viz. Clematis, Thalictrum, Anemone, Ranunculus, Nymphæa, Cardamine, Polygala, Viola, Stellaria, Cerastium, Linum, Drosera, Hypericum, Impatiens, Euonymus, Rhamnus, or 17 in 225, or 1 : 13·2. The only British species detected are *Cardamine hirsuta*, *Oxalis corniculata*, and *Stel-*

laria media, which is believed to be an introduction. It deserves the name of a cosmopolite if any plant does. It is a ubiquitarian in the vegetable kingdom.

The work is not a bare catalogue of Ceylon plants, but contains in addition the habitats, and sometimes the native names. The latter will be serviceable to etymological botanists, in enabling them to discover the etymology of some generic names. Some genera are elaborately described, and many species are accompanied with short *diagnoses*. The elevation of the plants is generally inserted.

Under *Cardamine hirsuta*, one of the few British plants in this First Part which is considered indigenous to Ceylon, the author enters a variety, *C. major*, "sæpissime trifoliata." Query, is this trifoliate form known to any of our readers as a native of Europe? *Oxalis corniculata*, and var. *β minor*, grow in Ceylon up to an elevation of 7000 feet. It has a considerable range of temperature as well as of elevation. One of the largest genera is *Impatiens*, which contains 21 Cingalese examples. Query, is *I. Balsamina* the original of our garden Balsam? As we shall have occasion to notice the remaining parts of the work, which it is to be hoped will speedily follow, then we shall take the opportunity of comparing the work of the immortal Swede with that of our learned author. "May his shadow," in Oriental phrase, "never be less!"

The Natural History Review, etc. London: Williams and Norgate.

The first article in this number of the 'Review of Natural History,' and the publications therewith connected, is a brief notice of the 'Handbook of the British Flora,' by Mr. Bentham, a work which the reviewer calls a novelty in botanical literature, such as has not appeared in the present generation. From the subjoined account some of our readers may infer that the reviewer's acquaintance with botanical literature is not very extensive, nor his knowledge of its character and contents very exact. For example, p. 183, the readers of the Review are told that "Hooker's 'British Flora' succeeded Smith, the author adopting most of Smith's species, but condensing the matter, changing the plan

from the Linnæan to the Natural arrangement, and adding several illustrative plates of the more troublesome genera. The latest edition of this work, edited by Dr. Walker Arnott, though changed in some respects, retains the greater portion of the original matter, and with the preceding editions, can only be regarded (so to say) as a 'cultivated variety' of the original stock, the 'Flora Britannica.' To the same stock may be referred, perhaps, the majority of the local Floras."

We do not profess to understand the sentence we have quoted, but it would appear to convey the following meaning: if we be wrong let the reviewer correct us; our opinion is given with much deference. It might be inferred that Sir W. J. Hooker's 'British Flora,' which has some years ago reached its seventh edition, was originally compiled from Sir J. E. Smith's, with the adoption of the Natural arrangement, as it is called, instead of the Linnæan; "condensing the matter, changing the plan from the Linnæan to the Natural arrangement," etc.,—these are the reviewer's words. The fact is, that at least four editions were published before the Natural arrangement, as it is called, was adopted; and, as the reviewer says, the edition commonly attributed to Dr. Walker Arnott is the first in which the new arrangement was substantially carried out. The first edition of this popular work on our native plants was published thirty years ago; and the sixth edition, in which the change was really made, appeared in 1851. Whether it be a *cultivated variety* of the English Flora, or a work of independent merits, we need not say, because the question is not referred to us; but the reviewer is not quite correct in assigning the change of method to Sir W. J. Hooker. Certainly not before the fifth edition of the 'British Flora,' did this eminent author make said change.

It is to be hoped that the editor of the 'Natural History Review' will not be angry with us for reminding him of what all our readers know right well! If he avers that he knows all this as well as we do, we only observe, that his mode of dealing with the subject gives no sign of such knowledge. Into the merits of Mr. Bentham's work on our British plants we cannot enter, for a good reason; but we accept the judgment of the highest authorities, who have warmly recommended it.

We beg leave further to inform our contemporary,—if he will allow humble mortals like ourselves the liberty of calling him

so,—that our Roses were a score before the advent of Mr. Bentham's work, and our Blackberries nearer threescore than thirty. It has often been said, and written too, that it would not be very difficult to carve another odd score or so out of the individuals of the Bramble genus. They are somewhat like reviewers, a troublesome *set*.

From an article on 'Omphalos,' (the final one?) it does not appear that we have made much progress in demonstrating the pre-existence of fossils, or, in other words, their indefinite antiquity; or how many myriads of years, or periods, or epochs, have run their course since the *trilobites* were involved in some cataclysm which occurred before the earth and the waters were made a suitable abode for the saurians.

We learn from this number of the Review that there is a new Myrtle, raised from seeds which came from Mr. Phillips, of King George's Sound. If this be what we ordinarily call Nootka Sound, the Myrtle may be supposed to have attained as great a range in America as in Europe. The winter temperature of King George's Sound is considerably lower than that of the Isle of Wight. It is the only known species of the genus which will bear such a temperature as that of the Columbian regions, now more famous for gold than for Myrtles or shrubs, that will bear greater alternations of temperature than this beautiful genus can endure. Pliny informs us that it was an exotic at Rome, and that its native country is southern Europe, viz. Greece. It grew into large trees in Italy. It thrives prodigiously in the Isle of Wight.

The Natural History of Pliny, translated, with notes, etc., by the late Dr. Bostock, and H. T. Riley, Esq. London: Henry G. Bohn. Vols. V. and VI.

The lovers of the curiosities and antiquities of Natural History will thank Mr. Bohn for a very convenient and cheap edition of the above-named work.

Pliny's Natural History is the great repository of all that was generally known about the plants, animals, and minerals of his time. It is, besides this, a record of all that was believed about these objects, and this was a great deal more than was known. We

need not marvel at this. Two centuries ago naturalists believed that geese grew on trees in the Hebridean isles of Caledonia; and a learned Professor of the present day believes in the lying legends of Boece and Buchanan, and he has repeatedly avowed his belief in the fabulous account of an army of Danes being poisoned by the juice of a plant which hardly grows in Scotland, and quotes the relation as a proof of the extensive knowledge of plants possessed by the Scots in the mythic times of Macbeth.

That Pliny should deal largely in the marvellous is no subject of wonderment, when the editor of the 'Gardeners' Chronicle' treats his readers with large refreshments of the same kind, culled from the ancient Scots chronicles. The former however either quotes his authority, or retails the wonders as *on dits* or *man sprichts* (hear-says). He does not give implicit credit to every account, like some of the learned of modern times. Pliny appears, from some of his remarks, not to have had much confidence in the curative remedies of the professors of the healing art, and thus in a quiet way satirizes the puffing of the ancients. "Compositions," he says, "and mixtures of an inexplicable nature, forthwith have their praises sung, and the productions of Arabia and India are held in unbounded admiration in the very midst of us. For some trifling sore or other a medicament is prescribed from the shores of the Red Sea, while not a day passes but what the real remedies are to be found upon the tables of the very poorest man among us. But if the remedies for diseases were derived from our own gardens, if the plants or shrubs were employed which grow there, there would be no art, forsooth, that would rank lower than that of medicine."

There were puffs and puffers then, who held a higher rank in the medicinal line than Cockle, Holloway, and the other patentees, proprietors, or vendors of medicinal nostrums of the present day. For all such, Pliny's work is a valuable store. Endless recipes for pills, draughts, gargles, ointments, cerates and salves, liniments, detersives, astringents, anodynes, antidotes, etc. etc., may be culled from its numerous pages.

One of the most common and useful properties of many plants is their remedial agency in curing the fatal or painful consequences of the bites or stings of serpents. Hence it is inferred that venomous reptiles abounded in the south of Europe in Pliny's time. They are still numerous in those regions. Many of the

plants had the power of driving away serpents, like the vermifuges of the present day. Such plants were invaluable in the *materia medica* of the ancient practitioner. A plant that drove away a serpent was worth more than one that cured the reptile's bite.

We do not learn merely the state of the healing art from the pages of Pliny, but also much of what is now called "Fine Art." For example, he gives the history of the plants from which colours, pigments, oils, gums, resins, etc., were derived; and gives tests whereby the counterfeits might be distinguished from the genuine.

Pliny's Natural History is an ancient "Materia Medica," or a "Pharmacopœia," or a sort of "Nosology," or, in still plainer terms, a catalogue of diseases, hurts, accidents, etc., and of the means by which they were curable.

If we were to give implicit credence to the modern panaceas which profess to cure all the ills that flesh is heir to, we should marvel at the existence of any human ailment.

Pliny's writings are valuable as proofs that in the diseases of humanity and their treatment there is nothing new. There was as much quackery among the ancients as among ourselves, and as many dupes and gulls then as now.

The ancient Herbals, we mean the British, were formed on Pliny's work, and instead of a description of objects we have a description of disorders. The indexes to the works are not indexes of things but of sicknesses, and the plants are classed by their curative properties. The 'Grete Herbal' and the excellent 'English Herbal' of William Turner, are compiled on this principle.

Botanists are indebted to Mr. Riley for his notes on the identification of the ancient plants with their representatives of the present day. If not always satisfactory, they are always learned and intelligible.

The table of contents occupies sixty pages, and there are three columns in each page; the average number of articles in a page is about 120: consequently the total number of articles catalogued in the index is upwards of 7000. If the references average three to each article,—they are occasionally six, and in a few cases from fifteen to upwards of twenty, and in one case, under the word Pliny, probably upwards of 100,—the references must amount to at least 20,000.

That every fact and every anecdote has a separate independent

entry and reference is not asserted; but we believe that every plant is specially entered under all its names, surnames, and synonyms, whereby it was known or referred to in the days of Pliny. An index to six volumes of so multifarious a nature as these is a work of no ordinary difficulty and labour. The work, to hundreds who would consult it, would be worthless without its index. It is humbly presumed that even the learned critic of the 'Gardeners' Chronicle' will admit that the translator has performed his work in a most satisfactory, business-like manner, and that he is honestly entitled to the thanks of all botanists.

BOTANICAL NOTES, NOTICES, AND QUERIES.

To the Editor of the 'Phytologist.'

Sir,—Will you give circulation to the following extract from the 'Gardeners' Chronicle' of August 7th, 1858?

"Irish Shamrock.—Will you inform me which of the Trefoils is the true Shamrock of St. Patrick? The White Clover appears to be the genuine Irish Shamrock, though, like the Scotch Thistle and other native emblems, the species employed in heraldry is not much more like any botanical species than the Unicorn on the Royal Arms is like any known animal, etc. A short description of its peculiarities would greatly oblige a *Constant Reader*." To this is appended the following editorial note:—"We believe it to be well ascertained that the Shamrock of the old Irish was not a Trefoil at all, but the Wood Sorrel, *Oxalis Acetosella*." Can you, Mr. Editor, or can any of your correspondents or readers, tell me how this is ascertained, or on what authority the distinguished critic and botanist makes the above assertion? Querist.

[We have heard that the Irish Shamrock is the *Oxalis Acetosella*, but we do not know what ground there is for this opinion. We would recommend Querist to ask the learned editor of the 'Gardeners' Chronicle.']

Gentiana Pneumonanthe in West Surrey.

A fair correspondent has informed us that the above plant, which grew abundantly about Walton upwards of half a century ago, was recently to be found in a moory spot between Chertsey and Chobham; near the scene of the camp which was there not long ago, and adjoining a stand erected by a gentleman of the neighbourhood.—Ed.

New British Blechnum.

Mr. Wollaston has just informed us that a *Blechnum* new to Britain, if not to the northern hemisphere, has been recently discovered in Perthshire. Our kind correspondent will, he says, have much pleasure in communicating further particulars, and in showing the plant (alive), to any reader of the 'Phytologist.'

Bidens tripartita and B. cernua.

On the tendency of the two species of Bidens to keep distinct habitats within a small radius of the same district.—While collecting, this autumn, in the neighbourhood of Southgate, Middlesex, my attention was drawn to the fact that although both species of *Bidens* were found in considerable abundance, within a radius of two miles, I could not detect the two growing in company in one instance. *B. tripartita* I found in three localities by the side of small running streams; once in an excavated, though then not inundated, spot; and once in a stagnant pond. *B. cernua* I also found abundant and fine in two localities, both stagnant ponds. The seven localities, I may add, might be united by links of less than a mile in length, and with little difference in soil to cause the distinction. Last year I found *B. cernua* in considerable abundance at Bishopstoke, Hants, but without its ally *B. tripartita*. Thus eight localities are recorded, seven being in close proximity, each enjoying single blessedness. May I ask, Is this an accidental fact, or is it an unsocial disposition which is a rule with these species?

If required, I can supply seeds or specimens of both.

F. Y. Brocas, *Botanist.*

85, *St. Martin's Lane, London, W.C.*

Enormous Mushroom.

A Mushroom was gathered on the 17th of last month, in the county of Gloucester, measuring very nearly 1 foot in diameter. The actual circumference was 2 feet 11½ inches, the girth of the stem 5 inches, its thickness 1½ inch. It was cooked, and made a most excellent dish for dinner. The family generally partook of it, and survive.—*From the 'Friend,' for August*, 1858.

Nil maxime admirandum; larger Mushrooms have been seen, perhaps recorded also. E. I.

Variety of Convolvulus sepium.

A correspondent has several times reminded us of a variety of the above plant undescribed. He reports that it differs from the common form both in the colour of the flowers and in the shape of the leaves. The flowers are pink, with white stripes. But our friend S. B. will probably oblige us with a detailed account of it, and also of the locality, number of plants, etc. A notice of this variety from any contributor will be welcome.—Ed.

Thorns and Thistles.

Although I appreciate Mr. Hind's observations given in the 'Phytologist' of July last, I cannot help retaining my opinion that the plant referred to in the Parable of the Sower would be more properly rendered Thistles, not Thorns (*Prunus spinosa*); and I would ask Mr. Hind to inform us how Thorns (such as *Prunus spinosa*) could spring up in one season so as to choke the good seed. A plant of annual growth, such as the Thistle, most abundant in Palestine, would be more likely to choke the seed, as growing up with it. The Thorn and Thistle are distinguished in other parts of Scripture, as in Hosea x. 8, where we find, "The Thorn and the Thistle shall come up on their altars." Dr. Kitto, in a note on this passage, says,

"This is another of the different words rendered Thorn in our version." The original is *Kotz*, which may very possibly denote the *Ononis spinosa*, or Restharrow, a papilionaceous shrub of a thorny nature, and which, like the *Dardar*, or Thistle, is in some places a great foe to the farmer. S. B.

To the Editor of the 'Phytologist.'

Sir,—In the 'Gardeners' Chronicle,' August 7, 1858, p. 607, there is an extract from the 'Buik of the Chronicles of Scotland,' a metrical translation from Boece's Latin and Bellenden's prose History of Scotland. The extract commences thus:—

"A herb in Scotland groweth here at hame,
Which called is the *Mucklewort* by name," etc.

The poisoning of Sweno's army and the slaughter of the sleepy host, etc., by Macbeth, are related in about a hundred lines similar to the above.

The editor of the 'Gardeners' Chronicle' gives implicit credence to this strange relation, and treats it as authenticating an important scientific fact, and as illustrative of the properties of plants or of some plants being known at that early period. If you will give insertion to a short paper on the subject, I will undertake to show your readers that there is no ground whatever for this belief; that it rests on no better evidence than another Scottish fabulous account, credited by Gerarde, viz. that geese grow on trees in the Hebrides. ANTIQUUS.

Sir,—I enclose a copy of a letter received from the Postmaster-General, respecting the transmission of botanical specimens through the post, which I think may be interesting to some of your readers. E. A.

(Copy.) "In reply to your letter of the 14th instant, I beg leave to inform you that *books*, having specimens of *dried* plants attached to their leaves, may be forwarded under the regulations of the Book Post, but that botanical specimens may not be sent loose through the post.

"I am, etc.,
"(Signed) F. HILL.

"*General Post-Office, September* 21, 1858."

Communications have been received from

Charles Howie; A.; W. P.; F. Y. Brocas; Querist; E. I.; Geo. B. Wollaston; W. Hobkirk; S. B.; W.; J. Stocks; E. A.; Antiquus; J. G. Baker.

BOOKS RECEIVED FOR REVIEW.

The Friend. *The Critic.*

ERRATA.

In p. 510, last line, for G. S. M. read J. S. M.
In p. 83, for *Lastrea Lonchitis* read *Polystichum Lonchitis.*
In p. 344, line 17 from bottom, for *Stellaria hypnoides* read *Saxifraga hypnoides.*
In p. 454, line 3, for *Cheiranthes* read *Cheiranthus.* *Linaria micrantha* is entered twice.
In p. 597, line 7 from top, for *Orchis* read *Ophrys.*
The article on Huddersfield Plants is by Mr. Stocks, not Mr. Hobkirk.

PLANTS OF PERTH.

Alphabetical List of Flowering Plants and Ferns found in the vicinity of Perth. By JOHN SIM.

Those plants whose occurrence is common and universal are not recorded.

This list is intended as supplementary to Dr. Lindsay's paper on the Perth Flora (see 'Phytologist,' p. 284, vol. ii. N. s.), consequently the plants enumerated by the Doctor, whose localities are definitely stated, are likewise omitted.

K. signifies Kinnoul parish; M., Methven ditto; P., Perth; R., Redgorton; and S., Scone.

In a few instances I gathered plants above four miles from Perth, as at Dunkeld and Blairgowrie, but few of my botanical researches exceeded that distance. In order to facilitate reference, I give the list alphabetically, without any regard to natural or artificial arrangement. As I am very imperfectly acquainted with the Cryptogamic division of the Vegetable Kingdom, I entirely confine myself to the Flowering Plants and Ferns. A paper on the Lichens of this district, by Dr. Lindsay, of Perth, appeared in the 'Phytologist,' November, 1857. In the same paper he noticed the climate, etc., to which I refer the reader.

Ægopodium Podagraria. Abundant under hedges, etc.

Æthusa Cynapium. Frequent among cultivated ground, etc.

Agraphis nutans. Among brambles and hawthorn-bushes, near Kinfauns toll-bar, K.

Aremonia agrimonioides. Wood of Scone; not plentiful.

Agrimonia odorata. Sparingly, in Den of Quarry Mill, S.; very robust, four feet in height.

Aira flexuosa. Frequent in dry, barren soil.

Ajuga reptans. Plentiful in Kinnoul Wood, K.

Alchemilla alpina. At the confluence of the Almond and Tay, P.; very sparingly.

Alchemilla arvensis. Frequent, Craigie, P.

Alchemilla vulgaris. Frequent in many places.

Alisma Plantago. In muddy pools, margin of the Tay; plentiful. P.

Allium oleraceum. Banks of Tay, K.; sparingly, in two localities.

Allium Scorodoprasum. Near margin of Tay. Kinfauns toll-bar; plentiful. K.

Anagallis arvensis. Rare, near Glencarse.

Anemone nemorosa. North Inch, and banks of Almond, near Perth; frequent.

Antennaria dioica. Craigie, P.

Anthriscus sylvestris. Most abundant, in hedges.

Antirrhinum majus. Naturalized on walls.

Arctium commune. Witchill, K.; not common.

Arenaria trinervis. Among bushes, near Kinfauns toll-bar; rare. K.

Artemisia vulgaris. Borders of fields; not common.

Armeria maritima. Near "Auld Brig" of Almond; sparingly.

Asplenium Adiantum-nigrum. Den of Bethaick, Carse of Gowrie, Craigie, near Perth, and rocks, Kinnoul Hill.

Asplenium Ruta-muraria. Plentiful on walls of Mr. Turnbull's nursery, K. Abundant on walls near Glencarse, six miles east of Perth.

Asplenium Trichomanes. Den of Bethaick; abundant.

**Asplenium septentrionale.* Steuton Rocks, near Dunkeld.

Astragalus Glycyphyllus. Banks of Almond, R.; frequent.

Astragalus hypoglottis. Banks of Almond, at confluence with Tay; sparingly, and some years not found.

Athyrium Filix-fœmina, var. *molle.* Craigie Wood, P.

Avena caryophyllea. Dry, barren soil; frequent.

**Avena flavescens.* Near Scone Palace; rare.

Avena præcox. Occasionally in dry, gravelly soil.

Avena pubescens. Borders of fields; rare.

Barbarea vulgaris. Frequent.

Blechnum Spicant. Woods of Scone and Kinnoul; frequent.

**Botrychium Lunaria.* Found some time since on Moorward, Wood of Scone, but not observed latterly.

Brachypodium sylvaticum. Wood of Kinnoul; most abundant. K.

Calamintha Clinopodium. Den of Quarry Mill, S.; plentiful. Dundee roadside, K.

Campanula glomerata. In a clump of wood at the confluence of Almond and Tay; sparingly.

Campanula latifolia. Hedges, Barnhill, P., and banks of Almond, R.; in the latter place luxuriant.

Cardamine amara. Marsh near Friartown, banks of Tay, P.; plentiful.

Carduus heterophyllus. Moorward, S., and near Friartown, P.
Carduus pratensis. Den Quarry Mill, and other places.
Carduus tenuifolius. Hill of Kinnoul; rare.
Carex binervis. Birnam Hill, Dunkeld.
Carex curta. Bog, Methven parish.
Carex flava. Frequent.
Carex hirta. Craigie, banks of Tay, Quarry Mill Den; not very common.
Carex limosa. Bog, Methven parish; not abundant.
Carex muricata. Near Perth; in one locality plentiful.
Carex Œderi. Near Friartown toll, in a quarry.
Carex ovalis. Craigie Moor, in one locality. P.
Carex pilulifera. Birnam Hill, Dunkeld.
Carex pulicaris. Birnam Hill, Dunkeld.
Carex vesicaria. Methven Bog.
Carex riparia. Marsh near Friartown, P.
Centaurea scabiosa. Kinnoul Hill roadside, two miles east of Perth; plentiful.
Chelidonium majus. Near Kinfauns toll-bar; not in great quantity. K.
Chenopodium Bonus-Henricus. Kinnoul Hill and Birnam; not common.
Chrysanthemum segetum. Occasionally in cornfields, but far from being common.
Cicuta virosa. Methven Bog; plentiful. M.
Circæa alpina. Dunkeld Woods, banks of Almond, R., and banks of the Ericht, Blairgowrie.
Claytonia alsinoides. Wood of Scone; in one locality plentiful.
Conium maculatum. Wood of Kinnoul, seven feet in height; sparingly.
Convolvulus arvensis. Frequent about borders of fields.
Corydalis claviculata. Woods, Dunkeld; plentiful.
Corydalis lutea. On a wall near Old Scone toll.
Crepis paludosa. Banks of Tay; not frequent.
Cheiranthus Cheiri. Precipitous cliffs, Kinnoul Hill; plentiful.
Cynoglossum officinale. Hill of Kinnoul, and near Glencarse; not in abundance.
Cynoglossum sylvaticum. Near Kinfauns toll; plentiful in a thicket. K.
Cystopteris fragilis. Den of Bethaick; plentiful.

Dactylis glomerata. Frequent in many localities.

**Dianthus deltoides.* Glen Farg, Ochil Hills.

Digitalis purpurea. Very rare about Perth, but plentiful near Almond Bank, four miles west. Abundant in Dunkeld Woods.

Dipsacus sylvestris. Plentiful near the foot of the precipitous cliffs of Kinnoul Hill, facing the Tay.

Doronicum Pardalianches. In a woody islet of the Tay, two miles north from Perth; in small quantity, but there undoubtedly indigenous, being far removed from any human habitation, and elevated above the highest flood-mark of the river.

Doronicum plantagineum. Occasionally found near Barnhill, but in all probability an outcast from a garden.

Draba verna. Rocks on the very summit of Kinnoul Hill, and tops of walls west side of North Inch.

Drosera rotundifolia. Methven Bog; plentiful.

Echium vulgare. Top of the cliffs, Kinnoul Hill; frequent.

Epilobium angustifolium. Top of sandstone cliffs, left bank of Almond, four miles west from Perth, R. Banks of the Tay, Friartown, P.

Epilobium hirsutum. Quarry Mill Den, S.; plentiful, seven feet in height.

Epilobium palustre. Same station as *E. hirsutum,* but sparingly.

Epilobium parviflorum. In a ditch near New Bridge of Almond, P.; sparingly.

Epilobium tetragonum. Damp and shady places; frequent. K. and P.

Erica Tetralix. Moorward, S., and Methven Bog, M.; plentiful.

Eriophorum polystachion and *Eriophorum vaginatum.* Methven Bog; not abundant.

Erodium cicutarium. Hedge, top of North Inch, and roadside, three miles west of Perth; sparingly.

Erythræa Centaurium. Quarry Mill Den, S.; luxuriant and plentiful.

Euphorbia Cyparissias. Found by me this summer on a heap of rubbish, Witchill, K.; seen nowhere else.

Euphrasia officinalis. Waste ground near junction of Almond with Tay, and a few other places; not common.

Festuca arundinacea. Borders of fields, banks of Tay, but sparingly.

Festuca rubra. *Passim.*

Filago germanica. Waste ground, Kinnoul Hill; most luxuriant and frequent. Crieff roadside, three miles west of Perth; sparingly.

Filago minima. Craigie Moor; sparingly. P.

Fragaria vesca. Woods of Kinnoul and Scone; abundant.

Fumaria capreolata. In a hedge near Kinfauns toll; rare.

Galeopsis Tetrahit and *versicolor.* Plentiful in cornfields.

Galium boreale. Plentiful and luxuriant, banks of Tay, by North Inch.

Galium cruciatum. Frequent around Perth.

Galium uliginosum. Marshes, banks of Tay; frequent.

Geranium phæum. Wood of Scone; rare. Near Barnhill, but undoubtedly an outcast from a garden.

Geranium pratense. Right bank of Tay, top of North Inch. Near Friartown, and banks of Almond, above "Auld Brig."

Geranium pyrenaicum. Near Barnhill, K.; plentiful.

Geranium sanguineum. Same locality as *Doronicum Pardalianches.* Most luxuriant stems, six feet in length.—A stunted variety occurs on the rocks on Kinnoul Hill.

Geranium sylvaticum. Same locality as *G. sanguineum* (islet in Tay), but more plentiful. Woods of Dunkeld; abundant.

Geum intermedium. In the wood of Quarry Mill Den, along with *G. rivale,* but not *G. urbanum;* frequent.

Geum rivale. Luxuriant and abundant in woods, particularly that of Quarry Mill Den, S.

Glechoma hederacea. Rather local, and not plentiful anywhere that I have seen in this district.

Glyceria aquatica. Near Friartown; abundant. P.

**Gnaphalium sylvaticum.* Hill of Kinnoul.

Helianthemum vulgare. Craigie Moor and Cherrybank, P. Kinnoul Hill, K. Plentiful in all these localities.

Helleborus fœtidus. Quarry Mill Den Wood; not plentiful, but undoubtedly wild, though often branded with an asterisk in our British Floras.

Heleocharis (or more commonly spelt *Eleocharis*) *palustris.* Abundant. Banks of Tay, and elsewhere.

**Heleocharis cæspitosus.* Moor of Durdie, four miles east from Perth.

Hesperis matronalis. In the deep, rocky ravines of Kinnoul

Hill, most luxuriant and abundant, four or five feet in height; truly wild. (Another disputed native.)

Hieracium prenanthoides. In one locality near top of North Inch; sparingly, but luxuriant.

Holcus mollis. Far less common than *H. lanatus,* Kinnoul Hill, borders of fields.

Hydrocotyle vulgaris. Methven Bog; plentiful.

Hypericum hirsutum. Very common in this locality; most abundant and luxuriant in Quarry Mill Den, S.

Hypericum humifusum. Quarry Mill Den, and banks of the Ericht, near Blairgowrie; in both localities sparingly.

Hypericum perforatum. Frequent about hedges.

Hypericum quadrangulum. Occasionally in damp and wet places, but not common.

Hypochœris radicata. Passim.

Juncus glaucus. Frequent in wet, clayey ground, banks of Tay, near Kinfauns.

Kœleria cristata. Craigie and Witchill; abundant.

Knautia arvensis. Common.

Lactuca virosa. Kinnoul Wood; frequent and luxuriant, five feet in height.

Lamium album. Very common, K.; frequent elsewhere.

Lamium amplexicaule. Frequent about Witchill, K.

Lastrea dilatata. Frequent. Very luxuriant in Scone Wood; frond four feet in length.

Lastrea Oreopteris. Wood of Scone; plentiful and luxuriant.

Lepidium Smithii. Banks of Almond, near the "New Brig," and rocks near Barm Hill; in neither place plentiful.

Lepigonum rubrum. Perth Military Drill Ground; abundant.

Linum catharticum. Near "Auld Brig" of Almond; rare.

Linaria repens. On a wall near left bank of Tay, K.; plentiful.

Linaria vulgaris. Occasionally in hedges, K. and S.

Listera cordata. Wood of Scone.

Listera ovata. Abundant and luxuriant in wood, Den of Quarry Mill.

Lithospermum arvense. Very rare; occasionally a stray plant to be found.

Lonicera Periclymenum. Plentiful above "Auld Brig" of Almond.

Lonicera Xylosteum. Methven Woods.

Luzula pilosa. Moorward, Scone Wood; rare.

Luzula sylvatica. Woods and banks of Tay; frequent. P. and K.

Lychnis diurna. Near confluence of Tay and Almond; plentiful.

Lychnis vespertina. Abundant everywhere about Perth.

Lycopodium clavatum. Summit of Birnam Hill.

Lysimachia nemorum. Woody banks of Ericht, near Blairgowrie. Methven Woods.

Lysimachia Nummularia. Left bank of Tay, K.; sparingly, in one locality.

Malva moschata. Frequent, K. and P.—A white variety is equally common in K. parish, and found near Forgandenny, five miles south-west from Perth. Both the white and red varieties have a musky scent, and there is a slight difference in the form of the leaves and carpophore, but this difference is easier seen than described, and whether sufficient to constitute a species or not I am unable to determine; this I know, the milkwhite colour of the flower, and the other differences, are permanent and unchangeable.

Malva rotundifolia. Roadside from Perth to Bridge of Almond. I saw one plant only. P.

Malva sylvestris. Sparingly, in the Carse of Gowrie, four miles below Perth.

Melampyrum sylvaticum. Woods, Dunkeld; plentiful.

Melica uniflora. Birnam, and rocky banks of Ericht, near Blairgowrie.

Mentha sylvestris. Very rare. I only observed it under a hedge on Kinnoul Hill.

Menyanthes trifoliata. Methven Bog; plentiful.

Mercurialis annuus (*perennis?*). Kinnoul Hill Wood; extremely abundant. Banks of the Almond, and other places; plentiful.

Mimulus luteus. Banks of the Tay, from Perth downwards; most abundant. Also in a ditch near Old Scone; sparingly.

Molinia cærulea. Heathy ground at margin of Methven Bog.

Moneses grandiflora. Wood of Scone, three miles north-east from Perth.—This beautiful and orangeflower-scented gem is found under the trees, among mosses and grass, sparingly distributed over an area of about two acres. I understand it is more plentiful than I thought. But botanists whose

creed is extirpation, should, in gathering this sweet plant, be content with the stem and its appendages, and leave the root to perpetuate the species.

Montia fontana. Stream west side of North Inch; plentiful.

Myosotis collina. Frequent in cultivated fields.

Myosotis palustris. Frequent in watery places and borders of streams.

Myosotis versicolor. Craigie Moor, and elsewhere, on dry ground.

Myriophyllum spicatum. Bottom of the Tay; abundant.

Myrrhis odorata. Borders of fields, along the banks of the Tay, and other places; frequent. Undoubtedly indigenous.—This is another of those plants which in Hooker and Arnott's 'British Flora' bears the brand of an alien and stranger, but in my opinion unjustly. In every instance in which I have detected it here, it was far removed from human habitations.

Narcissus Pseudo-Narcissus. Woods near banks of Tay; frequent. Undoubtedly an escape from gardens.

Narthecium ossifragum. Methven Bog, four miles west from Perth; plentiful.

Nasturtium amphibium. Frequent on the margin of the Tay, about Perth.

Nitella flexilis. Basin of Tay, North Inch, P.; plentiful.

Œnanthe crocata. Plentiful, banks of Tay, below Perth.

Œnothera biennis. Occasionally in fields and among rubbish, but undoubtedly an escape from cultivation.

Ononis arvensis. Top of North Inch; plentiful.

Orchis latifolia. In several places; not common.

Orchis maculata. In several places; frequent.

Orchis mascula. Hill of Kinnoul, in the wood; abundant.

Origanum vulgare. Wood of Kinnoul, among the rocks; plentiful.

Oxalis Acetosella. Near Dunkeld. Rare about Perth.

Oxalis corniculata. Witchill, Kinnoul, on rubbish; rare.

Papaver Argemone. Borders of fields; rather local.

**Paris quadrifolia.* Methven Woods, near the banks of the Almond, five miles west from Perth; plentiful.

Parnassia palustris. Wood of Scone, in a small peaty marsh; very sparingly. This plant is very rare.

Petasites vulgaris. Left bank of Tay, K.; sparingly. A white-flowered variety.

Pedicularis palustris and *Pedicularis sylvatica*. Methven Bog; plentiful.

Phalaris arundinacea. Banks of the Tay; frequent. P. and K.

Phleum pratense and var. *bulbosum*. Frequent about Perth.

Phragmites communis. Abundant in the Carse of Gowrie.

Pimpinella Saxifraga. Banks of the Almond, and at Craigie; but in both localities sparingly.

**Pinguicula vulgaris*. In marshy ground, S.; not frequent.

Poa compressa. Rare, on gravelly soil.

Poa nemoralis. Witchill, K.; very sparingly.

Polygala vulgaris. Heathy ground: Kinnoul Hill and Craigie Moor.

Polygonum Bistorta. Near Friartown; not plentiful.

Polygonum amphibium. Frequent in watery places and damp ground.

Polygonum viviparum. Near Cherrybank hamlet, P. Plentiful in cultivated ground near Forgandenny.

Polypodium vulgare. Craigie Wood, and other places; frequent.

Polypodium Dryopteris. Wood of Scone; frequent.

Polypodium Phegopteris. Wood on Birnam Hill, Dunkeld.

Polystichum aculeatum. Den of Bethaick; abundant and luxuriant.

Potamogeton natans. In a streamlet three miles west from Perth; plentiful.

Potamogeton perfoliatus. Bottom of Tay; plentiful.

Potentilla argentea. Witchill, K.; plentiful.

Potentilla Fragaria. Dry banks, Den of Quarry Mill. S.

Potentilla recta. Witchill, near and around an old quarry; plentiful.—This plant, which has been the subject of so much discussion in the 'Phytologist,' has never, as far as I am aware, been observed in Scotland until I observed it in this locality. A neighbouring surgeon had seen it before me, but he only considered it a larger form of *P. argentea*, which grows in the same locality. The difference of the two plants is evident to the most cursory observer. See my remarks on *P. recta*, in this month's 'Phytologist' (November, 1858).

Poterium Sanguisorba. Rocks, Witchill, K.; plentiful.

Primula veris. Wood of Scone; not common.

Primula vulgaris. Frequent in many places, under hedges, etc.

Prunella vulgaris. Common in uncultivated land, etc.

Pyrethrum Parthenium. Plentiful in the parishes of Kinnoul and Scone. Undoubtedly truly wild.—This is another disputed native.

Pyrola minor. Scone Woods. Wood, Quarry Mill Den, and plantation two miles west from Perth.

Pyrola media. Not so common as the last, and as I cannot well discriminate between the two, there may be but one species.

**Pyrola secunda.* Wood of Scone.

Ranunculus fluitans. Tay, and other streams; plentiful.

Ranunculus auricomus. North Inch.—A stunted form.

Ranunculus bulbosus. Covers the whole of the North Inch.

Raphanus Raphanistrum. Very rare; one plant, Tay banks, K.

Reseda Luteola. Kinnoul, Craigie, and other places; frequent.

Rhynchospora alba. Methven Bog; scarce.

Ribes Grossularia. Thickets, banks of Almond, four miles west of Perth.

Rubus discolor. In hedges, everywhere.

Rubus idæus. Frequent, but not one plant for a hundred of *R. discolor.*

Rumex alpinus. One plant, bank of Tay; an outcast from a garden.

Rumex aquaticus. Frequently, in watery places.

Sanguisorba officinalis. Near Tay, below Kinfauns toll; sparingly.

Saxifraga aizoides. By the margins of streamlets, on Birnam Hill; plentiful.

Saxifraga granulata. North Inch and Quarry Mill Den; abundant.

Scheuchzeria palustris. Methven Bog; plentiful.

Scirpus sylvaticus. Margin of Tay, in several places near Perth; plentiful.

**Scirpus cæspitosus.* Moor of Durdie, four miles east of Perth.

Scleranthus annuus. Frequent on dry barren ground.

Scrophularia nodosa. Common by hedges and ditches, especially in wet ground.

**Scrophularia vernalis.* Near Scone Palace; very rare.

Sedum album. Rocks near Barnhill; plentiful. K.

Sedum dasyphyllum. Craigie Moor, on rocky soil; plentiful.—Undoubtedly indigenous, though often (indeed generally) considered otherwise.

Sedum Telephium. Very common about Perth.
Senecio sylvaticus. Rare; occasionally in dry ground.
Sherardia arvensis. Frequent in cultivated fields.
Silene inflata. Not common in the immediate vicinity of Perth, but abundant in Fifeshire.
Silene maritima. Frequent near top of North Inch, among gravel and stones, within floodmark of the Tay.
Sisymbrium Alliaria. Frequent in hedges.
Sisymbrium officinale. Frequent by waysides, etc.
Solidago Virgaurea. Woody banks of Tay, near junction of the Almond; plentiful.
Sparganium ramosum. Rare. In a ditch near Glencarse.
Stellaria Holostea. Roadside, in a thicket near Kinfauns toll-bar, plentiful; and in other places.
Stellaria glauca. Damp meadow-ground; rare.
Stellaria uliginosa. Damp meadow-ground; rare.
Stellaria nemorum. Woody banks of Tay, above North Inch.
**Stratiotes aloides.* One of the bogs in Methven parish; brought to me in a recent state from thence, by a Scone gardener.
Symphytum tuberosum. By hedges; frequent. K.
Tanacetum vulgare. Widely and plentifully distributed.
Teucrium Scorodonia. Wood of Kinnoul Hill; abundant.
Thalictrum minus. Near top of North Inch, in barren ground, amongst bushes of *Ulex europæus,* and islet at confluence of Almond and Tay; sparsely.
Torilis Anthriscus. Hedges; frequent.
Tragopogon pratensis (*minor,* Fries). Abundant in the borders of fields, banks of the Tay, above the North Inch; frequent elsewhere.
Trientalis europæa. Wood of Scone; plentiful.
Trifolium arvense. Frequent in dry ground.
Trifolium filiforme. Frequent in dry ground.
Trifolium pratense. Not common.
Trifolium procumbens. Witchill; plentiful. K.
Trifolium striatum. Witchill; frequent. K.
Trollius europæus. Bank of Almond and Tay.
Tussilago Farfara. Not very frequent.
Valeriana officinalis. Frequent on the banks of the Tay.
**Valeriana pyrenaica.* Wood at junction of Almond and Tay.
Valerianella dentata. Witchill; plentiful.

Verbascum Thapsus. Banks of Almond; rare.
Veronica Anagallis. Mill-dam, Quarry Mill Den, and in a ditch near "Auld Brig" of Almond; rare.
Veronica Beccabunga. Frequent in the margins of streams, etc.
Veronica hederæfolia. Frequent in cultivated ground.
Vicia Cracca. Common in hedges.
Vicia tetrasperma. Frequent in cornfields, etc.
**Vicia sylvatica.* Wood near confluence of Almond and Tay.
Viola canina. Common.
Viola hirta. Under a hedge, banks of Tay, two miles north from Perth; plentiful. Also wood on Kinnoul Hill; frequent.
Viola palustris. Top of North Inch; plentiful.
Viola tricolor. Everywhere in cornfields.

In the preceding list, those few plants with an asterisk prefixed were not seen by me in their several localities, but I obtained specimens of them all in recent state; and the individuals, though not botanists, who kindly supplied me, were men on whose veracity I can depend. It will be seen from this list, that several plants, such as *Alchemilla alpina,* etc., occur in the vicinity of Perth, particularly on the banks of the Tay and Almond, that are seldom found except in subalpine regions. This may in part be accounted for by the river-floods of the Almond and Tay, particularly the latter. The absence of plants common to other counties is no less remarkable. *Parnassia palustris,* with the exception of one or two dwarf plants in a peaty marsh in Scone Wood, I have in this district seen nowhere else; in Aberdeenshire, the peaty bogs in August are often almost white with its blossoms.

In conclusion, should any readers of the 'Phytologist' see any plants in this list he would wish, let him just write to me, and if I have not duplicates by me I shall do my endeavour, *D. v.,* to get them next summer. If the parties applying can give me no plants in exchange, they will have to defray the expense of transmission. Applicants for any plants will do well to send in their applications before next May at furthest, in order that I may be enabled to meet their several demands. I have no doubt but applicants for *Moneses* will be legion, therefore, botanical friends, apply in time.

John Sim.

Commercial Street, Bridge End, Perth.

BOTANICAL SKETCHES.

Channel Islands. *By* John Lloyd.

Wednesday, the 4th of August, being a splendid morning, and having business to transact near to St. Peter's, I left St. Helier's at an early hour, intending to botanize a little upon my way there and back again. In leaving the town behind me, and taking the road toward St. Aubin, I came to an eminence on my right-hand. I ascended to the top of the hill and enjoyed a beautiful view of the bay, the town of St. Helier's, the distant town of St. Aubin's, and the adjacent country. It being an early hour, but few were astir. I saw a man, who appeared like a tradesman of the town, taking an early walk before the hours of business. I made towards him, with the intention of getting some information from him. After the usual salutation, I inquired the name of the hill upon which we were, and was informed that it bore the name of Gallows Hill. The appellation suggested to me the fact that I had not observed a prison in the neighbourhood of St. Helier's, and upon my remarking so to my new companion, he told me that they had such an edifice (he called it a *jug*); and he added that they sometimes put Englishmen into it who did not conduct themselves with propriety. I was more amused with his wit than offended with his rudeness, and when he found that I did not take any offence at his remark, he altered his behaviour, and soon became very communicative. I had before observed that the natives of the island appeared rather unwilling to converse with me, and I afterwards learned that they are very shy of the English: they have probably their reasons for being so. Several of the visitors of the island appeared to belong to the lower order of the middle ranks, with a portion of the better order of the working classes, and being gentlemen for the nonce, they perhaps arrogate to themselves more consequence than they are properly entitled to. To such I would say, put a charitable construction upon everything that you see; make no invidious comparisons between the States and England; and by no means pass any impertinent jest upon any Cæsarian damsel, for be her station ever so humble, they may feel assured that such conduct toward her will be deemed highly offensive, and that it will not be tolerated. If any one should require information from one, and will take the trouble to preface his question with a "Will you

be kind enough to inform me?" she will not only answer him readily, but will show a willingness to give every information in her power. By the help of such trifling civilities, any one who has the least tact, may get on very well with the men and maidens, but he will have a more difficult task with the matrons; many of them in the remoter parts of the island, when spoken to, will shake their heads, and pretend ignorance of the English language, or if a tourist goes to a house, there are few who will answer his knock at the door.

So much for the manners of the natives of the Channel Islands, for the same remarks are equally applicable to Guernsey as to Jersey. I will now let the readers of the 'Phytologist' know what plants I found.

In waste ground between the town and the hill, I observed *Matricaria Chamomilla* and *Malva sylvestris,* with a very procumbent habit, and with a dark patch at the base of the leaf, which covered about one-third of the surface. All the plants which I saw were alike. On the hill *Erodium cicutarium,* with a white flower; *Dianthus prolifer, Echium violaceum, Scilla autumnalis, Hieracium peleterianum,* and a very dwarf variety of *Plantago lanceolata.* There was also a great quantity of *Trifolium arvense,* certainly not a rare plant, but a very pretty one.

I descended, and took a course between the bay and the road, and observed *Plantago maritima, Eryngium maritimum, Matthiola sinuata, Coronopus didyma, Artemisia Absinthium, A. vulgare, Lamium incisum, Erodium moschatum,* and *Armeria maritima.* I next reached St. Aubin's, where I breakfasted, and turning to the right-hand and then to the left, soon reached the open country, where I observed *Erucastrum incanum, Erigeron acre, Armeria plantaginea,* and *Eryngium campestre.*

I took a round towards the Barracks, and afterwards went to St. Peter's, and returned towards St. Aubin's by another route, and found upon some marshy ground *Ranunculus ophioglossifolius, R. Lingua, R. Flammula, Wahlenbergia hederacea,* and *Bartsia viscosa;* after which I examined two small valleys, but found nothing worth relating. The Ferns were of the most common kinds, and the same kinds which I had seen the day previous.

It may be remarked that the indigenous herbaceous plants of the island are more numerous than in England, considering the small area over which they are distributed, and that they are

sufficiently distinct to show a British botanist that he is not botanizing at home. In arborescent botany it is quite the reverse; the high state of cultivation to which the island has attained, has no doubt extinguished many species which formerly existed upon it. I did not observe a single plant of any arborescent species of Willow, although *Salix fragilis*, and the mild and graceful *S. alba*, are recorded as growing there. The most common timber-trees growing in the hedgerows are *Ulmus suberosa* and *U. montana*, the latter not near so common as the former; no *U. campestres* but what were in situations where they had evidently been planted.

In exotics, the Fuchsias grow to large bushes, and are for the most part true species. The *Hydrangea* grows to a large size, and has the calyx blue, probably from the quantity of iron in the soil. *Camellias* thrive well as a common evergreen, but I did not see so many of those two old favourites, the Orange and the Myrtle, as, from the mildness of the climate, I might have expected. Coniferous trees (if I may judge by what came under my observation) will not grow for any great length of time; they grow rapidly when young, but when they get to a respectable size, they become stunted in their growth, get unsightly, and prematurely decay.

MURAL PLANTS.

By George Jordan.

Some observations on some of our mural plants may not be uninteresting to the readers of that useful periodical the 'Phytologist.'

Mural plants were undoubtedly originally rock-plants, for they grew there long before any walls existed; but as walls are composed of similar materials, lime and sand, they become a suitable location for many plants, which flourish there equally well as they do in their natural habitats, from whence they migrated to decorate our walls and the roofs of our dwellings. Amongst those emigrants, some flourish, others languish in unmitigated misery to the end of their existence; and as it is with the human race under adverse circumstances, cling to life with the utmost tenacity. But I restrict my observations entirely to

plants, mostly such as grow on walls and roofs. The following plants may be found frequently growing there; many of our forest trees and shrubs have the temerity to come to reside on the walls in abject misery for life, such as *Acer Pseudo-Platanus, Fraxinus excelsior, Pinus sylvestris, Betula alba, Taxus baccata, Sambucus nigra, Salix caprea, Rubus idæus, Solanum Dulcamara. Salix caprea* is now growing on a brick wall, about ten feet in height, and has been growing there nearly fifty years, a small, miserable, stunted bush. There has been no visible difference in its appearance for about thirty years; yet it bears fruit, which falls to the earth, and there vegetates plentifully. And on the same wall, a small plant of *Rubus idæus* grew for about forty years, at last died; and a plant of *Solanum Dulcamara,* which is still in a flourishing state, I have observed growing on a brick wall, about twenty years, a plant which rather prefers shade and moisture. Nature, ever procreative, dislikes a void; she scatters abroad, by various agencies, her redundancy of seeds, by birds, by winds, by frost, another powerful agent, which lends its assistance to open clefts and crevices in our walls to raise our mural Flora.

A mural Flora would be a desideratum for our citizens, who have but little opportunity of enjoying the æstival beauty of the country. The walls may be so constructed as to favour the growth of many of our native plants, and some exotics also. Although they may be a little begrimed by the fuliginous atmosphere of such places, yet it would afford much gratification and amusement. Some such plants may be chosen as suitable. *Verbascum Thapsus* and *Verbascum Lychnitis,*—splendid floral minarets, amply bestudded with gold and silver gems, splendid objects when majestically seated on their mural throne, where they often grow to the height of three or four feet, with scarcely any visible support, except a few very small roots wedged closely in the crevices between the bricks, yet brave the storm and seem not to suffer from weather vicissitudes. Another constant denizen of the wall is *Antirrhinum majus.* These make a splendid appearance when marshalled on the ramparts, bedizened in their flaming helmets. *Antirrhinum Cymbalaria* spreads its reticulated drapery, bestudded with little purple gems, and everywhere adorns the wall. None have a greater claim to our regard than our cheering *Cheiranthus Cheiri,* so abundant on our walls, arrayed

in its yellow vest, diffuses its sweetness all around. Not so agreeable its sulphur-scented relative *Sinapis tenuifolia*, an unfrequent companion on the wall. This plant grows very readily from slips in any garden-soil, but does not mature its seed there as it does on the wall. *Geranium lucidum*, *Corydalis lutea*, *C. claviculata*, *Draba verna*, *Parietaria officinalis*, and the ferruginous *Saxifraga tridactylites*, *Arenaria serpyllifolia*, *Cerastium viscosum*, *C. semidecandrum*, all denizens of the wall. *Lactuca muralis* leaves its woodland shades, to perch upon the wall. For a mural Flora none excel the *Sedums*; enduring, hardy plants, particularly *Sedum acre*, come from the hills to spread on our walls and roofs its cloth of gold. *Sedum reflexum* and *C. album* are welcome guests, their corymbs studded with silver and gold; and *Sedum dasyphyllum*, a little chubby favourite, delights to sit upon the wall. *Sempervivum tectorum*, rising in columnar elegance from amongst its infant progeny, crowned with a diadem of floral gems, subsisting on ethereal food, is a rich addition to our mural Flora.

Some of the cryptogamic tribes migrate to our walls and buildings, especially *Ruta-muraria*, properly named, which abundantly fringes the upper parts of our garden-walls. *Grammitis Ceterach* cannot colonize so successfully. *Polypodium vulgare* abounds, and occasionally *Aspidium Filix-mas* and *Adiantum-nigrum* appear on walls. Plants even will get into difficulties, as well as men. I once observed a plant of *Scolopendrium vulgare* springing from a small fissure in an over-burnt brick in a wall. It lived there about six years; it produced a very small frond annually, not half an inch long; at last, tired of its incarceration, it died.

Procreative nature spreads abroad her redundancy of seed, and where it falls it will vegetate, however inimical the situation may be to its prosperity.

Hieracium sylvaticum is often to be found on walls. To this plant the term *murorum* would be more suitably applied than to the plant now called *Hieracium murorum*, which I never saw growing on either walls or rocks. They both are found growing together plentifully in our native woods, different in habit and structure; but a novice in botany, by a little attention, may easily discriminate the difference in the two plants. Very probably those two plants were once considered identical, at a time when less acumen was observed in botanical science. The at-

tenuated state of *H. sylvaticum* on the rock or wall may deceive a cursory observer.

It would be a most desirable acquisition to our botany, if some of our many eminent botanists would undertake the task to give us a significant vocabulary of English names to our native plants. Their labours would be hailed with gratitude by all lovers of the science of botany.

LATHRÆA SQUAMARIA.

Observations on the Economy of Lathræa Squamaria.

By George Jordan.

For several years I have observed the curious habits of this parasite, which annually springs up from the roots of a Filbert-tree growing in my garden. For some time before the plants make their appearance, I have observed the earth over where they spring to become very moist, and only in that spot. The cause I found to proceed from the plants drawing the sap from the roots of their foster-parent to facilitate their egression through the superincumbent earth. How wise and necessary was such a provision to bring those modest nymphs, fully bedizened, and uninjured, into their sylvan bower! And be it observed, moreover, how they bend themselves, in their progress through the soil, over their tender raceme of gems, to bring them safely into Flora's domain, whilst other tribes must wait awhile before they can be sufficiently arrayed to join in Flora's levee. How,—as in all other instances,—how beautifully exemplified is the consummate wisdom and provident care of the Majesty of the universe, for the well-being of all creation!

THYMUS SERPYLLUM AND T. CHAMÆDRYS.

By George Jordan.

Many years ago I discovered that there were two very distinct species of British Thymes, which I proved by cultivation and observing their habits, and physiological constituents also; yet there are some who doubt their specific claims. I have sent

specimens of each to several distinguished botanists, whereby I find that some have considered them distinct species, by giving to one the appellation of *T. Chamædrys;* the other retains its original significant name of *T. Serpyllum,* from its creeping propensity, rooting and densely covering the ground, often, where it can, to the extent of twenty square feet. One of those Thyme-beds, when in bloom, is a beautiful object. This comes into flower in June, about a month sooner than the other species, and does not remain in flower nearly so long as the other species. It prefers a dry sandy soil, ditch-banks, and rocks; its smell a little aromatic, and has little taste. *Thymus Chamædrys* comes into flower in July, and continues in flower often until late in November. It grows more upright, and in tufts; a larger plant, a powerful scent, and pungent taste; not so choice in location as *T. Serpyllum;* it may be found growing most luxuriantly on ant-hills, in old sheep-pastures, in heavy soils, and in northern aspects also, where the other is not found. If the constituents of these plants were analytically obtained, it would most certainly establish their specific claims.

BRYOLOGY OF THE YORKSHIRE OOLITE.

On the Bryology of the Oolitic Hills of Yorkshire. A Paper read before Section D, at the meeting of the British Association at Leeds, September 23, 1858. *By* J. H. Davies.

The subject of the influence exercised by the geological formations on the distribution of Mosses, is one which, in consequence of the available data being but meagre and unreliable, it would at present be impossible to treat otherwise than vaguely, and the conclusions to be deduced must necessarily be of a crude and unsatisfactory character.

It will be found, however, that the mechanical (not the chemical) constitution of the rocks, their comparative dryness or humidity, or—to adopt the terminology of a paper by Mr. Baker, on the subject as relating to the distribution of the higher orders of plants, read before this Section of your Association, at Glasgow, in 1855—their "dysgeogenous" or "eugeogenous" qualities, very perceptibly influence the dispersion of species.

The district which comes within the compass of our remarks is all comprised within the limits of the North Riding. It is estimated that in North Yorkshire the Upper Oolitic strata cover an area of about 200 square miles, and the Lower Oolitic and Lias of about 650, this of course including the Liasic formations of the vales of Mowbray and Cleveland. The Oolitic moorlands, of the muscology of which only we purpose treating, extend north to the sea, beginning to margin the coast about Saltburn, from whence to Filey they form irregular cliffs, varying considerably in elevation, but generally about 120 or 130 feet; the highest point which they attain being at Boulby, which is nearly 680 feet above the sea-level. Inland, they sink into the vale of Cleveland, and extend west as far as the vale of Mowbray, and to the vale of Pickering on the south, their western boundary being marked by a series of abrupt descents, forming rugged and irregular scars.

Two distinct ranges of hills may be traced, differing from one another alike in physical configuration and lithology: the first and most northern, those of the Lower Oolite, which reach from Osmotherly Bank to the peak culminating in Burton Head, a series of undulated moorlands made up mostly of sandstone; the second and most southern, a series of tabular calcareous plateaux, extending and sinking in level gradually from Hambleton End, eastward to the Castle Hill at Scarborough.

The Lower Oolite range of moors is watered for the most part by the Esk, and those of the Upper Oolite by the Derwent, the tributaries of which drain innumerable picturesque dales and gills, often with precipitous, rocky, and more or less wooded banks. The principal dales drained by the Esk are Kildale, Baysdale, Danbydale, Glazedale and Goathlandale, and the highest point attained by the Lower Oolite is 1485 feet at Burton Head. The dales of the Derwent are Bilsdale, Bransdale, Farndale, Rosedale and Newtondale, which at their sources are in a great measure composed of Lower, and the lower parts, of Upper Oolite. 1300 feet, at Hambleton End, is the highest point which the Upper Oolite reaches.

The same peculiarity of two distinct ranges extends into a subordinate set of hills, known as the Howardian range, but the distinction of the muscology of the two is here marked in

a less decisive manner, owing to the Lower Oolite formation being more calcareous than is the case further north.

The total number of species which the district produces may be reckoned at upwards of 240, but to enter into a detailed account of the whole of these would be to extend this paper to a much greater length than we intended.

By way of illustrating the influence of climate upon the distribution, we will select out those species which find their headquarters in elevated situations. They amount to nearly 70 in number, and occur principally about the culminating summits of the Lower Oolite that lie on the south of the vale of Cleveland, viz. Burton Head, Wainstones and Cranimoor. Some of the more alpine species reach various points in the dales which radiate from these, but none but the most widely disseminated reach the dales that separate the calcareous plateaux of the southern range of which I have spoken. None of them are found in the great central valley, and their dispersion is analogous to that of those flowering plants which Mr. H. C. Watson, in the 'Cybele Britannica,' has placed under his Highland and Scottish types of distribution:—

Andreæa Rothii.
Gymnostomum rupestre.
Gymnost. curvirostrum.
Gymnost. microstomum.
Weissia cirrhata.
Brachyodus trichodes.
Seligeria pusilla.
Seligeria recurvata.
Anodus donianus.
Blindia acuta.
Cynodontium Bruntoni.
Dicranum squarrosum.
Dicranum fuscescens.
Distichium capillaceum.
Didymodon flexifolius.
Trichostomum flexicaule.
Trichostomum tortile.
Tortula tortuosa.
Encalypta streptocarpa.
Hedwigia ciliata.
Grimmia trichophylla.
Racomit. heterostichum.
Racomitrium aciculare.
Orthot. Drummondii.
Orthot. Hutchinsiæ.
Zygodon Mougeotii.
Tetraphis pellucida.
Tetrodont. brownianum.
Diphyscium foliosum.
Pogonatum alpinum.
Polytrichum gracile.
Bryum crudum.
Bryum roseum.
Bryum Zierii.
Mnium cuspidatum.
Mnium orthorhynchum.
Mnium serratum.
Mnium stellare.
Mnium subglobosum.
Paludella squarrosa.
Entosthodon Templetoni.
Bartramia calcarea.
Bartramia halleriana.
Bartramia Œderi.
Bartramia ithyphylla.
Splachnum ampullaceum.
Tetraplodon mnioides.
Discelium nudum.
Fissidens osmundoides.
Schistostega osmundacea.
Anictangium compactum.
Antitrichia curtipendula.
Cylindrothec. Montagnei.
Hypnum crassinervium.
Hypnum pumilum.
Hypnum Crista-Castrensis.
Hypnum tenellum.
Hypnum heteropterum.
Hypnum flagellare.
Hypnum brevirostre.
Hypnum delicatulum.
Hypnum depressum.
Hypnum elegans.
Neckera crispa.
Neckera pumila.
Hookeria lucens.
Fontinalis squamosa.

By way of illustrating the more direct influence which the constitution of the rocks exercises, I will give another list of species that are almost exclusively restricted to the calcareous moorlands :—

Seligeria pusilla.	Tortula tortuosa.	Hypnum lutescens.
Trichostomum flexicaule.	Encalypta streptocarpa.	Hypnum chrysophyllum.
Tortula rigida.	Bartramia Œderi.	Hypnum tenellum.
Tortula ambigua.	Anomodon viticulosus.	Hypnum delicatulum.
Tortula aloides.	Cylindrothec. Montagnei.	Neckera crispa.

The great bulk of species not included in either of these lists is pretty generally diffused throughout the entire district.

Thirsk, North Yorkshire.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Wednesday, the 5th of January. The Rev. A. M. Norman, of Sedgefield, South Durham, was elected a member of the Botanical Exchange Club.

Mr. J. G. Baker announced the receipt of parcels from Messrs. Barton, Brown, Hardy, Hunt, Ingle, Payne, Purchas, Richardson, and Windsor, and communicated the following notices, exhibiting specimens of the species to which he made reference :—

"*Galium debile,* Desv. Obs. Pl. Ang. p. 134; *G. constrictum,* Chauv. Fl. Agen. p. 67.—I have known for some time as an inhabitant of the Thirsk neighbourhood, and passed over as *uliginosum,* a *Galium* which appears, upon closer examination and more rigid comparison with specimens, to be identical with *G. debile* of Desvaux, a plant which has been known for the last forty years in some of the western departments of France. In its subprocumbent, interlaced habit of growth, it closely resembles the true *uliginosum,* but the stem is stronger and smoother than in that species, the flowers fewer, the pedicels shorter, and the lower branches of the panicle much more elongated. Both by Grenier and Lloyd it is compared with *Asperula cynanchica* as regards general appearance, but of course it is larger in size. In *uliginosum* the leaves are flat in surface and linear-lanceolate in shape, whilst in *debile* they are truly linear, and in the mature

plant considerably recurved at the edges, which makes them look even narrower in comparison than they are in reality. In drying, *uliginosum* preserves its colour, whilst *debile*, like *palustre* and *saxatile*, inevitably turns black. Lloyd marks it as 'assez commune' in La Vendée, and 'peu commune' in the Loire-Inférieure. In all probability, when the attention of collectors is directed towards it, the plant will be found in other localities in different parts of Britain.

"*Hypochœris maculata.*—Dr. Windsor sends an example of this from Humphry Head, near Cartmell, a promontory on the coast of the lake portion of Lancashire. Carnarvonshire stands in the 'Cybele' as the north limit of the species.

"*Hieracium gothicum, Mid-west Yorkshire.*—Mr. Hardy sends an example of this from Wensleydale.

"*Species introduced into West Yorkshire with foreign wool.*—In addition to the species of which specimens from Mr. Hobkirk were exhibited at our November meeting, Mr. Ingle also sends *Amaranthus retroflexus* and *Setaria verticillata*, both from the vicinity of Huddersfield. The name of the village near which some of these introductions have been found is *Whitley*, not *Whitby*, as printed in the December number of the 'Phytologist.'"

Mr. J. H. Davies exhibited fine fruiting specimens of *Hypnum speciosum* in a fresh state, from stumps by the railway-side, near Thirsk station, a second Yorkshire locality. He this evening took his leave of the resident members, prior to a change of his place of abode. He intends still to continue the curatorship of the Muscological department of the Exchange Club, and his address, until further notice, will be Glenmore Green, near Lisburn, county Antrim.

Reviews.

Tobacco and its Adulterations; with illustrations drawn and etched. By Henry P. Prescott. London: John Van Voorst, Paternoster Row.

Not very many months ago the press groaned, or teemed, as some say, with treatises on the ill effects of smoking. The

argument, if estimated by the number and weight of the paragraphs, pamphlets, and other publications, written with the good intention of keeping this practice within due bounds, was unfavourable to the smokers. The incorrigibles, of course, were unconvinced; smoking seems to be on the increase. The tobacconists, in order to meet the growing demand for the fragrant weed, and to commemorate their deliverance from a dispute that threatened the ruin of their trade, caused a large pipe to be manufactured, with a bowl quite as large as a common coffee-cup and nearly of the same shape, with a short tube; and this new contrivance for consuming tobacco by the ounce was named—it may be surmised, in derision—"the Controversy Pipe."

The cry against tobacco reminds us of the greater cry which has been raised and sustained for many years, against beer, wine, and spirits, and in recommendation of teetotalism, total-abstinence or temperance principles. Tobacco, like everything else, is good if used in moderation. The best gifts of Providence may be abused. It is the abuse of the article that is injurious. That it has some effect on the digestive organ is generally admitted; or it renders its power less active. It allays the craving for food. Some call it a sedative, others an excitative; all will agree that it is a pickpurse, not in a small way, with young fashionables or Oxford students, if we may judge by their tobacconists' bills which are occasionally published for the edification of the class *Paterfamilias*,—it should be plural,—who pay the bills of some of the ingenious high-born youth of the nation. Perhaps its most important use is that of being a fiscal commodity, or it is produced, imported, manufactured, sold, and smoked in cigars, or in controversy pipes, or in meerschaums, or in Turkey or china pipes, or in meerschaum-washed pipes, or in common clays, from the vulgar cutty of the Scot, the dudeen of the Irish, through all the varieties of three and four a penny, up to the aldermanic or churchwarden's pipe, a name invented or applied when churchwardens were of more consequence than they are now; it is used for the nostrils, applied with fingers and with spoon, and it is eaten,—for the sake of revenue. In this we have a common interest. The revenue is the great fund from which all our official dignitaries, from our Queen down to the police-officer, are paid; from this source our gallant army and

brave navy are supported; hence all our pensions. It is in this light that Tobacco is viewed by our author. His object, as he tells us in his preface, is to assist "officers of the Government, and others interested in the subject, to a knowledge of the characters of unmanufactured and manufactured Tobacco, and to enable them to detect its impurities." The adulterations discovered from time to time are enumerated, viz. leaves of Rhubarb, Dock, Burdock, Coltsfoot, Beech, Plantain, Oak, and Elm; also Chicory-leaves steeped in tar-oil, together with starches from many vegetable substances; also peat-earth, sawdust, bran, malt-rootlets, etc.

The work contains the following subjects, briefly and well handled, and clearly illustrated by good figures, viz. vegetable organography, and especially the form and venation of leaves; the internal anatomy of the leaf, the cells, vessels, and deposits; the structure of roots, stems, also of various sorts of woods, etc. The next subject is the Tobacco-plant, and such as are or have been used to adulterate the article, viz. Thorn-apple, Deadly Nightshade, Potato, Burdock, Dandelion, Sunflower, Comfrey, Hellebore, Plantain, etc. An account of starches, of the microscope, and the history, use, cultivation, and manufacture of Tobacco, fill up the book. The work is illustrated by forty plates. The plants whose leaves are or have been used in the adulteration of Tobacco, are Rhubarb, Dock, Foxglove, Plantain; Chicory-leaves steeped in tar-oil have been used as fillers for the adulteration of cigars; Coltsfoot and Burdock. But in addition to these expressly stated to have been used for the above purpose, it is inferred, from p. 35, that the following have been found among Tobacco, viz. Elecampane, Thorn-apple, Mullein, and Comfrey. It is to be wished that, when the work is reprinted for a second edition, Mr. Prescott would tell us what Tobaccos are adulterated with these various substances. In what Tobaccos—the Dutch, the German, the Turkish, or the American, for example—does he find the Thorn-apple? In what samples is the Foxglove seen? Where is the Tobacco grown which is mixed with Mullein, Elecampane, etc.? *Note.*—Mr. Prescott calls Foxglove a perennial: it is a biennial. Also he says that Green Hellebore is an annual: this is probably a misprint for perennial.

Some antiquarians of our acquaintance will demur to the

belief of the threadbare story of Raleigh's newly appointed servant's throwing the contents of the beer-jack in his master's face, to quench, as was feared, the internal combustion. If not Tobacco, certainly some herbs were smoked in England centuries before the epoch of America's discovery, and longer still ere the weed's introduction into England. Pipes for smoking something have been discovered with Roman remains. And there are, in the cabinets of the curious, relics of smoking-apparatus probably used by the ancient Britons. In Eastern lands the custom is of unknown antiquity; so it is in the West. The aborigines of America smoked before they were visited by Columbus and the early discoverers of the western hemisphere. England has seen many changes since the British Solomon, who then swayed her destinies, published his famous 'Counterblast against Tobacco.' There is a current story of this king, illustrative of his dislike to other things not so objectionable *per se* as Tobacco. He said that if he was to invite his Satanic Majesty to dinner, that he would regale him with pork—which most Christians call good eating—for the first course, a poll of ling and mustard for the second, and to finish with a pipe of Tobacco for digestion. A famous poet of that age, Sylvester, wrote a poem on the subject, which he entitles 'Tobacco battered and the Pipes shattered (about their ears who do idly idolize so base and barbarous a weed, or at least-wise overlove so loathsome a vanity) by a volley of Holy Shot from Mount Helicon.' His verses shall not be quoted here; but it may be believed that even in our liberal and independent times, royal and even noble authors would not lack imitators.

Index Filicum. Part V. *By* Thomas Moore, *Author of the 'Handbook of British Ferns,' the 'Ferns of Great Britain and Ireland, Nature-printed,' etc., Curator of the Chelsea Botanic Garden.*

The author informs his readers that the publication of this part has been delayed "chiefly by the author's illness" (from which, we are happy to inform our readers, he is now completely recovered), and that the sixth part is now in hand, and it is hoped will soon follow.

The part now before us contains twelve pages of descriptive matter. The suborders described are *Salvineæ*, etc., and the genera *Salvinia*, *Azolla*, *Pilularia*, and *Marsilea*. The analytical table of genera follows, and is continued to *Gymnogramma*. The genera and species are continued from *Anetium* to *Asplenium* inclusive. *Aspidium alatum*, a native of the Oriental Archipelago, enjoys just threescore and ten aliases. A great number of names is characteristic of two classes (*humani generis*) of personages, and humbler mortals, of Bow Street and Old Bailey fame. A Spanish grandee has fewer names than the least-famed of these fortunate Ferns, which have had hundreds of pens employed in their praise or in chronicling the peaceful annals of their uneventful existences. Will the number of readers of the names of these fortunate *Aspidia* be as great as the number of those who have written about them? We do not know. But we need not greatly wonder at strictures not rare in the current literature, and especially in the writings of Mr. Punch, whose remarks are not uniformly laudatory of contemporary science.

The patience and perseverance of scientific writers is most commendable. It is to be hoped that the reading public has a larger share of these amiable qualities than the writer of this notice can honestly lay claim to.

BOTANICAL NOTES, NOTICES, AND QUERIES.

Mustard.

If you have not exhausted this subject, will you allow me to refer your querists to a little work called 'A Scripture Herbal,' in which the writer, W. Westmacott, Med. Prof., says:—"Mustard, *quasi mustum ardens*, being used to hasten the *fermentation and depuration* of *new wine* or *must*. In Latin, *Sinapi* or *Sinapis*. Hurting-mustard, by its volatile acrimony, hurting the nose and eyes."

In Camden's 'Britannia,' vol. i. p. 273, he says, speaking of Tewkesbury, that it is a large and fair town, having three bridges leading to it over three rivers, famous for the making of woollen cloth and smart *biting mustard*, etc. Some of your correspondents who live in Gloucestershire can inform us whether mustard is cultivated there, and if it is still manufactured at Tewkesbury.

I find also that Mustard was by old writers called *Genuy*, or *Senuie*; and Minsheu, in his 'Guide into the Tongues,' has *Senuie*-seed, whereof mustard is made. This word is from the *Gallic* 'Seneue' (Senf), but I know not the particular meaning of this word. Does it express the property

of the plant or its nature, etc.? In Cogan's 'Haven of Health' (1612), he says:—"The best Mustard that I know in all England, is made at Tewkesbury, in Gloucestershire, and at Wakefield, in Yorkshire."

S. B.

To the Editor of the 'Phytologist.'

Sir,—Happening to observe an inquiry in one of the later numbers of your magazine, as to whether Ferns are liable to be attacked by insects, etc., I beg to tell you that in the course of this summer I have had two plants of *Gymnogramma leptophylla* completely destroyed by the Green or Rose Aphides. A plant of *Nothochlæna nivea* and *N. tenera* were much disfigured by the same pests. I also lost a plant of *Botrychium Lunaria*, which was just appearing aboveground, and several young fronds of *Daria Odontites*, *A. diversifolium*, and *A. vivipara*, as well as of other Ferns, by the attacks of *mice*, in the early part of the spring. I at first was utterly incredulous as to the cause of this disfigurement of some of my best specimens, but having watched, I detected the intruders *in manifesto facinore*, and have no doubt but that the succulent stems attracted them, in the absence of other food. I remain, Sir, yours truly,

W. B. F.

P.S. I have just ascertained a fact, new to me at least, respecting a use of our *Pteris aquilina*, viz. that the ashes of it are largely used, in conjunction with bone-dust and ashes, for the purpose of filling crucibles in which the cupellation of lead is carried on, *i.e.* the separation of lead from the silver which is nearly always found in it.

Berries of the Mountain-Ash.

Many communications have been sent to the 'Phytologist' on this subject. Two appeared in our number for October, 1858, pp. 599 and 600. The following is a newspaper account of this occurrence:—

"A Child Poisoned by the Berries of the Mountain-Ash.—On Monday afternoon an inquest was held at the Travellers' Inn, Armley, by Mr. Blackburn, borough coroner, upon the body of Joseph Murgatroyd, a child five years old, whose father is a clothier at Armley. The deceased had been ailing for the last fortnight, but on Friday afternoon he commenced vomiting dark matter, and continued to do so for some time. On the following morning, Mr. Alfred Rickards, surgeon, was called in, and prescribed for the child, whom he supposed to be suffering from pleurisy and disease of the kidneys. The deceased, however, continued to suffer, and died at half-past eleven o'clock in the evening. On a post-mortem examination being made, the remains of Mountain-Ash berries were discovered in the stomach of the deceased, who had no doubt eaten them when in the field. Mr. Rickards was clearly of opinion that the deceased had been poisoned by these Mountain-Ash berries, and the jury returned a verdict accordingly."

Our readers will see from what paper our second account is derived:—

"Poisoning by Red Berries.—(To the Editor of the 'Manchester Guardian.')—Sir,—I observe a paragraph in your paper stating that a child has been poisoned, near Leeds, by eating the berries of the Mountain-Ash. Without wishing to lessen the wholesome terror of red

berries which it is so desirable to impress on the infant mind, I think there must be some mistake in this matter, as I believe the berries of the Mountain-Ash (*Pyrus Aucuparia*) are not poisonous. In 'Buxton's Botanical Guide to the Plants about Manchester,' it is stated that these berries, dried and reduced to powder, make wholesome bread. In the same work, p. 34, occurs the following quotation from Withering:—'It is well worth observing how truly the insertion of the stamens into the calyx, as in the class *Icosandria*, indicates a wholesome fruit. With this simple guide a traveller in the most unknown wilderness might eat in safety.' The Mountain-Ash belongs to the Linnæan class *Icosandria* and the Natural Order *Rosaceæ*, and is, of course, one of the plants indicated in the above quotation. If therefore the botanists are right, it cannot be poisonous. As the berries in question were discovered on a post-mortem examination, it is possible they may have been some other than Mountain-Ash; perhaps those of the Woody Nightshade. It might be difficult to identify them positively under the circumstances, and they may have been too hastily assumed to be Mountain-Ash.

"Believing it to be desirable that correct information on this subject should prevail, I hope you will insert this, and it may perhaps elicit from some of your botanical readers an authoritative explanation of the point. I am desirous that the fair fame of the Rose tribe should be cleared from the imputation of having a noxious member among them. I am, yours respectfully, ROSA.

"[We have always understood that the berries of the Mountain-Ash were perfectly harmless, and agree in opinion with our fair correspondent, that what had been eaten were the red berries of the Woody Nightshade. —*Ed. Guard.*]"

As several correspondents have appealed to the Editor, he feels in duty bound to give his opinion. As an appeal has been made to botanists, it may be observed, in the first place, that the poisonous nature of this fruit is entirely unknown to them. *Primâ facie*, they would say, it is perfectly innocuous, because it belongs to a family—*Pomaceæ*—which contains no plants bearing poisonous berries or fruits.

Ray, the father of English botanists, gives the following account of the fruit of the Mountain-Ash (Synopsis Stirpium Brit. p. 453, ed. 1724):—

"Aucupariæ baccæ succum exhibent acidum hydragogon egregium, itemque scorbutico aptum; Wallis in frequenti usu, quibus vice dictæ purgantis exhibetur.

"Sativæ fructus, immaturi præsertim, adstringunt et fluxus quoscunque sistunt. (Vid. Hist. Nost. ii. 1456.)"

Sir J. E. Smith describes the fruit as follows:—". . . The fruit soaked in water, to extract some of its bitterness, makes a kind of jelly, which is tolerably flavoured. A spirit is also reported by Lightfoot to be distilled from these berries. Birds of the thrush kind devour them with avidity, and our Mountain-Ash trees, planted for ornament in most parts of England, are thus unfortunately stripped, early in autumn, of their produce."

Again, in the second place, no chemical analysis has hitherto been published to warrant the inference that these berries are poisonous. The

case of the child Joseph Murgatroyd is not satisfactory nor decisive of this point unsupported by the authority of all botanists who have noticed in their works the properties of the fruit of this tree: because the child had been ailing a fortnight before his death, and the surgeon had treated him as a patient suffering from pleurisy and renal disorder. To infer that he was poisoned by eating of this fruit, because the remains of some of it, or of something like it, were found in the stomach, would be similar to the inference that a patient, who died after breakfast or after any other meal, was poisoned because some toasted bread, or the remains of food recently taken, had been discovered in the stomach. We know, from experience, that the skins of these berries are not readily dissolved in the digestive juices. Besides, we can with confidence assert, on the *crede-experto* principle, that they are quite harmless. To our knowledge they have been eaten by hundreds, *au naturel*, and without the slightest ill consequences. If these are suspicious, so are apples, pears, medlars, and most fruits which are both pleasant to the taste and not hurtful to the system. One may be hurt by over-eating. The stomach is too often compelled to labour too much because the eaters have what is called "a sweet tooth." Sometimes it obstinately refuses to be the drudge of the palate, and its too heavy load must be moved by means of emetic tartar, or ipecacuanha, or colocynth, or bitter aloes, or some other drastic. But surfeiting is not poisoning.—Ed.

Note to Mr. Sim's Paper on the Aremonia and Potentilla.

. . . "Respecting the *Potentilla*, the locality of which I have just visited, I am more than ever inclined to think it is no outcast from any nursery. Its very position militates strongly against such a supposition. But while I doubt the probability, I admit the possibility. Though it is in the vicinity of a quarry into which rubbish from a nursery is occasionally deposited, yet the majority of the plants are found on elevated ground to the north and north-west of the quarry, where it is very unlikely that its seeds could have been wafted by the wind."

Edelweis.

Edelweis—Gnaphalium Leontopodium—a flower met with only on some of the highest mountains in certain parts of Tyrol and Bavaria. It is to be found in Berchtesgaden, and on the Scharfreuter in the Hinter Riss. It is much valued for the snowy purity of its colour, as well as on account of the difficulty of getting it. The very name, "Noble Purity," (*edel*, noble; *weiss*, white,) has a charm about it. Strangely enough, it always grows on a spot to be reached only with the utmost peril. You will see a tuft of its beautifully white flowers overhanging a precipice, or waving on a perpendicular wall of rock, to be approached but by a ledge, where perhaps a chamois could hardly stand. But it is this very difficulty of acquisition which gives the flower so peculiar a value, and impels many a youth to brave the danger, that he may get a posy of *Edelweis* for the hat or the bosom of the girl he loves; and often has such a one fallen over the rocks just as he had reached it, and been found dead, in his hand the flower of such fatal beauty, which he still held firmly grasped.—*C. Boner.*

Channel-Island Plants, Additions to.

By the Rev. T. Salwey.

Sir,—Your correspondent Mr. Henslow does not appear to have met with the *Allium triquetrum* in Guernsey, which is a plant perhaps of more decided southern habit than those which he has named. It was probably overlooked by him, as well as by Mr. Babington previously, by not being in blossom when they were there. I discovered it in many parts of the island of Guernsey in 1847, and sent it to my friend Mr. Borrer; and it was subsequently sent to Mr. Salter, to be figured for the 'English Botany' supplement, and would have appeared, but that the work at that time ceased to be published. I had previously met with this plant in Madeira.

Besides the above plant, I also found in the island, in 1847, not included in Mr. Babington's work,—*Carex pendula:* bay under the Artillery Barracks. *Erigeron acris:* fields to the east of Portinfer. *Œnothera biennis:* the Vale. *Hypericum linarifolium:* on all the slopes of the south coast. *Triticum glaucum:* Vagon Bay. *T. repens, β, dumetorum:* ditto. *Luzula Forsteri:* lane leading from the King's Road to Haviland Hall. *Barbarea præcox:* I have no record of the habitat of this. Some of the above I observe Mr. Henslow has also met with.

Shanklin, I. W., December 1858.

Huddersfield Plants. *By S. H. Stocks.*

It is hoped that the readers will correct the following mistakes in an account of exotic plants found near Huddersfield, p. 643, vol. ii. N.S. First, the paper is by S. H. Stocks, *not* C. Hobkirk. Also, the writer has the following additional duplicates:—*Digitaria sanguinalis, Setaria verticillata, Chloris compressa, Lappago racemosa, Senecio erucifolius, Erodium moschatum,* and *Erodium malacoides.* In the Order *Gramineæ,* for *Chloris compressa* read *Polypogon monspeliensis;* and in the Order *Lythraceæ,* for *Polypodium* read *Polypogon.* The additions to those mentioned above are *Phalaris paradoxa, Polypogon monspeliensis, Sagittaria sagittæfolia, Narcissus Pseudo-Narcissus, Solanum nigrum, Vinca minor, Medicago denticulata,* and *Saponaria officinalis.* I have also a few spare specimens of *Polypodium calcareum, Ranunculus sceleratus, Ribes Grossularia, Petasites albus, Taxus baccata, Potentilla Comarum, Narthecium ossifragum, Corydalis lutea,* and *Linaria repens.*

Localities for Claytonia alsinoides.

(From Baxter's 'British Plants,' vol. iv. p. 253.)

In moist, shady woods, very rare, Derbyshire. "In an elevated part of a large plantation bordering Chatsworth Park; unquestionably wild. Of this I feel quite satisfied, as its situation is such as not to offer any probability of either seeds or plants being conveyed there by any other means than by nature."—*Sir Joseph Paxton, Sept.* 8, 1837.

Malva moschata, *L.*, from Perth, var. *alba.*—The caulinary leaves of this variety are not divided to the base into linear segments, but are lobed or divided halfway or two-thirds. They are rounded, the lobes are rounded, and they are dentate, with rounded teeth. The whole plant is hairier than the typical plant is. The central cone of the fruit is larger, and the flowers are white.

Listera cordata in North Wales.

When we were in Merionethshire last September, I was much pleased to meet with plenty of this rare little *Orchis;* it grows in those wet moors, among Sphagnums and such bog-plants, near the village, or rather hamlet, of Laithgwm, about six miles north-north-west of Bala, and five or six miles west of Llandderfel, a rather out-of-the-way wild track. If you draw a line from Cerrig-y-Druidion to Bala, it will intersect some of the best, and at the same time, least trodden botanical ground in North Wales: the western side of that line, *i. e.* towards Carnedd-y-Filiast, may with safety be recommended. I am indebted to the ingenious Mr. John Jones (parish-clerk of Llandderfel) for having pointed out to me the *Listera cordata* in this locality. W. P.

Lythrum hyssopifolium.

Sir,—In looking over my plants gathered during the last summer, I find *Lythrum hyssopifolium*, which was gathered in a stagnant state, along with its allied species, *L. Salicaria*, near Northallerton, Yorkshire. It was the only specimen I could find which I preserve in my herbarium. If you think it would interest any of the readers of the 'Phytologist' to know this station for so rare a Yorkshire plant, I shall be glad to see it inserted.
Northallerton, December 13. W.

Map to Linnæus's Lapland Tour.

Pray inform me, which is the best map of that part of Sweden and of Lapland which is described in Linnæus's Journal of his Lapland Tour? It is some years ago that I first read that most interesting and simple narrative, and on taking it up again the other day, I sadly felt the want of some map whereon I might, as it were, track out the footsteps of the good man. A.

Erythræa linariæfolia (see 'Phytologist,' vol. ii. p. 649).

There is no doubt about the orthography of the above-named species. The specific name is from *Linaria*, because it has leaves like Toad-flax, or somewhat like flax-leaves (a *linaria*-like leaf), *linariæfolia*.

Pimpernel, or Shepherd's Weather-glass (*Anagallis arvensis*).

Lord Bacon calls this flower Wincopipe. Is it known by this name now in Hertfordshire or elsewhere? S. B.

Communications have been received from

S. B.; A. G. More, F.L.S.; A.; A. W.; W. B.; A. I.; S. H. Stocks; Rev. T. Salwey; P.; T.; W. B. F.; George Jordan; John Sim; John Lloyd; Charles Howie; J. G. Baker; J. H. Davies; Dr. Wood; John Windsor, F.L.S.

BOOKS RECEIVED FOR REVIEW.

The Critic. *The Friend.*

ST. LUCIA AND BARBADOS.

Remarks on the Climate and Vegetation of St. Lucia and Barbados, West Indies. By JOHN SIM.

The island of St. Lucia is situated between sixty and sixty-one degrees of west longitude from Greenwich, and thirteen and fourteen degrees of north latitude, and is nearly eighty miles west-north-west of Barbados. It is twenty-two miles in length, and nearly the same in breadth, and is mountainous and densely wooded throughout its whole extent. The climate is extremely moist and warm; rain, more or less, in the shape of heavy and rapid showers, falls almost every day of the year; they are however generally of short duration, seldom lasting more than ten or fifteen minutes; yet instances occur of their being considerably protracted beyond these periods. These showers more resemble waterspouts than the rains current in the British Isles.

The temperature during the entire year is very uniform, seldom differing more than two or three degrees; the maximum range of the thermometer in the shade, and freely exposed to the trade-wind, rarely attains 90° during the day, and its minimum in the night not much below 80°, except the elevation above the sea-level be considerable. I occupied a station 700 feet above the ocean, and only in one instance observed it so low as 74°. From careful observation, I found the mean temperature of 1841 at that elevation to be nearly 81° of Fahrenheit. The months of August, September, and October are by the natives denominated Hurricane Months, because the period of these fearful visitations is mostly limited to these three, although they sometimes occur rather later, as the most dreadful tornado ever witnessed in St. Lucia took place in October, towards the end of last century. One of these tempests I observed myself, but should never wish to witness it again. I can conceive of nothing more terrible in nature, an earthquake, when violent, excepted. These hurricanes are truly awful. During their prevalence the stoutest heart must quail. Houses are blown down, trees torn from their roots, sugar-plantations inundated and destroyed, and the fair face of nature, adorned with fruits and flowers, is, in the course of an hour or less, one universal scene of devastation and ruin. So great is the roar of the tempest, that the peals of the thunder are

inaudible by the still louder roar of the aerial current, while the frequent and momentary glare of the vivid lightning only adds strength to the horrid catastrophe by unveiling the work of destruction and havoc going on around. This is no overdrawn picture; it is plain matter-of-fact, well attested by many whose veracity is unimpeachable.

Owing to the absence of wood and mountains, the climate of Barbados is drier, and its mean temperature about a degree higher, than St. Lucia.

The vegetation of St. Lucia is truly rich, whether we take into account the number of different individual plants or the amount of those species which are everywhere common. One dense forest, from the margin of the ocean to the summits of its cloud-capped alps, entirely covers the island.

The Mangrove, whose roots are washed by the waters of the great deep, finds a favourable locality on the shores of the sea, whilst along the sand the Cocoa Palm (*Cocos nucifera*) grows in abundance. This, to the natives, is one of the most valuable productions of the vegetable kingdom.

Among the trees producing edible fruits may be mentioned the different species of Orange (*Aurantia*):—Sweet Orange (*Citrus Aurantium*), the Seville or Bitter Orange (*C. vulgaris*), the Shaddock (*C. Decumana*), a large East Indian species; the Lime (*C. Limonium*) and *C. medica* are well known for their acidity, which is too intense to permit of being eaten.

The Mango (*Mangifera indica*, Nat. Ord. *Terebinthaceæ*) has a large kidney-shaped fruit, of an agreeable flavour. Another of the same family is the *Anacardium occidentale*, a middle-sized tree, bearing a pyriform edible fruit, to which is appended a nut, in shape and size equal to an ordinary bean. It contains an acrid, caustic oil, which whosoever tastes will never desire to taste it again: it literally burns the lips and tongue as with a hot iron.

The Mamey-tree (*Mammea americana*, Nat. Ord. *Guttiferæ*), a large tree, bearing a fruit much bigger than an apple.

The Alligator Pear-tree (*Persea gratissima*, Nat. Ord. *Lauraceæ*). The fruit is much esteemed, and the kernel contains a juice used for marking linen, which is almost as indelible as the solution of nitrate of silver.

The Soapberry (*Sapindus saponarius*, Nat. Ord. *Sapindaceæ*)

is a tree producing an unctuous berry, anything but palatable, though extremely relished by the Negroes.

Adansonia digitata, one of the most gigantic specimens of arborescent vegetation with which we are acquainted, is no doubt an introduction from Senegal, though frequently met with in the island of Barbados.

The Seaside Grape (*Coccolobo uvifera,* Nat. Ord. *Polygonaceæ*) bears fruit resembling grapes, but very different from the fruit of the Vine, being astringent and austere, but quite wholesome. The same may be said of the Barbados Gooseberry (*Pereskea aculeata*), common both to St. Lucia and Barbados.

The *Guava Psidium,* of which there are many species, all produce delicious fruits. They belong to the Nat. Fam. *Myrtaceæ.* Their fruit, in taste and flavour, resembles a strawberry, and from it the natives produce an excellent jelly.

The Papaw-tree, a strange-looking plant (*Carica Papaya,* Nat. Ord. *Cucurbitaceæ*), bears a fruit in size and taste like to a small melon; in taste it is far from agreeable.

The Custard-Apple, or Sour-sop and Sweet-sop (*Anona muricata* and *A. squamosa*), are two small trees of the Nat. Ord. *Anonaceæ,* bearing excellent fruits. The former, as the specific name indicates, has an uncouth, prickly fruit, resembling in shape and size a bullock's heart; within it contains a slimy, subacid liquor, imbedded in a fibrous and whitish substance very like cotton-wool. *Anona squamosa* is much smaller, very sweet, and almost destitute of acidity.

The Cocoanut-tree. The uses of the tree and fruit are too well known by every intelligent individual to require any remark.

The Banana and Plantain (*Musa sapientum* and *M. paradisiaca*) are plants that produce excellent fruit. The former is extremely delicious, and tastes as butter and honey mixed; the latter produces a longer and more slender fruit, which is boiled or roasted, and eaten with meat in the former instance and with coffee in the latter.

Theobroma Cacao, a small tree of the *Byttneriaceæ* family, produces the well-known seeds from which chocolate is prepared.

The Calabash-tree (*Crescentia Cujete*) is a small tree, with a very large inedible fruit, the dry rind of which is used by the Negroes to boil water in, and for other domestic and culinary purposes: it belongs to the family *Solanaceæ.*

Various species of Capsicum or Cayenne Pepper are common, and used by the Creoles and Negroes as a condiment to flavour their soups, etc.; but I fear they would prove rather too hot for a British palate.

The Banyan-tree (*Ficus indica*) is remarkable for producing fibrous appendages from its branches, which descend to the ground, strike root, and so multiply *ad infinitum*.

The Coffee-plant (*Coffea arabica*) is here cultivated to a great extent. Any notice respecting it would be superfluous.

The Pumpkin (*Cucurbito Pepo*, Nat. Ord. *Cucurbitaceæ*) is a large fruit, and when boiled is eaten with meat, and has a flavour and taste intermediate between a turnip and carrot.

The Yam (*Dioscorea sativa*) is an excellent root; it is a turning plant, of slender appearance, but produces tuberous roots of immense size. They are boiled and eaten as we do potatoes in Britain, and are in reality an excellent substitute, of a far better quality than most of our potatoes nowadays.

Ipomœa Batatas is another plant, the tubers of which, when boiled, are used in lieu of potatoes. They are of a sweetish flavour, those in Barbados being superior in size and quality to those of St. Lucia.

Jatropha Manihot, called by the natives Cassava or Cassada, is a highly poisonous plant, with tuberous roots, which by the Negroes are grated, and afterwards washed in water, and finally kneaded into cakes and baked on the fire. The action of heat dissipates all the acrid and noxious qualities, and renders this poisonous substance an article of human food. It belongs to the *Euphorbiaceæ*, a family which contains many highly deleterious plants.

Arum Colocasia, a plant much resembling our British Wake-robin, with large deltoid leaves, is used by the Creoles and Negroes in the preparation of soups. The leaves being only acceptable, are by boiling rendered as bland as spinach, notwithstanding their extreme acridity.

The Dumb Cane (*Caladium seguinum*), a shrubby evergreen of the same family, is a highly poisonous plant, and completely paralyzes the mouths of all who incautiously taste it.

Artocarpus incisa, or Breadfruit-tree, a large tree with palmated leaves, introduced from the South Sea Islands, bears a large oval fruit of the size and shape of an ostrich-egg. It is

boiled or baked, and eaten with meat, etc., in the same manner as plantains.

Hibiscus esculentus, a plant of the Mallow tribe, bears a conical capsule, containing numerous seeds surrounded with a slimy mucilage; in its immature state is much prized by the inhabitants in the preparation of a wholesome and nutritious soup.

Another member of the same family is the Cotton-plant; plentiful in the West India Islands.

Abrus precatorius is a climbing plant of the *Leguminosæ;* common among the bushes. The pods contain beautifully scarlet-coloured seeds, with a black spot on each.

The Coral-tree (*Erythrina corallodendron*) produces scarlet seeds of the size of an ordinary bean; it is also a Leguminiferous plant.

The Logwood-tree (*Hæmatoxylon campeachianum*) holds the same place in St. Lucia as the Hawthorn in Britain, and is equally common. Its flowers are cream-coloured and fragrant.

Hura crepitans, a large tree with singularly shaped fruit, is thorny all over the trunk and branches, and when wounded exudes a large quantity of milky juice of an acrid poisonous nature. It is called the Sandbox-tree, and belongs to the Nat. Fam. *Euphorbiaceæ.*

The Castor-Oil-shrub (*Ricinus communis*), with its tricoccous and speckled fruit, is common both to St. Lucia and Barbados.

The Manchineel-tree (*Hippomane Mancinella*) is one of the most, if not the most, poisonous trees in the West Indies. It abounds in Barbados, at the seaside, and is a Euphorbiaceous plant, and like most members of that extensive family, liberally supplied with an acrid milky juice. Every part of this small tree is extremely poisonous; its very wood, in a dried state, contains the acrid principle, so much so that carpenters manufacturing it often have their arms blistered by the sawdust falling on them when perspiring.

The Cabbage Palm (*Areca oleracea*) is a majestic tree, with a trunk or stem forty or fifty feet high, and as straight and smooth as a marble pillar. It is frequent in Barbados.

The Mahogany-tree (*Swietenia Mahagoni*) is one of the largest of trees, and must have been plentiful in Barbados prior to the memorable hurricane of 11th of August, 1831, which nearly devastated the entire island.

The Almond (*Amygdalus communs*) is met with in Barbados, but I never detected it in St. Lucia. Numerous species of *Cacti* grow in Barbados, particularly on the dry rocky eminences overlooking the eastern coast.

Barbados Flowerfence (*Poinciana pulcherrima*) is plentiful in Barbados, and its seeds are much employed in the construction of purses, satchels, and other trinkets, by the natives.

The Sensitive-plant (*Mimosa sensitiva*) is abundant in St. Lucia; its wiry branches, covered with delicate prickles, extend over the ground in every direction. So sensitive are the leaves of this plant, that the slightest touch of the finger ensures a sudden collapse. It is likewise an individual of that extensive Order *Leguminiferæ*.

The Carolina Pink (*Spigelia marylandica*) is an occupant of the sandy shores of Barbados, and is in the Nat. Ord. *Loganiaceæ*, a highly poisonous family. It is used in medicine as a vermifuge.

Bryophyllum calycinum is a plant much like our Orpine (*Sedum Telephium*). It is, like it, a succulent plant, and belongs to the Nat. Ord. *Crassulaceæ*. So tenacious is it of life, that a leaf detached from the stem and suspended from the ceiling of the room, instead of dying and shrivelling up, will from its margin send out new leaflets in abundance;—this fact I have witnessed.

The Bamboo Cane (*Bambusa arundinacea*) is remarkable for its rapidity of growth, frequently attaining the height of sixty or seventy feet in three months. I observed a shoot to stretch seven feet in one week. It is a very useful plant, and its stems, though hollow, are stronger than the finest English Oak of like thickness and size.

The Sugar Cane is cultivated to a large extent in both islands, and yields employment to thousands. Indian Corn (*Zea Mays*) and a species of Millet are grown abundantly in Barbados.

Aloes, in Barbados, are cultivated for medicinal purposes.

I only observed two plants in these islands indigenous to the British Isles, viz. *Plantago* (*major*) and *Urtica dioica;* the latter certainly is abundant, and as much at home as in my native land; the former not so abundant, and under somewhat suspicious circumstances, but growing freely in localities similar to those it occupies in Britain.

I have now given a list of the more common and economical

forms of the Phænogamous vegetation of these two islands, but this list does not contain a tithe of the flowering plants, not to speak of the magnificent Tree-Ferns, which by their majestic and graceful fronds adorn the densely wooded ravines of St. Lucia; many of these colossal plants vie with the Palms in magnitude, and attain a perpendicular height of twenty or thirty feet; other stemless Ferns have fronds ten or twelve feet long. In these sunny isles the trees are adorned with blossoms of every hue and form, but those belonging to the *Leguminiferæ* seem to be the most numerous, the largest of which is the Tamarind (*Tamarindus occidentalis*), a beautiful tree with pinnated leaves, and common to both islands.

The members of the *Convolvulaceæ* and *Cucurbitaceæ* are also abundant. These islands being intertropical, almost the entire arborescent vegetation is composed of evergreens. A variety of climbing and twining plants adorn the trees, mounting to their tops and garlanding their branches with blossoms of the richest azure and gold, which hang in graceful festoons, charming the eye with their beauty and perfuming the air with their fragrance. After such a panegyric, the British botanist will be ready to exclaim, "Would that I were in those Hesperidian Isles, then would I feast my soul in the study of Flora's fairest treasures!" But stop a little: although neither mantraps nor prohibitory signboards there meet your eye in these unenclosed forests, which are free for all to range, enemies equally to be dreaded lie concealed, ready to pounce upon the unwary traveller whenever disturbed. There "poisonous serpents roll," whose bite is certain death if speedy measures are not adopted to prevent it, the only certain and effective remedy being immediate excision of the part bitten, and afterwards cauterization of the wound.

Another enemy to the flower-gleaner will likely be the land crab (*Cancer ruricola*), which peoples the forest in thousands. This animal has two formidable fore claws, and burrows among the dense vegetation under the trees, and when touched or pursued, raises up its talons in self-defence, and woe to the unwary intruder who shakes hands with such an opponent; for so powerful is the iron grasp of Cancer, that a separation is only effected at the expense of his life or limb: the loss of the latter, so far from being a permanent misfortune, is only a temporary

inconvenience, the reproduction of another being only a matter of time.

Another troublesome companion with which the botanist, as he culls the flowers, is likely to meet, is a species of wasp or hornet, familiarly known by the name of Jack Spaniard. These insects swarm on the trees, and are often concealed among their blossoms, and on being grasped, immediately inject their venomous sting. I was, in Barbados, stung myself while gathering a flower, and the pain I experienced for hours was excessive—it was absolute torture. These remarks may create a smile or elicit a sneer, but should the reader be so unfortunate as to come in contact with any of these three enemies, I am certain his laughter would soon be turned to wailing and sorrow.

The preceding remarks have just been noted down as they occurred to my memory. They are all facts, which in almost every instance came under my own experience and observation while residing in these islands.

Bridge End, Perth, Jan., 1859.

Review.

Theoria Systematis Plantarum; accedit Familiarum Phanerogamarum in Series Naturales Dispositio, secundum Structuræ Normas et Evolutionis Gradus instituta. Auctore Jacob. Georg. Agardh, Botanic. in Academ. Lundensi Professore. Cum tab. xxviii. Ex officin. lithogr. Cronholmiana. Londini: apud W. Pamplin. 1858.

It is not improbable that the susceptibilities of the *laissez faire* section of British botanists may have been rather severely tried by the appearance of two new descriptive works on our British plants within the short period of twelve months. What they will think of an entirely new system of Botany can only be known when they please to give utterance to their cogitations on the subject. The 'Phytologist' has waited full four months, and as yet there is no sign.

Our readers have been promised a notice of the above-named work, and though we would rather follow than lead, our promise is not like a piecrust; the pledge is now to be redeemed.

A systematic theory of plants, or a theory of systematic Bo-

tany! How do the learned translate these terms? The meaning of the title may be apprehended by reading the book. Probably the key to this puzzle may lie in the words *structuræ normas* and *evolutionis gradus,* which we venture to translate "normal structure" and "progressive development," or "organization and evolution."

A poet alone can translate a poet. *Mutatis mutandis,* a systematist or taxonomist alone can translate a work on taxonomy or system. We have done our best, and the best cannot do more.

"Res ardua, vetustis novitatem dare, novis auctoritatem, obscuris lucem, dubiis fidem, omnibus vero naturam et naturæ suæ omnia."—*Plin. Hist. Natur.*

This is the motto which our author prefixes to his book, which may be loosely translated as under: "It is a difficult matter to represent old facts in a new fashion, to get authority and credit for unheard, obscure novelties, to procure attention to doubtful subjects, or to be natural in all, and to represent all things consistently with their own nature."

The author observes that there is a very general complaint, viz. that in all our systems (called Natural by courtesy) both orders and species find themselves in different and distant parts of the same systems; or, to state the author's meaning by examples, Endlicher and Bartling do not arrange the Orders in exactly the same method. Nor do Lindley and Balfour. The arrangement of orders, genera, and species adopted by one botanist is modified or changed, or altogether upset, by another.

The learned professor states that the reason usually assigned for this discrepancy among systematists, and sometimes observable in the same author himself, is, that some of the Orders are imperfect, or some species are wanting to complete the series. Our author does not think that this is the sole cause of the diversity of arrangements, and asks, If the principles of the entire system of plants are consistent, how is it that they can be changed in the placing of the individual Orders?

Our author's work is divided into two parts:—1. Methodology, or systematic arrangement. 2. The natural series of phanerogamous families.

The first portion may be considered as an introduction to the whole; it comprises xcv. pages.

The Natural Orders occupy 404 pages.

There is an index to the whole.

The first part of the Methodology or system treats of species, genera, families, etc., whether natural or artificial, and the following quotation from Linnæus is prefixed: "*Naturæ opus semper est* Species et Genus. *Generum Genus est* Ordo, *Ordinum autem genus* Classis est."* Here the author shows that three very eminent recent authors have adopted different views on this nice question of natural systems. For example, Schleiden maintains that Nature only creates individuals; Lindley, species;† and Fries, species and genera.

There may not be in reality so great a difference between the opinions of these great men as appears at first sight. The dispute may be about words rather than things. Genera and species are meaningless terms unless individuals be implied. Hence, if Nature creates genera and species, she creates individuals.

The author then goes on to show that possibly two questions may be confounded, viz. the things themselves and the notions which we entertain about them. But into this metaphysical domain it is not safe for us to enter. Let us stick to our text, or rather to our author, who says, as it appears to us: "The question then which we propose, if properly circumscribed, is thus to be stated: Does Nature restrict herself in the production of those forms or types which we call organisms, which in a narrower sense we call species, in a wider genera, families, etc. etc.?" Also, "If these forms exist independently of any law, we are of necessity induced to infer that all Nature is under no law (*nulla ratione*

* "Nature always produces *species* and *genus*, or these are the work of Nature; but the Order is the genus of the genera, and the Class is the genus of the orders."

† (Lind. Nat. Syst. Bot. præf. p. vii.) "Of this system (the Natural, so called), Nature herself, who (which) creates species, knows nothing. Our genera, orders, and classes and the like are mere contrivances to facilitate the arrangement of our ideas with regard to species. A genus, order, or class is therefore called natural, not because it exists in nature, but because it comprehends species naturally resembling each other more than they resemble anything else." (How can they have a natural resemblance, or naturally resemble each other, if not natural? If the similarity be natural, and not artificial, the genus must be as natural as the species. But here is the rub. The professors make a hitch. They take it for granted that species are natural. If species are natural, why not genera, orders, and classes?)

"Fries autem rem ita dijudicat, ut species et genera velit a natura ordinata, non a nobis inventa; majores autem ordines arte constare;" or, as it may be rendered, "Fries, on the other hand, decides that both species and genera are natural and not artificial, but that larger groups (orders) are so (artificial)," etc. etc. (p. ii.)

moveri). Hence every system and all inquiries into Nature are like a house built of cards, which will fall to pieces by the least motion, and must be built up anew upon an equally insecure foundation. . . ." But if we admit that Nature preserves a certain law in those forms which we call species, then species are not defined or limited artificially, but by Nature; but forasmuch as the words we have quoted* from Lindley and Fries show that the opinions of the learned are not the same about the larger groups, which we call genera and families, it is our business diligently to consider this question" (p. iii.).

The professor then asks the following pertinent questions:— "And in the first place I would just ask those who maintain that some orders and genera are natural and others not, whether they admit the same uncertainty among the Salices and Eryngos, the Labiates and the Umbellifers, fishes and birds, plants and animals!! Are not all these formed and defined by Nature? Are not the species of the genus *Salix* formed in conformity with a a TYPE common to all? If it be admitted that species or the lower groups are natural, it follows that the same must be predicated of genera, orders, etc., the higher or more comprehensive groups."

As an example of the indefinite views prevalent on arrangement, the author remarks that Endlicher unites the *Labiatæ* and *Borragineæ*, while more recent writers find scarcely any difference between these two Orders, except in the form of the corolla and in the position of the radicle, and at the same time truly states, "that in the Order *Caprifoliaceæ* there is an example of an irregular and a regular corolla; and in the genus *Euonymus* he finds the radicle sometimes superior and sometimes inferior." He also notes, that by assuming some organs as characteristic, and by suppressing others, Orders may be established *ad libitum;* for example, *Labiatæ* and *Borragineæ* might be united, but not into a Natural Order.

The opinion that some Orders are less artificial than others is quoted, and he then asks, if it can be demonstrated that some assemblages are natural, or that Nature has followed (*servasse*)

* Bot. Reg. vol. xiii. p. 1066. "All genera, and indeed all the divisions of naturalists, are necessarily artificial; and when one genus is called natural and another artificial, all that can be meant by such expressions is, that the species of the one are less artificially combined than those of the other, etc."

certain more general types in the formation of species, is it not reasonable to assume that all organisms are so formed? "Vel potius dicam, si *est ubi* genera, familiæ, classes a natura definita sint, nonne *ubique* ita factum esse sumendum est, etiamsi non ubique nobis contingit, ut in naturalium ordinum expositione veras affinitates perspiciamus?"* The author next argues, that if the more general types are assumed, it need not necessarily be inferred that all the species must be alike, because the more general types may comprehend several more special types.

The individuals of the same species, he argues, are not all similar; they vary in the shape and size of their leaves, in the length of their stem, in the colour of their flowers; "Yet I doubt not," he says, "that those who deny that the larger groups are natural, will admit that all the individuals of the same species have been formed according to the same type (*ad eundem typum*). For in species *facies non omnibus una, nec diversa tamen, quales decet esse sororum.*"

"But if these more general types have no existence, I think we may ask, why in certain orders both forms and qualifications are present which are absent in other orders? Why are the flowers in the *Synantheræ* racemose, when in many other orders the inflorescence is both capitate and racemose? Why is the albumen corneous in the *Palmæ*, farinaceous in the *Gramineæ*, both fleshy and farinaceous in the *Cyperaceæ?* why in the *Araceæ* sometimes of diverse kinds, and sometimes none?"

Therefore the Professor concludes that there are in genera and in orders certain types; that groups of plants are formed on these types, and that these groups are made, not by us, but by Nature.

The first Chapter is terminated by the Linnæan maxim, viz. "*Characterem non constituere genus, sed genus characterem;*" which in plain English means that the character or quality does not determine the *genus*, but the *genus* the character. Query, have modern botanists abandoned this safe maxim? Do they do as the ancient Procrustes,—first draw up a character for their genus, and then follow the example of the above-named worthy,

* "If larger or smaller groups are *anywhere* observed as Nature's handywork, is it not reasonable to assume that they exist *everywhere*, although we may have been unable to assign them their true place in a natural arrangement, or have failed to perceive their true relationship?"

who by the rack stretched the bodies too short to fit his bed, and cut off part of those whose persons were longer than his couch?

The second Chapter is entitled "*Quid systemati naturali propositum sit,*" and its prefixed motto is in Swedish, a quotation from one of the author's works. It comprehends Jussieu's definition of a system, extracted from the article Taxonomy, given in (*Dict. Univer. d'Hist. Natur.*) his own words, only translated. Our author remarks that it is easily seen (*facile apparet*) that the object of devising this is merely that forms may be distinguished and more easily defined; and continues to state "that the sexual system of Linnæus provides for all this."

He then insists on the fact "that a natural system has a different object, as we have endeavoured to prove, viz. 'Necesse esse ut unumquemque Organismum ad certum et institutum typum formari censeamus, et certam quandam tanquam ideam ejus imagine expressam conspiciamus.'* As the plant which springs up this year is produced by the same life which produced this form thousands of years ago. That it depends on certain laws, which are continually in operation, that similar forms are constantly produced. And because certain plants invariably agree in structure, figure, and qualities, it proves that they are under the influence of laws common to them, which are not common to other forms, etc., of vegetation;—that the orders of plants are affected by these laws more or less, according to the extent of the family." Hence he concludes that every plant has its own peculiar place in the natural system, and that a natural system exists in order that every plant may occupy that place given to it by Nature. Whether the orders of such a system can be certainly defined or limited or distinguished from each other or not, is not the object proposed by a natural system, etc. etc.

"But we have seen," he continues, "that the investigators of nature, who deny that the larger groups are constituted by Nature, which creates only species, as some of them maintain, or species and genera, as others affirm, have no other idea of a natural system than as a means of determining the names of

* "Every organism is formed in the likeness of a certain type, and is capable by its form of being the expression of a certain definite notion (idea)."

species (naturale systema nihil esse nisi ignobilem quandam servam, quæ ad nomina specierum cognoscenda conducat)."*

"Hence we see Dr. Lindley, in the books he has published in our days, asserting that a natural system is not less accommodating for this purpose than the sexual system of Linnæus, which, by the bye, he boasts of having rendered a matter of history,—shelved it for ever." The professor remarks, with great simplicity, that he would not have again noticed this if the learned author had not been by general consent reckoned among the most celebrated botanists of the age,—a very prince, a triton among minnows,—"si non Lindleyanum inter principes scientiæ nostri ævi adnumeramus, si non de seipso prædicasset, se naturalis systematis acerrimum esse propugnatorem: scilicet sua opera factum esse ut sit in Anglia illud" "once popular but superficial and useless system of Linnæus, a mere matter of history. *Fuit Ilium.*"

The author further asserts that the reproached and exploded Linnæus had a better judgment of system, and wrote more judiciously about its object, than many in our time who profess to be the exponents of Nature's laws, and who are esteemed as the foremost in the construction of those systems which they fondly call expositions of natural methods of arrangement.

The third chapter is "*De Methodo Systematis Naturalis,*" and its motto is from Linnæus, "Scias characterem non constituere genus, sed genus characterem." (See *ante.*)

The difference between natural and artificial systems is commonly this, viz. that the Orders in the artificial arrangements are characterized by *one* or a *few* characters; in the natural, all parts of the plant characterize the Order. Our author assumes that the above is the chief distinction, if not the only one, existing between the two modes of classification; and although admitting its truth as far as it goes, he maintains that the difference between the two methods is something more than this.

The Professor now shows that the species and genera in the Linnæan system, or indeed in any system whatever, are constructed or constituted on exactly the same principles as the Orders in the so-called natural systems. Characters are derived

* "That a natural system is only a humble way, or a *help* (as the Americans say), which may assist us in ascertaining the names of species."

from all the parts of a plant, whether the species and genus are to be determined on the artificial or the natural method.

He next shows that the mode of arranging Orders by the number and disposition or insertion of the stamens is not very much different in principle from that adopted by Jussieu, etc., viz. the number, disposition, or insertion of the external parts of the flower;—the relations of the calyx and corolla to the ovary;—the normal divisions of the external envelopes, etc. And he maintains that by strictly following these principles the natural orders are violated. "Si quis illius characteris regulam severe sequetur, naturales affinitates forsan sæpius, quam si hos stricte sequetur [the Linnæan], violabuntur." It is further remarkable that the celebrated author of the Natural Orders does not call his invention a natural system. The title of his eminent work is, "*Genera Plantarum secundum Ordines Naturales disposita, juxta Methodum in horto Parisiensi exaratum.*" He is indebted to his followers for the reputation of a natural system-maker. It is universally known that the elder Jussieu arranged his Orders on characters which he believed to be the most constant, viz. the Acotyledons, Monocotyledons, and Dicotyledons on the structure of the embryo; he derived the sections *hypogyneæ, perigyneæ,* and *epigyneæ,* from the insertion of the stamens; *apetalæ, monopetalæ,* and *polypetalæ,* from the absence or from the nature of the corolla. This disposition has been followed by most botanists. Some other characters have been detected (*inventi*), our author says, on which much stress is laid, or to which much importance is attached, and to these we are indebted for the discovery of the natural division of all phænogamous plants into angiospermous and gymnospermous; and to which we owe the new class Dictyogens, the Rhizanths, etc. etc. Subsequently the author insists on the imperfections of this system by its results, viz. that some families may be selected that are sufficiently characterized by the vegetative organs, which are the most liable to mutation; while a number of families may be selected in which the law of insertion even is not constant, the *Saxifrageæ* for example. In the genus *Saxifrage* there are examples in which the ovary and calyx are adherent or epigynous, or only partly so, perigynous. Also that the structure of the embryo is not uniform in several families, *Nymphæaceæ, Convolvulaceæ, Lentibulaceæ,* etc., where this organ is undivided, as in Monocotyledons.

The Professor guards against the inference that he repudiates these characters as unsafe (*falsos*). On the contrary, he admits that they are mostly reliable (*veros*); and he says that "it is very credible that those plants which approach nearest by affinity should agree in the structure of their embryos, and in the forms and disposition of their flowers." But he further adds, "It has been discovered by practice that there is no character which is not variable; not even those to which Jussieu attached the greatest importance. If a character is not constant in a family, *à fortiori* it will be more subject to variation in a section or class. Some species of the genus *Fraxinus* have a corolla, some *Saxifrages* have perigynous stamens. Is the Ash achlamydeous, monochlamydeous, or diplochlamydeous? and is the Saxifrage to be divided between the sections *perigyneæ* and *epigyneæ?* Can any one believe that natural classes can be formed thus?"

"But the doctrine of Jussieu assumes another aspect when he maintains that it is an axiomatic truth that the lower or less important characters always follow the higher." ("'Dicuntur enim graviores characteres sequi leviores.") This reminds us of the famous reponse of the Delphic oracle, *Aio te, Eacida, Romanos vincere posse;* it is impossible to tell from the text if the author means that the lower follow the higher, or the higher the lower. As the oracle did not tell the king of Epirus whether he should conquer the Romans, or that the Romans should conquer him, his majesty inferred the former; the royal wish was father to the regal interpretation. And the oracle got credit at the king's expense. Botanists, like Apollo, sometimes shroud their oracular definitions with all the ambiguity of Delphic utterances. We only surmise that the author means that the structure of the embryo is of higher import than the following; but let the author speak for himself, which is here translated for the ease of the reader;—the Doctor's Latin is not remarkably easy. "They say (viz. the natural-systematists), when once we know that a certain plant is monocotyledonous or dicotyledonous, we know its internal and external structure. We know its germination, the structure of the stem, the nervation of the leaves, their shape, and the number of parts into which the floral verticils (calyx and corolla) are divided." The author goes on, and shows that this rule, like every other, has its exceptions; some would say this is a proof of the universality of the rule, for *exceptio probat regulam,* as the ancient dialecticians used to say.

"The Aloe, *Dracæna*, etc., have wood like what is produced by dicotyledons. The leaves of the *Dioscoreaceæ* and *Menispermeæ* are so much alike that they might be presumed to be all of the same class. Many flowers of the dicotyledons are *trimerous;* some of the monocotyledons *dimerous* and *tetramerous*, and some are even formed on the pentamerous type. "Nonne id vitiose statuitur?" he asks, if, following Jussieu, we say,—

Gramineæ and *Liliaceæ* are monocotyledons; but

All *Gramineæ* and *Liliaceæ* have their vascular tissues scattered (*sparsos vasorum fasciculos*);

Therefore all monocotyledons have their vascular tissues scattered.

Is it not an erroneous inference if we infer that

Since the leaves of *Gramineæ* are linear,

But all *Gramineæ* bear imperfect flowers,

Therefore plants which have linear leaves have imperfect flowers?

This is what logicians call a syllogism. Our readers may judge for themselves if the propositions be fair, and if the predicate be distributed or non-distributed.

"If these two systems are well considered, viz. that one which is called Natural and those called Artificial, it will be seen that certain groups, viz. species, genera, and orders, are formed on a natural method; and it is not denied that species and genera, in artificial systems, are founded on natural characters; also that all higher groups than Orders, viz. alliances, sections, classes, etc., are artificial; it appears as incongruous to unite these, and call the whole a Natural System, as it would be 'humano capiti cervicem pictor equinam jungere si velit.'" This is Professor Agardh's opinion.

This chapter ends with the following reflection, which is better stated in the original than in any form we are able to invest it with. "Duæ viæ sunt atque esse possunt ad inquirendam et inveniendam veritatem. Altera a sensu et particularibus advolat ad axiomata maxime generalia, atque ex iis principiis eorumque immota veritate judicat et invenit axiomata media; *atque hæc via est in usu*" (this is the usual way). "Altera (*via*) a sensu et particularibus excitat axiomata, ascendendo continenter et gradatim, ut ultimo loco perveniatur ad maxime generalia: *quæ via vera est, sed intenta*" (this is the true way, but it is not usual).

The fourth chapter has the title "*De principio dispositionis et ordinandi norma in systemate naturali.*" And the motto is from L. Cl. Richard, viz. "Facts are only the materials of science. To give them a suitable form, and to combine them by analogy, is to prepare them for building; by uniting them we raise the edifice." The author proceeds to inform his readers that when the facts which are requisite for the construction of a system are collected, a law is to be discovered whereby species may be combined into genera, and genera into orders, etc. So that a certain disposition and order, or distribution of the entire kingdom may be constructed. But he adds, "No law of this nature has as yet been pointed out by any one."

We find that species are arranged sometimes in one way, sometimes in another. Subgenera and genera are formed, not in accordance with any certain law, but are made and unmade on the very slightest grounds (*levissimis rationibus*). A genus becomes either the leader or the centre of a group; sometimes the ordinal type is represented by one genus, sometimes by another. The disposition of families and the arrangement of classes are altogether arbitrary and artificial. The arrangement of the entire system sometimes commences with plants of the highest organization, sometimes with those of the lowest. And this is represented as a matter of no consequence whatever ("hoc fiat an illud nihil interesse existiment").

Then there follows a long quotation from Fries, in justification of placing the highest Orders in the series at the head of the classification.

The Professor appears to incline to the opinion that Orders of the lowest organic development should be placed first. For he says (p. 22), "Impedire non potest quominus imperfectioribus inferior locus quam perfectioribus tribuatur. Nam inferiores plantas re vera a superioribus nasci (transformari) nescio an hac ætate nemo velit serio contendere."

This is not denied by any botanist. The higher Orders, as *Ranunculaceæ* or *Compositæ*, are placed at the beginning of the series because they comprehend plants with a more perfect development, so to speak, than the *Algæ* and *Fungi*. All admit that cellular tissue, which is the *only* organization of the lower groups, enters largely into the composition of the higher. And all admit further that the other tissues constituting the solid framework

of the plants in more developed Orders are but modifications or extensions of the simpler elementary organs of vegetation.

The following quotation merits special consideration, and it is therefore given in the author's own words. "Quemadmodum sui quosque ordines intrant certique organismi nec alii, sic qui cuique organismo intra ordinem locus tribuatur, certa constet lege et ordinandi fas est. Atque *naturali methodo* per omnes ducta systematis partes, inveniamus quæ cuique ordine naturali pertineant; qua autem lege omnes et singulæ partes ordinis inter se disponi debeant, et quæ sit totius ordinandi norma, hac paragrapho nobis exquirendum est. Quod quo assequamur, hæc disputationes via nobis ingredienda videtur."

The author next states, what every one is ready to admit, that organisms are composed of a few definite (*quibusdam*) organs (elements) which in their primordial condition are alike, but in their development are changed, some more, some less.—That from these changes the varieties of both forms and qualities which abound in nature are derived. The generally received name for these changes is Metamorphosis or Morphology. He next inquires how this metamorphosis is evolved—whether it is exerted or accomplished in a longer or in a shorter space of time.

When the larva of the insect crawls out of the egg, it gradually comes to perfection, through the *nympha stage*, till it reaches its *imago state*. And these changes and the mode of their accomplishment are proper or peculiar to one and the same individual: "HIC METAMORPHOSIUM ORBEM QUENDAM CONFICIT INDIVIDUUM. . . . PLANTARUM QUOQUE DICITUR METAMORPHOSIS COMMUTATIO ESSE PARTIUM QUÆ SENSIM SENSIMQUE PROVENIANT IN UNO EODEMQUE INDIVIDUO."

The author next maintains that there are two kinds of metamorphosis, viz. first the *successive*, when the progress is from a simpler or less perfect state to a more complex or perfect condition; and second, the collateral, viz. the changes both in form and function, which organs that are typically identical undergo in different classes, orders, and genera. The author illustrates these laws of morphology or comparative anatomy from examples taken from the animal kingdom (pp. xxiii. and xxiv.).

"*Duo esse*, (inquit auctor,) *quibus conditur naturale systema, structuræ norma (organizationis norma) et perfectione evolutionis (organizationis perfectione).*" Hence, if we understand the termi-

nology of the author, the natural system is founded on these two principles, *normal structure* and *perfect development*. In this chapter is discussed at great length the doctrine of successive and collateral metamorphosis, of affinities, analogies, etc. etc.

The fifth chapter is on the difference between the natural and the artificial systems (*inter systemata artificialia et naturale systema quidnam intersit*). All botanists know what objects artificial systems are devised to subserve: we need not repeat what is already well known, but as few, at present, know Agardh's views on the objects of a natural system, they are here stated in his own words: "Naturali autem systemati id propositum esse ut ita in majores ordine componerentur organismi, ut ab ipsa natura institutum esset." Hence he infers that there is one method of constructing a natural, and another way of forming an artificial system.

It needs no ghost to tell us this. But our author tells us further, that in an artificial system we look for distinctions, in a natural, for similarities (*similitudines*) and affinities. This throws some light on an obscure subject. Furthermore, an artificial method is formed on *analysis*, the natural on *synthesis*. In the former, individual things (objects) are to be distinguished, or in other words, there is a descent from the more comprehensive and general to the special or less general. In the natural system, on the contrary, the operation proceeds upward from the more special to the more general and universal. There are many other distinctions noticed by the author, *quas nunc præscribere longum est*.

The next Chapter has the following heading: "*Naturale systema quomodo a botanicis inventum fuerit et expositum.*"

In the infancy of the science, as the Doctor states, in defining species, genera, and orders, differences chiefly were noted; and thus the groups in the first systems devised were of necessity artificial. Still, as the divisions were usually founded on the flowers and fruit, it often happened that Natural Orders were accidentally formed. In the Linnæan system even, where the principal characters are derived from the parts of the flower, there are many Orders which even in the present day are admitted to be natural. This eminent man, who knew that there were natural groups larger than genera, and who also maintained that the formation of these was the ultimate and the grandest object of botanical

investigation, judged more judiciously and prudently of this matter than some writers in our own age, who are his most inveterate detractors. These have disregarded his golden rule, viz. "*Character non dabit genus, sed genus characterem.*" Here the Professor bravely accuses the French *savants* of injustice to the memory and merits of his famous countryman. For example, the illustrious Cuvier, in his *Eloge* in commemoration of Adanson (Paris and Strasbourg, 1819, p. 286), *hæc jactitavit:* "Il y a des fort raisons de croire que Linnæus avait profité de conversations de Bernh. de Jussieu sur ce sujet (l'arrangement naturel de plantes), car plusieurs des rapprochements indiqués dans ses Ordines Naturales, publiés en 1753 sous forme de simple liste non motivée, auraient difficilement pu naître des vues qui ont dirigé cet homme celèbre dans ces autres ouvrages." "In the grouping of many genera," our author admits, "there is truly much similarity between Linnæus and the French authors above named, and the inference of the latter is that Linnæus obtained this from his intercourse with the French botanists of Paris. But the 'Fragmenta Methodi Naturalis' was first published, not in 1753, as Cuvier states, but in 1738, at Leyden, and the preface bears the date of the 20th March, before Linnæus had visited Paris." See Dr. Maton's edition of the 'Life and Writings of Linnæus,' p. 71, 4to, London, 1805.*

Professor Agardh then states that neither Linnæus nor Jussieu can be considered as the founders of a natural system. He says: "Linnæus primus constituit Generis notionem in re herbaria,

* It is surely like quarrelling about goat's wool (*lana de caprina*) to dispute about the merit due to the inventors of Natural Orders prior to the publication of Jussieu's 'Genera Plantarum.' Linnæus, in his 'Fragmenta Methodi Naturalis,' gives indeed a list of sixty-eight sections, which some are pleased to call Orders, though the author or adopter does not dignify them with this high appellation.

But if Cæsalpine, Lobel, Morison, Ray, Hermann, Rivinus, Tournefort, Dillenius, Haller, Gesner, etc., were each and all to claim their genuine or adopted offspring, Linnæus's portion would not be large.

The largest of the Orders, viz. Compositæ, Gramineæ, Cruciferæ, Caryophylleæ, Leguminiferæ, Umbellatæ, Rosaceæ, Labiatæ, Campanulaceæ, Amentaceæ, Palmæ, Liliaceæ, Euphorbiaceæ (Tricoccæ), Musci, Algæ, Fungi, etc., were all well known before Linnæus published his celebrated Fragments of a Natural Method.

The modern systematists have departed far from Linnæus in their arrangements. For example, their modern Order *Primulaceæ* contains genera which are placed by Linnæus in *Calycanthemæ*, *Glaux;* in *Preciæ*, *Primula;* and in *Rotaceæ*, *Lysimachia*, *Anagallis*, *Trientalis*, *Centunculus*, *Hottonia* ?, and *Samolus* ?

Jussieu familias constituit. Classes nonnullas naturales jam habuit R. Brown, Flinders' Voyage, vol. ii. app. pp. 539, 540."

The seventh chapter is headed, "*De formarum similitudine, in iis conspicua quæ eandem habent Organizationis normam ei convenientiæ contraria, quæ in singulis quibusdam partibus cernitur; sive de eo quod differt inter affinitatem et analogiam.*" To this there is affixed a motto from Linnæus, viz. "Nulla hic valet regula a priori, nec una vel altera pars fructificationis, sed solum simplex symmetria omnium partium, quam notæ sæpe propriæ indicant."

In this chapter the author lays down the law that there are three kinds of similitudes, and states that these have never been observed, or, so far as he knows, only very obscurely by some writers; and quotes 'Agardhii Aphorismis Botanicis,' Lundæ, 1819, p. 59. "Inde factum est ut primo analogia quædam et similitudo in diversis seriebus vegetabilium interdum cernatur, quasi progressa esset Natura ad perfectionem per eosdem gradus sed diversa via. Secundo, anticipationes formæ perfectioris in plantis inferioribus non raro obveniant; ut etiam in plantis superioribus regressus ad formam imperfectiorem; et tertio, formæ illæ normales, aut ejusdem gradus, aut superioris, ita interdum confluant ut ægre limites observantur.* Duplex est igitur affinitas plantarum," etc., or the transition from one normal form to another, or what is manifested in anticipation of a higher form, or in a return to a lower form.

The eighth chapter is on the analogies of different Orders, viz. analogies of habit, of inflorescence, of the flower, of the fruit, of the seed, of the embryo, and of the stem.

From this long chapter, which is a full and clear exposition of the author's views, it is evident that he means by analogy what most writers call affinity.

Whether all modern botanists have any definite distinction to show between analogy and affinity we know not. Their definitions are as follow: "Analogy,—resembling a thing (organ) in form but not in function; or in function but not in form. Corresponding

* Normal structure and perfect development: will the author excuse a question from one of the less informed portion of the botanical community?

Is not the Mushroom (*Agaricus campestris*) as perfect as the Buttercup (*Ran. bulbosus*)? It is not so complex in its structure, but it is a perfect individual though of a simpler organization than the higher forms of vegetation.

with a thing (organ) in many points, but differing in more, or in points of more importance. For example, the flowers of *Ranunculus* and *Potentilla* are analogous." "Affinity," again, "signifies a resemblance in the principal part of its structure." From these definitions it appears that these two terms differ only in degree, not in kind. And this appears to be our author's opinion, for whether he be right or whether he be wrong, the object of the whole chapter appears to be to show that botanists have mistaken the meaning and application of these two terms, or have confounded them. What the *bigwigs* may have to answer to this charge, or whether they will condescend to answer it, or even to notice it, is not our concern. The Professor modestly writes, "Nisi fallimur, plantarum systemata multa præbent testimonia dissimilia typorum analogas formas vere affines habitas fuisse."

The author had formerly (p. xlix.) defined these two terms thus: "Ergo quorum organizatio ad eandem normam (typum) conformata est, ea affinia (organa?); quæ ad diversam, ea analoga dicimus."* He admits "that it is not always easy to distinguish between analogous and related forms (*affines*). It sometimes needs a severe investigation of the structure to be able to determine what is analogy and what is affinity;—that universally applicable rules for deciding this are impossible;—that every definition depends on the examination of the object to be defined."

"Nusquam natura immutabili formarum lege adstricta cernitur; in aliis plantis formam aliam magis mutat et perficit; ex quo fieri potest, ut eæ plantæ quæ proximæ affines sint dissimiles videantur, quæ longe inter se distant, quibusdam partibus similes nobis obveniant."

As an example of what the author does not mean by affinity, the following free translation of a sentence from p. lxix. is given: "For as the numerous carpels in the Orders *Alismaceæ Ranunculaceæ, Potentilleæ,* are not adduced as a proof that these Orders are related, so the great number of the carpels in *Ranunculaceæ, Magnoliaceæ, Rosaceæ,* and *Calycantheæ,* and their spiral disposition, is no proof of affinity in these Orders."

* The author illustrates his view of analogy from the example of whales and fishes. He calls these analogous but not related forms. ("Neque enim Cetaceæ et Pisces conferuntur, quod pinnis natant," etc.) Plants may agree, he further adds, in their leaves, inflorescence, in the number of the floral and carpellary organs, and still be only analogous, not kindred (*affines*) forms. (See p. l.)

In discussing the question *de analogia embryi,* the author states: "Sed sive Monocotyleam formarum seriem proprium quendam typum existimes, sive quorundam Dicotyleorum typorum inferiorem quendam evolutionis gradum, errare mihi videtur, si quis statuit quodcumque embryon quod thalloideam quandam offerat formam, id cum Monocotyleis affinitatem quandam significare." He concludes that in certain cases it is impossible to judge from the embryo whether the plant be related to Monocotyledons or to Dicotyledons.

This chapter is ended with an inquiry into the plants which have the highest development, and he concludes that the *Synantheræ,* the primary Order in Fries's classification, should not stand first. In the two succeeding paragraphs there is a condensed view of the substance of this long and important chapter.*

The last chapter of this learned and scientific introduction to the study of the Natural Orders is entitled, "*De vi et varietate Ordinum Naturalium.*"

The author's classification or arrangement of the Orders is the following:—

1. *Plantæ sporogamæ (Agamæ?).* Comprehending *Algæ.* ("Characcas Siphonearum seriem concludere, mihi probabile est.") Several systematists have assigned them a higher rank. In this section, or under the Sporogamous type, both Lichens and Fungi are included.

* "Cæterum quod floris structuram attinet, jam in præcedente paragrapho docui, quæ mihi visa sunt evolutionis diversa stadia: itaque illud sumo, numero ternario inferiorem evolutionis gradum significari quam quinario; quo intra florem majus expansus est axis, eo minus perductam metamorphosin, itaque inferiorem indicari evolutionis gradum, probabile esse; ergo eum florem, cujus partes spiraliter dispositæ sunt, verticillato flore imperfectiorem esse, itemque polypetalum gamopetalo imperfectiorem; atque pari modo fructum carpellis spiraliter dispositis et numerosis constantem eo imperfectiorem esse, qui carpellis constat verticillatis, quemadmodum distincta carpella minus perductam metamorphosin quam coalita significent; denique atropam gemmulam imperfectiorem esse anatropa, et id embryon, cujus partes non evolutæ sunt, eo imperfectius esse, cujus sunt distinctæ cotyledones et plenæ evolutæ.

"Vix denique nobis sit monere, non propter uuius partis perfectionem—si cæteræ imperfectæ sunt—locus aut superior aut inferior Ordini cuidam tribui debere; ut enim in omni, ita in hac re, universæ vitæ ratio est habenda, eaque forma perfectissima existimanda, quæ omnes simul partes perfectissimas habet. Neque, credo, possit dubitari, quin, quum numerosissimæ sint phanerogamarum series analogæ, non in una quadam speciali formæ perfectissimæ quærendæ sint, sed liceat in multis et diversis seriebus formas æque fere perfectas expectare."

2. *Plantæ anthogamæ,* or *Hepaticæ* and *Musci.*

3. *Plantæ thallogamæ,* the higher orders of Cryptogams. He considers *Ophioglosseæ* as being of the lowest type,—*infimum evolutionis gradum,*—and *Marsileaceæ* as the highest.

The Phanerogams follow this higher type. Then follow *Series Naturales Familiarum Phanerogamarum,* but we cannot afford so much space as would admit of giving even a list of the Orders. This unusually long notice must be terminated with a few remarks on the subject.

The author, in his preface, very modestly admits that a work of this extensive character requires more scientific assistance (*adjumenta*), than he was able to command, and also a greater knowledge of the forms of the vegetable kingdom than he possesses (*quam quantam ego complexus sim*). He further expresses his hope that his attempt, such as it is, will excite others to more successful endeavours (*ad meliora efficienda*). "While," as he says, "he does not expect that his work will obtain universal currency, as the exponent of botanical arrangement, he is thoroughly convinced that systematists or taxonomists have mistaken the right way of classification; he hopes that he has proved that if the way pointed out by him is not the right way, that at least there is another way to be discovered."

With the author, we earnestly hope and desire that his labours may be promotive of genuine science. How many systems have we seen, even in England, since the Linnæan arrangement, as the learned professor of University College informs us, became a matter of history! The latter-mentioned eminent methodologist has himself inaugurated more than one scheme of arrangement. We have had systems by Decandolle, by Bartling, by Endlicher, by Fries, etc. All have had their followers, their defenders and admirers. The upshot of the whole appears to be, that system is deemed an immaterial element in the study of plants, and, consequently, that one system is just as good as another. This is only the implied opinion of the writer, who judges merely from the fact that as systems are now as plentiful as mushrooms in September, he infers that the system-makers, like some of the species-makers, throw them away with less reluctance than they would part with their old shoes.

This is not Professor Agardh's opinion. He evidently believes that classification is an important affair, and his book, which he

has published on the subject, is the best possible voucher for his sincerity. That the author, with all his sincerity, accompanied as it is with laborious investigation, will obtain for his system the currency which the Linnæan rapidly obtained, is barely to be expected. Linnæus's system might have been mastered in an hour by any one who had but a moderate knowledge of the floral organs of a plant. But notwithstanding the great simplicity and facility of his plan, he was not received very cordially in England, and the botanists at the time of his visit turned a deaf ear to the merits of his classification.

We cordially wish that Professor Agardh's system, which appears to be in reality what it professes, viz. an exponent of *the* Natural System, may get a fair hearing: the article *the* is prefixed with some hesitation. We have had so many pretended Natural Systems that we are like those who have been often deceived, rather shy of trusting to appearances. During the last thirty years there have been many plans proposed, all dignified with this captivating title, and some of them were disowned by their inventors long before they attained notoriety, strangled in the very birth! Luckless offspring of cruel parents, stepmothers rather (*novercæ crudeles*), who slaughtered the innocents to save the trouble and expense of wet- or dry-nursing them!!

Would that some correspondent of the 'Phytologist' who has a taste for systematic botany, and who has more leisure and a better knowledge of scientific Latinity than the Editor has, would seriously undertake the study of this work, and be so generous as give the readers of this periodical the result of his labours! Whether he approves or disapproves of the author's plan, which we cannot illustrate at present, he will not have any reason to regret the time spent in the undertaking.

Further, we heartily desire that Professor Agardh himself would freely use this journal as a vehicle for the elucidation of his views. If the learned author would condescend to send forth a brief statement of his plan in our own vernacular (English), we can assure him that he will get a fair hearing. His work will be perused by a select circle of botanical readers. But that many will read his work in Latin is more than can be expected. All scientific works, or almost all, that circulate in this country, are composed in our own language. The few modern Latin works on science we have are treatises descriptive of objects, not expo-

sitions of science and scientific details. Our Latin reading is chiefly confined to the Classics, or a few tomes of ancient divinity, like Poli Synopsis, Critici Sacri, the Vulgate Bible, and the like; or to law Latin, old charters, deeds, and records; or to literary criticism in the works of Continental authors. Of scientific Latin we are not readers.

If the author would only amplify, or it may be, correct, our statements of his views,—for it is hardly to be supposed that they have been correctly represented in this article, long though it be,—and if he would kindly supply our omissions, he would render an essential service to some of those who read this journal; and coming from so distinguished a quarter, it would be highly appreciated. The writer of this takes the liberty of informing him that all the notices of his work in English which he has seen or heard of have proceeded from his pen. A testimony, slight though it be, still it is conclusive of his estimate of the importance of the production, and of his admiration of the zeal, perseverance, and scientific attainments of the author. He has an experimental knowledge of what is to be reaped in the field of botanical investigation, and therefore he will not be stingy in acknowledging the obligations under which we lie to those who disinterestedly give us the fruits of their ingenuity and toil. Emolument is out of the question. Botanical works do not pay in England. Are they more appreciated on the Continent? We hope they are. But if we cannot aid our botanical brethren in a tangible way, we may encourage them by generosity in thanks.

The chilling effects of the cold shade of despondency are but too apparent in the preceding remarks. It cannot be helped. A Natural System, a genuine one, seems too good news to be true. An accommodation to our superficial ways of investigating the arcana of Nature, or in plainer English, "a royal road to botanical science" (pardon the triteness of the metaphor, *lector benevolentissime*), is now so common that it may well be called *trivial*. The work, to which the attention of our readers is humbly requested, partakes not of such an ephemeral character. It is a solid, substantial performance, evidently the labour of many years. But, as has been already stated, what hope can the half-desponding portion of the fraternity have in the establishment of a natural system of classifying Orders, while we are not agreed about the limitations even of the smallest of the groups which

are at the very threshold of every system? Are botanists unanimous in their definition and descriptions of species? Will any botanist tell us which is the typical species in the genus *Rubus,* in the genus *Salix,* in the genus *Hieracium,* or even in the genus *Potentilla?*

Which is the typical genus of the order *Primulaceæ?* Is it *Primula* or *Lysimachia* or *Anagallis?* What individual do systematists select as the type or representative of species? Our teachers tell us that the written character of a species is not that of an individual. Would a description drawn up from a thousand distinct individuals of the same species be a proper character of that species? These are troublesome questions, and those who ask them are in some danger of being called *troublesome impertinents.* "They sit at their firesides, and presume to judge of things done in the Capitol," as Coriolanus said of the factious Romans. Factious botanists will not be content blindly to follow the leaders; they will ask inconvenient questions, questions as often blinked as answered.

We do not harbour the slightest suspicion that Dr. Agardh is not fully alive to the difficulty of the subject. The whole matter may be quite clear to him. But is it equally so to his readers?

Another question may be asked, simple and easy enough to those who have made the affinities and analogies of plants their study, though the matter is not equally clear to the less learned portion of the scientific brotherhood. Is the type the highest form of the group of which it is typical; is it the example of the highest organization and of the utmost development of all the plants in the group which it represents? Or is it, for example, a *real* plant in the higher groups, genera and orders? Or is it an ideal object uniting in itself all the qualities of the species and genera it professes to represent? Again, are the groups lineal or circular? Are the individuals, species, genera, etc., arranged around this type like matter round a section of a sphere, the plants of the highest form occupying the centre, and the lowest the circumference, the intermediate the space between the circumference and the centre? Or, again, is the series lineal, and does the typical plant take the lead? In either case it is not very clear where the new plants continually turning up are to be put.

The great Linnæus—who was in his own day, and from that day to this, except by a very few *recentiorum*, dignified with the high title of *botanicorum omnium facile Princeps*—does not appear to have indulged very sanguine hopes of the discovery of a natural system. He says (see Dr. Maton's 'Life and Works of Linnæus,' p. 559) :—"The natural orders of plants are given as an appendage to the *Genera Plantarum*, which an ignorant person would imagine to be of no use or value, but *Linnæus* looked upon his performance as a masterpiece. Many people have endeavoured to refine upon it, but have all been unsuccessful. He who discovers the key to them will have discovered the *natural method;* but this discovery may not precede that of squaring the circle." Has Professor Agardh discovered "the key"? Let our readers answer the question when they have read the work for themselves.

> "Dic quibus in *plantis*, et eris mihi magnus Apollo,
> Tres *l*ateat classes."

The following suspected errata are respectfully submitted to the author, viz. *Cryptogamus*, p. liii. line 9, for *Cryptogamos. Phollodiis*, p. liv. line 8 from bottom, for *Phyllodiis? Œnotera*, p. lxii., for *Œnothera. Aus* for *aut*, p. lxxviii.

BOTANICAL NOTES, NOTICES, AND QUERIES.

Mountain-Ash Berries.

Since the letter of mine on the above subject appeared in the October number of the 'Phytologist,' I have had some light thrown on it. A lady in this neighbourhood has lately been collecting and making use of them for jam, taking the precaution, however, to extract the *stones*, which, she says, *are poisonous*. I may also mention that the fruit of "*Ribes sanguinea*" has been turned to good account. I, a short time ago, tasted a jelly which had been concocted from it, which, I can assure you, was far from being repulsive to the palate. E. G.

Grasmere, December 11, 1858.

Cockle Bread.—The Nut Cracked.

The following is from Brand's 'Popular Antiquities:'—"There was formerly some kind of bread called Cockle Bread, and 'cockille mele' is mentioned in a very early manuscript quoted in Halliwell's 'Dictionary of Archaisms,' p. 260. In Peele's play of the 'Old Wives' Tale,' a voice thus speaks from the bottom of the well:—

"Gently dip, but not too deep,
For fear you make the golden-beard to weep.
Fair maiden, white and red,
Stroke me smooth, and comb my head,
And thou shalt have some cockle bread."

It is well to inquire what this early MS. is, that one might refer to it I find, however, in Ash's Dictionary, the following:—"Cocket-bread, from Cocket and Bread, the finest sort of wheaten bread." If the monks of the Wormwood Valley ate Cockle Bread, or Cocket Bread alias *fine wheaten bread*, as well as *barley bread*, they did not fare amiss and we are at once relieved from the necessity of supposing it was made from the "English plant Cockle" or "any of its tribe." S. B.

Bidens tripartita and B. cernua.

With reference to a remark at page 32, it may be worth mentionin that in the Isle of Wight both species of *Bidens* are to be seen growin side by side, as in the marsh ditches a little above Yar bridge, etc.; an a remark of Dr. Bromfield's seems to imply that the fact of the tw species being thus associated is with us rather the rule than the exception. (See 'Phytologist,' Old Series, vol. iii. p. 433.)

A Vectisian.

On the Extirpation of Rare Plants.

A few days ago a man came to sell me some indigenous Ferns. He had a bag full of various species; amongst others, *Aspidium rigidum*, *Cryptogramma crispa*, *Cystopteris fragilis*, etc. His account to me was, that he travelled all over the United Kingdom collecting them, and selling them in the larger towns. He was then coming from Settle, in Yorkshire, where he had been to gather the *A. rigidum*, of which he had a great quantity, and I am not aware that any other locality has yet been quoted for it. Now if the man goes and collects Ferns in that wholesale manner, he will soon eradicate all our rare species from the county; and I wish to give this slight caution to botanists who delight in the Flora of their county, not to encourage him by buying any of his stock. Moreover, it is quite a wonder to me that people who have the means will purchase from them when they may derive such intellectual pleasure and health from botanizing themselves; and by his not obtaining any sale for his stock, and no encouragement from any one, he would no doubt relinquish the trade for one more honourable. J. F. Robinson.

Warrington, January 17, 1859.

Insane Root of Shakespeare.

"That takes the reason prisoner."

In the 'Phytologist' for November, 1858, the writer begins his article by saying—"If the Potato be unmentioned in Shakespeare's plays, the whole modern genus *Solanum* may be dismissed as not comprehending the insane root."

In answer to this, I beg to refer him to the 'Merry Wives of Windsor,' act v. scene 5, where Falstaff, having taken his stand under Herne's Oak in Windsor Park, waiting for the merry wives to meet him, says:—"Let the sky *rain potatoes*, let it thunder to the tune of Green Sleeves," etc.

The writer also states that Shakespeare's knowledge of plants was not very extensive; but I beg to differ with him, for I find in plants, as in most other objects in nature, his knowledge was great, particularly as regards their properties and peculiarities. However this may be, we are not yet satisfied as to the *insane root proper* of our great dramatist, but when it is asked, If the *Atropa Belladonna* is not, what is? we must look through all the herbals of Shakespeare's time to answer the question. We might conjecture that the plant referred to by him as having the property described was the Black Henbane, *Hyoscyamus niger*, the root of which has been known to produce, when eaten, temporary insanity and delirium. Others might say it was the *Œnanthe crocata*, Water Hemlock, the roots of which have been eaten by mistake, and produced similar effects. Is there any old work on plants which tells us that the Deadly Nightshade produces any effect *short of death*, or, in fact, insanity?

H. B.

If your readers are not going to sleep over this subject, or getting crazy with the repetition of it, I must add a line or two referring to the following, which I find in Greene's 'Never too late,' 1616. "You gazed against the sun, and so blemished your sight, or else you have eaten of the *roots of Hemlock, that makes men's eyes conceit unseen objects.*"

I should be glad to know from what source the dramatist derived his information. I cannot find any work which describes Hemlock to have this property.

S. B.

Specific Names, etc.

"Some botanists write *ericæfolia*, *salicisfolia*, *linguæformis*, etc., instead of following the analogy of the Latin in forming adjectives with an *i*: as *palmifer* from *palma*, *-æ*; *baccifer*, from *bacca*, *-æ*; *barbifer*, from *barba*, *-æ*."—*Smith's Introduction to Botany*, 307, *note*.

Therefore *Erythræa linariifolia* is more correct than *linariæfolia*. Having by an oversight misled your readers on this point, it is hoped that you will insert this in the 'Phytologist.'

B.

Extract from Correspondence.

A fortnight ago I stumbled upon a "shoddy heap," on which I gathered several rare plants, as *Cynodon dactylon*, *Gastridium lendigerum?*, *Solanum nigrum*, *Herniaria ciliata*, *Amaranthus retroflexus*, etc., and a *Medicago* of which I have no description, with linear-oblong toothed opposite leaves. I will forward specimens in course.

C. S. Hobkirk.

('Phytologist,' vol. iii. p. 19.)—*Gladiolus imbricatus.*—What are the other registered stations for the above plant?

Errata, etc., in Article on Perth Plants.

('Phytologist,' No. 46, N.S. p. 33.)

The reader is requested to make the following alterations and additions:—Page 39, *Mercurialis annuus:* cancel *annuus* and the interrogative mark. Page 41, *Polygonum viviparum:* cancel *viviparum,* and insert *Hydropiper.*

Insert in their proper places in the list the following plants:—*Empetrum nigrum:* Birnam Hill. *Genista anglica:* Methven Bog (margin). *Ornithopus perpusillus:* Craigie Moor, etc. **Polygonum viviparum:* Moor of Durdie. **Stachys Betonica:* Glen Farg, Ochil Hills. *Trifolium hybridum:* occasionally about borders of fields; an escape from cultivation. *Vaccinium Oxycoccus:* Methven Bog, abundant. Cancel *Heleocharis cæspitosus* as being only an antiquated synonym of *Scirpus cæspitosus.* John Sim.

Large Rush.

A specimen of *Juncus effusus* has arrived from St. Alban's. Its length is just 4 feet 10½ inches. When fresh it was probably a little longer. Has any reader observed a taller? W.

In looking over my duplicates collected during the year, I find amongst others the following rare plants:—*Narcissus Pseudo-Narcissus, Vinca minor, Polypodium calcareum, Corydalis lutea, Linaria repens, Digitaria sanguinalis,* and *Setaria viridis,* and also a few of *Medicago denticulata, M. sativa, Polypogon monspeliensis,* and *Phalaris paradoxa,* any of which, together with a list of other duplicates, I shall be glad to forward to any botanist requiring them, in exchange for other rare British plants. W. B. Ingle.

4, *Commercial Street, Huddersfield.*

Culverkey.

I find in Walton's 'Angler' a flower called by this name. On referring to Webster's Dictionary I find the following:—"Culverkey, a *plant* or *flower.*" Very unsatisfactory. Can none of your readers inform me what is the flower alluded to by Walton? S. B.

List of Trees on which the Mistletoe grows, by Willisel.—Oak, Ash, Lime, Hazel, Willow, White Beam, Purging Thorn, Quicken-tree, Apple-tree, Crab-tree, White Thorn.

Communications have been received from

A. G. More, F.L.S.; J. S. M.; Dr. Holmes; C. C. Babington, F.R.S.; Rev. E. Cole; M. Crepin; Scraps; J. F. Robinson; George Hunt; John Sim; H. S. Fisher; W. P.; Oswestry; Rev. W. W. How; S. B.

BOOKS RECEIVED FOR REVIEW.

Natural History Review.—The Critic.—The Friend, etc.

ON THE SITUATION OF RAPHIDES.

The calcareous concretions in the cells of plants known by the names of *raphides* and *cystoliths*, afford very interesting objects to the microscopist. The former are to be found in the cells of most plants, and are particularly abundant in the Cactus tribe; the latter are most plentiful in the *Urticaceæ* and the *Acanthaceæ*. Some discussion has taken place as to the situation in which the raphides are found. There is no doubt that they occur in all parts of the plant, but the point in dispute is whether they are always situated in cells, or whether they occur also in the intercellular passages. Raspail has stated that they are to be found in the intercellular passages, but Mr. Quekett, in his valuable lectures on Histology, asserts that Raspail is in error, and that the raphides are always in the interior of cells. This statement of Mr. Quekett is adopted by Dr. Carpenter in his book on the microscope. Mr. Henfrey, in the 'Micrographic Dictionary,' however, says:—"They (raphides) are usually found only in the interior of the cavities of cells, but in some cases they occur in the intercellular cavities, perhaps, however, accidentally." An instance has come under my own observation in which these bodies were undoubtedly situated in the intercellular cavities, and in which I can see no reason for supposing their occurrence in that situation to be accidental. I found, in a shallow part of the Thames, near Weybridge, a stem of *Myriophyllum* (probably *Myriophyllum verticillatum*), which, being covered with a minute *Alga*, I took home, wishing to examine the latter. Upon making thin transverse sections of the stem, and placing them under the microscope, I observed that the intercellular cavities contained an abundance of stellate raphides, such as are shown in the sketch on p. 98. The tissue of the *Myriophyllum* stem consisted of a central cylinder of very small, delicate cells; the outer layer consisted of much larger cells; and the central cylinder and the outer layer were united by radii or *spokes*, each formed of a single row of oblong cells, the whole section thus presenting exactly the appearance of a wheel. The sketch shows a segment of one of these wheels, and it will be seen by referring to it that the intercellular cavities are very large, and that the raphides are situated in these cavities, and rest upon the spokes of the wheel. It will be seen that not

one of the cells themselves contains any trace of raphides, the latter being entirely confined to the intercellular passages. I kept the stem of the *Myriophyllum* in water until it became quite decayed, and I observed that as the stem rotted, the number of raphides increased enormously. What the connection may be between the progress of decay and the increase of the number of these bodies, I am unable to suggest, and can only record the fact. The large figure represents a segment of a transverse section of the *Myriophyllum* stem magnified 50 diameters, and the small represent some detached raphides magnified 220 diameters. I may add, that in examining raphides, or in searching for them in the tissues of plants, polarized light may be advantageously employed. If any readers of the 'Phytologist' should wish for more information as to raphides, they should consult Mr. Quekett's 'Lectures on Histology' above referred to; and with regard to cystoliths there is a very interesting paper by M. Weddell, accompanied by figures, in the fourth series of the 'Annales des Sciences Naturelles,' vol. ii. p. 267. F. C.

SORB-TREE.

Pyrus domestica. *By* John Lloyd.

In the 'Phytologist' for June, 1856, I offered some observations on the Sorb-tree of Wyre Forest, and founded my objections to its introduction upon the assumption that no one could have had an adequate motive for taking so much trouble.

In the 'Phytologist' for December, 1858, is an extract from the 'Worcestershire Journal,' giving an account of a meeting of the Worcestershire Naturalists' Field-Club, held under the said old tree, where Mr. Edwin Lees gave a sketch of its history, and, amongst other things, asserted that for centuries it had been re-

garded with the same superstitious regard that in Scotland was attached to the Mountain Ash or Rowan-tree.

Here then we have a motive, and a very strong one. When Edward III. held the Duchy of Aquitaine, he was attended by his nobles with their retainers; probably many a Worcestershire man was there; and if we take into consideration the fact that at that time, and even at a later date, witchcraft was believed in by all, from the prince to the peasant, and if they observed that this tree was made use of in France as an antidote to it, some of them would very probably be anxious to take such a treasure to their native land, and would spare no pains in accomplishing what they thought so desirable an object.

I do not think that the retainers of a noble would find the difficulties insurmountable in bringing trees of this description for so long a journey, if they were small ones; but I still think that a recluse would, unless in the shape of a staff, afterwards stuck into the earth, as Joseph of Arimathea is said to have done by the Glastonbury Thorn.

Perhaps the readers of the 'Phytologist' may think that they have had enough of the old Sorb, but being under a somewhat different impression upon the subject to what I was in 1856, I trust that you will give me the opportunity of correcting myself.

BRITISH FERNS ABOUT WARRINGTON.

By James F. Robinson.

Warrington, considering its geological formation (not being limestone), is remarkably rich in the Cryptogamic portion of the Vegetable Kingdom, known as Ferns, and may rank next to Settle, in Yorkshire, which certainly is the richest locality in all England. Woolston, which lies to the east of the town, is very low, boggy land, where such Ferns as the *Osmunda* delight to flourish. Appleton, on the contrary, is to the south, and very hilly; this certainly is the best botanizing ground, and where we may expect to find all the rarer varieties and species. It comprises within a very small radius about twenty species, and more than thirty species and varieties, viz.:—

Polypodiaceæ.

Polypodium vulgare. Common about Burton Wood.

Polypodium Dryopteris. On the top of Appleton Dingle, but not plentiful.

Aspidium lobatum. Banks, etc., Burton Wood.—The *A. aculeatum* is not really distinct from this species: the more I see of them, the more am I convinced that it is nothing more than a variety.

Aspidium angulare. Bank, Appleton, but not plentiful.

Aspidium Oreopteris. Appleton and Penketh; abundant.

Aspidium Thelypteris. Bog near Over.

Aspidium Filix-mas. Abundant about Warrington.

Aspidium spinulosum. On Woolston Moss a very slender var. of this Fern is to be found, very like *Cystopteris fragilis;* but of course the common variety known as *A. dilatatum* is very common.

Asplenium Ruta-muraria. Wall, Lutchford and Grappenhall Bridge; plentiful.

Asplenium Trichomanes. Wall, Paddington; not common.

Asplenium marinum. Winwick stone-quarry.—This is the var. that is so particularly noticed in the 'Nature-printed Ferns.' It is peculiar on account of its being so far inland. The chief distinction between this and the common form is, this has the pinna crenate, and a larger frond. It is more common on Overton Hills.

Asplenium Adiantum-nigrum. Winwick; very common at Frodsham, in walls, etc.

Asplenium Filix-fœmina. Abundant about Warrington.—The form mentioned in the 'British Flora' as *A. latifolium,* grows in Appleton Dingle.

Scolopendrium vulgare. Common, also the peculiar trifid, bifid, and crenate abnormal forms, at Appleton.

Pteris aquilina. Abundant.

Blechnum boreale. Woolston, Penketh, etc., but not common in any locality about Warrington.

Osmundaceæ.

Osmunda regalis. Ditch, Orford, and bank, Burton Wood, and on Woolston Moss; plentiful.

Ophioglossaceæ.

Ophioglossum vulgatum. Plentiful by the river Mersey, at Sankey, and Gate Wharf.

VISIT TO DUNKELD WOODS AND BIRNAM HILL.

By John Sim.

In August, 1856, I first visited Dunkeld Woods and Birnam Hill, in search of rare plants. The woods around Dunkeld being part of the Duke of Athol's domains are, in the literal sense, forbidden ground: not so Birnam Hill; this, being the property of another, is free of access to all visitors. I took the train from Perth to Birnam (three-quarters of a mile south from Dunkeld), and proceeded along the road (leaving the wood on my left) until I reached the junction of the Braan with the Tay, which is about half a mile north-west of Dunkeld town. In returning I discovered in the plantation the following plants:—*Cystopteris fragilis, Melampyrum alpinum, Circæa alpina, Geranium lucidum, Spiræa salicifolia?* and *Digitalis purpurea,* the latter in abundance: this plant, though generally and abundantly distributed throughout the northern parts of Aberdeenshire, is very local and rare in the immediate neighbourhood of Perth; the cause of this I am unable to determine. I soon arrived at the foot of Birnam Hill, and commenced a laborious ascent: this hill is wooded about halfway to the summit. On entering the plantation, near its foot, I gathered *Polypodium Phegopteris.* It is plentiful, as is also *Allosorus crispus,* among the rocky *débris* on the eastern slope of this mountain. On arriving at the other side of the plantation, by the side of a small mountain rill, I found a few plants of *Saxifraga aizoides,* the first I ever saw. A little further up I came upon a lovely carpet of Moss, composed of *Bartramia fontana* and *Dicranum squarrosum,* through which the water trickled in pellucid drops. Having reached the eastern summit, but not the highest, I sat myself down on its rocky eminence to rest my weary limbs and observe the extensive panorama of Nature around so grand and glorious. Looking westward my observation was limited, the mount on which I stood intercepting the view. Northward rose the huge Grampians, piled as it were one above another in endless confusion; eastward, as far as the eye could reach, was the spacious valley of Strathmore, bounded on the south by the wooded range of the Sidlaws, and on the north by the lofty mountains of Clova; close by, in the foreground, was the little town of Dunkeld, with its Gothic cathedral;

and a few miles beyond, the Loch of Cluny, containing many rare aquatic plants, obscurely seen by the intervention of wooded hills. Looking southward, the magnificent Tay was seen rolling silently along its crystal current, till it mingled its waters with those of the German Ocean, while at a distance of fourteen miles the fair city occupied a site on its right bank: beyond which rose the wooded hill of Moncrieff, with the long line of the Ochils, and the conspicuous "Lomonds" in the "Kingdom of Fife." Still further off might be detected the smoke of the Scottish metropolis; Arthur's Seat and the Pentland Hills were just perceptible, while the elevations of the Lammermoor and Moorfoot range died away in the utmost bounds of the visible horizon. I now retraced my steps to the terminus, and in an hour was safely in Perth.

I paid another visit to the northern side of this hill early in September, 1858, but instead of steering for its summit, as on the former occasion, kept traversing the margin of a small stream which afforded me a few rather rare plants. There *Corydalis claviculata* grew among the "briers and thorns," abundantly also on the borders of its tributary hills, *Saxifraga aizoides, Melica uniflora, Bartramia fontana,* and several subalpine Sedges and Willows.

Bridge End, Perth, 1859.

PEWSEY PLANTS.

Rare Plants of Pewsey Downs, etc., Wilts.

By the Rev. T. F. Ravenshaw.

Ranunculus fluitans. In the Avon, near Swan Bridge, Pewsey.
Clematis Vitalba. Foot of Martinsell Hill; frequent.
Adonis autumnalis. Cornfields, near Amesbury (*Mr. Alexander*).
Draba verna. Pewsey Downs.
Pastinaca sativa. About Pewsey.
Bupleurum rotundifolium. Near Amesbury (*Mr. Alexander*).
Bunium Bulbocastanum. Pewsey Downs.
Cnicus eriophorus. Pewsey Downs.
Cnicus acaulis. Pewsey Downs.
Carduus nutans. Pewsey Downs.
Spiræa Filipendula. Pewsey Downs.

**Medicago sativa.* Pewsey Downs.
Onobrychis sativa. Pewsey Downs.
Cichorium Intybus. Pewsey Downs.
Centaurea Cyanus. Cornfields.
Campanula glomerata. Pewsey Downs.
Campanula rotundifolia. Pewsey Downs.
Polemonium cæruleum. Water Meadows, between this and Maningford.
Agrimonia odorata. (*C. Steadman.*)
Thymus Serpyllum, Linn. (*C. Steadman.*)
Calamintha Acinos. Oare Hill.
Asperula Cynanchica. Pewsey Downs.
Thesium linophyllum. Everly Barrows.
Veronica Buxbaumii. Fields, Pewsey.
Colchicum autumnale. Fields, Pewsey.
Bryonia dioica. Frequent.
Sagittaria sagittifolia. Canal.
Alisma Plantago. Canal.
Myriophyllum spicatum. Canal.
Polygala vulgaris. Pewsey Downs and Martinsell Hill.
Saxifraga granulata. Pewsey Downs and Martinsell Hill.
**Anacharis Alsinastrum.* Ponds on Pewsey Downs.
Orchis Morio. Pewsey Downs.
Orchis mascula. Pewsey Downs.
Orchis maculata. Pewsey Downs and Stonehenge.
Orchis pyramidalis. Martinsell Hill, north-east side.
Gymnadenia Conopsea. Pewsey Downs.
Listera ovata. Canal-side, near Pewsey Wharf.
Orobanche minor. Fields about Pewsey and Milton.
Polypodium vulgare. Common.
Lastrea Filix-mas.
Polystichum aculeatum. Woodborough.
Polystichum angulare. About Pewsey.
Asplenium Ruta-muraria. Occasional.
Asplenium Adiantum-nigrum. Occasional.
Scolopendrium vulgare. Occasional.
Botrychium Lunaria. Pewsey Downs, in considerable quantity, but only in one place as far as I know.

Pewsey Rectory, February 7.

EXTRACTS FROM CORRESPONDENCE.

Hypnum speciosum, etc.

From J. B. Wood, M.D.

You will see I have found *Br. Marratii* again at Southport, in an entirely new locality, and six miles in an opposite direction to where it grew before. It occurs there in abundance, and does not fruit until late in November or early in December, as you will see by the examples sent. The place where it grows is locally known as the "Bulrush Stack," a sheet of water in a valley amongst the sand-hills, about three miles *south* of the town, and very near the sea, on the swampy margins of this lake, and also *B. calophyllum, B. Warneum* (fruiting at the same time), *Hypnum lycopodioides, H. polygamum, H. salebrosum. H. Elodes, Meesia uliginosa,* etc., are all found plentifully, and a visit to this place in May or June would be productive of a rich harvest of the above, most of which would be then found fruiting luxuriantly. I have also met with the very rare *H. speciosum,* but cannot exactly tell where I got it there, and have but very little of it: this is another addition to the very few stations known for this splendid and beautiful species. Doubtless it will be found again hereafter. There is however one discrepancy as regards the character of my plant, which I think is deserving of note. Mr. Wilson, in Bry. Britannica, emphatically says, no less than three times in his description, that it is *essentially synoicous;* and that by this circumstance it is distinguished from its congeners, some of which are very close allies, and with difficulty distinguished, from the intricacy of the features more especially identifying them. My Moss is unquestionably both *monoicous* and *synoicous.* In the first I examined, I found perigonia or male flowers to the number of five or six, before meeting with a single synoicous flower, and in it there were only *two archegonia,* and next to that a *perichætium,* where of course there were no antheridia. In other specimens the flowers were nearly all hermaphrodite or synoicous. That there are male flowers, as I have already stated, is unquestionable, and therefore, judging from the remarks in Br. Brit., it may probably be *H. remotifolium* of Greville, as the monoicous and synoicous inflorescence of this species, is said to be a

characteristic feature as separating it from *H. speciosum*. In no other respects however does the plant differ, either as to the characters ascribed to it, or from specimens which I have from Mr. Mitten and Mr. Carroll, at any rate so far as I can judge.

Are we then to trust to this character of the difference in the inflorescence, as one that is subject *to no variation*, and look upon it *as an infallible test* of specific indentity in all instances? Doubtless where such difference does exist, it would lead us, as experience has already sufficiently proved, to infer other organic and essential variations in structure, hitherto passed by unnoticed, or deemed to be of so trivial a character as not to be valued or taken into account in studying the relations of species to each other, and the almost insensible gradations they assume under different and varying circumstances, frequently giving rise to doubts and queries in the mind of the observer, of the most puzzling and perplexing character. I should feel much obliged either to you or any of your readers, if you could furnish me with an accurate description of *H. remotifolium*, and also with their views in regard to this peculiar and very interesting subject.

From the same.

Broughton, 26th Jan. 1859.

Since writing to you on the subject of *Hypnum speciosum*, Bridel, lately found at Southport, I have submitted to the inspection of my friend Mr. Wilson the specimens then gathered. He at once and without any hesitation admitted them to be identical with such as he himself had collected, as also with the Sussex and Irish examples before alluded to. It appears that those species, *naturally monoicous* or synoicous, are predisposed, though but rarely, to have an admixture of what I believe to be the reproductive organs, so that the circumstance of a species essentially or generally *monoicous*, or another whose character is to possess *synoicous* flowers, having in the one case an admixture of *synoicous* flowers, and in the other of *monoicous* organs, does not *necessarily* invalidate the rule as such. In either of these cases they then become what, for want of a better term, are known as *polygamous*. *H. polygamum*, for instance, is a species which will aptly illustrate my meaning. A person examining

this Moss, for the purpose of ascertaining the nature of its inflorescence, without great care and perseverance might very easily be led astray. Supposing the specimen under examination was a fertile one, he would not be long before he found near the base of the fruit-stalk a number of *perigonia,* clustered together by threes or fours, and near them he would find also *true perichætia,* so he would naturally conclude that the plant he was investigating was a truly *monoicous species,* which however it is not strictly, for on prosecuting the dissection he would meet, no doubt, with *synoicous* flowers, containing an admixture of both *antheridia* and *archegonia,* with their accompanying paraphyses. He thus finds that his plant bears out the description assigned to it, of being *polygamous,* that is, that *each* and *all* the kinds of inflorescence known, exist together on the same plant. Now this is exactly what occurred in the examples of *H. speciosum,* the only difference being as to the *relative number and disposition* of the kinds of flowers, the *perigonia* in this being *rarely found,* the *perichætia* or simple *female* flowers not at all unfrequent, the *synoicous* ones abundant. So far as that instance is of value, it proves the plant liable to aberration, and undoubtedly throws much uncertainty upon the distinguishing feature of *H. remotifolium* from *H. speciosum,* so far as the inflorescence is concerned. But Mr. Wilson says that he should have no difficulty in distinguishing the two, apart from this circumstance; but not having seen the former, I cannot offer any opinion about it. As another illustration of the occasional deviation in the mode of inflorescence, I may mention the very common *H. rutabulum,* in which, Mr. Wilson tells me, *synoicous* flowers are not unfrequently present. The plant is essentially a *monoicous* species, and this circumstance, with others, undoubtedly led to the discrimination and detection of its very near ally *H. rivulare,* with which it had long been confounded. In this latter the flowers are always *dioicous,* thus affording an excellent test of the value of these organs in assisting our diagnosis in the determination of closely allied species. As also tending to show still more the necessity of careful and unwearied attention, and of a persevering use of the microscope in investigating species, I may venture to name one or two incidents that have occurred to me very lately. A specimen of what was represented to be *Hypnum polygamum,* was sent to me lately by a friend; from its general aspect I felt some

doubt as to its being such, and on searching for the inflorescence, I could find nothing but *male flowers;* this led me to suspect, with the difference in the form of the leaf, that it was *H. chrysophyllum,* a *dioicous* species, and as the plants were all barren or males, there was necessarily no fruit. In another instance I received from a very valued friend a specimen named *H. polymorphum,* which on examination proved to be *H. chrysophyllum.* This was evidently an inadvertence or oversight, for if it had been carefully investigated, the presence of the nerve would have at once decided that it could not well be that species, which is *nerveless;* this character, with the *dioicous* inflorescence, would also have prevented its being mistaken for *H. polygamum,* the only other species, perhaps, with which it could be *confounded,* though I possess *H. stellatum* so named. These things should teach us all a useful lesson in pursuing practically the study of these most interesting and delightful plants, and forcibly illustrates the necessity of taking nothing for granted, or trusting to the general appearance they may present from their more obvious characters; the satisfaction and pleasure thus obtained is at all times most pleasing; moreover the peculiar characters of each individual are far more permanently fixed upon the mind, and not readily effaced from the memory. The facility it also gives in the recognition of species is of no mean value, and in my opinion amply requites us for all the time, labour, and trouble expended in their study, besides acquiring an amount of real practical knowledge, to be obtained by no other mode with which I am acquainted.

Breidden Hill.

The following sketch of this famous botanical station is extracted from a report of last year's excursions, read at the annual meeting of the Oswestry and Welshpool Naturalists' Field Club and Archæological Society, by the Secretary, the Rev. W. W. How. (We are not at all sure that the *Veronica* mentioned below should not be *hybrida* instead of *spicata.*)

"To the botanist the Breidden is an unrivalled mine of wealth. As he scrambles up the almost precipitous face of the Black Rock, above the little over-shadowed village of Criggion, he finds his feet pillowed in a cushion of Saxifrage, or crushing an exquisite

bed of the delicate emerald fronds of the Oak-fern, contrasting in their tender transparent greenness with the grey, lichened, mossy, rugged stones and rocks among which their straggling roots are so firmly anchored. Then, as he clings for support to some tuft of herbage above, he suddenly finds in his hand a bunch of leaves which he has not seen before, and which he soon finds out belong to *the* Breidden plant *Potentilla rupestris,* unknown elsewhere, but happily plentiful here, and growing where it is not likely to suffer greatly from the ravages of unprincipled collectors. And then, as ledge after ledge of rock comes into sight in his upward scramble, he rejoices in the exquisite contrast of two friends, often found together, and though each beautiful in itself yet each lending a new beauty to the other, the tufts and masses of *Geranium sanguineum,* with its large, graceful, drooping crimson flowers, and the stiff, upright spikes of the dense cobalt-blue flowerets of the *Veronica spicata.* Here and there too are seen standing out stiffly from the rock-face three or four stems of the rare *Lychnis Viscaria,* crowned with its bunches of bright pink flowers. While over numberless little juts and ledges on every side hang the gay trailers of Rock-rose and *Sedum,* with their yellow flowers, or sometimes the larger and more beautiful flower-stems of the great ruddy-purple *Sedum Telephium,* or the green leafy foliage of the St. John's-wort (*Hypericum Androsæmum*). And there, to crown all, in that damp, over-hanging cliff near the summit, see running all along, that exceedingly lovely fringe—what delicately sculptured string-course in richest work of art had ever a tithe of its grace?—of the mingled fronds of the *Cystopteris fragilis* and the *Asplenium Trichomanes.* All is beautiful, and all beautiful with that pecular type of beauty belonging only to alpine regions, where we have ever side by side, in a union most affecting to the lover of beauty, both the glory and the grandeur of the vaster works of the Creator, in the splendid outlines and magnificent grouping of the mighty hills themselves, and also a delicate perfection of each minutest object that meets our gaze, so that not a spray, not a leaflet, not a little starry flower, but seems in itself most lovely, and also just in that spot where its loveliness is most perfect. I do not know whether others feel as I do, but I can hardly imagine any one with a heart open to the glory of creation, and a quick sense of beauty in the lesser works of God

around him, not, at times at least, feeling an overwhelming sense of God's greatness and goodness, when encircled by the unutterable splendour and loveliness of mountain scenery. How truly, as well as nobly, does Coleridge sing, when he says,—

> " 'For all that meets the bodily sense I deem
> Symbolical, one mighty alphabet
> For infant minds; and we in the low world,
> Placed with our backs to bright reality,
> That we may learn, with young unwounded ken,
> The substance from its shadow.' "

Mountain-Ash Berries.

I see in the 'Phytologist' of the month of October, 1858, a statement about poisoning with the fruit of *Pyrus Aucuparia*, or Rowan-tree, and the query is put, Are the Rowans poisonous? I, as one who have a pretty fair acquaintance with fruits, would unhesitatingly answer, No;—at any rate in the properly understood sense of the term. In the days of my boyhood I have eaten them in hundreds, and never sustained the least inconvenience, further than occasionally a slight colic after an over-feed. They are eaten here by children, rich and poor, without any ill consequences whatever. Few or any fruits belonging to plants of the *Rosaceæ*, or Rose family, contain deleterious properties, except—in some, perhaps, as cherries—Hydrocyanic Acid in small quantity. If the medical gentleman and jury had been a little better acquainted with the properties of the Natural Orders of British plants, I doubt not but in the case refered to they would have come to a very different conclusion.

John Sim.

Pyrus Aucuparia, (Sorbus Aucuparia.)

The remarks in the 'Phytologist' of February last, on the fruit of this plant, one would conclude had set the question at rest, viz. *that they are not poisonous;* but when gentlemen "learned in medicine," and distinguished by M.D. and LL.B., tell us to the contrary, what are we to say? We may be told by these gentlemen that botanists are not expected to know the *properties of plants,* but that the M.D.'s are, and do,—more particularly of those used in medicine, whether poisonous or not.

The jury, in the Armley poisoning case, relied on Mr. Ricard the surgeon's evidence, and returned a verdict—"That the deceased boy had been poisoned by eating *Mountain-Ash berries.*" Dr. Edward Smith, in his treatise on Botany, published in 'Orr's Circle of the Sciences,' under Class 12, *Icosandria,* says, "These plants, with the exception of the *Pyrus Aucuparia,* or Mountain Ash, are edible." Dr. Smith might, with all his "appliances and means to boot," have taken the trouble, or the pleasure, of ascertaining the fact before sending his sheets to the press, but so it is. Sometimes doctors, like lawyers, write and talk to show that they know more about these subjects than others. Some years ago, a celebrated knight of the legal profession acted as counsel for a prisoner on trial for the murder of a *woman at Slough.* The evidence against him went to prove that she had been poisoned with prussic acid, but the learned "knight of the black silk robe" produced witnesses to support his argument that *the woman died from the poison in apple-pips,* which were found in her stomach; but notwithstanding the eloquence of the learned knight, the jury, knowing *what apple-pips were* better than the advocate, rejected this evidence, and the prisoner was convicted of wilful murder, and hanged at Aylesbury.

In Miller's Dictionary there is a full account of this plant, its uses and properties, and he tells us *that the berries dried and reduced to powder make wholesome bread;* infused in water they make an acid liquor somewhat like perry, which is drunk by the poorer people in Wales and in the island of Jura; the juice of them is used as an acid for punch.

In Germany the fowlers bait springes, suspended in the woods, with these berries, to entice the redwings and fieldfares, whence the trivial name of *Aucuparia.*

The superstitious uses of this plant have been before alluded to in the 'Phytologist,' but I have not heard from any of its contributors that it is found *growing near Druids' temples,* as Mr. Lightfoot informs us, nor in churchyards, as related by Mr. Evelyn. S. B.

Trifolium elegans. By the Rev. E. Cole.

Barnston, Feb. 7, 1859.

Sir,—I take the liberty to enclose some specimens of a Clover

which I have noticed the two last years growing plentifully in a field in this neighbourhood; and I should be much obliged if the Editor of the 'Phytologist' would kindly inform me to what species of *Trifolium* it is to be referred, as it does not appear to me to agree with any of those described in the ordinary works on English Botany. Its flowers are of a pale rose-colour, and before they are fully expanded, are reflexed in the same way as I understand those of *T. resupinatum* to be. It extends over almost the whole of one field, and if it should prove a foreigner, has probably been introduced with seed, as I do not observe it in any neighbouring fields. The field has been scarified and burnt this autumn before ploughing, so I cannot say if it will appear again.

The specimens were gathered, the larger ones in September, 1857, after a crop of barley had been reaped, the smaller ones in September, 1858, the field having been "fed off" with sheep throughout the summer.*

Crocus vernus.

Barnston Elton, Nottingham, March 3, 1859.

I sent off by post yesterday a small tin with a number of the Nottingham *Crocus vernus*, which I hope you have received. Owing to the forwardness of the season, they are now in full bloom, and the meadows are covered with them in the greatest profusion. In greater or less quantities, they extend over a space, I should say, of more than a hundred acres; and I cannot think that any one who saw them in this locality would doubt their being truly wild. In the season, you may see them lying about in Nottingham streets in all directions, as all the children in the place turn out and gather them. The white one I sent was the only one I have seen. R. E. C.

Sisymbrium pannonicum.

By H. Fisher, Liverpool.

About the month of May, 1858, I first observed a plant, then

* The specimens were duly received, and it is conjectured that they may belong to the species *T. elegans*, which has only recently been observed at Wandsworth, near the Steam-boat Pier.—Ed.

new to me, growing for about a hundred yards along the railway-side at Crosby.

I gathered specimens, which after a careful examination I found to be *Sisymbrium pannonicum;* and Mr. Babington, with his uniform kindness, informed me that the name was correct: he says that it was before discovered in the neighbourhood of Wandsworth.

The plant at Crosby was in great abundance, and I afterwards found had existed there for some time; for the Rev. H. Higgins had specimens (though not named) found some years since at the same place.

In May the plants were just coming into flower, and were very beautiful, with their finely pinnate leaves set round an erect and elegant stem of about two feet high. The whole plants were of a glaucous hue, slightly truncated at the summit, and their branches, when the plants became mature, and the seed-vessels began to form, became very divaricate, spreading and interlacing one with the other in a remarkable manner, so that a plant formerly only a few inches across the top, became as many feet in diameter. Among our British species it is nearest allied to *S. Sophia,* to which it has some slight resemblance. I am puzzled to account for its introduction, but think it may have been introduced among seeds sown in the station-master's garden.*

Seeds of Verbascum Lychnitis *vegetating after remaining in a dormant state for a long period.*

In 1850, when about preparing a list of the Flowering Plants of this neighbourhood for a correspondent, I found a *Verbascum* in seed, and being unable to determine the species in that state, I sent the seed to my correspondent, who sowed it in his garden. After the lapse of *five* years, several plants of *Verbascum Lychnitis* made their appearance, and could not be accounted for, except from the supposition that my seed was that of *Verbascum Lychnitis.* This last summer (1858) I visited the locality where the *Verbascum* grew, and had the satisfaction of finding it to be *Verbascum Lychnitis,* just coming into bloom,

* The plant above observed at Liverpool has been plentiful at Wandsworth during the last seven or eight years.—Ed.

thus accounting for its occurrence in my correspondent's garden, who, though quite satisfied of this fact, is at a loss to discover the favourable circumstances which stimulated the vegetation of the seeds after remaining in a dormant state so many years.

I. Gifford.

SPORIDIA OF FUNGI.

On the Sporidia of several Ascomycetous Fungi.

By Archibald Jerdon.

In Dr. Greville's beautiful work, 'Scottish Cryptogamic Flora,' the sporidia of several Fungi of the Order *Ascomycetes* are not very correctly represented, and I am induced to mention two or three instances, as I have paid a good deal of attention to Fungi of late. It is no disparagement to the author of that admirable work that in some cases he has failed to depict aright the internal structure of some Fungi, for in these plants microscopic examination is often confused and unsatisfactory, unless they are *exactly* in a state of maturity, in which state it is sometimes difficult to find them.

In his figure of *Xyloma acerinum* (now *Rhytisma acerinum*), the common Fungus which appears in the form of black spots on almost every Sycamore-leaf, Greville represents and describes the sporidia as "very minute and oval." But if the Fungus is examined when the fruit is in perfection, it will be found that they are very long, of a cylindrical or, rather, filiform shape, and acuminate at the extremities. This Fungus does not generally perfect its fruit till the following spring, and I have this year (1858) found it in full perfection in the month of May, with its discs open, and discharging its sporidia in clouds.

Another instance occurs in the figure of *Sphæria typhina* (*Dothidea typhina*, of Hooker's English Flora), the curious orange-coloured production which is found in summer, investing the culms of various Grasses with a covering of from two to three inches in length. In this, I think, Dr. G. has represented the sporidia as *asci*. The latter will be found to be somewhat clavate (as these bodies generally are), and to be filled with elon-

gated, somewhat acuminate sporidia, which sometimes protrude at the top, imparting a spiculose appearance to them.

A third instance is that of *Sphæria acuta*, the sporidia of which are delineated as "linear and 4–5-septate," whereas they are very minute, oblong, and *simple* (not septate). Probably Dr. G. mistook the sporidia of *Sphæria coniformis*, which often occurs on Nettle-stems in company with *S. acuta*, for those of the latter plant.

In describing *Spathularia flavida*,—the little, yellow, battledore-shaped Fungus found in Pine groves,—Dr. Greville states that he has not seen the sporidia of that plant. On examination, I make them to be very similar to those of *Rhytisma acerinum*, but not quite so long, and often acuminate at one extremity only. Another Fungus with similar sporidia, is *Cenangium quercinum*, which is common on Oak-twigs. In Hooker's 'English Flora' the sporidia are not described, but I find them to be long, filiform, and somewhat acuminate.

In all these forms of elongated sporidia, one extremity is sometimes curved, which probably arises from the sporidium having been situated at the apex of the ascus.

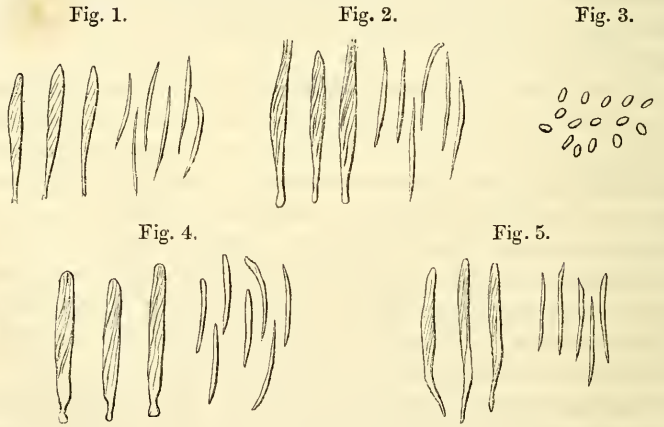


Fig. 1. Asci and sporidia of *Rhytisma acerinum*. Fig. 2. Asci and sporidia of *Sphæria typhina*. Fig. 3. Sporidia of *Sphæria acuta*. Fig. 4. Asci and sporidia of *Spathularia flavida*. Fig. 5. Asci and sporidia of *Cerangium quercinum*.

Mossburnford, Jedburgh, N.B.

"THORNS" NOT "THISTLES."

By Rev. W. Hind.

Your correspondent S. B. asks me how Thorns (such as *Prunus spinosa*) could spring up in one season so as to choke the good seed. I can only answer, I doubt if they could. Nor is it needful that they should, to suit the requirements of the Parable of the Sower. The parable is related by three of the Evangelists, with a slight variety of expression in each case, as regards the point before us, but with the most perfect agreement of meaning. St. Matthew says, some fell *ἐπὶ τὰς ἀκάνθας*,—'among thorns,' or rather, '*on the* thorns;' St. Mark, *εἰς τὰς ἀκάνθας*,—'among' or '*into the* thorns;' St. Luke, *ἐν μέσῳ τῶν ἀκανθῶν*,—'among' or '*in midst of the* thorns.' The language in each case evidently implies that the thorns were already in existence, and the ground preoccupied with them before the seed fell; and that consequently the increase of the thorns, which were already rooted in the soil, gave no opportunity for the grain sown among them to come to perfection. I trust this explanation will be deemed sufficient to show that the Translators of our Bible were perfectly justified in retaining the usual signification of the term in the original, instead of supplying its place by an unusual if not wholly unauthorized meaning. It has the further recommendation of being in strict keeping with the other figures of the parable, as the *wayside* and *stony ground* were then actually in being when the seed was sown; and so in like manner *the thorns*. It gives greater force of spiritual application; telling us that if the heart be preoccupied with worldly cares, the Gospel cannot flourish there; and that it is necessary that the love of the world, and earthly anxieties, should first be rooted up, to make room for the good seed to grow and flourish. While writing on this subject, I may remark that I do not suppose that any particular plant is pointed at in the parable, but that the reference is to thorny plants in general, be they of what genus or species they may; just as all manner of worldly cares are to be understood in the spiritual application. Were there any difficulty in understanding the parable as at present translated (which I maintain there is not), I doubt much whether the translation '*thistles*' would much tend to simplify it. Thistles as a rule are not (at

least in England) annuals, but biennials or perennials, with one or two rather questionable exceptions, and these last not denizens of cornfields. It would therefore require the thistles to be in previous possession of the soil, just as much as the thorns, to suit the language of the parable. Thorns and thistles are associated, in the authorized version of the Scriptures, in Gen. iii. 18, Hos. x. 8, and Matt. vii. 16; and in each case 'thorn' is given as the representative of the Greek *ἄκανθα*, and 'thistle' of *τρίβολος*. To these might be added Heb. vi. 8, where our translation has 'thorns and briers,' instead of the more usual 'thorns and thistles.' I am not aware of more than one place in which any lexicographer has proposed to translate *ἄκανθα* by '*thistle:*' but it admits of doubt whether such translation does not destroy the force of the original. Those who are curious may look at lines 328–9 of the fifth book of Homer's Odyssey, and judge for themselves.

DORONICUM PARDALIANCHES.

This plant was first observed four years ago, growing on a shaded bank in the King's Wood, near the site of a rustic building which formerly existed, called the Hermitage. There was but one solitary cluster, of about two yards in diameter, and as a specimen it scarcely reached the general average. Till the spring of 1858 it was not noticed elsewhere; but one day of the last week in May, another group was discovered on the margin of a gravel walk in the same wood, that skirts the lake, which in point of excellence far exceeded what might be termed the original plant, the flower-stalks averaging about three feet six inches in height, and literally covered with bloom. This superiority was doubtless the result of its more favourable position, being open to the lake and the rays of the morning sun; in the former case both these advantages were denied by the density of the forest trees by which it was surrounded. The distance in a direct line from the two habitats is about three hundred yards, and the question to be solved is the manner of its introduction.

Thirty years ago, I am told, the plant was grown in great quantities in the gardens here, being confined, as a rule, to the marginal beds of shrubberies, which its distinctive, showy character would assist much in enlivening. From that time it has

gradually sunk in estimation, and is now to be seen only in a few small isolated groups, struggling into light through dense masses of hardy and other shrubs; the Leopard's-bane is therefore a rare plant in this district, either in a cultivated or natural state, but it deserves protection, and I am happy to say is likely for the future to receive it.

The woods here are very beautiful, and intersected by gravel walks, whose margins are planted with vast quantities of Rhododendrons, Holly, and similar shrubs. Many of these plants have been taken from the gardens, in places required to be thinned, and to this source I attribute the introduction of the *D. Pardalianches* to the woods. The specimens of this year's finding belong undoubtedly to this cause, as they spread out to a diameter of about three yards, the centre being occupied by a Holly-bush, planted about two years since, which came from the gardens; and although not noticed before this spring, from the extent and flourishing condition of the plant it must have existed there some time previously. The origin of the other is not so clear, as it is quite an isolated group; but now that it is established, every care should be taken to preserve and extend its growth, to illustrate more fully the "beautiful contrast afforded by its bright-yellow starry flowers, with the purple Foxglove (*Digitalis purpurea*), with which the woods and hills abound." LYNX.

Trentham, July 15.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Monday, the 9th of February. Mr. J. G. Baker announced the receipt of packets from Messrs. Atwood, Messrs. Crotch, Plower, Irvine, Linnell and More, and that the distribution of specimens for the season was in progress. He exhibited an example of *Glyceria loliacea*, collected by the Rev. J. Addison on the coast in the vicinity of Whitehaven, the species having been previously registered as a plant of the Lake province, upon doubtful authority only.

Mr. J. H. Davies communicated a notice of the discovery of

Hypnum speciosum by Mr. Nowell, in the vicinity of Southport, in Lancashire, and mentioned the following species as having been noticed recently by himself in the neighbourhood of Glenmore, Co. Antrim, viz.: *Tortula aloides, revoluta,* and *convoluta, Bryum atro-purpureum, cernuum,* and *intermedium, Physcomitrium polyphyllum, Racomitrium aciculare,* and *Hypnum populeum.*

Reviews.

Carpenter's Vegetable Physiology. Edited by Dr. LANKESTER. New Edition. London: H. G. Bohn.

This work on Vegetable Physiology, by the most eminent physiologist of the day, is not a rival to the excellent introductory works of Dr. Lindley, Professor Balfour, Jussieu's Cours Elémentaire, Schleiden's profound works, etc. etc.: it is a totally distinct and different treatise.

It is divided into two parts:—1. Vegetable Physiology. 2. Botany, structural or organic, and systematic.

Some might question the fitness of the arrangement, and maintain that the structure or anatomy of vegetation should precede the description of the functions, habits, and characteristics of their vital agencies. But, as before said, this is a work *sui generis,* and only *one* of a series descriptive of the laws of living organisms.

The author, in his preface, states that the physiology of man cannot be understood unless viewed in connection with that of the humbler orders of the animate, sentient creation; so the physiology of animals cannot be successfully studied, except in connection with vegetable physiology.

The editor of this new edition has modified, we presume, some of the author's views about circulation, descent of the sap, etc. He has dealt tenderly with the subject; and his own views on these mysterious points are not very prominently put forward.

The author's distinctive characters, both of inorganic and organic objects, are all derived from his favourite theme, Physiology. The various accidents of form, dimensions, or extension and duration, do not figure among his distinctive characters. These external and obvious marks are fully as conclusive, and far more easily apprehended than the more recondite physiological facts.

Animate objects generally are endowed with figures or shapes that all more or less approach the circular, the cylindrical, the spherical form, or some modification of rounded bodies. In inanimate or inorganized objects the bounding lines are usually straight, and the ends angular. They assume the prismatic, the cubicular, the rectangular, or some modification of regular mathematical figures. Rounded organs characterize animate beings, angular inanimate. Extension and duration afford as certain marks of distinction between the two kingdoms of animate and inanimate beings, as their physiology or even anatomy can supply. We observe the beginning and the end of animate beings. There is a time before they existed, and there will be time when they exist no longer in their organized condition. This cannot be predicated of rocks, or of mountains, minerals, etc. "Where wast thou," Job was asked, "when I laid the foundations of the earth?" If the question were now, When did the Orange-tree which is on the table before me begin its life? it may be replied, Seven years ago I planted an orange-pip, and now it is about a yard high; and it probably will exist, if preserved from accidents, for many generations. But, as Dean Swift said,—and anybody might say the same,—"Nothing lasts for ever;" Orange-trees, sturdy Oaks, and long-lived Yews will end their lives some distant day. There are however myriads of things, both animal and vegetable,-that do not live during the space of a year; some have a duration of a few months, and some terminate their existence after enjoying a brief life of a space of only some hours. This certainly is not the case with the inanimate creation, which appears to us to be indestructible. Its condition, like that of plants and animals, may be changed, but its constituents still exist. Extension also characterizes both kingdoms. Animate beings are of limited extent, as well as limited duration; but what limits can we assign to the air, the water, the earth, the rocks, or even the diamonds and precious stones?

The distinction between plants and animals is rather confounded, than established on purely physiological principles; but is there anybody that does not know a toad from a toad-stool? Irritability and locomotion, on which so much stress is laid, are not general laws of vegetation: they are exceptions. Zoophytes, diatoms, etc., are liable to be confounded, because some of them are so minute as almost to baffle the microscopist. These are

only exceptions to the general law. The physiologist discards the character of sensation, because some plants appear sensitive to touch, and even to atmospheric influences, and to light and heat. But the great argument that volition and sensation characterize animals, may be satisfactorily proved by *à priori* arguments. The Creator has provided animals with protective defences against injury, and often with the means of retaliation; not seldom with celerity in escaping from enemies: plants cannot be said to possess these, and therefore it is inferred that they have no occasion for them, *i. e.* are incapable of feeling or suffering. The chemist knows flesh from vegetable fibre or cellular tissue by chemical tests. A common person will recognize the the savour or smell of animal substance if submitted to fire, as being different from that of vegetable tissue.

The alimentary substances on which the respective individuals of both kingdoms exist, are entirely dissimilar, as are likewise the organs of digestion and assimilation. Much must remain unsaid, because space forbids. We should like to hear from either of the learned Doctors who indorse the facts illustrative of vegetable physiology, whether the carnivorous qualities of *Drosera* and *Dionæa* (pages 204 and 139) are positively ascertained, or whether they be only *on-dits* or hearsays. Where is there a record of satisfactory experiments confirmatory of the facts therein stated?

Is it a claptrap, not for flies, but for another class, that might, with more ill-nature than courtesy, be called by a name which, good manners say, is neither fit for ears nor eyes polite.

There is another fact which is probably assumed, but, if we are wrong in our assumption, we shall be glad to receive due correction. In page 344 it is stated that the natural form of the turnip and radish is completely changed by cultivation. What is the natural form of the radish and turnip? Again, if "the seeds of any variety of either of these species be raised in a poor soil, they will produce the tough stringy roots characteristic of the original wild plants." Is this true, or is it one of our time-honoured, traditionary hearsays? Surely this is capable of some proof. Who has submitted it to the test of experiment, and what have been the results?

The following fact is illustrative of the value of the Natural System, as it is called. "During Lord Anson's voyage round

the world, a very large portion of his crew either lost their lives, or were rendered unfit for service, by the scurvy; and although new and unknown lands, teeming with luxurious vegetation, were constantly being discovered, the dread which the surgeon entertained of the men being poisoned was so great, that he would often allow them to use no other kind of fresh vegetable food than grass. If he had been acquainted with the simple fact, that none of the *Cruciferæ* are deleterious, and that all possess (in a greater or less degree) those properties which render them more valuable than any ordinary medicines in the treatment of this disease, he might have been able to restore many to health, by simply explaining to them the very evident marks by which this Order is characterized, and encouraging them to seek for plants which exhibit such, and to make use of them without apprehension" (pp. 346, 347). Our sailors, because they were not botanists, or rather because their surgeon did not know the Natural System, were forced to eat what Babylon's proud king ate when he became a beast.

The Natural History Review. London: Williams and Norgate, January, 1859.

The articles with which the 'Phytologist' has any concern in this number of the 'Natural History Review,' are Miss Brightwell's 'Life of Linnæus,' a work which we have not yet seen, but of which we are promised a notice which is now in preparation; and Lady Wilkinson's 'Weeds and Wild Flowers.' This latter-named work is noticed at some length in a contemporary, which is sent us by a kind correspondent. The last is a memorial to the Chancellor, on 'Public Natural History Collections.' This important subject we hope to notice in due time.

The Friend. A Religious Literary Journal.

The following notice of 'Weeds and Wild Flowers, their Uses, Legends, and Literature,' is extracted from the above-named publication.

"Throughout the book we find evidence that the authoress reads aright the wonders and beauties of creation, regarding them

all as bearing witness to God's wisdom as displayed therein; and this is the spirit in which alone such wonders and beauties should be read; it is a spirit which, while it gives glory where alone glory should be given, refreshes and improves the mind of the giver, and brings it into closer communion with the Head and Fountain of all things.

"It may be assumed from these observations that 'Weeds and Wild Flowers' is a book that we can heartily approve and recommend; the errors are rather errors of judgment than of fact, and we recommend the lady authoress in future editions to appeal only to the general reader, and altogether eschew, instead of seeking to conciliate, the patronage of the pedant. We extract entire the history of a single genus; because, by thus allowing the authoress to speak for herself, we represent her more exactly than by any abstract, however candid and faithful, and secondly, because the passage is one which cannot be otherwise than acceptable to the readers of 'The Friend.' The plant whose biography is selected, is the lowly and most familiar but still most interesting Sundew (p. 31). The preface of mottoes is in itself an amusing though not original conceit, and we think these mottoes might have been largely extended without becoming wearisome. And here we may observe that many of the mottoes, good in themselves, are not good *here*, because inappropriate; for instance:—

"And he who perpetually reads good books, if his parts be answerable, will have a huge stock of knowledge.—*Bishop Taylor.*

"It is an axiom, that while every locality, every natural situation, has perceptible differences in the character of its several beauties, not one is destitute of beauty of some description; beauty perhaps, which may be totally invisible to the distant surveyor, to the careless passer-by, to the uninquiring observer; but which yet grows more and more upon our minds the more closely and the more intelligently we examine into it, the more earnestly we seek to read in it the lessons which the Almighty Creator has 'written for our learning,' in every natural object which exists in his world, his earth, and his heavens. How chilled, how desolate become our feelings, as we gaze on the sad monotony of some dreary swamp, or unwholesome morass; how monstrous in their dark sterility do they appear! And justly so, for it *is* just that whatever is left as an uncultivated blank, when it should be tilled with laborious and unwavering care—whether it be in the moral or the physical world—should strike the heart with emotions of sorrow or disgust. If, however, instead of contemplating

the morass as a whole, a thing which man's labour should displace, we examine with patient interest into its fastnesses, we find that it nourishes things as bright and beautiful, in their particular way, as those of more favoured regions of the earth. There, amidst delicate forms innumerable, the Sundew sparkles with ruby points, near emerald moss-tufts of a brilliancy unsurpassed elsewhere; while, to complete this vegetable emulation of the gems of the mine, 'the amethyst-like *Pinguicula* rears its transparent stalks,' and almost eclipses in all but scent the much-loved Violet.

"The very curious appendages with which the leaves of the Sundew are furnished, consisting of pellucid glands thickly scattered over the upper surface, and each exuding a sparkling dewdrop from its ruby tip, have given rise not only to the English name of Sundew, but to the appellation of the plant in most countries; almost all its names, as will be seen by a reference to the synonyms given at the head of our description, signifying the same thing. The name assigned to it by our botanists (*Drosera*) is derived from the Greek, and simply means *dew;* but the Latin *Rossolis* is equivalent to the others, which are founded on an opinion—whether existing in fact or not I cannot tell—that these dew-drops only appear on the plant in the day-time, when the sun is above the horizon. Not so poetical is the name of 'Red-rot,' by which it is distinguished in some of our rural districts, on account of its supposed share in the injurious effects experienced by sheep which feed on pastures such as it loves, but of which it is most probably quite innocent, as it is in itself of a warm and stimulant nature, added to which it seems to be very doubtful whether sheep eat it. It has, however, received the 'bad name,' and shepherds are, I fear, just as unwilling as other men to acknowledge the injustice of a stigma of their own affixing and their own invention.

"These glandular hairs are frequently as long as the leaf itself; and as they fringe its edge, and stand up on its surface, each exuding a tiny drop of a somewhat glutinous fluid, they give an aspect of great but peculiar beauty to the whole plant; though this beauty is frequently, to a certain extent, marred by the effect produced by the number of dead insects with which they are spotted; for every unfortunate insect, or even fragment of broken Grass, etc., which touches a leaf, is instantly rendered unable to quit it again, from the adhesive nature of the dew; and sometimes, too, the leaves may be observed to shrink or fold inwards, as if more closely to entrap the luckless prisoner. I think, however, that, with regard to our British species, this sensible movement or contraction has been somewhat over-rated. The leaves rarely, so far as I have seen, contract, unless a large number of animals, or particles of any other material, are attracted to its surface, and then the movement appears to be more like the result of *shrivelling* than of vegetable irritability, properly so called, in which case it would evidently result from the too great absorption of the dewy secretion

caused by so many adherent bodies. I speak this with diffidence, well knowing how easily error creeps into such observations, and also how very rarely a naturalist will find that the deductions of those who most differ from him are in reality less accurate than his own, so seldom can individual examination include all possible circumstances, and all accidents of time or season. This much, however, I can confidently advance,—that when the leaves do, as described, contract, they present a flaccid and decidedly shrivelled appearance; and that gradually, as a fresh supply of moisture is secreted, they resume their natural position, and the plumper appearance of their somewhat fleshy substance. Yet at the same time we must not lose sight of the fact, that the *Droseraceæ* are a pre-eminently irritable family, numbering amongst them, as they do, the celebrated Venus's fly-trap (*Dionæa Muscipula*), which folds its leaves together if their glandular hairs be but touched.

"The Sundew, or at least the round-leaved species (*D. rotundifolia*), has another very beautiful peculiarity, and one which is full of poetical 'suggestiveness:' the delicate little flower-buds are racemed, and but one blossom opens at a time: that is to say, as the raceme gradually rises, the bud which is at the apex of that portion of it which has become upright, unfolds itself to the sun, from which it takes its name; but if the sun do not shine forth on the day on which the flower is ready to expand, *it never opens at all;* on the following day another bud has reached the apex of the scape, like the last, to unfold at the right moment, or to perish, and give way in turn to the succeeding bud. If we take up, says the 'British Flora' of Sir W. J. Hooker, and read this fact as a mere botanical occurrence, it is impossible not to gaze with interest on the phenomenon; but if we make it 'point a moral,' how much significance it acquires! How many an earnest, yet too weakly shrinking a mind, has been wrecked, because some one amongst its fellows has not been prompt to seize the *fitting moment* for action or support! How many an opportunity has been lost, never to be regained, which, if we had but commanded strength enough to embrace, might, perchance, have saved from hopeless ruin some heart as upright as, though perchance less firm than our own! How many a life has been saddened, nay, blighted, by the recollection that greater promptitude on our own parts might have saved some noble nature, which it was 'but that once' in our power to do; or how some momentary relaxation on our part of self-control, has caused some over-sensitive, and, it may be, morbidly-conscientious spirit, to shrink into itself, never again to unfold the aspirations or inquiries which, if fostered by the blessed sunshine of a kind and tender spirit, *at that moment*, might have led it unchangeably to the better way! Would that all amongst us were Nature's pupils, and that every student of Nature treasured up his knowledge of the secrets of the blossoming of the Sundew, in his very inmost heart; making

its teachings ever active agents in his conduct, in all his dealings with his fellow-men; making it, as it aptly might be made, a perpetual memento of all which constitutes true *charity*, true and god-like love! Were it so, the Sundew had, indeed, not been created in vain; it had, indeed, done us 'true service.' But it has other and more material uses, and to these we must now turn our attention. In former days it was used by thrifty dairymaids for the purpose of curdling milk; for it would appear (I write, however, in perfect ignorance of the fact)—as if the more easily obtained stomach of a calf, which now forms almost the only rennet used, were rather a modern application, so many records are there of the different plants formerly used in this way. The sundew is acrid and caustic in its nature, and is said to burn away warts and corns; it was also much valued of yore as a cosmetic, I know not whether from any supposed relationship to the celebrated May-dew, which was once so carefully collected by maidens whose lot was cast perhaps rather in the age of Roland the Brave than of him of the 'Kalydor.' We must suppose, however, that it was applied with considerable caution to the faces of these by-gone or would-be beauties, as it is well known to possess blistering qualities; and in the days of Gerarde it was commonly used as a counter-irritant. This quaint old author makes the Sundew a vehicle in which to convey a rather sly assertion of the comparative value of theory and practice, telling us that 'the later physitiones have thought it to be a rare and singular remedie for consumption;' and adding, 'but the use thereof dothe otherwise teache.' I cannot, however, but acknowledge (though I do not enter into the merits of the question) that he is very much to be suspected of judging by preconceived generalities, as he immediately weakens his satire by affirming that 'reason showeth the contrarie, being of such a hot and biting nature;' alluding, I imagine, to the Sundew, and not to reason.

"This is the plant of which Burton, in his 'Anatomie of Melancholy,' says that 'Bernardus Penottus prefers his Herba Solis before all the rest (of herbs) in this disease (melancholy), and will admit *of no herb upon the earth to be comparable to it.* It excells Homer's Moly, cures this, falling sickness, and almost all other infirmities.'

"The Sundew was formerly much used as a tincture, to obtain which it was distilled with wine, and then spiced and sweetened. In this way a most stimulating spirit was produced; and the plant is still employed in the manufacture of the Italian *liqueur* called 'rossoli.' Several of the Droseras, which are widely distributed throughout temperate climates, possess dyeing properties, as may be remarked in our own three species, *D. anglica*, *rotundifolia*, and *longifolia*, which not only produce a deep red impression on the back of the sheet of paper on which they are placed in drying, but will communicate it to a thickness of several contiguous sheets; and for years afterwards will stain fresh ones placed in contact with it."

BOTANICAL NOTES, NOTICES, AND QUERIES.

Tewkesbury Mustard.

In reference to *Tewkesbury mustard*, perhaps some of your readers may not object to being reminded that Shakespeare alludes to it in the second part of Henry IV., act ii. scene iv., where Doll Tear-sheet remarks, "They say Poins hath a good wit," to which Falstaff replies, "He a good wit? hang him, baboon! his wit is as thick as Tewkesbury mustard; there is no more conceit in him than is in a mallet."

Birmingham. G. H. Handsworth.

Eranthis hiemalis near Nottingham.

Some fields (ploughed) and copses in this neighbourhood are at present (February 15th, 1859) quite yellow with the above-named plant, which appears perfectly naturalized, in spite of persons who come from Nottingham and dig up the roots for sale. R. E. C.

Long-tailed Terms.

A crabby Correspondent has sent the following complaint about the cacophoniousness of certain names given to plants. Some of our readers may probably sympathize with him. We have room only for a sample.

"Technicality is the gimlet of the social bore. It is the bludgeon of the scientific bully. Who shall venture to touch or to smell English plants with such names as *Salix woolgariana*, *Carex bœnninghauseniana*, *Hieracium Schmidtii*, *Rubus Grabowskii*, *R. Reichenbachii*, *R. Guntheri*, etc. etc., if plants can grow with the disgrace of such names fastened to them—if such words can represent any living thing of beauty in the glory of the creation through which we walk daily? We have no right to overwhelm them with our scientific Billingsgate. Neither have we any right to seal up against children—our own blossoms—the beautiful story of the lives of their kindred in the gardens and the fields. He who by the seashore makes friends with the sea-nettles is introduced to them by the scientific master of ceremonies as the *Physophoridæ* and *Hippopdodydæ*. Creatures weak, delicate, and beautiful are *Desmidiaceæ*, *Chætopterina*, and *Amphinomaceæ*, Twentysyllableorfeet, and all for the honour of science, or rather, not for its honour, but for its honorificabilitudinitatibus. Almost every book of science is a stream alive with long-jawed alligators, among which no such small fish as a general reader dares to swim. We declare war against these alligators. Let them be hunted down."

Our testy friend is not quite correct in telling us that these sesquipedalian words (terms a foot and half long) were invented in honour of the plants whose representatives they are. They are thus named in honour of their illustrious discoverers. *Semper floreant! quorum honos, nomen laudesque maneant in æternum.*

Early Flowers.

Plants in Flower at Berkhampstead.—Snowdrops on the 18th of January; Mezereon on the 24th; Polyanthus on the 31st.

Plants in Flower at Shields.—Vegetation forward. Plants in flower:—Pansy, Jan. 13; Wallflower, Jan. 14; Hepatica, Jan. 20; Christmas Rose, Jan. 21; Stock, Jan. 22; White Rock-cress, Jan. 23; Rhododendron, Jan. 25; Red Primrose, Jan. 26; Chickweed, Jan. 31; Auricula, Jan. 31.—*From The Friend, March 1st.*

Lepidium ruderale.

Lepidium ruderale, stated in the Report of the Greenwich Natural History Society to have been growing, last year, in the lane which goes out of the south-west corner of Kidbrook Common, is there in profusion this year also; and so many-seeded a plant having found a locality propitious to it, has every chance of remaining there till the botanist's crack of doom, "a trowel ticking against a brick."

Mentha Pulegium, another plant in the Society's general list, is flourishing round a small pond on the eastern edge of Chiselhurst Common.

I have had a day in Tilgate Forest, and have succeeded in finding *Cicendia*. As it was not abundant, I was sparing of it. J. S. M.

The Weather in the North.

Last week a man was found frozen to death among the snow on the hills near Stanhope, in Durham. In the same week some sportsmen found the body of a person known as an American prophet, lying out on the wilds of Northumberland, near Falstone, where he had frozen to death. In the same week Cowslips were gathered near Stockton, in Durham, and Wallflowers and other hardy garden-flowers were in full bloom in the public parks and gardens in the towns on the coast of Northumberland.—'*Times*' *of February* 10, 1859.

Things not Generally Known.

I did not, in reading the notice under this title in the 'Phytologist,' understand that it was taken from Mr. Timbs's book, but that the writer of the notice gave this name in *imitation of Mr. Timbs's title.* If any of your readers can tell me whether the notice was taken from Mr. Timbs's book, I shall feel obliged. I can hardly think he would state such absurdities as facts.

The second article in a subsequent number of the 'Phytologist,' told us that the notice was taken from the 'Vestiges of Creation,' and the writer referred us to the passage. I do not know why the Editor of the 'Phytologist' is to be censured for publishing the notice, as it enables his readers to see how important it is for botanists to correct errors gravely propounded as truths in popular works. S. B.

Solanum, Origin of the Name.

A celebrated author remarks on this term, "Some ingenious commentators derive this name from *solari*, to comfort;" and adds: "The derivation may be possible, but the application is not evident." This is not a solitary example of an application which is *not* evident. But the Hibernian who feasts on mealy *praties*, experiences some satisfaction, if not *comfort*,

in his frugal fare. Some of the species are delicacies, and form accompaniments to a luxurious meal. It is comfortable to have a hot potato with meat, whether roast or boiled. This celebrated esculent is acceptable to every palate, and forms no inconsiderable portion of the diet, both of the rich and the poor.

Early Names of English Plants.

I believe many of your readers are desirous of knowing the English names of plants; I send a few which I found in a work published in 1670, and as I do not know them by those names, I shall feel obliged if you, or some of your correspondents, will give me the other names by which they are called.—Muskmillions, Maiden-blush, Sops in Wine, Six-leaved Primrose, True Love, Crowtoes, Priest Crown, London Button, Lady Gloves, Liricumphancy, Rose Parsley, Irish Madam, Rocket Gollout, Capon's Tail, Nose-bleed.

In other early books I find the names Spoonewurt, Chesboule, Culverkeys, Whincopipe, Kedlock Harlocks, Coventry Bells, Passe Flower or Red Mathes. S. B.

To Collectors who exchange Specimens.

A Correspondent of Yorkshire, who has several duplicates of good plants, is desirous of offering them in exchange for South of England specimens. Botanists in Kent, the Isle of Wight, Devon, and Cornwall, might be able to supply our correspondent with what he wants, for which they would receive an equivalent in plants of a different district. Address to the Publisher or the Editor of this Journal.

Notice to Rose Collectors and Botanists.

Monsieur Crepin, Botanist, Rochefort, Province de Namur, Belgium, hereby announces his intention of issuing the European Roses in fasciculi, and offers to Rose Collectors a complete set of his contemplated series for three or four of the rarest and most curious of the British species of Rose. He requires twenty-five specimens in flower and twenty-five in fruit of each species or form. He does not however tell us the names of the species he requires.—[If M. Crepin will write out a list of the plants he wishes to have, and will at the same time tell us what he has to give in return, we will publish it for him.]

Communications have been received from

Jas. F. Robinson; J. B. Wood, M.D.; John Lloyd; John Sim; Rev. T. F. Ravenshaw; S. B.; R. E. C.; John G. Baker; Rev. W. Hind; Lynx; G. H.; H. C.; Rev. E. Attwood; T. W. B. Ingle; D. Stock; J. Windsor; J. E. Sowerby; W. P.

BOOKS RECEIVED FOR REVIEW.

Principles and Rudiments of Botany.
Sowerby's Wild Flowers. Nos. 2–8.
The Critic. The Friend, etc.

CHAPTERS ON BRITISH BOTANY.

Introduction.

"In a work intended to exhibit the progress of the science in England, and to assign to each Writer his respective praise, I could have wished to have subjoined a complete catalogue of all the English plants, with the names of the first discoverer annexed, or of that author in whose work each first occurs, as an English species. The progress I had made in the intended *Pinax* above-mentioned, would have enabled me to have made this addition; but as such a catalogue could have afforded gratification only to the more curious and critical botanists, . . . it was judged most proper to omit it."—*From the Preface to Dr. Pulteney's Historical and Biographical Sketches of the Progress of Botany in England*, pp. 15, 16.

The above quotation, from the only English work descriptive of the historical progress of this science in England, will sufficiently explain the nature and object of the following chapters on British Botany. To each writer will be assigned his respective share in the merits due to the united or entire band of botanists, from the times of William Turner, who was both a theologian as well as a naturalist, to the more enlightened times in which we live.

The botanists of Great Britain may honestly be congratulated on the extent, variety, and excellence of the literature devoted to their special science. From the commencement of the sixteenth century, when Dr. Lynacre published what he calls a translation of Macer, to the present time, a period of three centuries and a half, books on this subject have been produced; and they would now form, if collected, a not inconsiderable library.

The British Floras are numerous and, compared with similar works in other countries, are, to say the very least, of average merit. The local or county Floras are of surpassing excellence.

Dr. Pulteney's work, modestly entitled 'Sketches of the Progress of Botany in England,' brings down the history of what had been previously accomplished, only to the middle of the last century. And the most interesting part of his work, viz. his "British Pinax," was left unpublished, because his, unfortunately, was a *non-critical* or an incurious age, which did not relish, and therefore gave no encouragement to, such investigations.

The following chapters will not only contain a complete history of the literature of British Botany, from the earliest

times to the present, but it will be a history of species, a *Phytopinax Britannica*, which Dr. Pulteney was persuaded not to print because it would have gratified only the "curious, critical botanist," a *rara avis* in those days. The present series will embrace every fact contained in Pulteney, not *totidem verbis*, but in substance; together with the annals of the science in England, since the introduction of the Linnæan system, with which event Dr. Pulteney concludes his interesting narrative. This essay will supply a *desideratum* in botanical literature, viz. a chronological notice of the eminent botanists whose names are affixed to our native plants as authorities or guarantees of native species, whether such authors or observers be British or foreign.

The origin of the names of plants, both scientific and vernacular, will be investigated both historically and etymologically; and the relations of our native species with the Floras of other and distant lands, and with the plants recorded in the historians and poets of ancient and modern times, will be satisfactorily displayed.

A hundred years have passed away since the period when the subject of Dr. Pulteney's work terminates. It is now sixty years since his work was published. Therefore it is not an unreasonable assumption, that a new work on the history of British Botany would be encouraged. A continuation of the "Sketches" is not proposed. They are rather too diffuse to meet with approbation in this economical age. A condensed and comprehensive treatise is wanted. That this want will be supplied, at the present time and in the present form, will entirely depend on the suffrages of those for whom alone it can have a permanent interest, viz. the botanists of Great Britain and of her dependencies.

The present mode of publication is most conducive to its completeness and accuracy. As it will appear at intervals, there will be opportunity for supplying whatever is defective, and of rectifying the accounts of the preceding, in the subsequent parts.

But as a specimen or an example is always more satisfactory than the most elaborate description of an undertaking, it is proposed to give a brief notice of such of our native species as are noticed by name in Holy Scripture, or to describe the relations of our Flora with that of the Bible. This is beginning at the very *beginning*; for certainly *we* have no historical book of so

great antiquity as some portions of the Old Testament; and for some names of plants there are no ancient authorities that are earlier than those of the sacred volume. The Druidical or ancient British plants will be the subject of the second chapter. The third chapter will be devoted to the Greek and Latin classical plants. The fourth to the medieval or barbarous period of botany, etc. etc.

Or, to set the matter in another light, or to show the subject under a different phase, the entire series will consist of four parts. The first will embrace the history of British species from the earliest period to about the middle of the seventeenth century, or to the time of *How, Merret, Ray,* etc. The second, from the last-mentioned period to the introduction of the Linnæan system. The third, from about the middle of the last century to the introduction of the Natural system, as it is called. The fourth, the history of botany from that period to the present time.

CHAPTER I.

On the earliest Knowledge of Plants.—Authors of Works on Sacred Botany.—Plants of Holy Scripture.—Thistles, Thorns, Oaks, Mustard, Hyssop.—Newton, Westmacott, Sir Thomas Brown, Rauwolf, Belonius, Harris, Bromfield, Lady Calcott, etc.

In the very infancy of society, when the human race formed only one family, and when they all lived together, or not very distant from the spot where man was originally created, botany, or the knowledge of plants as a practical science, was not entirely unknown. Both plants and animals were observed and appreciated by Adam and his immediate descendants, before they had occasion to make use of the products of the third or mineral kingdom. That the antediluvian patriarchs soon discovered the use of metallic implements for subjugating some animals and for destroying others, is not only probable, but also an historical fact; but as at this early period they lived on fruits or roots, or probably on the milk of animals, their attention must necessarily have been called to trees and herbage: the former, as yielding food for themselves; the latter as affording subsistence to their flocks, in which their wealth chiefly consisted.

The sacred historian informs us that one of Adam's sons, Cain, was a tiller of the ground. Husbandry therefore was not entirely unknown in the very first age of the world, and in that

place which is called the cradle of mankind, where the earth of her own accord yielded much produce with little expense of toil,

"Fundit humo facilem victum justissima tellus."

Immediately or soon after the Flood, there is another proof of early cultivation: "Noah began to be a husbandman, and planted a vineyard," and indulged rather freely in the produce of his toils.

The Thorns and Thistles, the effects of the curse with which the ground was cursed for man's sake, give an unpleasant, as well as an adequate proof, that in the very earliest times the people must have had some considerable knowledge of vegetation.

That they knew their botanical affinities or relationships, and could classify them under some antediluvian system, is highly improbable. But that they knew some of their good and also bad qualities is undoubted. Cain, the first agriculturist, cultivated the useful and eradicated the noxious plants. Abel did not drive his sheep on pastures in which they were likely to eat herbage which caused the rot or which bred flukes. Experience and history, not study, were the first teachers of mankind.

They did not collect and compare, with the design of discovering laws of structure and development. But that they were well acquainted with the natural productions of their neighbourhood is abundantly testified both by history and common sense.

That we should at this time, so distant from that when the first men lived, be able to ascertain or identify their plants with certainty is simply preposterous. Botanists are not agreed about the plants of Theophrastus and Pliny; and it would be absurd to expect them to agree unanimously about the plants of Adam, Noah, Abraham, Moses, and Samson.

Much of the uncertainty that exists about sacred botany, or the plants named or noticed in Holy Scripture, is owing to the character of the natives of the East. Olaus Celsius, who studied this subject more than any other investigator, and who was a profound philologist as well as a good botanist, used to lament that the monks of Palestine did not devote some part of their time to the composing of catalogues of their native vegetation—of the productions of the mountains on which their convents were situated. Good-natured author! He did not choose to expose the indolence and apathy of the Oriental races. But facts are stubborn things, and they tell unpleasant truths. Many

MSS. have reached the West from Egypt, from Abyssinia, Arabia, Palestine, Syria, etc., but is there any of those that contain facts of natural history? There may be such MSS. in existence, but if there are, they are unknown even to those who have industriously investigated the history of natural science. Again, it is a fact that we are indebted to Rauwolf, Belonius, Buxbaum, Tournefort, Russell, Hasselquist, Förskal, Sibthorp, Mangles, Bromfield, etc., for our knowledge of the plants of Palestine and Syria. The enterprise of Western travellers, or of men from the nations of Italy, Germany, France, England, Sweden, and Denmark, has contributed the entire knowledge of Scripture plants now in our hands.

In this, Sweden bears an honourable place. Hasselquist's 'Travels in Palestine,' and his 'Flora Palestina,' published by his great teacher and friend, the amiable Linnæus, are still the most succinct and systematic works on this interesting subject. The Swedish traveller only passed through the land, and died ere he reached Europe.

The East appears to be fatal to botanists. Förskal died before he had half explored Arabia. And in our own days we have had to lament the loss of a countryman who may justly be ranked among the most devoted of the martyrs of science.

Olaus Celsius, the great Oriental linguist, studied sacred botany for above fifty years. He published many separate pieces on the subject, and finally bequeathed to the botanical world his 'Hierobotanicon,' the immensely learned labour of a long life.

The critics and commentators of our own country are to be greatly commended for the light they have respectively thrown on this subject; but there is no work in existence which, for erudition, surpasses, or even equals, that of the illustrious Swede.

A good *Flora Palestina* is one of our *desiderata*. When will the learned monks of Palestine find leisure to prepare one? When they leave off their private brawls, personal quarrels, and other similar non-ecclesiastical practices. But as the professed subject of these chapters is the Flora of the British Isles and not that of the Holy Land, a complete enumeration of the plants of the latter would not be "the *right* matter in the *right* place." The Flora of Palestine and the Biblical part of botany appear here only as it is related with the botany of our native land.

A sacred Phytology is a work of great magnitude, and he who

desires distinction in this extensive sphere should have an intimate acquaintance with the erudition of past times, and especially should be conversant with the works of Theophrastus and Dioscorides, Athenæus, and Pliny; he should be well acquainted with Oriental languages, viz. Hebrew, Chaldee, Arabic, and Syriac; be well read in the Arabic botanical works of the Middle Ages,—Avicenna, Massue, etc., and finally he should be a good botanist:—

> "Sumite materiam vestris qui scribitis æquam
> Viribus."
>
> ". . . Ye writers, weigh with care
> . . . What your strength will bear."

It is not probable that the Biblical Thorns and Thistles which were the plague of Adam, Cain, and the first cultivators, as they are still agricultural pests in every country, were, or are, the identical species which British agriculturists have to eradicate.

The only plant so called, that is common to the Holy Land and to the islands of Great Britain, is Our Lady's Thistle, *Cnicus benedictus* in Hasselquist, and *Silybum Marianum* of modern English botanists. The Swedish traveller enters two species of Thistles, neither, as yet, found in England, viz. *Carduus syriacus* and *C. mollis*, the former collected in Arabia, the latter in Palestine. The British *Compositæ* besides these are *Centaurea scabiosa, Arctium Lappa, Cichorium Intybus.* Artichokes, *Echinops,* and Sand Thistles are among the plants of the Holy Land.

There are many Thorns or thorny plants in Palestine, as there are everywhere else. They are a part of the consequence of the curse with which the earth has been cursed. The Thorns however which are common to the British Isles and the Holy Land are but few. Our common White-thorn, *Cratægus Oxyacantha,* is perhaps the only one. Our Restharrow, *Ononis spinosa,* may be one of the thorny plants with which the East is afflicted. It is not quite certain if there be any species of the genus *Rubus* common to both countries. The Sacred Bramble, *R. sanctus,* is reckoned among the plants of Palestine, but it has not yet been detected among our many Brambles. Wild Roses are common in the East, but these are not Thorns, though, like them, equally troublesome.

The Dog-rose, κυνόβατος of the Greek botanists, as will be shown hereafter, is not wanting in Eastern lands.*

* According to Dr. Kitto, the common Roses of Palestine are *R. alba* and *R.*

The Vine, mentioned in very early times as an object of cultivation, was the same specific plant which is now so common in the temperate regions of the West.

The cereal Grasses of Palestine were in all probability nearly the same as our own.

The ancients were acquainted with both the Summer and the Winter Wheat, *Triticum æstivum* and *T. hyemale*. Barley was also generally cultivated then as it is now. It is not believed that these corn-producing plants were indigenous in the East. They were cultivated, as they still are, in all parts of the world where the temperature will admit of their cultivation.

The edible vegetables, the cucumbers, melons, the leeks, the onions, the garlic, etc., of Holy Scriptures are well known among us, and are still objects of general cultivation and domestic consumption.

We do not expect to find in the Bible a list of the natural productions of those countries inhabited by the people whose history is contained in the books of the Old Testament. The books of Holy Scripture contain the moral and religious and civil history of the chosen people, but not the natural history of the land in which they lived. Plants are mentioned in connection with them and their modes of life, but are never so precisely described as to leave no doubt about the species intended by the sacred historians, prophets, and poets. When it is related that Abraham dwelt under the Oak at Mamre, and that Elijah laid himself down and slept under a Juniper-tree, it is not to be inferred that the common Oak of our forests, and the Juniper shrub of our hills and downs, are the same as those mentioned in the inspired volume. The trees, herbs, and flowers of the Bible are employed figuratively or metaphorically, to give clearness, force, or dignity to expression.

It is now well known that the Oaks of Palestine are not *Quercus pedunculata** nor *Q. sessiliflora*. There are Oaks in the Holy Land, but they are chiefly of the evergreen species, and Oaks that bear edible acorns.

The British Oak indeed bears fruit; and it has often been re-

centifolia. The Rose of Jericho (*Anastatica hierochuntica*) is a very different plant.

* Belonius, who reached the Holy Land in 1546, did not observe our British Oak there. The discoveries of this traveller were published by Clusius.

corded that our ancestors, before they discovered corn, *i.e.* before the times of Ceres (when did she live?), ate acorns instead of brown bread, and drank of the waters of the clear spring or of the "brook that bubbled by." But it is more probable that our wise forefathers kept large herds of swine which fed on acorns. A swineherd in those days was an honourable post. Bladud, a king's son, was his father's swineherd when he discovered the curative qualities of the waters of Bath. He learned this from the scurfy pigs that delighted to wallow in the tepid springs because they felt the benefit of this hydropathic treatment. The Jews were forbidden by their law to eat pork; and it is not to be conceived that so thrifty a people would have extended the cultivation of an Oak which yielded food only for swine. Again, it is not credible that the aboriginal Britons, who kept hogs, did not also eat them. And hence may have originated the tradition that our ancestors lived on acorns, although the truth was they ate the animals that had been fattened on the fruit of the Oak.

There might, even in those remote times, when the poor-laws were not invented, have been some idle, thriftless vagabonds, who were, like the prodigal in the parable, fain to eat pigs' meat. But that oak- or beech-mast was ever the common diet of respectable people is not to be credited unless founded on better authority than poetic fables.

It is not yet determined whether or not any of our common forest-trees are also natives of the mountains and vales of Judæa. Some say that they are, and others that they are not.

That our common Oak may once have grown on the hills of Bashan is not very improbable; and Hasselquist enumerates our Scotch Pine, *Pinus sylvestris,* as one of the trees of Lebanon.

The funereal Cypress, well known in our cemeteries and sometimes on our lawns, is called the Gopher-wood of the Bible, of which the Ark was made. The *Acacia arabica,* or Gum-Arabic-tree, is supposed by some to have been the Shittim-wood of Scripture, of which the Tabernacle was constructed. These however are not British trees, but they are not altogether unknown as cultivated, ornamental objects.

Our common Ash-tree is a native of the East. The prophet Isaiah relates that the deluded people "planted this tree, and the rain nourished it; part of it was used for fuel, part was fashioned

and carved into a graven image, and worshiped." In his forty-fourth chapter he sternly rebukes the infatuation of those who were so stupid and degraded as to worship what they themselves had grown and made.

The Willows "by the watercourses," whereunto, in the same chapter of the same prophecy, the servants of the Lord are compared, are probably species distinct from our British Willows. The only species in Hasselquist are *Salix babylonica* and *S. ægyptiaca*, the former well known in England as the Weeping Willow, and believed to be that tree on which the maids of Jewry hanged their harps when their vanquishers insulted them by asking them to sing the songs of Zion. This is pathetically described by the Psalmist in Psalm cxxxvii.: "By Babel's streams we sat and wept, . . . and hanged our harps on the willows in the midst thereof."

There are recorded as growing in Palestine many plants which are not mentioned in Holy Scripture, and there are also several plants named in the Bible which have no representatives in our land.

The textile or fibre-bearing plants, viz. Hemp and Flax, are common to both Britain and to the Holy Land; they are both cultivated very extensively in western Europe, and one of them is commonly grown in the British Isles. They are generally regarded among us as interlopers, as strays and waifs rather than as genuine natives. Have they any native country? Are they, like the domesticated animals, or like the cereals, dependent on man for their very existence as plants? The history of economical plants has yet to be written. Botanists—some of them at least—infer that, because there is no very striking difference between the wild Oat and the cutivated Oat, the one is derived from the other, or is only a variety of the other; also that our Carrots, Parsnips, Cabbages, etc., in all their varieties, have at some period or other originated in or among the wild examples. Many excellent varieties of both fruit and vegetables have been raised rather than discovered in our times, but they have been rather the rewards of industry and perseverance than the results of accident.

Many of our salad-plants, such as Chicory, Lettuce, Endive, Mustard, Cress, etc., are common both to our islands and to the ancient Jewish territories.

Much has been written about the signification of the parable of the kingdom of God being like a grain of mustard-seed, which is said to be the least of all seeds, yet it becometh a tree, and the fowls lodge on and under its branches. There are plants which have smaller seeds than the Mustard, and there are larger trees than the Mustard-plant. Much erudition and speculation have been thrown away on this subject, and attempts to reconcile the teaching of Holy Scripture with botanical facts have been as little satisfactory as the attempted reconcilement of revelation and science in astronomy and geology.

Mangles and Irby, in their travels, saw a shrubby or arborescent plant which had some acrid properties like Mustard, and our expositors, or some of them, accept this as a godsend to save them from the difficulty of receiving as a tree what is truly an herbaceous plant. Others maintain that the Mustard-plant of Scripture is an *Asclepias;* although the genuine Mustard, *Sinapis orientalis*, is admitted to be plentiful in Syria, and it is also considered to be specifically identical with *S. nigra*. Dr. Kitto says, *S. arvensis;* but the Doctor probably was not a botanist.*

The Virginian Poke† (*Phytolacca decandra*) has also been pressed into the service of sacred hermeneutics, but very unfortunately, for the latter is a plant of the Occidental, not of the Oriental, hemisphere.

The mustard-seeds are indeed a stumbling-block to those who seek botanical and geological truth in their Bibles, where the truths of Redemption and Salvation *only* are professedly given; but the stature of the Mustard plant or tree need be no bar to rational belief.

Several examples of the common Charlock, *Sinapis arvensis*, have been seen in very rich soil, for example, in the Essex marshes near Southend, upwards of two yards in height and of a corresponding extent of branches and thickness of stem. Many of the feathered tribes resorted to them for food, and probably for shelter also. We know that the reed-warblers build their nests on

* Dr. Kitto enters, besides *Sinapis arvensis*, *S. alba* and *S. halepensis*, together with *Erysimum officinale*, *Draba verna*, *Lepidium perfoliatum*, *L. sativum*, and *L. latifolium*, Woad, Flixweed, Dame's Violet, Radish, Stocks, and *Nasturtium officinale*, among the plants of the Holy Land.

† Harris, in his 'Dictionary of the Natural History of the Bible,' says that *Phytolacca dodecandra*, or *Kokkon sinapeos*, is the Mustard of the parable.

more tiny and slender plants than the branches of the Mustard-plant: these sit on the very tops of the *Arundo Phragmites*. If we were to make allowance for the greater size which vegetation may reach in some parts of Palestine, it would not be necessary to invent plants which may, to our poor, formal understandings, appear to agree better with the descriptions of Divine wisdom than the more common things do.

The Paschal Lamb was to be eaten with bitter herbs at the Divine commandment. Thomas Newton, the venerable translator of 'Levinus Lemnius,' says, "With soure hearbes, or wild lettuce, . . . because in this life all things are bitter, troublesome, grievous, and full of calamitie, having in it a great deal more of aloe than of honie, much greater store of miserie than of tranquillite." Our traditional custom of eating lamb at Easter is probably derived from this ancient, sacred source, only we take the liberty of eating our lamb not with bitter but with sweet herbs, *Mentha sativa* or *M. viridis*, plants which also grow in the Holy Land, and probably were used as condiments by the Jews as we now use them with our lamb and green peas.

Several of our condiment-plants are Oriental, viz. Coriander, Fennel, Parsley, etc.

There is no plant mentioned in Holy Scripture which has given rise to more speculation than the Hyssop* plant, viz. that which was used in the rites of purification, and probably another, mentioned in antithesis with the Cedar, in the Book of Kings, where Solomon's acquaintance with botany is recorded. It is also mentioned in the account of the Crucifixion. Much learned labour has been thrown away on the attempt to identify this plant. Celsius, the polyhistor of the last century, produces a formidable list of plants and authorities and opinions, given in all the languages of the East, and in many of the West also.

The chief of these supposed species are *Abrotanon, Absinthium, Adiantum Cap.-Veneris, Alsine, Rosemary, Mint, Marjoram, Pennyroyal, Thyme, Tree-Mallow, Genista* (Cytisus), *Juniper, Reed,* etc. etc.

* Dr. Kitto notices the Hyssop of Palestine, and describes it as a shrubby plant, about eighteen inches high. With this he mentions several Labiate plants, Sage, Thyme, Lavender, Rosemary, Clary, Basil, Poley (*Pulegium?*), *Mentha sylvestris*, and *Salvia verbenaca;* also some Umbellifers, as Hartwort, Fennel, Hemlock, Shepherd's-needle, and Parsley.

Our Pellitory, *Parietaria officinalis*, is not forgotten. The learned Celsius quotes Bartholomeus Glanville, our countryman, 'De Proprietatibus Rerum,' who says, "Tantæ auctoritatis herba fuit apud veteres, ut sine aspersione se purificari non posse in delubris non reputarent;" "et hoc Plinium dicere idem, ille Glanville asserit, non dubito," says Celsius, "quin sit *falsissimum*." But William Westmacott, who lived a century before Celsius, informs us that "Hyssop cleanseth the breast and lungs, and purgeth the head very orderly from flegme and tough clammie humours, and therefore is of singular effect to help the pleurisie, stitch, or any other griefe or paine in the side" (p. 147). "Our common hysope, which is not a small and slender herb, but sometimes of a foot or more in height, bearing a spiked purple or dark-bleuish flowers. Whole leaves are," etc. (p. 148).

It is more than probable that the Hyssop of the ancient author (Barth. 'De Proprietatibus Rerum') was a plant noticed and strongly recommended by the author or authors of the 'Schola Salernitana.' The most of the medical and botanical knowledge then popular and prevalent was derived from this source. There is no very strong objection to the view that it was exactly what is called *Hyssop* at this day. Thomas Newton, a contemporary of Westmacott's, inclines to the opinion that it was *Rosemary*.

(*To be continued.*)

ON SPECIFIC NAMES OF PLANTS.

(*From a Correspondent.*)

Sir,—Under "Specific Names," etc. ('Phytologist,' p. 95, vol. iii.), there is a quotation from Smith's 'Introduction to Botany' in reference to the above; also the following inference:—"Therefore *Erythræa linariifolia* is more correct than *linariæfolia*. Having by an oversight misled your readers on this point, it is hoped that you will insert this in the 'Phytologist.'"

The 'Phytologist' is not exactly the work in which philology finds its right place. Hence, in what follows, only the practice of botanical writers will be noticed; and from this it will be seen that the rule laid down by the eminent author of the 'English Flora,' if a rule it be, has not been universally followed.

1. Mr. Babington, in his 'Manual of British Botany,' second edition, employs the following names:—*Erodium pimpinellæfolium, Crepis succisæfolius, Potamogeton zosteræfolius.* In the same work is also to be found *Hypericum linariifolium,* also *Erythræa linarifolia.* Hence it appears that this great authority did not follow Smith's rule. Did he observe any rule? *Linariifolium* and *linarifolia* are both from the same original, *linaria* and *folium.*

2. The London Catalogue, which usually follows Mr. Babington in nomenclature, as in other matters, has, in addition to the above, *Cyclamen hederæfolium* (it is *hederifolium* in the 'Manual'), also *Senecio erucæfolius.*

3. Smith, in his 'English Flora,' does not appear to have very rigidly adhered to his own rule, for *Erodium pimpinellæfolium* occurs in vol. iii. p. 230. *Crepis succisæfolia* was not known *then* as a *Crepis,* but *Hieracium succisæfolium,* which is the same thing, appears in Smith. *Potamogeton zosteræfolius* was undiscovered when this great botanist ruled the botanical destinies of England, and laid down laws for the guidance of her scientific children. This eminent authority does use the other form, as *e.g. Cyclamen hederifolium,* but he does not uniformly follow his own rule.

4. Hooker, in his 'British Flora,' appears to be neutral; he employs both forms indifferently, thus:—*Potamogeton zosteræfolius, Veronica hederifolia, Cyclamen hederæfolium,* etc. There is no evidence in the third edition of his 'Flora' that he recognized the binding authority of the alleged law.

5. Withering has *Veronica hederæfolia,* and this form has been adopted by a greater authority (in philology), viz. Dr. Sibthorp (Fl. Oxon.), also by Dr. Abbot (Fl. Bedford.), two learned clergymen, *non inscii sermonis Latini,* appear to have been ignorant of this assumed analogical rule propounded by Smith and circulated in the 'Phytologist.'

6. The late Dr. Bromfield, who is celebrated for learned accuracy, as well as for strict veracity, has, in 'Flora Vectensis,' the same form, *V. hederæfolia.* It is impossible, from the above-named work, to say how he would have dealt with the examples above quoted, for they did not fall within his province. They are not in the district to which his 'Flora' is restricted.

7. The foreign botanists appear to follow another principle,

for example, Kitel, in his 'Deutschlands Flora,' writes (invariably?) *æ* instead of *i*, as *Salix salviæfolia, Veronica hederæfolia, Cineraria spatulæfolia*. He appears consistently to have used this form. *Hypericum linariæfolium* and *Erythræa linariæfolia* do not occur in his 'Flora.' It can only be inferred how he would have dealt with them if he had had occasion to write their names.

8. In Sprengel's 'Historia Rei Herbariæ' there are numerous examples, for example:—*Sagittaria sagittæfolia* (i. 349), *Cyclamen hederæfolium* (p. 405), *Antirrhinum genistæfolium* (p. 418), *Centaurea erucæfolia* (p. 420), *Veronica urticæfolia* (p. 433), *V. hederæfolia* (p. 436), *Inula spirææfolia, Scirpus tabernæmont., Cardamine resedæfolia*, etc.

9. In Suter's 'Flora of Switzerland' there are the following, viz.:—*Veronica hederæfolia, V. urticæfolia, Cyclamen hederæfolium*.

It may be assumed from the above examples that the discrepancy appears only when the first portion of the compound word is of the first declension and of the feminine gender; and here grammar, if not an analogy, requires that the genitive case should be employed. When a change is made of the *æ* into *i*, neither grammar nor sense is satisfied. Our English botanical authors are unsteady; they waver or vacillate. Sometimes they write the *one* way, sometimes the *other*. Perhaps they never heard of the rule. Perhaps some of them may think that the author of the rule, though a great authority in botany, was not equally great in etymology. Whatever be the cause, their practice is not uniform. They not only differ from each other, but also from themselves. This is not the case with English authors alone. Nyman, in his 'Sylloge Floræ Europæ,' is not always strictly consistent, though there are but few examples in which he has violated the grammatical principle. The Continental authors quoted in Nos. 7–9, have invariably followed the etymology, and not the assumed analogical principle.

It is only in compounds where the first declension forms a part that there can be any question about the proper *scription*. Sir J. E. Smith says that some botanists write *salicisfolia*. This is probably as rare as a white crow. Who has ever seen *tenuisfolius, grandisflora, noctisflora*, and the like? When nouns of the second declension form a part of the compound, the gramma-

tical agrees with the presumed analogical rule. When the word is compounded of a noun of the third declension and an adjective, the *s* of the genitive may be supposed to be elided *euphoniæ causa*, to avoid *cacophony*, or a harsh or ill sound.

Pecudes lanigeræ, cornigeri hœdi, equi cornipedes, may be quoted in support of the rule; but to show that it is not absolute, *cornucopia, tabernaculum* (not *taberniculum*), *viaticum, unanimis* (*unius animi*), *undecem* (*uno* and *decem*), and many other compounds, may be urged. The rule appears to be absolute or unchangeable when the second part of the compounded word is a derivative of *fero, gero*, or such-like, as *uvifer, carniger, furcifer*, etc.

The Continental practice, which is all but universal, appears to be preferable, in order to avoid the inconvenient concurrence of vowels when the first part of the compound word ends in *a* pure, as prosodians say, or *a* after a vowel, as *Linaria*. *Linariæ* is a more manageable word than *Linarii*, and the logical sense is clearer.

If the question is to be decided on grammatical principles, the above suggestion is worth consideration. If an appeal is made to practice or authority, there are ten to one in favour of what is here proposed. Finally, if the writer in the 'Phytologist' who has been reminded by "B." (vol. iii. p. 95) of having by an oversight misled the readers of this Journal, has erred, he has a numerous and influential band to back him. This is something.

"Solamen miseris (misero) socios habuisse doloris (erroris?)."

F.

SCRIPTURE PLANTS.—HYSSOP.

I am gratified with the announcement, in your January address to the readers and contributors of the 'Phytologist,' that we are to have some articles on this subject, as I know there is much to be written for our learning, as to what the plants named in the original Scriptures truly are; and although we may excuse many of the names given in English by our early translators in the authorized version, on the ground that little was at that time known of plants, still, as we have the advantage of 300 years' increased knowledge, errors, when discovered, should be corrected.

William Coles, in the year 1655, wrote and published his 'Introduction to the Knowledge of Plants;' and he has a chapter headed, "That the art of simpling is necessary for those that intend to be divines." And he says, "It would be useful to many professors, but because divinity is the noblest of them, he will speak only to that at present. There are in Scripture several expressions and similitudes, either concerning plants, or derived from them, which cannot thoroughly be understood without this art." He then enumerates several plants which require explanation, and tells us "that the Lilies amongst the Thorns were Woodbines, is not known to every one, or that the husks which the Prodigal Son did eat were the fruit of a tree. That if a divine were a good herbalist, he might be much more accurate in the interpretation of Scripture."

Almost all the early writers on this subject speak of Solomon's knowledge of plants. Gerarde, in the preface to his 'Herbal,' says, "He was the first botanist; he knew every plant, from the cedar of Lebanon to the *mosse* that groweth on the *wall*." The word Moss being here named by Gerarde, instead of Hyssop, as translated in the fourth chapter of Kings, first book, I was led to consider why Gerarde should make this distinction; I found, in referring to Cole's 'Simpling,' that he has the word Moss instead of Hyssop; and Walton, in his 'Angler,' calls it "the *shrub* that groweth out of the wall."

The references in Scripture to Hyssop are as follows:—Exodus xii. 22, "Take a bunch of hyssop, and dip it in the blood, and strike the lintel," etc. Leviticus xiv. 4 (upon the rites and sacrifices in cleansing the leper), "The priest shall command to be taken, etc., two birds, cedar wood, and scarlet, and hyssop;" the 6th verse says, "The scarlet, and the hyssop shall be dipped in the blood of the bird, and shall sprinkle upon him that is to be cleansed from the leprosy;" the 52nd verse says, "And he shall cleanse the house with the blood of the bird, etc., and with the hyssop, and with the scarlet." Numbers xix. 18, says, "A clean person shall take hyssop and dip it in the water, and sprinkle," etc. In Psalm li. 7, David, in praying for deliverance from his sins, says, "Purge me with hyssop, and I shall be clean." In John xix. 29, it is said, "And there was set a vessel full of vinegar; and they filled a sponge with vinegar, and put it upon hyssop, and put it to his mouth." In Hebrews ix. 19, St.

Paul, referring to the bloody sacrifices of the law, says that "Moses took scarlet wool and hyssop, and sprinkled both the book and the people." From these passages it appears that the plant translated in our version Hyssop, was always used in the application of sprinkling in the rites of purifying, etc.; but I do not see why this in particular should be selected to represent the original Hebrew word *Esob;* and the question is, what plant was really used by the Israelites in these sacrifices? and is our translation correct? Dr. Kitto, whose note to the verse in Exodus says, "Hyssop (*Esob*).—The Hyssop of Sacred Scriptures has opened a wide field for conjecture, but in no instance has any plant been suggested that at the same time had a sufficient length of stem to answer the purpose of a wand or pole, and such detergent or cleansing properties as to render it a fit emblem for purification." He then gives a cut of the *Phytolacca decandra* (Hyssop), which he says is remarkable in both those respects, and he considers the Hyssop belonged to this genus. The note continues (see 'Pictorial Bible,' vol. i. p. 161) to give a reason for a plant with a long stem, and also with the other properties; and tells us this contains an enormous quantity of *Potash,* 100 pounds of its ashes giving 42 pounds of pure caustic alkali; and hence we obtain a striking illustration of the expression in Psalms, "Purge me with hyssop," etc.

I must confess this note of the Doctor's does not satisfy my mind, and I hope some of your readers who are interested in this subject will be able to give us more satisfactory information, and tell us what the true plant was, and if our Hyssop is a proper representative of the original or not.

A Reader of the Word.

ON EARLY ENGLISH NAMES OF PLANTS.

(*From a Correspondent.*)

The following now obsolete names are chiefly taken from our early English poets, from dictionaries, etc.

Maiden's-blush is a white Rose with a tinge of red. It is a slight variety of the York and Lancaster Rose. It was commonly known in Scotland nearly half a century ago by this name.

Sops-in-wine appears in the 'Shepherd's Calendar' of Spenser.

"Bring hither the pinks and purple cullumbine,
With gilliflowers;
Bring coronations, and Sops-in-wine
Worn of paramours;
Strow me the ground with daffadowndillies
And cowslips and kingcups and loued lilies;
The prettie pawnce
And the chevisance
Shall match with the fair flowredelice."—*April.*

Soppes-in-wine, as it is called by Spenser, was anciently used by our forefathers for flavouring their wine, as rosemary was employed in beer. It is a kind of Pink, or a variety of Carnation, with spicy petals.

True-love is *Paris quadrifolia*. It was recognized by this name in Hertfordshire, in not very remote times.

Crowtoes is *Lotus corniculatus*. It is one of the flowers mentioned by Milton in his Monody on Lycidas.

"Bring the rathe primrose that forsaken dies,
The tufted crowtoe and pale jessamine,
The white pink and the pansy freaked with jet,
The glowing violet;
The musk-rose and the well-attired woodbine,
The cowslips wan that hang the pensive head,
And every flower that sad embroidery wears;
Bid amaranthus all his beauty shed,
And daffadillies fill their cups with tears,
To strow the laureat herse where Lycid lies."
LYCIDAS, *in Milton's Minor Poems.*

Priest-crown, or Priest's-crown, is Dandelion. When the winged or downy seeds of this plant are blown off, the bare receptacle has a fancied resemblance to the ecclesiastical tonsure.

Rose-Parsley may probably be *Caucalis daucoides*, or some reddish-flowered umbelliferous plant.

Prick-Madam is *Sedum acre;* probably Irish-Madam is this or some other species of *Sedum*.

Nose-bleed is Goose-tongue, a rough-leaved Yarrow (*Achillea Ptarmica*).

Lady-gloves is Foxgloves. The name is given in honour of Our Lady, the Blessed Virgin.

Spoonwort is *Ranunculus Flammula*, so called from the coch-

leate shape of its leaves. In Scotland, the children, in play, used them for spoons.

Harlock is Charlock; so is Hedlock or Kedlock. They are corruptions or provincialisms.

Passe-flower is Pasch- or Pasque-flower, *Anemone Pulsatilla*, so called because it blows about the period when the feast of *Pascha*, or Easter, is celebrated.

Chesboule is *Papaver*, or Poppy. Cheese-bowls, *flores papaveris horti, sic dicti a similitudine aliqua vasculorum caseaceorum* (Skinner). Their flowers are like Chesils or Cheese-holds, or the wooden vessels in which cheeses are made.

Capon's-tail is a corruption of Capul-tail, and this is a corruption of *caballus, equus*, whence we have *cheval* and chivalry, cavalry, etc. Hence it may be inferred that Capon's-tail, or Capul's-tail, is *Equisetum*, a species of *Horsetail*.

Liricumphancy, or Liriconfancy, is the Lily of the Valley. The first part of this very singular word is probably from λείριον, Lily.

Muskmillion may be a variety or a corruption of Muskmallow.

London-buttons, Irish-Madam, and Coventry-bells, may possibly be corruptions or provincialisms for London-pride, or Bachelor's-buttons, or Prick-Madam, or Canterbury-bells.

e. g. Coventry-bells may be Canterbury-bells, or some species of *Campanula*. London-buttons may be London-pride, or London-Rocket, or some sort of yellow or white Rocket; or it may be Bachelor's-buttons, a name applied to several very different species.

Culverkey is probably the Snake-weed, or Snake's-head, or Snake's-root, *Fritillaria Meleagris*, or *Polygonum Bistorta*. Culver may be a form of *coluber*, a snake.

Wincopipe is the Poor Man's Weather-glass, but whether *Anagallis arvensis*, or some other meteoric plant, is unknown to the present deponent. G.

Note. A reverend correspondent suggests that Crowtoes is a species of *Ranunculus*, which is called *Crae's-taes* in Scotland; also that Spoonwort declares itself to be *Cochlearia;* Lady-gloves, *Aquilegia vulgaris*, or, according to some, *Digitalis*. London-button is Bachelor's-button, a double form of *Pyrethrum Parthenium;* a weed in some gardens. Muskmillions,—? what in Devon is called Mother-of-millions, viz. *Linaria Cymbalaria*.

HORSE PLANTS, ETC.

(*To the Editor of the 'Phytologist.'*).

The perusal of your article, in a recent number of the 'Phytologist,' respecting the word 'Buck' has induced me to consider what can be said on behalf of plants having the prefix *Horse.* They are numerous; and the same rule applies with regard to the meaning of the word *horse,* as relating to certain plants, that we find in the word *buck,* though in the present case the word means *size;* for instance, we have Horse-Chestnut, Horse-Cucumber, Horse-Radish, Horse-Mint, Horse-Purselove, Horse-Rape, etc.

I think there is no difficulty in saying that these names indicate plants which are distinguished for their size compared with some others. The word *horse* is used as a prefix to other words which have a similar meaning, to signify size and strength, such as 'horse leech,' a large leech; 'horse martin,' a large kind of bee; 'horse mussel,' a large mussel; 'horse crab,' a large crab; 'horse emmet,' a large ant; 'horse-fly,' a large fly. We have also 'horse face,' a large face; 'horse godmother,' a large, coarse woman; 'horse laugh,' a large loud laugh; and, equally significant, we have 'Horse Guards,' who will admit that they are large enough and strong enough for any one. As to the derivation of the name of this animal, the Horse, some of our dictionaries tell us that it is derived from the Saxon *Hors;* and Horsa, the Saxon chief, was so called from the figure of a horse borne on his coat-of-arms. This name, so given by our Saxon ancestors, might have been to signify what the first of the family possessed, namely, power and greatness. We all know that the horse proverbially possesses power, and it is a common saying, "As strong as a horse."

H. B.

PYRUS AUCUPARIA.

Mountain Ash, Quicken Bean or Quicken-tree, Rowan Tree, etc.

You have already given us some notes on this tree and its superstitious uses, and something has been lately said as to its berries being poisonous; but I cannot find, in any of the old herbals I have referred to, that our early writers considered them poisonous. In a curious volume, called 'Historia Vegetabilium

Sacra,' or a Scripture Herbal, I find, under the title "Ash," the following, which refers to its virtues :—"The berries of the Quicken-tree, or wild Ash, are bitter and acid, purge *waterish humours bravely*, therefore good in the scurvy and in dropsies, in diet-drinks, and it is said it will yield a liquor (if tapt as we do Birch in the spring) highly commended in scorbutical and 'splenetical *affects*.'

"Some authors confidently aver a serpent will rather creep through a fire than over a twig of Ash."

The book above referred to is written by W. Westmacot, Med. Prof., and printed by John Salusbury, at the Rising Sun, in Cornhill, 1695.

The author also refers to the *Sorbus pyriformis*, and says of it that "the first to find it in England was my old friend, and most exact botanist, Mr. Pitt, an apothecary of Worcester, since dead, who sent a description of it to the Royal Society, which I shall set down for the encouragement of young botanists; yet hoping that Mr. Norton, a botanist from London, whom I accidentally saw near Malvern, in Worcestershire, on the 26th of July, '92, going to search what plants he could find on that mountain (in order to completing a large herbal he was about), may find it and give us a further account of it."

I should like if some of your readers could give me some particulars of the above-named Mr. Newton, and also of the author of 'Historia Vegetabilium Sacra.'

I think Mr. Pitt named above has already been noticed in the pages of the 'Phytologist' as Mayor of Worcester.

S. B.

ATROPA BELLADONNA.

(*To the Editor of the 'Phytologist.'*)

Several notices have appeared in your interesting Journal relating to poisonous plants, and their effects upon persons who have eaten them by mistake. The enclosed account of poisoning by the berries of the *Belladonna* may be worth recording; it also shows the locality of the plant, and may assist some of the curious, in ascertaining whether the root of the *Belladonna* was the insane root of Shakespeare, referred to in the play of 'Macbeth.' The berries, in the case reported, certainly produced deleterious

effects upon the persons who ate them, but I do not know any instance recorded of the same effects being produced by eating the root of the plant; but I should like to find one. The question has been mooted in your Journal as to the range of this plant, and some one has told us it grows in Fifeshire, the site of the blasted heath where Macbeth met the witches, but I do not find that the question has been satisfactorily cleared up. H. B.

Homœopathy not a Modern Science.

If you can allow this subject to be brought within the scope of your Journal, I think it may be interesting to some of your readers, particularly to those who delight in "doses infinitesimal," and carry in their pockets a neatly bound case, well filled with delicate bottles of globules, composed of Dulcamara, Belladonna, Chamomilla, Pulsatilla, Bryonia, etc., the produce of British plants.

In Shakespeare's 'Romeo and Juliet' we have the following passage, which plainly describes the principles of Homœopathy:—

Benvolio to Romeo.

"Tut, man; one fire burns out another's burning;
One pain is lessened by another's anguish.
Turn giddy, and be holped by backward turning;
One desperate grief cures with another's languish.
Take thou some new infection to the eye,
And the rank poison of the old will die."

Dr. William Turner, in his 'Herbal,' dated 1551, speaking of Wolfsbane, or Aconite, says, "This of all poisons is the most hastie poison; howbeit Pliny saith this herb will kill a man if he take it, except it find in a man something it may kill; with that it will strive as with its match which it has found within the man; but this fighting is only when it hath found poison in the bowels of a living creature; and a marvel it is that two deadly poisons do both die in a man, that the man may live."

William Coles, in his 'Introduction to the Knowledge of Plants,' ch. xxviii., says, "Certain it is that many herbs which the rude and ignorant call weeds, are the ingredient of many soveraigne medicines. Winter Wolfsbane, which otherwise is

rank poison, is reported to prevail mightily against the bitings of serpents and vipers; so have I seen some persons who when they have burned their fingers to go and burn them again to fetch out the fire; and why may not one poyson fetch out another, as well as fire fetch out fire? and that Nightshade, which carries death in its very name, prevents death by procuring sleep, if it be rightly applied to a fever." S. B.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Friday, the 8th of April. Mr. J. G. Baker communicated the following notices:—

Barbarea intermedia, Boreau.—With reference to this plant, M. Crepin, of Rochefort, writes:—'This species has been misunderstood in Belgium as in England, and generally taken for *B. præcox*. It is six years since I recognized the identity of the plant of our country with that of the centre of France.'

"*Salix undulata*, Ehrh.—This species was figured in 'English Botany' and takes its place in our Floras and catalogues amongst the naturalized Britons, on faith of its occurrence in osier-grounds near Lewes, in Sussex. It is nearest *S. triandra*, which it resembles closely in general appearance and habit of growth, but it may be readily known from that species by its villose scales and elongated styles. For several years I have had in my collection a specimen with leaves and hermaphrodite catkins, collected by the Rev. W. H. Purchas, on the banks of the Wye, near Ross, in Herefordshire, where he states that it occurs in tolerable plenty. During the early part of last summer I met with it in considerable abundance by the side of the river Wharfe, between Burley and Otley, in West Yorkshire. Both the plants of Herefordshire and Yorkshire belong to the form with villose ovaries, which is that which is common on the Continent, and was originally described by Ehrhart (that figured by Smith under the name of *lanceolata* has the ovaries glabrous). By Wimmer, *S. undulata* is regarded as a hybrid between *triandra* and *viminalis*, but this hypothesis cannot be regarded as tenable; for, as pointed out by

Fries, it grows wild plentifully in tracts of country where the former of those species does not occur. In the vicinity of Thirsk, what is probably the same grows intermingled with those species in the osier-grounds ; but in our neighbourhood I have not seen it in flower. Upon the Continent, *S. undulata* is a plant of Scandinavia, Russia, Germany, Holland, Belgium, and France."

He announced that the distribution of the proceeds of the collecting-season of 1858 was in a forward state of progress, and that the Report for this year was nearly ready for circulation.

Reviews.

A Life of Linnæus. By Miss Brightwell, of Norwich. London: Van Voorst, 1858.

We are glad to welcome this contribution to our knowledge of a great naturalist, "the mighty spirit of his day," and we do so the more readily, because we feel disappointed that some of the members of the Linnæan Society have not given us a full and complete life of him. They have possession of his collection of plants, correspondence, and other works, which show that he, like Solomon, spake of plants, from the Cedar-tree that is in Lebanon, even unto the Hyssop that springeth out of the wall; but we regret to say that these valuable remains are kept almost as a sealed book in the archives of the Society. The Linnæan Society was instituted in the year 1788, and incorporated on the 26th of March, 1802, and they have honoured themselves with his name, but have not honoured him with a biography. We do not of course consider the articles in Rees' Cyclopædia, written by Sir J. E. Smith, worthy of the name; and although Dr. Maton did something excellent in its way, we may fairly ask why nothing more has been done by the Fellows of that learned Society. It cannot be that because Linnæus was a Swede, a foreigner, that this tardy justice has not been offered to his memory,—he belongs to Humanity. He is a cosmopolitan in the strictest sense of this term. Linnæus was born in the year 1707 and died in the year 1778, having lived 70 years, 7 months, and 7 days.

Aristotle is generally, but erroneously, considered the founder of the *Science of Botany ;* it has also been cultivated by kings,

queens, princes, and emperors, and many of our plants are named after them. The learned in all ages, Greeks, Romans, Arabians, Venetians, Germans, Dutch, and English, have contributed towards its advancement, but to the immortal and unrivalled Swede are we indebted for enlarging and systematizing it. Linnæus tells us that in order to make himself acquainted with the species of plants, he explored the alps of Lapland, the whole of Sweden, a part of Norway, Denmark, Germany, Belgium, England, France; that he had examined the Botanical Gardens of Paris, Oxford, Chelsea, Harlescamp, Leyden, Utrecht, Amsterdam, Upsal, and others; that he had turned over the Herbals of Benzer, Hermann, Cliffort, Burmann, Oldenland, Gronovius, Royer, Sloane, Sherard, Bobart, Miller, Tournefort, Vaillant, Jussieu, Surian, Beck, Brown, etc.; that his dear disciples had gone to distant lands and sent him plants from thence,—Kerlen to Canada, Hasselquist to Egypt, Osbeck to China, Toren to Surat, Solander to England, Alstrœmer to southern Europe, Martin to Spitzbergen, Pontia to Malabar, Kœhler to Italy, Förskahl to the East, Lœfling to Spain, Montin to Lapland, etc., and seeds were sent to him by his friends from various countries. From these important facts we may conceive that Linnæus in his life and labours acted upon the declaration of one of the ancients, viz. that "True glory is to be acquired by doing what deserves to be written, and writing what deserves to be read, and making the world the happier and better for our having lived in it." With this introduction we proceed to notice Miss Brightwell's work. It contains seven chapters and 191 pages. She tells us in the first page that it is a brief and simple sketch of the great naturalist, and designed for the instruction and entertainment more especially of the young, and of those who feel a debt of gratitude to him who, availing himself of the labours of preceding naturalists, arranged a system by which "the greatest kingdoms of nature might be better studied and understood, and their advantages to man more completely secured." The name of Linnæus is known to the whole civilized world, but it does not appear that we have yet a popular life of him suited to the tastes and wishes of those who would gladly know something of his personal history and adventures.

The work is what the authoress candidly states it to be, and we can with pleasure recommend it for perusal; but at the same

time we take the liberty of suggesting to Miss Brightwell, before a second edition be published, access should be had to the documents in the Linnæan Society, and also to the correspondence between Linnæus and Haller, by which the work might be enlarged, and some dates more particularly given. In doing this, we think Miss Brightwell would find that some of the statements in the present edition might be varied; for instance, as to the great naturalist having been parsimonious in his habits, and fond of money, as stated by her in page 138; and as to his vanity and inordinate love of fame, which she says was Linnæus's foible, page 158. She might also more particularly refer to the description given by himself (in our opinion anything but vain), as follows:—"My head was prominent behind, and transversely depressed at the lamboid suture; my hair was white in infancy, then brown, in old-age somewhat grey; my eyes were of a hazel hue, vivacious and penetrating, with a remarkable power of vision. My forehead became wrinkled in after-life. I had an obliterated wart on my right cheek, and another on the same side of my nose; my teeth were ineffective, having become unsound in early life from hereditary tooth-ache. My mind was quick, easily moved to anger, joy, or sadness, quickly appeased. In youth hilarious, not torpid in age, in business extremely prompt. My gait was light and active. I committed all household cares to my wife, being myself concerned solely with the productions of Nature. I brought to a conclusion whatever I commenced, and during a journey I never looked backwards."

Miss Brightwell refers to Linnæus's Tour to Lapland in 1731 (3,800 miles in six months), of which he kept and published a most interesting journal, and concluded it with the following entry, made on his arriving at Upsal: "To the Maker and Preserver of all things be praise, honour, and glory, for ever."

Linnæus in after-life, when referring to his *trials and privations*, says, "I thank thee, Almighty God, that in the course of my life, amidst the heavy pressure of poverty, and in all my other trials, thou hast been ever present to me with thine omnipotent aid."

The writings of Linnæus are numerous; he was not only great as a botanist, as is shown by the 'Species Plantarum,' termed by his great rival Haller, "*maximum opus in æternum*," containing a description of every known plant, arranged according to

the sexual system, but also as a zoologist. He was honoured with the society and correspondence of the most distinguished persons of the time, both at home and abroad. The Queen of Sweden, sister to Frederick of Prussia, was one of these. She commanded him to attend at her palace, to arrange and describe her collection of shells and insects,—and Miss Brightwell tells us the Queen was so pleased with the conversation of her distinguished subject, that she treated him with much regard, and even allowed him to indulge in his usual habit of smoking, in her apartments. The King of Sweden also, in consideration of his services in describing the rare animals and birds of his collection, in Latin and Swedish, with plates, conferred on him the honour of the Polar Star, which had never before been conferred for literary merit.

Linnæus did not forget to record his gratitude to the friends who took him by the hand in early life. One of these was Count Zessin, who had been tutor to the King of Sweden, and he is affectionately noticed in the last edition of the 'Systema Naturæ,' published in 1766.

It appears to us, from the writings of this great man, particularly his Lapland Tour, that he did not only "look through Nature up to Nature's God," but he looked *into* Nature, and *there saw Nature's God.*

Miss Brightwell, in concluding her work, says:—"I wish to add a few words recommendatory of the study of botany for its own sake. We are no longer in the infancy of the science, and its utility is put beyond question. Of its benefits no one doubts. Our food, our physic, our luxuries, are all improved by it. All this is acknowledged, but are its benefits as a mental exercise sufficiently considered? And yet what study is calculated to afford more delightful instruction to the young, at once gratifying a taste for beauty, and training the youthful mind to thought and observation? Affording too the most healthful gratification and innocent enjoyment, its pleasures spring up beneath our feet, and as we pursue them, reward us with simple and pure joys. All is elegance and delight in this charming study, and there are no painful, distressing, or unhealthy experiments to be made. And it is certain that no one can *rightly* enter upon this and kindred pursuits without having cause in the end to pronounce them profitable both *here* and *hereafter.*"

With these remarks we entirely concur, and sincerely hope that the perusal of Miss Brightwell's interesting 'Life of Linnæus' may be the means of extending the love of the delightful science of botany, and prove beneficial to all who truly desire to become better acquainted with this portion of the works of our great and all-wise Creator. S. B.

Note on S. B.'s Review of 'A Life of Linnæus.'

We believe that both Dr. Pulteney and Dr. Maton, who compiled 'A General View of the Writings of Linnæus,' were both members of the Linnæan Society. Dr. Maton was certainly a member. Still the reviewer's charge against the Society is not groundless; for these valuable works, or, strictly speaking, these two editions of a work on Linnæus, contain only a *catalogue raisonné* of the great man's writings. The authors do not entitle their compilation or compilations a biography of the most eminent of all naturalists. There may exist in the arcana of the Linnæan Society materials for a life of their patron saint, or there may not; the keepers or trustees of these treasures only know.

Theophrastus, not Aristotle, is the real father of botany in the West, and probably in the East also.

That Linnæus did not despise gold is testified by Fabricius, who knew him intimately, and who excuses his parsimony by the extreme poverty this eminent man had to struggle with from his youth, and till he had nearly reached middle age.

This memorialist candidly affirms that his frugality never degenerated into avarice; and also that in non-reception of fees for instruction he was generous to excess, especially in the case of foreigners.

That he was desirous of fame, or ambitious, as some would entitle this feeling, is *one* of the infirmities of noble minds. If he was *cupidus laudis*, desirous of commendation, he certainly was no niggard of his praises. If he locked up his coffers, he opened his heart in another way; and although many words will not fill a bushel, yet a good word spoken in season is more valuable than a pecuniary gift; "it is like an apple of gold in a picture of silver."

BOTANICAL NOTES, NOTICES, AND QUERIES.

The publication of the following is particularly requested,—

A New British Fern.

(*To the Editor of the 'Phytologist.'*)

During last summer, whilst on a visit to Mrs. ——, for the purpose of seeing her Ferns, which were collected in Scotland in the summer of 1856, I immediately detected one new to my eyes as British, and which she thought was a beautiful variety of *Blechnum spicans* (*Spicant*), but which I informed her was *B. alpinum* (*Lomaria alpina*), and hitherto not found north of the Equator. I at once thought there must be some mistake, and that, unknown to her, the British and other Ferns had got mixed. But Mrs. —— soon dispelled all my doubts, by telling me the exact spot in which she found it, and only took it up because she thought it a beautiful variety of *B. spicans* (*Spicant*). Neither the gardener who had potted all the Ferns, nor herself, knew anything of *B. alpinum* until I made it known to them. However, my sceptical manner on the following day, brought a letter, of which I give an extract :—

"I cannot resist the satisfaction of telling you, that my husband confirms all I told you about the ambiguous Fern ; he is certain that it is *the* Fern I gathered about a mile from ——, on a wall running alongside a rushing mountain-stream. I was charmed with it, or rather with myself for discovering anything so unlike what I had ever seen, that I can remember the spot ; and the Fern so exactly comes up before my mind's eye as this identical Fern, that I cannot yet quite submit to thinking that it cannot be, even though you say it."

Blechnum alpinum, found in the crevices of an old stone wall, by the side of a mountain-torrent, not far from Loch Tay, Perthshire, Scotland, June, 1856. Geo. B. Wollaston.

Doubts of its Origin.—1. Why only a solitary plant ? 2. Can it have been planted ? 3. Has a mistake been made ?

Chiselhurst, Dec. 6, 1858.

Allium at Southend.

About three years since, when at Southend, I found, just beyond the village, on the left-hand, amongst the grass and bushes, in many places, a species of *Allium*. I brought home several specimens, but accidentally forgetting them, when I went to the case nothing was to be distinguished but the bulbs ; these I planted, but they never made their appearance. Do you know what species it is ? [Possibly Mr. Salmon, or some Southend botanist, could tell us which *Allium* the above is. Several years ago, Mr. Syme saw one in an inaccessible place below Gravesend, which he conjectured was *A. oleraceum*.]

Potentilla opaca ?

Mr. Sim, of Perth, the valued and indefatigable correspondent of the

'Phytologist,' has sent the radical leaves of a *Potentilla*, which may probably turn out to be the above-named plant. It grows on the banks of the Tay, not far from Invergowrie. Mr. Sim will send specimens when mature. The leaves are rather like luxuriant states of *P. reptans*, which is rare in Scotland.

The same most successful explorer of Flora's dominions writes that *Viola odorata* abounds about Perth. He affirms that it is a true native of these parts, and that "no one who has seen it growing on the banks of the majestic Tay, far from any human abode, would have the temerity to assert that it is an outcast from a garden."

Perhaps not. But some prudent people would affirm that, like *Alchemilla alpina* and other upland plants, it was carried thither by floods. If it be urged that it is not an alpine nor an upland species, it might have been carried up from Dundee or Fifeshire by the tide. Let Mr. Sim settle the matter with the sceptics.

On the Carnivorous Property of the Droseræ (Sundew-plants).

(*To the Editor of the 'Phytologist.'*)

Sir,—Visiting Chat Moss last July (1859), and being previously warned that if I was a vegetarian, my feelings would be tried, the above plants were minutely observed, in order to see if they live on animal diet.

Though there were probably millions of the three British species on the extensive Moss (a large portion was traversed), none of the plants had insects on them. They sometimes have flies on their leaves.

It is however a well established physiological fact, that plants, which have no stomach, can only absorb and assimilate nutriment in a fluid state, either liquid or gaseous.

It is a mistake, or probably one of our vulgar traditional errors, or it may be classed with certain other asserted fallacies, a sample of which was given in the 'Phytologist' not long ago, under the somewhat equivocal title of *things not generally known*.

Leigh, near Manchester, 15*th April*, 1859.

'Insane Root' of Shakespeare.

In the last number of the 'Phytologist' there is a query respecting the 'insane root' of Shakespeare. I think the following, taken from an old herbal of G. D. Rembert Dodoens, dated 1576, will set the matter at rest; it being translated into English in Shakespeare's time would render it the more likely. After making mention of the *Atropa Belladona*, under the name of *Solanum somniferum*, it gives the following description of the *Solanum manicum*.

"The other *Solanum*, called *manicum*, that is to saie, Madde or Raging, hath leaves like Sennie or Mostarde, but greater, and somewhat like the leaves of the right Branke Ursine, called in Latine, *Acanthus*." "It bringeth forth, from one roote, ten or twelve stalkes of the height of two or three foote; at the top of the sayd stalkes or branches, groweth a rounde head, of the bigness of Olyne, and rough like the fruit of the Plane-tree, but

smaller and longer. The flower is blacke, and when it perisheth it bringeth forth a little grape, with ten or twelve berries, like the fruit of Jine, but playner and smother, like the berries of grapes. The root is white and thicke, of a cubite long, and hollow within." "To this description agreeth that kinde of straunge Malloe, which is called *Malua Theophrasti* and *Alcea veneta*, the which shall be described in the xxviii chapter of the fifth part of this historie."

"*The Danger.*—The roote of *Solanum manicum*, taken in wine, to the quantitie of a dram, causeth idle and vayne imaginations; if taken to the quantitie of two drams, it bringeth frenzie and madness, which lasteth by the space of three or four days; and if four drammes, these if be taken, it killeth."

This description, although not very intelligible, I think is no doubt meant for the *Solanum Dulcamara*. GEORGE DOWKER.

The Berries of the Mountain Ash.

"A little after sunset we reached the mouth of the river Tschugash, where it falls into the Katounaia. This is also a most lovely spot; it is sheltered by some very high rocks of fine green and purple jasper, their tops fringed with Birch and Mountain Ash, the latter covered with bunches of deep-scarlet fruit, used in almost every dwelling throughout Siberia. The wealthy housewife makes a *nalifka* from it, which is considered excellent; it has a fine bitter flavour. They make it into a preserve, and some dry the fruit in sugar. A delicious salad is also made by placing the bunches in large jars, filling them up with vinegar, slightly sweetened with honey. This is found in most cottages."—*Atkinson's 'Siberia.'*

[Our readers are indebted to the Rev. M. M. Atwood for the above. This, with the previously published statements, will, it is hoped, settle the question about the wholesomeness of this fruit.]

Helleborus viridis, Watford, Herts.

Near Watford goods-station, London and North-western Railway, there is a beershop called the 'Bricklayers' Arms,' and near the latter there is a wood or oak-grove. In the south end of the wood is a dry pit, on the banks of which there is abundance of the above plant.

JOHN LLOYD.

It is to be hoped that the pig-doctors may remain in ignorance of this fact. They are great enemies to the Green Hellebore.

Watford, Herts.

Botanical Query.

Why is *Czackia Liliastrum* called St. Bruno's Lily?

English Names of Plants.

(See 'Phytologist' for April, 1859.) Crowtoes, *Lotus corniculatus*. True-love, *Paris quadrifolia*. Liriconfancie, *Convallaria majalis*. Capon's-tail, *Festuca Myurus*. Nose-bleed, *Achillea Millefolium*. Coventry-bells, *Campanula Medium*. Red Maithes, *Adonis autumnalis*. Kedlock, Gar-

lock, Warlock, Charlock, Cadlock, Chadlock, *Sinapis arvensis*.—These names have been taken from Green's 'Universal Herbal,' published in 1816.

In the same work *Cucurbita Pepo* is called English Melons, or Millions, therefore perhaps Musk-millions may be the old English term for *Cucumis Melo*, or Musk-Melon. M. H.

Duplicates for Exchange.

I shall be happy to exchange with any British botanist the following duplicates:—

Digitaria sanguinalis, Chloris compressa, Setaria verticillata, Erodium moschatum, Polypogon monspeliensis, Phalaris paradoxa, Sagittaria sagittæfolia, Narcissus Pseudo-Narcissus, Solanum nigrum, Vinca minor, Medicago denticulata, Saponaria officinalis, Polypodium calcareum, Ranunculus sceleratus, Ribes Grossularia, Tussilago hybrida, Taxus baccata, Potentilla Comarum, Narthecium ossifragum, Corydalis lutea, Linaria repens.

S. H. Stocks.

Fitzwilliam Street, Huddersfield, Yorkshire.

Exchange of British Plants.

A Correspondent writes:—"Having still a few duplicates of alpine, Scottish, and other plants, also a few Mosses, left from last year's collection, I shall be happy to forward desiderata for exchange with any Botanist in the south or west of England or Ireland, who may be so disposed.—Address, Charles P. Hobkirk, Huddersfield."

To Muscologists.

A correspondent who has several examples of the female state of *Hypnum elegans* for exchange, wishes to obtain the same in fruit. The Publisher or Editor of the 'Phytologist' will be happy to receive the fertile plant, and will send in exchange examples of its other state.

Daphne Mezereum.

Possibly this may meet the eye of some one who will be able to report upon the following:—

Has the Mezereon been noticed in any of the Welsh counties, growing wild or apparently wild? The plant is so very generally met with *in gardens*, in Denbighshire and in Merionethshire, that one would be inclined to suspect that it may be indigenous to North Wales. It might be sought for, by those who have the opportunity, in warm, sheltered woods, upon the slope of hills of moderate height. A.

Communications have been received from

S. B.; F.; G. B. Wollaston; G.; H. B.; A Reader of the Word; John Sim; G. Dowker; J. Lloyd; A.; S. H. Stocks; M. H.; Rev. M. M. Atwood.

NOTES ON THE BELGIAN FLORA.

A List of Plants growing wild in Belgium, and which are either rare or not indigenous in England.

The following is not by any means a complete list of *all* the rare or interesting plants to be found in this country, but merely such as I have collected myself, chiefly within walking distance round my home, near Dinant-on-the-Meuse, in the province of Namur. My guides in determining them have been the 'Compendium Floræ Belgicæ' of Lejeune and Courtois, and the 'Flore de Namur' of the Abbé Bellynck.

I suppose I ought to say something about climate, geological formation, etc.

With regard to the former, I can state from experience that the air is pure and bracing, owing to the elevation, which is said to be between 1200 and 1500 feet above the level of the sea. In summer, the reflection of the sun's rays from the rocks produces intense heat during the midday hours, but the mornings and evenings are delightfully cool, a fresh breeze springing up at sunset which lasts through the night.

The winters are generally severe, beginning with heavy falls of snow, followed by long-continued frosts. The present season has been here, as elsewhere, exceptionally mild.

I am told, and that on excellent authority, that the strata in this province form part of the Old Red Sandstone system of Hugh Miller. If so, Dr. Arnold was right when he said it was not *Sandstone* but *Limestone* (much of it *carboniferous*), for this latter certainly prevails to a considerable extent, alternating with a crumbling sort of slaty shale. Some of our plants grow indifferently on both, while others particularly affect one or the other.

Following the example of other contributors to the 'Phytologist,' I give my list alphabetically, without reference to any system, natural or artificial.

Actæa spicata. Growing singly on the limestone in many places. Ruins of Poil-vache, etc.

Allium sphærocephalum. Abundant on the rocks in this neighbourhood, which are quite gay with its globular heads of pink flowers, through great part of the summer.

Alyssum calycinum. Common in dry, waste places. Border of a field leading to Poil-vache, etc.

Anemone ranunculoides. Fond* de Leffe, near Dinant.

Aquilegia vulgaris. Frequent on the limestone rocks, growing in little families, and very attractive from the bright purple colour of the flowers.

**Arabis arenosa.* One of our commonest rock-plants, so abundant in some places as to cover the ground, like a rose-coloured carpet. It flourishes also on the ruins of Poil-vache, Montaigle, etc.

**Asclepias vincetoxicum.* Very abundant on the limestone in the provinces of Namur and Liége.

Atropa Belladonna. On rocky hillsides. I have found it very luxuriant on the shale in the valley of the Bocq, a small stream which falls into the Meuse three miles below Dinant.

Bark- or *Borck-hausia taraxacifolia.* Dry, sunny banks. By no means so abundant as *B. fœtida.*

**Campanula persicæfolia.* Common on the limestone rocks along the Meuse, the Ourthe, Visdre, etc., and conspicuous from its large flowers.

**Corydalis bulbosa.* In a sheltered dell, called the Fond de Rivaux, between the villages of Honx and Dinant.

**Cornus mas.* Forms part of the brushwood throughout the province.

**Crassula rubens.* Was abundant on the limestone for several summers, in company with *Sedum rupestre* and its variety, *S. elegans*, but the last two years I have looked in vain for it. The heat and drought were, I suppose, unfavourable to its development.

**Dianthus Carthusianorum.* A very common rock-plant, enlivening the sober grey limestone with its bright red flowers, throughout the spring and summer.

Digitalis lutea. Valley of the Lesse, near Dinant.

Euphorbia Cyparissias. Ruins of Poil-vache.

Euphorbia stricta (*micrantha* of Bieb.). Fond de Rivaux: same locality as *Corydalis bulbosa.*

**Globularia vulgaris.* Common on the rocks; flowering early.

* In this part of the country the small valleys are all designated by the term *fond*, as the Fond de Leffe, Fond de Rivaux, etc.

Its head of pale-purple flowers might, on a cursory glance, be mistaken for *Jasione montana*, but the plant is very different in appearance, besides that it blooms much earlier.

Helleborus fœtidus. Abundant on the limestone everywhere.

Helianthemum polifolium. Rocks along the Meuse, between Dinant and Yvoir.

Impatiens Noli-me-tangere. Abundant along the swampy banks of the Bocq, a stream already named, which falls into the Meuse at the village of Yvoir.

**Lactuca perennis.* Limestone rocks, and ruins of Poil-vache, etc.

Libanotis montana. (*Athamanta Libanotis*, L.—*Seseli Lib.*, L. Cat.). Very common on the rocks everywhere round Dinant.

**Lunaria rediviva.* Valley of the Bocq, on the rocks.

Œnothera biennis. Same locality.

Orchis Tephrosanthos, Vill. I have found several specimens, but never two succeeding years, nor twice on the same spot, though I invariably left the tubers in the ground, in the hope of seeing them spring up again. Did I destroy them by plucking the flowers?

**Orlaya grandiflora.* Rather local, but flourishing abundantly where it does grow. Some cornfields near us are remarkably gay every summer with its numerous large, pure-white umbels mingling with the bright red and yellow *Melampyrum arvense.*

Phyteuma spicata. Common in woods almost everywhere in Belgium.—*P. orbiculare* is rare. I have not yet met with it.

**Polygala comosa.* A species recognized by Continental botanists, but not named in our English Floras; was common here on dry waste ground till within the last two years. It seems, like *Crassula rubens*, to have been checked by the late hot, dry summers.

Stachys germanica. Common on the limestone.

Teucrium Botrys. Waste places on the slopes of hills; abundant.

Teucrium Chamædrys. Crevices of the limestone rocks; equally common.

To this list may be added the Gooseberry, Currant, red and black, and the Raspberry, which we find in localities where

they can scarcely be regarded as escapes from cultivation. During a visit to Spa some years ago, I also procured *Maianthemum bifolium* and *Centaurea montana*, both common in the woods there; *Trientalis europæa*, near the Fountain of the Géronstère; and *Arnica montana*, whose bright orange-coloured flowers were very conspicuous among the heather.

I have omitted giving the synonyms by which many of the plants are distinguished, from the fear of lengthening this already extended article.

I have marked with an asterisk those plants which do not figure in the English Floras, even as introduced or doubtful.

H. C.

CHAPTERS ON BRITISH BOTANY.

(*Continued from page* 140.)

Sir Thomas Brown, who takes a very judicious view of Biblical Botany, believed that there were at least two kinds of Hyssop, viz. one employed in the sacred act of sprinkling, and the other one of the *Capillaries*, as the *Filices* were called in his time, a proper contrast to the lofty Cedar. Celsius refines still more on this point, for he calls *Bryum truncatulum*, Hasel., the Hyssop of Solomon (*Hyssopus Salomonis*).

Moræus, a learned physician of Paris, who wrote a commentary on 'Schola Salernitana,' censures Lemnius for calling the Hyssop spoken of in the Book of Kings a Fern, as if no other plant could grow out of a wall but this.

The Salernitan physicians understood under the name Hyssop more herbs than one:—

"Hyssopus purgans herba est e pectore phlegma."

These medieval doctors probably knew plants better than prosody. Here is another version, not so faulty:—

"Hyssopus est herba purgans a pectore flegma."
"Hyssope a purgingherbe is held to be."

It is not improbable that the name of the next herb, *Salvia*, was applied to many other kinds of plants whose leaves resembled the true Sage, and whose virtues might not be widely different:—

"Cur moriatur homo cui Salvia crescit in horto?"

Or,—

> "Why should man dye (so doth the sentence [proverb] say),
> When sage grows in his garden day by day?"

In Palestine there grow several kinds of Sage, and among them one of our two British species was seen by Hasselquist, *Salvia verbenaca*. *Rosmarinus officinalis* is another plant of the Flora Palestina.

Saffron, once as celebrated in the healing art as Sage is now in the culinary, is also a plant of Palestine. It is always enumerated among our indigenous species, but on very unsatisfactory grounds. The same may be said about our ornamental bulbous plants. They are indeed common enough as productions of our gardens, but they are rarely found far from places where cultivation has been at some time or other employed on the soil.

The Lily of the field, the common White Lily of our gardens, is plentiful throughout Syria and Palestine, and there is no good reason why our critics and commentators should cudgel their brains about this and puzzle their readers with multitudes of other plants which might have been alluded to by our Lord. The Martagon, the Tiger, and the Orange Lilies would suit the sense very well, but the grand White Lily, the emblem of dignity and purity both, is every way preferable, because more common.

It is true that this is not a British plant. Is it a European species? Perhaps not. Yet there are few British or European plants better known. It may be inferred that it is as much noticed and as general a favourite in Asia, its native land, as it is in Europe. If so, it was quite as suitable for illustrating the Sermon on the Mount as any other plant could be. The lesson is more easily apprehended by us because we know the illustration.

The Dove's-dung plant, sold to the besieged inhabitants of Samaria, has been a fruitful source of learned trifling. Its botanical name, which is a genuine original, and not a botanical puzzle, as some think, implies a relationship to ornithology, but in a less offensive form than that which our translators have affixed to it. What would squeamish translators think of the common name of *Asafœtida*, viz. Teufels-dreck or *Diaboli stercus*, or, in plain English, Devil's-dung? There is reason in the name, and those who gave names to objects in days neither sophisticated nor silly were not so fastidious as their posterity. The excrement of pigeons is speckled like the leaves of this plant (*Ornithogalum*).

The analogy, if not very delicate, is not far-fetched. This is one of the beauties of Oriental metaphor. If we knew the thing, we could have no difficulty in understanding the allusion. The bird's-milk of the Greeks, which the Greek name signifies, is not so expressive as the Hebrew, because it is unnatural. Bird's-milk is unknown in the West, except here and there on the first of April, when strap-oil, essence of mite-horn shavings, and similar nonentities are in request among those not distinguished for mental perspicacity.

The "cab of dove's-dung," sold at a high price during the siege, is universally believed to have been a measure of the bulbous roots of a species of what we call the Star of Bethlehem. Its very name points to its Eastern origin. It is exceedingly plentiful in Sicily, where it is a weed in the cornfields. Is it known as an edible root in the present day? The inhabitants of Kamtchatka cultivate a species of Lily for food, and store its roots as we store potatoes.

The perpetual desolations threatened by the ancient prophets are very graphically expressed by such descriptions as that of Isaiah, when he foretells the destruction of Idumæa and of a people cursed of God (the people of my curse): "Thorns shall spring up in her palaces; nettles and brambles in the fortresses thereof;" and again, "Moab shall be a breeding-place for nettles;" also, "Nettles shall possess them, thorns shall be in their tabernacles." Those who have visited English monastic remains, or who have seen the sites of old castles and spacious houses now in ruins, will appreciate the faithfulness of these descriptions, and the poetic beauty and expressive energy of the prophetic diction which gives so lively a representation of the grandeur of desolation.

The Tare, in the Scripture parable, like the Hyssop, is probably a word which expresses more than one kind of plant. Most writers agree that the *Tares* among Wheat mean our Darnel, or *Lolium temulentum*, which grows in Judæa as well as in England, and only in cultivated places. The grain of this weed is poisonous and intoxicating. (See 'Phytologist,' N. S. vol. i. p. 167.) But it may also be a species of *Vicia;* for though the plant which we call *Tare* be a very useful agrarial, yet there are several kinds in this country, as *Vicia hirsuta* and *V. tetrasperma*, etc., that are very injurious in agriculture.

Names of poisonous plants appear here and there in sacred

history, and are expressive of wrong or injustice; for example, Hos. x. 4, "Swearing falsely in making a covenant, . . . judgment springeth up as *hemlock* in the furrows thereof." Hasselquist mentions *Cicuta virosa*, but he did not observe *Conium*. The Greeks knew this latter plant, and they employed it in the execution of criminals. Socrates was compelled to drink a bowl of Hemlock, to expiate the freedom of speech in which he indulged when discoursing about the mythology of his countrymen. Dr. Kitto, in his 'Natural History and Physical Geography of Palestine,' enters *Conium* as one of its productions.

The Box and the Fir are mentioned as among the ornamental trees of the Holy Land. "Behold," saith the Lord, by His servant the prophet, "I will set in the wilderness the fir-tree and the pine and the box-tree together." These trees are natives of Palestine, and they grow well in Britain, though they are accounted but doubtfully naturalized species.

The term *Reed*, in Holy Scripture, is like many other names—rather generic than specific. It usually indicates instability. As a *Reed* is shaken by the water and by the winds, so the Lord threatened to shake out of their land His rebellious people. The Prophet said to Jeroboam, "For the Lord shall smite Israel as a *reed* is shaken in the water, and shall root up Israel out of this good land." In speaking of John the Baptist, the Lord declared that he was not a *Reed* shaken by the wind, *i. e.* a light, inconstant man, a temporizer, a weathercock, but a man of integrity, truth, and faithfulness.

The reliance on such as are not able to render efficient aid is proverbially likened unto one leaning on a staff of Reed, which not only betrayeth him that trusteth thereto, but breaketh and woundeth the hand that holds it. It was foretold that Pharaoh would be to the inhabitants of Judæa only a broken Reed, and thus it proved.

The Reed, *Arundo Donax*, in Hebrew, *Kaneh*, whence we have our word *cane*, is a native of the south of Europe, as well as of the east; but our Reed, *Arundo Phragmites*, or *Phragmites vulgaris* of some botanists, is a plant of Palestine, noted by later authorites, though not by Hasselquist. With the Reed is usually united the Bulrush, that of which Moses' mother made a little ark, basket, or boat, in which she committed him to the Nile. Some critics have indulged in small criticisms on the celebrated

passage in Isaiah, where a woe is denounced against the "land shadowing with wings, which is beyond the rivers of Europe, that sendeth ambassadors by the sea, even in vessels of bulrushes upon the waters, etc." In the 'Phytologist,' N. S. vol. i. p. 335, there is an extract from the 'Journal of Botany and Kew Miscellany,' in which it is shown that in the upper regions of equinoctial America the inhabitants use the *Rush* or Bulrush (*Scirpus lacustris*) in the place of wood, iron, canvas, etc. The Indians about the lake Titicaca use no other material in the construction of their tiny ships.

What more expressive figure can be imagined than that of bending the head like a Bulrush, as the hypocrites did. The Reed-mace or Cat's-tail, *Typha latifolia* or *T. angustifolia*, is called by some Bulrush; but this never bends its head, and it is not so suitable for plaiting as the *Scirpus* is. It is quite erect, and of a brittle structure.

The Bulrush, the Reed-mace, the *Arundo*, and several species of *Juncus* (Rush), also a representative of the Sweet-flag (*Acorus Calamus*), are plants of Palestine.* Our Flag-plants, viz. *Iris fœtidissima* and *Gladiolus communis*, are common both to England and Palestine. The latter is but a recent discovery in Britain, but it apparently had existed in the New Forest for centuries before it was observed.

Many British Grasses are found in Palestine. Hasselquist names the following, viz.:—*Agrostis Spica-venti, Poa annua, P. bulbosa*, and *P. rigida, Dactylis glomerata, Cynosurus echinatus, Bromus madritensis, B. sterilis*, and *B. tectorum, Avena fatua, Lagurus ovata*, and *Hordeum murinum*. The late lamented Dr. Bromfield states, in his Letters from the East (a privately printed book), that *Cynodon dactylon* is one of the commonest Grasses on the shores of the Mediterranean, about Alexandria, and in other parts of the East.

The Ash-tree has been already named as one of the ornamental and useful trees of Palestine. To this may be added the Lime (*Tilia*, called *Teil* in Isaiah), the common Elm of England (*Ulmus campestris*), the Poplar (*Populus alba*), and the Alder (*Betula Alnus*). It is true that all these trees are not expressly mentioned in the Bible, but several objects were in these early, as also in later times, comprehended under one name.

* *Juncus effusus* is given by Lady Calcott as the Rush of Palestine, a poor representative.

Few fruit-trees are common to both lands. *Pyrus Malus* and *P. communis*, the Apple and the Pear, are both included in the Flora of Palestine; but we read nothing about fruit-bearing bushes, nor even of the Strawberry. The mountains and plains of Israel were far too warm for fruits that grow naturally in this climate. The Almond-tree, often mentioned in Scripture, and especially in the Book of Ecclesiastes, is the only one which just now occurs to memory. In Roses and Brambles, already mentioned, we have the representative genera, but few, if any of the species.

It is remarkable that Violets do not occur in the Sacred Writings. The plant neither attracted notice for its beauty nor praise for its virtues. Like the obscure and lowly, it appears to have been, in the land of the Hebrews, "born to blush unseen, and waste its fragrance on the desert air."

It is probable that the Centaureas, which abound in the Holy Land, were all lumped together with *Carduus*, *Carthamus*, *Cynara*, *Serratula*, and *Echinops*, under the general name of Thistles; while *Ononis*, *Cratægus*, *Rhamnus*, *Acacia*, etc., might rank as Thorns; the Roses, Brambles, and such-like being classed as Briars.

The Heath of Scripture is another representative of a series of plants of which we may probably have some of the genera but no species; and the term does not convey to us the same idea that it conveyed to the ancient denizens of that land.

Our term Heath is restricted to plants of the genus *Erica*. The ancients, both Jews, Greeks, and Romans, gave a wider sense to the word. Even our early English botanists included under Heath, plants which are widely different from modern Heaths, *Frankenia*, for example, an herbaceous, diminutive object, but which bears the name of Sea-heath.

Commentators are almost unanimous in opinion that the Heath of Scripture is *Tamarix*, Tamarisk, or *Myrica*. Another refinement. Heath is not altogether unknown in Syria and Palestine. Even the genus is represented by the *Erica orientalis*, and the Order by *Erica* and *Arbutus*, of which one species is a native of the British Isles,—the glory of the lakes of Killarney. The Strawberry-tree, *Arbutus Unedo*, if not native in England, thrives well here, and bears our severest winters.

The prophet, in foretelling the destruction of Moab, and in

warning the people that their safety was in flight, said, "Flee, save your lives, and be like the heath in the wilderness;" he reminded them that, as a nation, they would be no more esteemed than the *Heath* and *Ling,* or worthless shrubs of the desert. Again, when the same prophet describeth the wretched state of those who trust in man and make flesh their arm, and who withdraw their confidence from God, he compares such to the Heath in the desert, where they receive no benefit from the dews and rains of heaven, but cumber for awhile the dry, parched soil, and are ready to be kindled and consumed by the slightest spark. "But blessed is the man who trusts in the Lord, and whose hope the Lord is; for he shall be like a tree planted by the waterside, which spreadeth out her roots to the water and her branches in the air, and does not feel when the heat cometh, but her leaf is still green and her fruit plentiful." This is poetical description, such as is only to be met with in Holy Scripture.

Hasselquist, in his Oriental travels, enumerates and names 600 plants seen by him in Arabia, Palestine, and Syria. Of these, upwards of 100, or nearly 120 (114), grow in England, are British plants by reputation. Many more are acclimatized here.

Förskal, the Dane, botanized in Egypt and Arabia, about the middle of the eighteenth century. Like Hasselquist, his labours were prematurely ended by death. He died in 1763; Hasselquist in 1752. Belonius and Rauwolf visited these lands in the sixteenth century. Clusius published the discoveries of the former, and our famed countryman Ray published an abridgment of Rauwolf's journey, in his account of curious travels in the East. There is a complete translation of this work by Stapherst (London, 1693).

Besides these, the learned Bochart, Pococke, Shaw, Russell, and others, have incidentally written on the plants of Holy Scripture.

The following have investigated the subject *per se,* viz. William Westmacott, a physician of Newcastle-under-Lyne, whose work is a curious relic of the knowledge of that early time, entitled,—

"Theolobotanologia, *sive Historia Vegetabilium Sacra:* Or a Scripture Herbal, wherein all the trees, shrubs, herbs, plants, flowers, fruits, etc., both foreign and native, that are mentioned in the Holy Bible (being near eighty in number) are in an alphabetical order rationally discoursed of.

Shewing their names, kinds, descriptions, places, manner of propagation, countries, various uses, qualities, and natural principles, etc. Together with their medicinal preparations, virtues, and dose, Galenically and Chemically handled and performed according to the newest doctrines of philosophy, herbarism, and physick.

"The whole being adorned with variety of matter, and observations, not only medicinal, but relating to the alimental and mechanical uses of the PLANTS.

"Fit for divines, and all persons of any other profession or calling whatsoever, that use to read the Holy Scriptures, wherein they find not only physic for the soul, but also, with the help of this herbal (may the better understand the *Bible*, which also yields them) safe medicines, for the cure of their corporal diseases. The like never extant before.

"By William Westmacott, of the Borough of Newcastle-under-Line, in the County of Stafford, Physician.

"*Adoro Scripturæ plenitudinem.*—Tertul.

"London, printed for T. Salusbury, at the King's Arms, next to St. Dunstan's Church, in Fleet Street, 1694."

Thomas Newton's 'Sacred Herbal' is a translation of Levinus Lemnius, and its object is sufficiently explained in its title, viz.:—

"A HERBAL FOR THE BIBLE, containing a plaine and familiar exposition of such similitudes, parables, and metaphors, both in the Olde Testament and in the Newe, as are borrowed and taken from herbs, plants, trees, fruits, and simples, by observation of their vertues, qualities, natures, properties, operations, and effects. And by the holie prophets, sacred writers, Christ himself, and his blessed Apostles, usually alledged, and unto their heavenly oracles, for the better beautifieing and plainer opening of the same profitably inserted.

"Drawen into English by Thomas Newton.

"Imprinted at London, by Edmund Bollifant, 1587."

From the above it will be seen that Thomas Newton's translation of Lemnius was printed and published seven years before the Doctor's, though the latter modestly tells the reader that the "like (was) never extant before." Newton's Herbal is not compiled on Galenical principles of cold and hot, in the first, second, or third degree, etc., but it is much fuller or more complete than Westmacott's, and it is also explanatory of Holy Scripture.

Harris's 'Dictionary of the Natural History of the Bible' is a very useful work, and is compiled, as its author states, from Calmet, Olaus Celsius, Scheuchzer, Hiller, etc. It was reprinted

in 1833, and it deserves to be reprinted again. The Holy Land has been frequently visited during the last quarter of a century. There is another work on this subject, viz. 'Illustrations of the Holy Scriptures,' by George Paxton, in two volumes (Edin. 1819). This work does not add much to the science of Biblical Botany.

Foreign works on this interesting subject are numerous. Besides the work of Olaus Celsius, the most learned of all the learned expositors of sacred *phytology*, and Lemnius, who is rather a commentator on Holy Scripture than a critic on the botany of the Bible, translated by T. Newton, there is an 'Arboretum Biblicum,' by J. H. Ursinus, printed at Norimburg in 1663. Is this the prototype of the work on sacred botany by the present celebrated botanical professor in the University of Edinburgh? To this may be added a treatise entitled, 'Phytologia Sacra,' by Adr. Cocquius, a Flemish clergyman, quarto, Ulessing, 1664. 'Hierophyticon,' by Matth. Hiller, a theologian of Würtemberg, in quarto, 1725, is a very useful work on this subject.

The most elaborate work on the plants of Holy Scripture (O. Celsius's is the most erudite) is by Jac. Scheuchzer, a most indefatigable naturalist, whose writings have helped to immortalize his native country and himself both. Next to the illustrious Haller, will this name stand in the annals of Swiss botany. His *magnum opus*, 'Physica Sacra,' appeared in four volumes folio, in several languages; the best edition is in Latin, printed at Augsburg in 1731. Editions in French and German, in eight volumes, appeared in 1734. In this great work all the Bible-plants are described and delineated, with judicious critical remarks and lucid comments. The same learned author also published a physical history of the Book of Job, in the German language. There is an edition of this work, printed at Zürich in 1721, and another at the same place in 1740, both in quarto.

Sir Thomas Brown, the celebrated physician and author, in his 'Observations on certain Plants mentioned in Scripture,' already noticed, has some very judicious remarks on these critical plants, as they may be called. For example, he states that "Hyssop is taken for that plant which cleansed the leper, being a well-scented and very abstersive simple, etc. . . . It differs from ours, as Belonius hath observed," etc.; also that "Heath

is probably *Myrica* or *Tamarix;*" and that "*Panis Sancti Johannis* is the husks that the prodigal ate." The Doctor has no doubt about the Mustard being *Sinapis nigra* of modern botanists.

The learned Michaelis, in his introduction, informs us that there are "in the Sacred Scriptures upwards of 250 botanical terms; which none use so frequently as the prophets."

Among sacred phytologists is to be included Dr. Bromfield, who is well entitled to rank among the most illustrious martyrs of science, and who perished before completing his labours in the interesting field of Oriental and sacred botany. This lamented traveller, in his 'Letters from Egypt and Syria,' notices the plant *Malva rotundifolia,* Linn., as still common, and eaten in the East. Hiller (p. 457) says, *Malluach,* Heb., *Malva,* is a kind of *Halimus;* and Schenchzer agrees with him.

Lady Calcott's work on sacred botany is the most recent treatise on the Scripture plants that has appeared in England. And it is now nearly twenty years since this was published.

There is much information on the Natural History of the Holy Land in Dr. Kitto's 'Pictorial Bible,' and especially in his 'Physical History of Palestine.' These works are well known and very popular; and they are all professedly compilations: none of them lay claim to originality of matter.

The Natural History of Palestine is one of our *desiderata;* it is an unaccomplished task. It is a field in which laurels may be fairly won and worn; and he who wishes to win his spurs has a fine opportunity. Let him, if he has a few years to spare, depart for Syria; but he should not take Egypt in the way, as most of our naturalists have done. The land of Misraim, though most interesting to the civil historian, antiquarian, and artist, is but a barren soil for the botanist. The latter should betake himself to the mountains, vales, rivers, and lakes of Palestine. Here he will not be disappointed. The monks of Syria are too incurious and lazy to accomplish this task, but they might afford some help to an enterprising naturalist.

There is one purely botanical object which waits for some adventurous author to accomplish, viz. the botany of that part of Syria or Arabia which lies between the Mediterranean on the west, and the Euphrates on the east, and between Egypt on the south, and the Lebanon chain of mountains on the north.

A complete Flora of this entire tract should be prepared. This would probably be the work of five years at least, unless several persons were associated in the enterprise. It is likely that some considerable time will elapse before it will even be undertaken. It is small encouragement to surmise that the plants which might be collected would not defray a hundredth part of the expense. As there are but few amateur travellers who understand botany, it is not at all probable that this want will be supplied in these our utilitarian days. Engineers may visit this interesting tract to survey it and to mark out the fittest line for a railway between Constantinople and Bagdad, or between Beyrout and the Euphrates. A botanical expedition to survey the beauty of the vegetable kingdom would be unproductive of anything, except, it might be, the approbation of a few devoted votaries of Flora. A *Flora Palestina,* however desirable, is not likely to be speedily composed.

There is another object, quite as desirable as the former, and much more practicable, viz. the uses of the names of plants, botanical terms, etc., in conveying forcibly to the common people the words of inspired wisdom; the rebukes, corrections, threatenings, promises, hopes, encouragements, enounced by the holy prophets of old.

Holy Scripture, as is well known, abounds in figurative or metaphorical language, or in allegorical descriptions and parables. These are sometimes very inadequately represented to modern readers through the medium of things with which they are conversant. A master-mind is wanted to explain the botanical phraseology of the Bible,—so to translate it that it may have the same beauty and force among us as it had when spoken to the ancient Hebrews. Or if this be impossible in certain cases, an approximation is practicable, and exceedingly desirable. He who undertakes this office need not go to Palestine; although a visit to that sacred territory might be helpful. If he is a good Biblical scholar, a sound theologian, and a moderately good botanist, he would have ample qualifications for this undertaking.

A work like that of the Rev. Wm. Jones 'On the Figurative Language of Holy Scripture,' or like that of the learned Dr. Robert Lowth 'On the Sacred Poetry of the Hebrews,' would supply this desideratum, and would be a boon to all lovers and students of the volume of inspired wisdom.

Note.—Dr. Kitto, in his 'Natural History of Palestine,' to which the previous article is somewhat indebted, states that the two Almond-trees, *Amygdalus communis* and *A. persica*, and the common Pea, flower in January: they flower here in March. In this month, he further says, the groves are adorned with Anemones, *Ranunculi*, Crocus, Tulips, Narcissus, Lilies, and Violets. He mentions blue Tulips as among the floral productions of the land. Shaw is quoted as an authority for blue Lilies.

In February all the flowers of the previous month are in blossom, together with scarlet Poppies (*Papaver Rhœas, P. hybridum, Glaucium luteum*).

In March the Fig-tree, Apple- and Pear-trees are in bloom. Barley is ripe in April. In May, Gooseberries, Currants, and Strawberries, all introduced from Europe, are fit for the table.

Pocock, the traveller, relates that he ate new Olives on the 24th June.

The Leguminifers common to Palestine and the British Isles are *Ononis antiquorum, Anthyllis Vulneraria, Hedysarum Onobrychis, Medicago sativa, M. polymorpha, Vicia sylvatica, V. angustifolia, Trifolium resupinatum, T. stellatum, T. procumbens, T. incarnatum, Genista tinctoria?, Borago officinalis, Echium vulgare, Symphytum orientale.*

In Russell's list of Aleppo plants, which are all probably natives of the Holy Land, are mentioned Madder (*Rubia*), Clivers (*Galium*), *Veronica spicata*, Toad-flax, Spurges, Mouse-ear several species. Plantain (*P. major* and *P. lagopus*). Eight species of *Arum*, among which is *A. maculatum*, Asphodel, *Lilium candidum, L. Martagon, Gladiolus*, Rose of Sharon (*Cistus roseus*, Willd.), *Anagallis arvensis*, and *A. cœrulea, Verbascum pulverulentum, Valerianella olitoria, Vinca minor, Geranium rotundifolium, G. columbinum, Chenopodium viride, C. maritimum, Salsola fruticosa?, Euphorbia Peplus, Mercurialis annua, Parietaria officinalis*, Houseleek.

THE FLORA OF NEW BRIGHTON.

A few Remarks upon the Flora of New Brighton.

By Jas. F. Robinson.

On looking over the 'Phytologist' for December, I saw an article on the Flora of New Brighton. As I was botanizing there last summer, I found a plant which, if a distinct species, is rather rare, and which your contributor has evidently overlooked,—the *Erythræa linariæfolia*, growing very plentifully on the rocks, along with *Anthyllis Vulneraria, Thymus Serpyllum*, and *Hordeum maritimum*. In the British Flora it is mentioned as being found on the sandy coasts of Lancashire, etc. When reading the

above article, the plant was brought to my recollection, and I now avail myself of the opportunity to state an opinion that has long since been formed, regarding the plant as a true species, and not distinct specifically from *Erythræa Centaurium*.

If, in my opinion, the *Erythræa pulchella*, *E. latifolia*, and *E. linariæfolia*, were joined to the *E. Centaurium*, and considered as true varieties merely, it would be a great acquisition to the Flora, and would not be half so perplexing to the young student as it is at present, to judge between so nearly allied species; for instance, the specific characters of the *E. Centaurium* are:—Roots fibrous; stems nearly simple; leaves ovate-oblong; flowers nearly sessile, fasciculate; calyx 5-cleft; corolla infundibuliform, its limb short; anthers at length spirally twisted; style one, deciduous; stigmas two; capsules linear, 2-celled.

Var. *a. pulchella* (*Chironia pulchella*): a short, tufted plant, stems much branched; plentiful at Southport.

Var. *b. latifolia*: flowers in dense forked tufts.

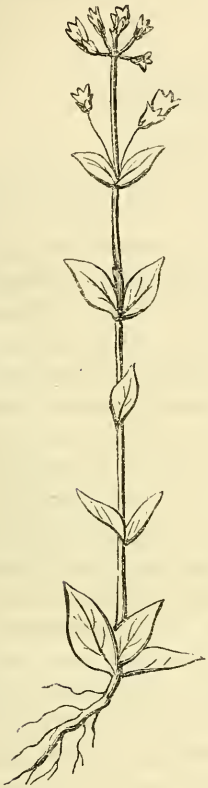
Var. *c. linariæfolia* (*Chironia littoralis*): flowers sessile, one or two at the top of each stalk; leaves, lower ones spathulate, upper linear, obtuse.

It will at once be seen, by the drawings of the two plants, what little difference there is between them, as well as the above descriptions. The drawing is from Nature. Both plants were found at New Brighton,—*linariæfolia* on the rocks, the *Centaurium* more inland.

Besides the above-mentioned plants, I found others worthy of notice, one in particular, the *Salsola Kali*, which seems to flourish upon the sand-hills, far from any water, and when gathered seems as fresh as if found under water, for when squozen (crushed) it emits a great quantity of greenish juice. *Plantago Coronopus* and *Rosa spinosissima* are both in tolerable abundance, besides a few roots of *Sagina nodosa* and *Malva moschata*, the large purple petals of the latter contrasting strongly with the small white ones of the other. *Chlora perfoliata* and *Menyanthes trifoliata* are both found at Bidston Marsh. Next to that, *Geraniaceæ*, in which I may enumerate, amongst others, *Geranium molle*, *G. dissectum*, *G. pusillum*, and *Erodium cicutarium*; the last-mentioned is abundant on the sand-hills.

There are also *Cakile maritima*, *Spergularia marina*, *Ononis*

arvensis, Senebiera Coronopus, and *Potentilla reptans. Ononis arvensis* and *Spergularia marina* are very common: the latter by the riverside, and the other on the sand-hills.



Erythræa Centaurium.

Erythræa linariæfolia.

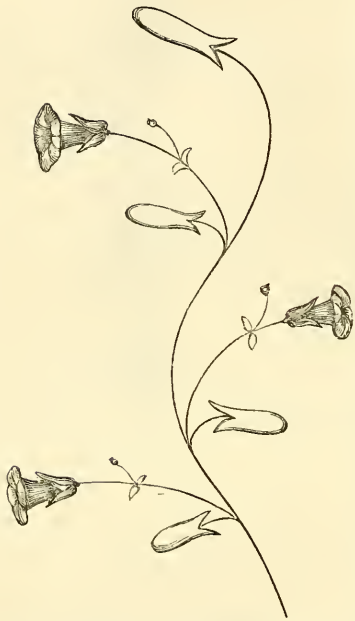
In conclusion, let me recommend those whose tastes and pursuits incline them to study botany for pleasure, to take a ramble at New Brighton. I am sure they will be highly delighted with the productions of the sand-hills, as well as by the extensive view of the sea and the many ships thereon. I do not think there are many seaweeds to be picked up there: the only two I could find were the common *Fucus vesiculosus,* and what I thought was the *Laminaria digitata,* but it was only a poor specimen.

It does not offer any advantage at all for the conchologist: the only specimen to be seen there is the duck barnacle (*Pentalasmis anatifera*), and which is common on any shore or river-bank throughout the kingdom.

Warrington.

CONVOLVULUS SEPIUM.

(*To the Editor of the 'Phytologist.'*)



Sir,—In the last number of the 'Phytologist' a contributor notices a variety of what he calls the *Convolvulus sepium* (it is no doubt well-known now that our good old botanist, the late Mr. Brown, thought proper to make it another genus, being quite distinct from *Convolvulus* as described and instituted by Linnæus, the principal characteristic being, the bracteas close under the flower; it is now therefore better known by *Calystegia*) having leaves and flowers different, the former being larger, and of different shape, the latter purple, with white veins. I beg to say this appears to be a common variety, I myself have noticed it several times; but a greater authority still—it is mentioned in the 'British Flora.' Near Frodsham, Cheshire, a peculiar variety is to be found pretty plentifully; it seems to be a hybrid between the *Convolvulus arvensis* and *Calystegia sepium*:—leaves larger than those of *Convolvulus arvensis*, sagittate, obtuse at the extremity; corolla large, purple, angles white; peduncles double-flowered; bracteas large, caudate, situate at the junction of the pedicels. By the latter character it would appear to partake of *Convolvulus arvensis*, but that the bracteas

are large and caudate. The cut will express my meaning better than words; it may very probably be the variety, or hybrid, your contributor alludes to; if it is so, it can only rank as a mere variety of *Calystegia sepium*.

J. F. Robinson.

THE ISLAND OF MALTA.

Malta, its Climate and Vegetable Produce.

By John Sim.

Malta is an island twenty-one miles in length, twelve in breadth, and about sixty in circuit. Its geographical position is too generally known to require comment or explanation. Its general appearance is flat, but to the southward there are a few low, undulating hills; Civita Vecchia, seven miles from Valetta the capital, occupies one of their summits. Viewed from the sea, Malta presents a very barren aspect,—a mere desert,—its monotony only relieved by the low bushy tree, *Ceratonia siliqua*, the Carob-tree, or St. John's bread, called also the Locust-tree, because its fruit is considered by some to have been the food on which John the Baptist subsisted in the wilderness of Judæa. Be this as it may, it appears to be the only tree that I could pronounce with certainty to be indigenous to the island; it is abundantly distributed everywhere throughout its whole extent. The climate of Malta, during the months of June, July, and August, is extremely hot, the thermometer in the shade often exceeding 90°, and rarely below 84°. Its minimum in the coldest months is seldom below 55°; and the average temperature of the year I found to be about 70°; this was the result of four years' close observation. On one occasion only did I detect indications of frost, but so very slight as just to be perceptible. During my five years' residence snow never fell, but the north winds of January and February were often disagreeably cold. In summer they are, with even a temperature of 84°, remarkably refreshing. In the summer months rain rarely or ever falls; the sky is destitute of clouds, and assumes a deep azure hue, and the rays of the sun are scorchingly hot. I have seen the thermometer in the sun rise to nearly 150°. In September the autumnal rains begin

to fall, and continue during the month of October; the precipitations are commonly in the form of heavy showers, accompanied with tremendous lightning, whose gleams are nearly uninterrupted, and the peals of thunder almost deafening. In November the weather begins to assume a more settled appearance, being mild and warm; the earth is covered with myriads of flowers, and Nature, so recently dry and parched up, now wears a cheerful smile, and is adorned in the gay embroidery of blooming flowers.

Malta being an island in the southern portion of the warm temperate, or rather, subtropical zone, it is to be inferred will produce fruits and flowers common to both the torrid and temperate zones; and to a certain extent so it does. Several plants of British growth thrive here, while some intertropical species come to maturity. But in general its entire vegetation is precisely that of southern Europe. Here grow the Vine, Pomegranate, Olive, Orange, Lemon, Lime, etc., in abundance, the Malta Oranges being proverbial for their delicious flavour; the Apple-tree perfects its fruit, but is dry and insipid compared to those of British growth. Plums, Apricots, etc., are of good quality; Tomatoes, Melons, sweet and water, the latter containing abundance of a clear, cool, and refreshing liquid, like to pure water, is much relished by the Maltese. Enormous Pumpkins grow there, often attaining the weight of 160 or 170 pounds. The Fig-tree is cultivated to a great extent, generally in the same field with the Vine; the latter runs along the walls and dykes very much like our Bramble or Blackberry. Some straggling Date-palms are scattered here and there over the country, but have most probably been introduced. Among the other vegetable products may be reckoned Sainfoin, a valuable plant for their mules and cattle. Cabbages, Cauliflowers, Potatoes, etc., are also abundant. The cereals are mostly Barley, Indian-corn, and Millet. The cultivation of cotton is carried on to a considerable extent. Among the other culinary vegetables may be reckoned Onions, of enormous size and mild in flavour—twelve pounds' weight can be purchased for one penny sterling; in short, almost all the kitchen vegetables of Britain can be, and are, reared with advantage to the natives and British settlers. The Prickly Pear (*Cactus Opuntia*) is everywhere; its fruit is much relished by the natives. I have eaten it, and consider it excellent. In the months of Fe-

bruary and March the thin rocky soil is covered with myriads of Liliaceous plants of every hue and form, but towards May, when the rains cease and the summer heats set in, they speedily dwindle away, and by the middle of June hardly a single blade of grass or herbaceous plant is to be seen (those under cultivation excepted, which are supplied with water by the hand of man), all being scorched up, and the country presents a very sterile and uninviting appearance; still, amid all this seeming destruction of the vegetable tribes, a few plants thrive vigorously on the arid rocky knolls and military fortifications of the island. I may record *Antirrhinum majus* and *Capparis herbacea*, whose local habitat seems confined to the walls and fortifications, and the numerous Sedums, which prefer the rocky soil. Some members of the *Acanthaceæ* grow in Malta, but at that period (1836) I was not so well acquainted with plants as now, so therefore unable to determine the species. An under-shrub belonging to the *Labiatæ* is plentifully distributed over the more elevated portions of the island; its fragrance greatly resembles our common garden Thyme. A botanic garden is situated at the south end of Valetta, and contains many rare exotics, both herbaceous and arborescent.

Bridge End, Perth.

FERNS OF BALTHAYOCK, ETC.

Rambles to the Den of Balthayock, Woods of Scone and Craigie, in search of Ferns. *By* JOHN SIM.

On Saturday, 4th September, 1858, I left Perth by rail for Glencarse (six miles east of Perth), and from thence travelled to the Den of Balthayock, two miles northward from Glencarse station. I expected to find *Scolopendrium vulgare* and *Grammitis Ceterach* (reported to grow there); in this I was sadly disappointed. In this romantic and highly picturesque den, Ferns abound, perhaps not the very rarest species, yet some are far from common in this part of the country. The glen runs longitudinally from north to south, and is densely wooded on both sides—many of the trees no doubt planted by Nature and not by man. In the bottom of the glen flows a

small stream of the purest crystal, often shaded from view by an umbrageous canopy of trees. This den in many places is a mere ravine—precipitous cliffs on either side above a hundred feet in height. Entering this den at its southern end, and after traversing the margin of this tiny brook, the traveller is, after rounding a rugged cliff, suddenly ushered into the presence of a gentle cascade, gently rushing beneath the covert of the shady trees. Looking to the right, on the verdant and rocky slopes, grow abundance of *Polystichum aculeatum*, frond two feet long; also *Cystopteris fragilis*, with its fragile fronds, and *Asplenium Trichomanes*, with pinnated leaves nine inches in length. *Asplenium Adiantum-nigrum* was frequent in several other parts of the den, among loose stones. The season being too far advanced for collecting the flowering plants, I failed to detect *Paris quadrifolia* and *Lychnis Viscaria*, said to grow in this den. Perhaps, if health and strength permit, I may pay it another visit earlier in the season, when I expect to reap a richer harvest of Flora's choice treasures. On my way home, near the den's southern end, I observed many plants of *Cynoglossum officinale* and *Anagallis arvenis*, neither of which is of frequent occurrence in this part of the country, however common they may be elsewhere. *Asplenium Rura-muraria* is abundant on stone walls on either side of the road, a little to the northward of the small village of Glen Carse. On the margin of the stream which issues from the den, and about a mile from its southern end, *Petasites vulgaris* grows luxuriantly in great abundance. Near the same locality, in a grassy ditch by the wayside, I saw several plants of *Mentha viridis*, a rare plant in Scotland. I collected near the same place a fine specimen of *Sparganium ramosum*, of rare occurrence in the neighbourhood of Perth, although abundant in several parts of Aberdeenshire, particularly on the banks of the Ythan, where the peasantry cut it down for litter to their cattle. Should any reader of the 'Phytologist' ever arrive in the 'fair city' during the flowery months of summer, if time will permit, I would strongly advise him to pay a visit to the Den of Balthayock, it will well repay him for his trouble.

My next trip was to the Wood of Scone on the following Monday, being the 6th. The part I visited is where the *Moneses* is found, and is three miles north-east from the town of Perth. I soon gathered a fine specimen of *Blechnum Spicant*, var. *ramosum*,

with its forked fronds, also a gigantic *Lastrea dilatata,* fronds four feet long, and some fine plants of *L. spinulosa* and *L. Oreopteris. Polypodium Dryopteris* I gathered on a former occasion. It is nearer the centre of the wood than those just mentioned, so I failed to obtain it on this occasion. All the Ferns, both at Balthayock and Scone Wood, were taken up by the roots as they were, for exhibition at the Bridge End Horticultural Flower-show, which took place on the 8th, two days afterwards. On the 7th, I steered my course to Craigie Wood, and obtained good plants of *Polypodium vulgare, Lastrea Filix-mas, Athyrium Filix-fœmina,* and its variety *molle.* These I likewise collected root and branch, and exhibited them in pots next day, for which I obtained the prize. It was certainly a novel competition, but they had a very graceful and pleasing appearance which was greatly admired by all present. The species exhibited were the fourteen following:—*Polypodium vulgare, Lastrea dilatata, L. Oreopteris, L. spinulosa, L. Filix-mas, Cystopteris fragilis, Polystichum aculeatum, Blechnum Spicant* and its var. *ramosum, Asplenium Adiantum-nigrum, A. Ruta-muraria, A. Trichomanes, Athyrium Filix-fœmina,* and its var. *molle.*

BOTANICAL SKETCHES.

Kinnoul, near Perth. By John Sim.

I had a bit of botanical excursion to Kinnoul Hill on the 23rd April, and I have discovered two more strangers,—another *Allium,* and *Ceterach officinarum,* the first in abundance, the latter not so. I saw about a half-dozen of thriving plants in the fissures of the cliff; these I denuded to a great extent of the last year's fronds, but left the plant uninjured. I enclose a couple of fronds to show you I do not deceive. This lovely little Fern, so abundant in Ireland, is very rare in Scotland. The *Allium* is the *A. vineale,* not a common plant. I gathered the other day one single plant of *Allium ursinum* near the junction of Tay and Almond, and several plants of *Stellaria nemorum* in flower; you may have a specimen of it when dried, if you wish. I took the *A. ursinum* up root and branch, and have it snugly planted in my miniature garden, along with a few plants of *A. vineale.* I gathered

also on Kinnoul Hill a few plants in flower of *Myosotis collina*. The cliffs of this hill are at present literally yellow with the fragrant blossoms of the *Cheiranthus Cheiri;* the atmosphere is quite perfumed with its delicious odour. I wonder what those botanists who doubt its being a native would think if they saw those huge cliffs at present; to the extent of a mile it adorns these inaccessible bulwarks of Nature in great abundance. I may also state the same in regard to another cruciferous plant, the *Hesperis matronalis;* it is really most abundant throughout the entire southern slope of the hill, not like the *Cheiranthus* confined solely to the rocky ramparts of this hill, it is abundantly dispersed throughout the wood. The wild Teasel, *Dipsacus sylvestris,* is also in greater quantity in this wood than I at first considered it to be. I see on further search that it is in great quantity in another locality in the wood, on the southern slope of the hill. I was looking at the old stems of last year, some of them six feet in length. The *Lactuca virosa* is widely and pretty liberally distributed also in this wood, and in one locality the *Conium maculatum,* but not in great quantity. Truly Kinnoul Hill contains many rare plants, and if I had more physical strength, I might yet detect some rarities.

Peculiar growth of the Flowers in a grafted Laburnum.

The gardener at Dunster Castle showed me in June last a yellow Laburnum-tree which he had grafted with the pink variety; some of the flower-clusters of which, instead of hanging in long leafless bunches, were arranged in *sessile* groups of threes and fours, intermixed with tripartite leaflets, something in the manner of a *Cytisus*. These sessile flowers were pink in colour, while the yellow bunches on the *same* bough were in clusters of the usual form and size. I could not discover that the tree was unhealthy, nor could the gardener at all account for the peculiar disposition of its flowers, and mixture of different-coloured clusters on the same branches. The stock was grafted in the usual manner, and he expected that the blooms would have been of the pink variety *alone*. J. Gifford.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Monday, the 2nd of May. Mr. J. A. Knights, of Norwich, was elected a member of the Exchange Club. Mr. J. G. Baker communicated the following notice :—

"*Delphinium Ajacis.*—The Rev. W. R. Crotch writes:—'It may perhaps interest you to be told that the specimens of *Delphinium* in my herbarium, one sent to me by Professor Henslow, from Cambridgeshire, one gathered by me in Davenport Wood, near Bridgnorth, in Shropshire, and one near Greenwich, were all labelled by me *D. Ajacis* at the suggestion of a German botanical friend. Two of them have the pubescent carpels, and the third has the habit of *Ajacis*, and not that of *Consolida*, as given by Koch.'"

He also read a paper from Mr. J. H. Davies, entitled, 'Notes on the Museology of Colin Glen, county Antrim.'

"On the 25th of last month, in company with two of my relatives from Liverpool, my friend John S. Ward, and a number of the boys from the Friends' School at Lisburn, I made an incursion, for the first time, into Colin Glen, chiefly known to bryologists as a reputed locality for *Neckera pennata ;* and I thought that, as serving to illustrate the muscology of the more elevated parts of this district, a short notice of our excursion might not be altogether unacceptable to our Members.

"Of the range of mountains, which run nearly east and west, including Cave Hill, Devis, Colin, Black Mountain, and Aughrim, extending from Belfast to within a short distance of Glenarsy, Colin is situated about midway, and is distant somewhat upwards of three Irish miles from Lisburn.

"We started out shortly after breakfast, mustering ten or twelve vascula, and provided with sundry ingenious contrivances for boiling cocoa and eggs *à la* Gipsy. Taking the road towards Derriaghy, we stopped only for a very short time cursorily to examine a cutting in the New Red Sandstone, which on a former occasion had yielded us *Tortula vinealis* and *T. aloides*, the latter in considerable plenty, and with fully matured capsules. So far as I have had opportunity of observing, this species, in Yorkshire and in other localities that I have visited, is almost, if not entirely, peculiar to limestone districts, so that I was not a

little surprised to meet with it in a situation of so wholly different a character. Leaving the village a little to our right, a walk of about an hour brought us to the "Falls" bridge, that spans the stream at the lower part of the glen, where we commenced to explore its muscological productions, our intention being, if at all practicable, to examine the stream to its source. In this part the banks—well-wooded, principally with Oak, Ash, and Larch, and sparingly interspersed with Hazel—slope very gradually; and the stream, the bed of which is apparently made up for the most part of Trap, although not very wild and rugged, is sufficiently rocky to be picturesque, winding along its uneven channel amongst loose rocks and nodules of flint from the chalk, bare and unproductive for the most part, but here and there clothed with a rich vestiture of *Hypnum palustre*, and its variety *subsphæricarpum*, *Schistidium apocarpum* and var. *β*, *Hypnum rivulare*, *rusciformium*, and *plumosum*. Not much of importance was observed here, but several of the commoner *Hypna* (such as *cuspidatum*, *filicinum*, *striatum*, and *triquetrum*) were met with in a desirable state of fructification. Following up the course of the stream, —and noticing on our way *Isothecium alopecurum* and *myurum*, *Hypnum molluscum* and *loreum*, *Mnium rostratum* and *punctatum*, *Pogonatum aloides* and *urnigerum*, *Racomitrium aciculare*, *Dicranum pellucidum*, var. *fagimontanum* (the normal form of which we did not see), *Jungermannia asplenioides*, *albicans*, *epiphylla*, and *reptans*, and most of the species of Mosses and *Hepaticæ* commonly associated with these,—the glen gradually becomes narrower, the banks more abrupt and precipitous, and the stream, which a little lower down murmurs quickly along its rocky channel, here rushes on with all the impetuosity of a mountain torrent; now tumbling over the wide ledges of Trappean rocks, across which have fallen old trees, decayed and ivy-bound, reminding one of the Rhaiadr-y-Wennol in Carnarvonshire; anon dashing in cascade-like falls down some narrow and steep declivity, clinging to the dark sides of which luxuriant fronds of Polypody and *Scolopendrium* form a conspicuous feature. In one or two parts crop out portions of the band of cretaceous limestone that may be traced throughout the whole series of hills, but which of course is of quite too dry a nature to be at all favourable to the growth of bryological vegetation. The further we proceed up the stream, the productiveness of the Trap in-

creases, yielding us very fine and abundant examples of *Mnium rostratum, Zygodon Mougeotii,* and of what was perhaps the best acquisition of the day, *Hypnum Teesdalii.* On the trees occur *Orthotrichum affine, phyllanthum, pulchellum,* and *Bruchii* (the latter only very sparingly), *Omalia trichomanoides, Neckera complanata* and *crispa* (but no *pennata !*). The fruit of *Dicranum scoparium* was just making its appearance, and in the more shady places *D. majus*—amongst which grew *Pyrola media*—was abundant. *Tortula tortuosa* and *Neckera crispa* were observed in tolerable plenty, but the other dysgeogenous species usually found in company with these, and occurring in such plenty on the Upper Oolite of the hills in your neighbourhood, we did not notice. Higher up the valley large quantities of *Zygodon Mougeotii,* and several of the *Racomitria,—R. fasciculare, heterostichum, lanuginosum,* and *canescens,*—and *Ptychomitrium polyphyllum* were to be obtained. Leaving the glen and following up the tortuous course of the stream, over the wide and open moorlands, covered in places with Heath and Ling and Bilberry, we meet with *Cinclidotus fontinaloides* and *Fontinalis antipyretica,* and on its banks *Bryum pallens, nutans,* and *pseudo-triquetrum, Polytrichum piliferum* and *juniperum, Fissidens adiantoides, Hypnum commutatum* and its var. *condensatum, Bartramia arcuata, pomiformis,* and *fontana;* and on the rocks, *Hedwigia ciliata* and *Campylopus flexuosus.* The marshy and boggy places appeared to be filled up almost wholly with *Hypnum cuspidatum, Climacium dendroides,* and *Polytrichum commune,* not a single species of *Sphagnum* presenting itself to our notice, although on the neighbouring eminence, of a formation similar to that we were examining, the young enthusiasts at the school have collected four species, viz. *cymbifolium, compactum, acutifolium,* and *molluscum,* together with *Antitrichum Curtipendula* and *Bartramia calcarea,* none of which we met with on this occasion.

"The weather which throughout the day had not been very auspicious, was now dull and cloudy, and 'of all that dower of prospect' that lay outstretched beneath us, embracing on the one hand the wide and undulated valley of the Lagan, and in other directions views of the Lough Neagh, Carrickfergus Bay, and Strangford Lough, but little was to be seen, and of the Mourne Mountains only the outlines were very dimly discernible in the distance.

"On the whole, for a first and hasty examination of the locality, we had not much reason to be dissatisfied, and doubtless a more careful investigation would be attended with greater results."

Review.

The Friend, a Religious and Literary Journal for the Society of Friends. April, 1859. London: A. W. Bennett.

In this number of 'The Friend' there is an appreciatory review of the Life of Linnæus, by Miss Brightwell, a work already noticed at some length in the 'Phytologist.'

"Honour to those to whom honour is due." Few are they who have the hardihood to deny that Linnæus is not an honoured name. He may have had indiscreet panegyrists and over-fond admirers, as he has in modern times had critics more distinguished for flippancy than good-natured geniality; but we are glad to find that his eulogists are on the increase, and his detractors are quiet. Botanists may now admit their obligations to this eminent naturalist without counting stamens and styles, and puzzling out the mysteries of *Syngenesia Æqualis, S. Necessaria, S. Frustranea, S. Segregata.*

The reviewer estimates the importance of Linnæus's inventions at a high rate. Few indeed will differ from him. Modern philosophers are unanimous in adopting specific names and in imitating the precise and intelligible method of description invented and practised by this great renovator of natural science. This is more than was conceded by the ablest of his contemporaries. Haller, the most eminent botanist of the eighteenth century, saw no merit in the nomenclature of Linnæus, but reproached him for what is now universally acknowledged to have been his great merit. *Magna est veritas et prævalebit;* but this is a work of time.

"From what we know and see of London lecturers on botany," the reviewer continues, "we can scarcely realize the fact that a lecturer on botany could render himself or his subject so attractive that his audience should gradually increase in number until it had exceeded fifteen hundred; and should then only be limited by the size of the building in which the lecture was delivered; yet such was the fact; such the power of fascination possessed by the lecturer, that his class rose to the extraordinary number of

fifteen hundred. His eye beamed with intelligence; his voice was musical and most agreeable; his delivery fluent, earnest, convincing; his knowledge, though since far surpassed by a Jussieu, a Brown, and a De Candolle, was at that period entirely unrivalled."

What the London lecturers on botany at the present day may think of the reviewer's judgment we do not know. The contrast with Linnæus is not favourable to the present occupiers of botanical chairs. In our humble opinion, the fact above quoted proves the eminence of the botanical lecturer (professor) of Upsala in the eighteenth century, but the inferiority of the learned professors of the science in London need not hence be inferred. Indeed from the number of botanical publications issuing almost weekly from the press, it might be concluded that botany was never in a more palmy condition.

BOTANICAL NOTES, NOTICES, AND QUERIES.

Blechnum alpinum.

Queries about *Blechnum alpinum*. See 'Phytologist' for May, 1859, p. 157.

1st. Did the lady's collection include any other than Scottish Ferns? There appears to have been a collection of Scottish Ferns made in 1856. Were there no other Ferns there? If there were no other Ferns in the collections, Mr. Wollaston would not have thought that "there must be some mistake, and that unknown to her the British and the other Ferns had got mixed."

2nd. How could the "telling the exact spot dispel all well-founded doubts?" No doubt the fair collector took up some Fern from the spot afterwards described, but unless she had kept it under her eye, she might in a few months have forgotten it, especially in a mixed collection and where a gardener was employed.

The gardener's ignorance of *B. alpinum* is rather a weak proof that the original conjecture of Mr. Wollaston was not after all the correct one.

It does not appear that Mr. Wollaston in person visited the spot, which he very carefully conceals. It is not stated that he ascertained for himself whether or not *B. alpinum* really grows "on an old stone wall running alongside a rushing mountain stream."

He does more than this,—but this addition is not so satisfactory as his own personal evidence would be,—he gives a letter from the fair discoverer, who adduces her husband as a voucher for her veracity. After all, notwithstanding her safe backer, the lady "*cannot quite yet submit to thinking that it cannot be, even though you say it.*"

Mr. Wollaston himself does not appear to have much confidence in the

account, or if he has, why does he add three queries, the last of which is, "Has a mistake been made?"

With deference, Mr. Editor, it may be suggested that these queries show that the announcement is premature, or *nidus equæ*.

Doronicum Pardalianches.

In last number of the 'Phytologist' (page 117), "Lynx," in some observations on *Doronicum Pardalianches*, quotes the following sentence (*whence* I know not):—"The beautiful contrast afforded by its bright-yellow, staring flowers, with the purple Foxglove, with which the woods and hills abound." I beg to ask if any one has observed these two plants in flower *at the same time*.* In this neighbourhood, at least, the *Doronicum* flowers in the month of *May*, and the Foxglove not till *July* or *August*. A "lingering bloom" of the *Doronicum* may perhaps remain to contrast with the Foxglove, but, generally speaking, the former is *in seed* before the latter begins to flower. If I am wrong, will any one put me right?

A. Jerdon.

Pyrus Aucuparia.

On the supposed Poisonous Qualities of the Fruit of Pyrus Aucuparia.

Relative to the discussion that this subject has occasioned in the pages of the 'Phytologist,' it seems to me that the real question at issue is simply this:—"Was the death of the boy caused by his having eaten of the berries of the Mountain-Ash or not?" For the satisfaction of those correspondents of the 'Phytologist' who still appear to entertain doubts on this point, I will quote a paragraph from a note which, shortly after the inquest, was communicated to the 'Lancet' by Mr. Rickards, the surgeon who attended the child.

"Up to the time of holding the inquest, I could not ascertain that the child had eaten any other berries than those of the Mountain-Ash; and finding some reddish-yellow pulp in the stomach, such as the berries of the Mountain-Ash would produce, I believed (though contrary to the generally received opinion of this fruit) that death must have resulted from it. On further examination, however, I believe the child to have eaten two or three different kinds of berries, amongst which are those of the Woody Nightshade (*Solanum Dulcamara*), and which I now believe to have been the cause of death."

Surely this is conclusive enough. J. H. Davies.

Morel, from Wandsworth.

Our valued correspondent John Lloyd has sent a plant of the above which does not agree with any of the species described by Mr. Berkeley in his work on the British Fungi. The stem is very short and hollow (only a mere skin), and the pileus is not confluent with the stipes, nor conical as in the common form, but dilated and flat.

I remember seeing a Morel in a garden at Guildford many years ago,

* See 'Phytologist,' vol. ii. p. 407.

but of which I cannot find either a drawing or a description. *M. patula* is Sowerby's *Helvella esculenta*, a synonym of our common Morel, or a variety of it. John Lloyd's plant partly agrees with Withering's *Phallus esculentus*, especially in the stem.

Our readers are warned not to trust to the specific name, *esculent;* Mr. Lloyd remembers having eaten a bit of a Morel similar to the one he sent, and which he gathered near Shere, in Surrey, and experienced a painful sensation in his palate and throat, viz. a swelling, with intense inflammation and a difficulty of swallowing. This uncomfortable state remained for some hours. E.

Claytonia alsinoides.

A fine specimen of this plant has just been received from Mr. Sim, who collected it in the woods of Scone Palace, near Perth. He says that he there obtained a good supply of specimens. He also found *Aremonia agrimonioides* widely distributed in patches here and there throughout the wood. He collected *Geranium phæum* in the same locality.

Description of *Claytonia alsinoides*:—Root fibrous; stems several, succulent, cylindrical, quite smooth, slightly reddish at the base, with a single pair of opposite leaves under the first flowering-branch; leaves ovate-rhomboid, tapering, entire succulent and quite smooth, on long, reddish foot-stalks, all radical; stem-leaves rounded, sessile, and very shortly or abruptly pointed. Sepals two, roundish, short; petals white, cleft, four times as long as the sepals; stamens shorter than the petals, with red versatile anthers. Annual. Flowers in May.

This American genus, or species of an American genus, is not known as a European plant, excepting in two stations in the British Isles; viz. in the woods of Scone, Perthshire, first observed by our observant contributor, Mr. Sim, and also in the woods of Edensor, Derbyshire, discovered by Sir Joseph Paxton, or by some one who communicated it to him. The Edensor example was subsequently transmitted to Mr. Baxter, of Oxford, who published it in his 'Genera of British Plants.' It has been steadily ignored by our descriptive botanical authors. *Claytonia perfoliata* has been several times recorded, and has been even admitted into the 'Cybele,' but her less fortunate sister has hitherto been unnoticed; her charms have attracted no admirers; obscurity and neglect have been her untoward fate.

The Blasted Heath,

Where Macbeth and Banquo met the Three Weird Sisters.

(See 'Phytologist,' vol. iii. p. 150, and Shakespeare's 'Macbeth,' act i. scene iii.)

Sir,—Some one has told us that the *insane root* grows in Fifeshire, the site of the blasted heath where Macbeth met the witches, etc. Is this heath in Fifeshire? The fabulous or mythic battle with the Danes or Norwegians may have been in that ancient kingdom. But the scene of the witches' meeting with the victorious thanes was near Forres, in Nairnshire, more than a hundred miles from "the eastmost neuk of Fife."

Before the victors Macbeth and Banquo met the witches, the latter says, "How far is 't called to Fores?"

And in the scene-directions to scene ii. the heading is, "A camp near

Fores." Here they, *i.e.* the king and nobles, first heard that their enemies were discomfited, and Macbeth was travelling onwards to his castle at Inverness, where the king was murdered, and it was between Forres and Inverness that he received the prophetic announcement of his future greatness.

Query. May not the *insane root* on the moors of Nairn or Forres be a poetic liberty, like the "cannon overcharged with double cracks," one of the similes used by our great dramatist in the same play, and only a few lines from the place where the heath is mentioned? SCOTUS.

Having recently collected good duplicates of *Saxifraga umbrosa*, *Lonicera Xylosteum*, *Actæa spicata*, *Doronicum Pardalianches*, *Vinca minor*, *Chrysosplenium alternifolium*, *Myrrhis odorata*, *Arum maculatum*, *Lamium Galeobdolon*, *Stellaria nemorum*, *Ribes alpinum*, *Schistostega pennata*, and several other rare and local plants, I shall be glad to forward specimens to any botanist requiring them, in exchange for other British Plants, and trust, from the quantity of duplicates I possess, that I shall be able to supply all who require these species. Address, T. W. B. Ingle, 4, Commercial Street, Huddersfield.

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.

QUERY ON FLORAL OR BOTANICAL NATIONAL EMBLEMS.

Different opinions prevail respecting the species of plants which are adopted as national emblems. These differences are of slight importance as botanical questions, but in the application of botany to ornamental or decorative art they are worthy of special consideration.

What plant or species is the Scotch Thistle? and

What is the Irish Shamrock? Q.

Some years ago a startling query appeared in the 'Phytologist:'—"Who knows *Viola canina?*" Most botanists would *then* have answered unhesitatingly. Now they might demur, and ask whose *V. canina*, Gerarde's, or Linnæus's, or Fries's, or Forster's, or H. C. Watson's?

Communications have been received from

Sidney Beisley; John Sim; Rev. T. F. Ravenshaw; H. C.; M. E. C., with a list of Arran plants; Jas. F. Robinson; J. Gifford; J. H. Davies; J. G. Baker; A. Jerdon; E.; Scotus; T. W. B. Ingle; Chas. C. Hobkirk; Q.; Rev. R. E. Cole.

BOOKS RECEIVED FOR REVIEW.

The Natural History Review.
Thirsk Natural History Report.
Critic; four numbers.
The Friend, for May; etc. etc.

THE FLORA OF FRODSHAM.

By James F. Robinson.

Frodsham is a small town in Cheshire, situate midway between Chester and Warrington. On the south it is bounded by a long range of hills, from the top of which there is a most beautiful prospect. Birkenhead and Liverpool may be seen very distinctly on a clear day. On the north it is bounded by marshy ground, extending down to the river Weaver, thus making the botanizing ground of a mixed character, hilly and marshy plants being found in abundance. It is easily accessible from Manchester and Liverpool, from either of which towns may be arranged a good day's botanical excursion. The following list is arranged according to the Natural method, and all the most common plants are left out.

Ranunculaceæ: Thalictrum flavum, Anemone nemorosa, Ranunculus circinatus, R. Lingua, R. ophioglossifolius, R. Flammula, R. hirsutus.

Berberidaceæ: Berberis vulgaris.

Nymphæaceæ: Nymphæa alba, Nuphar lutea.

Papaveraceæ: Chelidonium majus.

Fumariaceæ: Corydalis claviculata.

Cruciferæ: Arabis hirsuta, Cardamine amara, Cochlearia officinalis, Draba verna, Teesdalia nudicaulis, Lepidium campestre, Senebiera Coronopus.

Violaceæ: Viola odorata.

Droseraceæ: Drosera rotundifolia, D. longifolia.

Caryophyllaceæ: Silene inflata, Agrostemma Githago, Stellaria nemorum.

Linaceæ: Linum usitatissimum.

Malvaceæ: Malva moschata, M. sylvestris.

Aceraceæ: Acer Pseudoplatanus, A. campestre.

Geraniaceæ: Geranium sylvaticum, G. pratense, G. pusillum.

Celastraceæ: Euonymus europæus.

Rhamnaceæ: Rhamnus catharticus.

Leguminosæ: Genista tinctoria, Ononis arvensis, Medicago sativa, Melilotus officinalis, Trifolium medium, T. arvense, Ornithopus perpusillus.

Rosaceæ: Prunus communis, Geum rivale, Rubus suberectus,

Comarum palustre, Alchemilla vulgaris, A. arvensis, Agrimonia Eupatoria, Rosa arvensis, Pyrus Malus, P. Aucuparia.

Onagraceæ: Epilobium hirsutum, Circæa lutetiana.

Haloragaceæ: Myriophyllum spicatum, M. verticillatum.

Cucurbitaceæ: Bryonia dioica.

Paronychiaceæ: Spergularia rubra, S. marina.

Crassulaceæ: Sedum Telephium, S. acre.

Umbelliferæ: Hydrocotyle vulgaris, Sanicula europæa, Apium graveolens, Helosciadium nodiflorum, Bunium flexuosum, Sium latifolium, Crithmum maritimum?, Conium maculatum, Anthriscus vulgaris, Daucus Carota.

Araliaceæ: Adoxa Moschatellina.

Caprifoliaceæ: Viburnum Opulus.

Rubiaceæ: Galium cruciatum, G. palustre, Sherardia arvensis, Asperula odorata.

Dipsacaceæ: Knautia arvensis.

Compositæ: Tragopogon pratensis, Bidens cernua, B. tripartita, Aster Tripolium, Solidago Virgaurea, Senecio aquaticus, Chrysanthemum segetum.

Vacciniaceæ: Vaccinium Myrtillus, V. Oxycoccus.

Ericaceæ: Andromeda polifolia.

Apocynaceæ: Vinca minor.

Gentianaceæ: Chlora perfoliata, Menyanthes trifoliata.

Convolvulaceæ: Convolvulus arvensis.

Boraginaceæ: Symphytum officinale.

Solanaceæ: Solanum nigrum.

Scrophulariaceæ: Veronica Anagallis, V. montana, Bartsia Odontites, Melampyrum pratense.

Labiatæ: Pedicularis palustris, Ballota nigra, Galeopsis versicolor, Galeobdolon luteum, Betonica officinalis, Scutellaria galericulata.

Lentibulariaceæ: Utricularia vulgaris.

Primulaceæ: Hottonia palustris, Primula elatior, P. veris, Glaux maritima, Lysimachia Nummularia, Anagallis tenella, Samolus Valerandi.

Plumbaginaceæ: Armeria maritima.

Plantaginaceæ: Plantago maritima, P. Coronopus.

Chenopodiaceæ: Chenopodium olidum, Salicornia herbacea.

Polygonaceæ: Polygonum amphibium.

Urticaceæ: Humulus Lupulus.

Salicaceæ: Salix Caprea, S. aurita, S. alba.

Cupuliferæ: Fagus sylvatica, Castanea vulgaris.

Hydrocharidaceæ: Hydrocharis Morsus-ranæ, Stratiotes aloides.

Orchidaceæ: Orchis Morio, O. mascula.

Iridaceæ: Iris Pseudacorus.

Liliaceæ: Galanthus nivalis, Convallaria majalis, Allium oleraceum, A. ursinum.

Juncaceæ: Luzula sylvatica.

Butomaceæ: Butomus umbellatus.

Alismaceæ: Alisma ranunculoides.

Araceæ: Arum maculatum.

Pistiaceæ: Lemna trisulca.

Cyperaceæ: Cladium Mariscus, Carex pulicaris, C. cæspitosa, C. riparia.

Gramineæ: Nardus stricta, Phalaris canariensis, Phleum asperum, Catabrosa aquatica, Holcus lanatus, Poa aquatica, Bromus asper, Phragmites communis, Hordeum maritimum.

Polypodiaceæ: Polypodium vulgare, P. Dryopteris, Aspidium lobatum, A. Oreopteris, A. Filix-mas, A. spinulosum, Asplenium Ruta-muraria, A. marinum, A. Adiantum-nigrum, A. Filix-fœmina, Scolopendrium vulgare, Pteris aquilina, Blechnum boreale, Osmunda regalis.

Equisetaceæ: Equisetum fluviatile, E. sylvaticum, E. palustre.

Ranunculus circinatus. Plentiful about Frodsham.

Ranunculus ophioglossifolius. I am in uncertainty about this plant. A botanist to whom I sent a specimen said the achenia resembled those of *R. Flammula,* but I think it is quite distinct from that, the flowers being white and corymbiferous, and the plant more stunted.

Berberis vulgaris is rather common at Kingsley, there being several large hedges of it.

Nymphæa alba. Pond, Morley.

Cochlearia officinalis. Rather scarce; by the river Weaver.

Viola odorata. The blue and white varieties of this plant are common in several places in the neighbourhood.

Malva moschata. The purple variety of this plant was found on the Ry Bank, at Sutton, last summer, but perhaps an escape from a garden.

Rhamnus catharticus. Kingsley and Morley, but not common.

Melilotus officinalis. Weaver Valley; abundant.

Ornithopus perpusillus. Bank, Woodhouses.

Geum rivale. Ditch-side, Frodsham.

Rubus suberectus. This is another plant whose characters are not well defined from the description given of it in the 'British Flora.' Helsby and Woodhouses.

Comarum palustre. In several places, but not common.

Agrimonia Eupatoria. Overton Hills.

Sedum Telephium. Under the hills, in several large patches.

Asperula odorata. Woodhouse Hills.

Bidens. I have lately seen a remark in the 'Phytologist' in reference to these two species, which I am now able to bear out in the locality (Helsby). They are both growing in a pit together. Is not one an abnormal state of the other?

Solidago Virgaurea. Weaver Valley; common.

Galeopsis versicolor. This species is said to be rather rare, in the 'British Flora.' I must say, about Warrington, Frodsham, etc., it is exceedingly common.

Utricularia vulgaris. In a solitary ditch, Frodsham.

Lysimachia Nummularia. Bank, Newton.

Cladium Mariscus. This rare plant, almost wholly confined to Cheshire, is common on Oakmere.—I have noted the Ferns that are to be found in the neighbourhood, and they are all very common species.

Equisetum sylvaticum. Common; Delamere Forest.

In conclusion, let me recommend those whose taste and pursuits incline them to study Botany, to take a ramble over Frodsham district during this summer. I shall be happy to show any one where the rare plants of the neighbourhood are to be found.

BOTANY OF ARRAN.

(*To the Editor of the 'Phytologist.'*)

Sir,—As I have never observed any information respecting the Botany of the Island of Arran in the interesting pages of the 'Phytologist,' I venture to hope that a few words on the subject, even from so humble a botanist as myself, may not prove unacceptable. I visited the island in the months of June and July, 1856, and had it not been unusually wet weather, I do not doubt

that our list of floral treasures would have been materially increased. Our party consisted of my two sisters and myself, and we took up our residence in a very small and inconvenient cottage about half a mile from the village of Invercloy. The situation amply atoned for its internal discomfort; and when enjoying the lovely prospect of the Frith of Clyde, the Ayrshire coast, and the hills of Argyle, we willingly forgot the chaff beds, the single water-jug, and the nocturnal dance regularly celebrated by the rats in the thatched roof of our mansion. A winding path through several sloping fields led us to the shore: and these fields were mines of wealth to us, for in them blossomed the delicate little *Rosa spinosissima*, *Habenaria albida* and *H. bifolia*, *Orchis mascula* and *O. maculata*, *Pinguicula vulgaris*, *Lysimachia nemorum*, *Thymus Serpyllum*, *Digitalis purpurea* (occasionally the white variety), while the air was fragrant with the sweet odours of *Gymnadenia Conopsea* and *Pyrus Aucuparia*. *Scolopendrium vulgare*, *Asplenium Trichomanes*, and *A. Adiantum-nigrum*, grew plentifully among the pieces of rock which frequently projected from the ground. Near the shore was a large space of marshy land, in which we gathered splendid specimens of *Anagallis tenella*, *Menyanthes trifoliata*, *Aster Tripolium*, *Samolus Valerandi*, and a small variety of *Erythræa*. The shore plants were rich and varied. Among them were the beautiful *Mertensia maritima*, *Honkenya peploides*, *Anthyllis Vulneraria*, *Silene maritima*, and *Glaux maritima*.

At Corrie, a small fishing hamlet beyond Brodick Castle, we found in abundance the small but rare *Pinguicula lusitanica*; and in the same bog grew *Narthecium ossifragum*, *Myrica Gale*, and the most exquisite specimens of *Erica Tetralix* I have ever seen. Beyond the bog are some low Red Sandstone rocks, with caves in which grow *Asplenium marinum*, *A. Adiantum-nigrum*, *Osmunda regalis*, and the luxuriant *Lastrea recurva*. We gathered much finer specimens of *Asplenium marinum* at King's Cove, on the west coast of the island, where it grew on the roofs of the caves in great profusion, intermixed with delicate pendent fronds of *Scolopendrium vulgare*. In Glen Sannox and at Corrie Gills we found beautiful plants of *Drosera anglica*; *D. rotundifolia* being common throughout the island. *Cotyledon Umbilicus* is of frequent occurrence, but varying much in size according to its situation. I may also mention *Geranium sangui-*

neum and *G. pratense, Verbascum Thapsus, Lycopsis arvensis, Alchemilla alpina, Orchis viridis, Trollius europæus, Vaccinium Myrtillus,* and the different varieties of Heath and Ling, among the plants we met with in our various rambles. On the summit of Goatfell we gathered most lovely specimens of *Saxifraga stellaris,* of a larger size and more luxuriant habit than any I have seen on the mountains in the Lake district.

Should this brief notice induce any lovers of scenery and wild-flowers to pass a few days or weeks in the Island of Arran, they will in all probability be enabled to add many more plants to the list here recorded. M. E. C.

Birkenhead, May 16th, 1859.

DONCASTER FUNGUS, ETC.

By John Bohler.

The Doncaster Fungus, of which there have been so much paragraphing in the newspapers, and placarding as the "largest Fungus in the world," (although if carefully taken off the stone and weighed, it would be under two ounces,) is the mycelium of *Merulius lachrymans,* growing in an excavacation into a hill of New Red Sandstone, made for the convenience of getting a main sewer for the town drainage on to a lower level called the Carrs. There are several oak-beams in this cavern always moist through dampness. On one of these beams, about twenty months since, a small nucleus appeared, thence spreading out like a fan into a beautiful white byssoid film, creeping over the sandstone, and adhering closely to all its inequalities. Commencing thus at a single point on this roof-beam, it spread each way to the rock, forming two elegant lobes, each lobe retaining its byssoid form until its outer edge had spread three or four feet from the centre, where it begins to show a veiny appearance; the veins elongate as it spreads outward.

The elongation has extended by a light drab-coloured web, until now it is about sixteen feet to the outer edge of each lobe. The lobe on the western side of the cavern has shrunk into a brown-coloured web, and is fast perishing. The opposite one is still growing, and, as if subject to the influence of seasons, has, since I saw it in November, 1858, revived, assuming a more

snow-white brightness, and has added more than a foot to its byssoid margin. Now, in March, 1859, it looks exceedingly healthful, and is freely covered from centre to circumference with drops of water, bright as those seen on the leaf-points of the Droseras, giving the plant a most interesting appearance, and hence the appropriateness of its specific name, *lachrymans*. At about a foot from the outer circumference, and in a circle parallel with it, is growing on this large mycelium a quantity of what probably is *Agaricus parasiticus* of Bulliard, according to the Rev. M. J. Berkley's description of that plant, though twice as large; but whether it be the above-named plant or *Asterophora agaricoides* is not easy to determine, the proprietor not allowing any one to touch his valuable stock-in-trade; his care is not the form of the *pileus*, but the colour of the *tip*.

The *Merulius lachrymans*, growing in unventilated places, seldom produces hymenium, sporting itself in mycelium to an enormous size, spreading its thin film over such wood, brick, stone, or rock as are convenient for it. There is a very profuse growth of this mycelium in the Dewsnop pit, at Dukinfield, near Manchester, which is more than two thousand feet deep. In the Doncaster cavern there are other beams, on which the same fungoid growth is freely spreading, sometimes in small patches like a corium, at others growing in a more tufted form, with pendent processes resembling stalactites, full of little pits, containing pellucid drops of water of the most crystalline brightness. In the same cavern grow very freely the *Trichia chrysosperma, Agaricus rotula, Agaricus domesticus, Corticum giganteum*, and *Thelophora hirsuta*.

For the encouragement of local botanists studying this interesting but neglected family of plants, the following list of Fungi, which I have found near Doncaster in several rambles for that purpose, may be acceptable. Most of them may with care be preserved, and would be interesting additions to the herbaria of those who value them.

The sight-seers who have gone to see the 'wonderful Fungus,' might any autumn behold a more interesting spectacle in the family of Funguses in front and right and left of the Grand Stand, where the fine grass sward is so beautifully bespangled with Agarics, Boletuses, Lycoperdons, and Clavarias, of the varied colours of salmon, ochre, chocolate, white, brown, and

red; thus ornamenting that fine green carpet so as only Nature beautifies her works. On the Doncaster common grow freely *Agaricus tortilis, A. tenuis, A. ciliaris, A. pascuus, A. procerus, A. granulosus, A. constrictus, A. Columbetta, A. personatus, A. nudus, A. luteus, A. ruber, A. hysginus, A. dealbatus, A. pratensis, A. virgineus, A. psittacinus, A. coccineus, A. velutipes, A. compressus, A. Oreades, A. purus, A. repandus, A. griseo-cyaneus, A. chalybeus, A. fastibilis, A. campestris, A. semi-globatus, A. æruginosus, A. stercorarius, A. vitellinus, Boletus Grevillei, B. edulis, Clavaria pratensis, C. inæqualis, Lycoperdon giganteum, L. pusillum, L. gemmatum, L. pyriforme.*

In Sandall Beat are *Agaricus pantherinus, A. eburneus, A. hypothejus, A. imbricatus, A. torminosus, A. fuliginosus, A. vellereus, A. giganteus, A. confluens, A. dryophyllus, A. personatus, A. ramealis, A. porreus, A. varius, A. Georgii, Polyporus squamosus, P. spumens, P. versicolor, P. abietinus, Boletus luteus, B. bovinus, Clavaria abietina, C. cristata, Phallus impudicus, P. caninus.*

On the Carrs, *Æthalium septicum, Thelophora cærulea, Peziza corea, Ozonium auricomum.*

On the Shorne road and Wheatly woods, *Thelophora laciniata, T. hirsuta, T. byssoides, T. Sambuci, Bovista nigrescens, Polyporus betulinus, P. scoticus, P. abietinus, Agaricus corticola.*

In a small plantation east of Wheatly Hall, are *Nidularia striata* and *N. campanulata.*

On Levick Hagg, *Agaricus androsaceus, Geaster Bryantii, G. fornicatus, Polyporus vulgaris, Peziza coccinea, Tremella mesenterica, Exidia Auricula-Judæ, Sclerotium complanatum.*

Morchella esculenta in Edlington Wood; *Spermoidea Clavus* on Grasses, common; *Nemaspora Rosæ* on old wood.

To give a list of the very common but minute Sphærias, Rhytismas, Hysteriums, and Æcidiums, on sticks, twigs, and leaves, would be pedantic on account of their frequency, though they are worth the botanist's attention, as not only can they be preserved, without trouble, for the herbarium, but it is interesting to see them exist and perfect their spores by countless millions, to be blown by the winds to find other homes on the stems, twigs, and leaves of trees and shrubs and thorns, to vegetate apparently without injuring their healthy progress.

Moreover, in this neighbourhood there is a fair share of the

injurious Erysiphes, Oidiums, Puccinias, and Botrytises, which in their destructive effects as blights and mildews are too well known. If local botanists would study the laws which govern them, and so guard against those conditions which encourage their growth, it would be another step toward rendering the study of botany both useful and pleasing to many who, I fear, look upon it rather as an insignificant, useless, and dry pursuit, —the reverse, in truth, of what it is.

NOTE ON SEDUM SEPTANGULARE, *Haworth.*

By John Lloyd.

In June, 1857, I began to grow this plant side by side with *Sedum reflexum* and some others. They retained their distinctive characters of seven- and nine-angled up to July last, when, both being in a gross and luxuriant state, *S. septangulare* suddenly became nine-angled in all its larger branches, and which branches have retained the same number of angles up to the present time (Jan. 5th), whilst those which it produced in the autumn took the seven-angled form: *S. reflexum* has always remained nine-angled. This sporting, if it may be called so, may be considered as quite sufficient to prevent its ever being considered as anything more than a form of *Sedum reflexum*, unless some difference should hereafter be discovered in the inflorescence. Different varieties they certainly are, as a glance at their habit will immediately determine. And what I have above stated is probably not of frequent occurrence, but a casualty caused by the plants being over-luxuriant; and as an illustration of this view of the matter, I may mention that two seven-angled species, which had been treated in the same manner, became nine-angled: these were the British species *S. albescens* (*glaucum*, Smith), and the Hungarian species *glaucum* (Waldstein and Kitaibel).

I may perhaps be excused in suggesting that although the number of angles, or rather ranks of leaves, is too vague a diagnostic to determine species by, it may still serve to divide this now overgrown genus into sections. We have types of all the angular forms that I have observed in the genus amongst our British species: *S. dasyphyllum* is four-, *S. acre*, five-, *S. albes-*

cens seven-, and *S. reflexum* nine-angled; whilst *S. rupestre* and *S. forsterianum* are multifarious.

CHAPTERS ON BRITISH BOTANY.

CHAPTER II.

On Druidical or Ancient British Botany.

Hume's notice of Druidism.—Verstegan and Sheringham on the Antiquities of the English Race and Nation.—Knowledge of Plants possessed by the Druids and Bards.—*Loranthus europæus* not the *Mistletoe* of Britain, and hence not of the Druids. — Birch.—Vervain. — Selago. — Samolus. — Primrose. — Ivy.—Triads. —Trefoil. — Rowan-tree (Rantree). — St. John's Wort. — Fern. — Botany of Cerdwen.—Contents of the Mystic Cauldron.

The religion of Druidism was prevalent in the western parts of Europe, and in the isles of Britain its head-quarters were established. "No idolatrous worship," the eloquent historian of England writes, "ever attained such an ascendant over mankind as that of the ancient Gauls and Britons; and the Romans, after their conquest, finding it impossible to reconcile these nations to the laws and institutions of their masters, while it maintained its authority, were at last obliged to abolish it by penal statutes, a violence which had never, in any other instance, been practised by those tolerating conquerors."*

Verstegan, the learned panegyrist of England and of the English nation, in his work on the Antiquities of the English race, says that "the Druids had no knowledge of letters" (Restitution of Decayed Intelligence, etc., p. 93). This opinion is strenuously opposed by Robert Sheringham, who some years subsequently to Verstegan wrote on the origin of the British nation. He asserts (De Origine Gentis Anglorum, p. 127) that the Druids had acquired both the knowledge of letters and other arts from the Greeks,—"Nam ut literas, ita disciplinas illas a Græcis comparasse videntur." Here the learned author quotes Cæsar, who states that they, the Druids, were in the habit of discussing doctrines on the power and authority of the immortal gods; also about the universe, the magnitude of the earth, the motions of the heavenly bodies, *and the nature of things;* and this instruction they imparted to their disciples.

* Hume's History of England, vol. i. p. 5.

It is possible that these learned men may have been misled by the analogy, if not affinity, that exists between the Celtic and the Greek languages. In Greek, Δρῦς is an *Oak;* hence we have *Druids,* the ancient priests of Gaul and Britain, who, if they did not live in woods, practised their religious rites in groves; and as the Oak is the most common tree in these islands, they may have had their name from the places where they resided, or where their rites were performed.

In the Cambro-British language, *Derwen* is an *Oak,* and *Derwydd* is a *Druid.* The Greek Δρῦς and the Welsh *Derwen* are evidently from the same root.

These ancient priests had a respectable share of knowledge for the times in which they lived, and it still exists, or at least a a portion of it is said to have been handed down to us in the Welsh Triads and other remnants of Druidical or Bardic lore. The Bards succeeded the Druids, and transmitted part of their learning to modern times. It is in these songs of the Bards that we may look for the scanty gleanings of botanical knowledge that are still extant.

Here it is to be lamented by antiquaries that the *sacri vates, i. e.* the Bards, were not botanists, and also that the botanists were not bards; hence much of the ancient knowledge of Nature has perished. The *rhizotomists,* as the Greeks called the *simplers* of their times, could have given much interesting information about the herbs with which they were familiar, but they could not convey what they knew in phraseology so acceptable to their countrymen as Theophrastus, Aristotle, and Plato could. Many great men lived before Agamemnon, but their deeds are unknown because they had no *sacer vates,* no one gifted with the divine art, to transmit their names and labours to posterity.

Celtic or Druidical or ancient British botany can only be a meagre subject; but an account of the progress of botanical science in Britain would be incomplete without this portion, however meagre. It may be assumed that the Druids knew the *Oak,* the chief tree in the groves wherein the rites of their religion were celebrated; they also knew the *Mistletoe,* a plant which they regarded with a superstitious veneration, especially if it grew on the Oak.

Several naturalists, among which De Candolle and Sprengel may be named, assert that *Loranthus europœus* is the plant which

was so highly esteemed by the Druids. They maintain this because the common Mistletoe rarely grows on the Oak, while the *Loranthus* frequently is found on this tree. But the common Mistletoe, *Viscum*, is plentiful both in France and Britain, the ancient seats of the Gauls, and where the Druidical religion was chiefly prevalent. The *Loranthus* does not grow in Britain, neither is it so common in France as it is in the south of Europe, where the Druids were strangers. There does not appear to be any good reason for doubting that our *Mistletoe* was the chief mystic plant among these ancient herbalists.

The mode of cutting this sacred plant has been often described, viz. with a golden knife, when the moon was five days old, and it was received on a white cloth; also two white bulls were to be sacrificed in honour of its discovery.

Our knowledge of the sacredness of the Mistletoe is entirely derived from Pliny, certainly not the best possible authority, because he did not live in the countries where these rites were practised, and especially because many of his accounts are purely fabulous. The Druidical accounts transmitted by the Bards are more reliable than those of Pliny. Our botanists, like our historians, would rather quote a Greek or Latin than a Celtic authority. Unhappily most learned men are as ignorant of the Celtic languages and literature as the Greeks and Latins were ignorant of the customs of these north-western parts. A quotation on the gathering and uses of the Mistletoe from Llywarch Hên would be more instructive and less trite than one from Pliny, whose account, however, is the only available one. "The Mistletoe is but rarely found upon the Oak, and when found is gathered with rites replete with religious awe. This is done more particularly on the fifth day of the moon, the day which is the beginning of their months and years, as also of their ages, which with them are but thirty years. This day they select because the moon, though not yet in the middle of her course, has already considerable power and influence, and they call her by a name which signifies in their language the All-healing." What do Celtic scholars say about this? "Having made all due preparation for the sacrifice, and a banquet beneath the trees, they bring thither two white bulls, the horns of which are bound then for the first time. Clad in a white robe the priest ascends the tree, and cuts the Mistletoe with a golden sickle, which is received by others

in a white cloak. They then immolate the victims, offering up their prayers that God will render this gift of his propitious to those to whom he has so granted it. It is the belief with them that the Mistletoe, taken in drink, will impart fecundity to all animals that are barren, and that it is an antidote to all poisons. Such are the religious feelings which we find entertained towards trifling objects among nearly all nations."

The Cambro-British name of the Mistletoe, viz. *Pren Awyr*, reminds the reader of Virgil of the famous lines in the sixth book of the Æneid, line 205 :—

> "Quale solet sylvis brumali frigore viscum
> Fronde virere nova, quod non sua seminat arbos
> Et croceo fœtu teretes circumdare truncos;
> Talis erat species auri frondentis opaca
> Ilice, sic leni crepitabat bractea vento."

The Celtic word *aur* means 'gold;' and the poet calls the *Viscum*, Mistletoe, *frondens aurum*. The branch which the Sibyl enjoined the pious Trojan to take with him when visiting the Tartarean shades, was a production like gold springing out of a deep-green Ilex. The plant had a mystic importance among the Romans as well as among our British ancestors. The golden branch, *aureus ramus*, that grew concealed on the leafy tree, was dedicated to Proserpine, and its bearer was deemed sure of her protection. The tree on which the most sacred of all mystical plants grew was the peculiar gift of the deity Buanawr, the Quickener.

The *Birch*, in Cambro-British *Bedwen*, in Latin *Betula*,—both names are from some ancient common *radix*, now unknown,—was celebrated by the ancient Britons. The feast of the maypole, and that of the *phallus* among the Greeks, had probably a common origin. The Apple-tree, *Afallen*, is commemorated in the poems of Llywarch Hên. Its spray and blossoms were the usual emblem of victory. This tree occurs also in the songs of Cerddin the Caledonian. It is the name of one of this ancient bard's poems, which Mr. Turner contends is a genuine production, and contains the last words or the expiring groans of the northern Druids.*

The mystic cauldron, which contained the five sacred herbs which were to be boiled during a year and a day, under which

* Mr. Turner has proved that the 'Avellanan,' or 'Apple-trees,' is a genuine production of Merddin.

the fire was never suffered to be without fuel, nor without an attendant, forms a prominent object in the incantations of those times. "The five ingredients of this Circæan decoction were called *berries*, and the *foam of the ocean*, the *purifying cress*, laved in the clear fountain, a contribution of *wort*, the founder of liquor, . . . and the placid, cheerful *vervain*." Learning and science can only guess at the present names of these plants.

The fruit of the Lady's-seal, *Afal Adda*, *Tamus communis*, is conjectured to be one of the ingredients of this vegetable soup; the Ocean-foam is probably some one or other of the floating Algals, *Ulva;* the Cress may be what is still known by this name; *Wort* is possibly *Mentha piperita*, or some Mint, which being either infused or distilled, produced a potent liquor; the cheerful *Vervain* is either the plant still so called, or probably a member of the Labiate family.

The *Hierobotane*, sacred herb, or *Peristereon*, or *Verbenaca*, of Pliny, is generally believed to be the *Verbena officinalis*, or common Vervain of modern botanists; though the description given in Pliny, lib. xxv. ch. 59, does not correspond with the latter plant. Pliny says, "They have" (both varieties, the male and female, as he calls them) "numerous thin branches, a cubit in length, and of an angular form. The leaves are smaller than those of the Oak, and narrower, with larger indentations. The flower is of a grey colour, and the root is long and thin. The plant is to be found everywhere in level humid localities." Pliny's Vervain, whatever it was, differs from our modern plant both in size, frequency, and locality. The Vervain does not grow in moist places, it is not found everywhere, and its branches are not a cubit long. It may be impossible now to identify Pliny's plant, but it is probable that it was not our plant so called.

The same historian informs us that "the people in Gaul use it for soothsaying purposes, and for the prediction of future events; but it is the magicians, more particularly, that give utterance to such ridiculous follies in reference to the plant. Persons, they tell us, if they rub themselves with it, will be sure to possess the objects of their desires; and they assure us that it keeps away fevers, conciliates friendship, and is a cure for every possible disease; they say, too, that it must be gathered about the rising of the Dog-star, but so as not to be shone upon by sun or moon; and that honeycombs and honey must be first presented to the

earth by way of expiation. They say also that a circle must be traced around it with iron, after which it must be taken up with the left hand, etc. If the banqueting-couch be sprinkled with water wherein it has been steeped, merriment and hilarity will be greatly promoted."

It is probable, after all, that this "holy herb," *hierobotane*, was not the name of any particular plant, but rather a name which was indifferently applied to all plants used in sacred or sacrificial rites.

The *Selago* was also renowned in Druidical mythology, and is now so obscure that the most discordant species, genera, and even Orders, have been conjectured to be the plant. "Most authors," Dr. Pulteney says, "have agreed, from this resemblance (viz. that of the leaves to Savin-leaves), that it is *Lycopodium Selago*, a species of Club-moss." The likeness is not great between a shrub several feet high or long—for it is usually prostrate—and a plant only a few inches high, and found only on boggy parts of lofty mountains. The Druids were too good judges of what was likely to impose on the credulity of their disciples to make choice of so insignificant a plant as the *L. Selago*. Juniper is far more likely to have been the Selago of the Druids than a Club-moss is. This does grow in Britain plentifully, in most mountainous and hilly parts of the country. The plant might have been what we now call Herb-of-Grace, in Cambro-British *Gras Duw*, or *Ruta graveolens*. This is not a native, but it is well known at the Old Bailey as the Herb-of-Repentance. It has a very strong smell. It might have been our Meadow Rue, *Thalictrum flavum* or *T. minus*, or it may have been some member of the Labiate family. "It was to be gathered without the use of iron, with the right hand passed through the left sleeve of the tunic; the feet of the gatherer were to be bare, and washed clean, and a sacrifice of bread and wine must be offered before gathering it. It was carried also in a new napkin. The Druids of Gaul pretended that it was a preservative against accidents of all kinds, and that the smoke of it is good for all maladies of the eyes." (Pliny, book xxiv. ch. 62.)

Equally doubtful is the identity of *Samolus*, another Druidical plant. Sprengel says it was the same as our modern *Samolus Valerandi*, because it grows in humid situations. But for the same reason it might be *Menyanthes trifoliata*, or Bog-bean, or

Buck-bean, for it grows also in humid situations, and is probably as efficient a remedy for porcine disorders as the other. Fée supposes it was *Veronica Beccabunga,* and Anguillara, *Anemone Pulsatilla,* which does not grow in moist places, and is rather unfrequent everywhere. "The plant must be gathered by a person fasting, and with the left hand, and he must be careful not to look behind him. It must not be laid anywhere but in the troughs from which the cattle drink. It is a remedy against the maladies to which swine and other beasts are subject." (Pliny, book xxiv. ch. 63.)

There are several plants besides the above noted by Pliny, which are described or named in Cambro-British poetry. One of these is the *Primrose, Briallu,* one of our earliest flowers, and a great favourite with both old and young. The *Ivy,* among the ancient Britons, was used for garlands, probably on festive occasions, a practice brought from the East, the cradle of the human race. Ivy-crowned Bacchus came from India, followed by a band of noisy bacchanals. The Cambro-British name *Eidiorwg* is not very remote from the Latin *Hedera.* They are kindred words, derived from some root common to both languages.

Ears of corn were impressed on ancient British coins, a certain proof that the aboriginal inhabitants of this island did not live entirely on acorns, as some assert; nor on swine's flesh, as others maintain. They had the staff of life, perhaps not so abundantly as their descendants, but its appearance on their circulating medium is a proof that they were not entirely ignorant of Ceres and her gifts.

If any one is curious enough to investigate the subject, let him, if he is not an adept in the science of numismatics, apply to an antiquarian. If he fails to get satisfaction about the precise species of *Triticum, Hordeum, Avena,* or *Secale,* that may be impressed on the pieces of money, let him remember that the Irish Shamrock, the Scotch Thistle, and other national emblems are not identified at the present day, though the plants grow and the dies are cast or cut.

It may be gathered from the term *Triad,* that the *Trefoil,* a very common plant everywhere in some of its many forms or species, played a very conspicuous *rôle* in the poetry and mythology of the ancient Britons.

As much of the ancient Cambro-British wisdom, morals, and

poetry has been preserved in *Triads*, it is only reasonable to infer that they, the ancient Druids and Welsh bards, had observed a plant so plentiful as the Trefoil, and which was so well adapted for teaching mysteries. The ancient bards relate that wherever the goddess Olwen trod on the ground, immediately four white Trefoils sprang up.

In the legendary history of the life of St. Patrick, the Apostle of Ireland, it is related that when the then heathen Irish refused to admit the doctrine of the Trinity of persons in the Godhead, the preacher took a blade or leaf of white Clover, or *Shamrock*, and showed the simple people that the doctrine of the unity of substances or essence and of a plurality of persons was illustrated by a natural fact; that the three leaflets of Clover were all of the same nature and organization, and that they all constituted but one leaf.

There is probably as much, and no more truth in this legend than there is in the virtues ascribed to the mystic plants of Druidism; still it supplies a proof that the plant was not unnoticed in these early times.

It is probably now too late to inquire what the Druids or Bards meant by the mysterious *three*, one of the grand secrets inculcated by the hierophants of ancient Britain, the form of which is only retained in the Triads (*Tribanau*) of the Welsh, as it is embodied in the Hindoo trinity of Bramah, Vishnoo, and Sheva. The Trefoil was a mystic plant of later times, and probably its superstitious uses are still known in some remote parts.

A Trefoil with four leaves—or blades, as they are called in the northern parts of the island—was believed to be, not very long ago, as efficient a preventive of the malice of *good neighbours*, or fairy folk, as the Rowan was a certain specific against the cantraips of witches, warlocks, and all the other members of the infernal alliance. The following story will illustrate the popular belief in a four-bladed Clover-leaf. A conjuror, at a fair, was exhibiting, to the wonderment of a large concourse, a cock drawing a couple of spars large enough for masts to a first-rate three-decker. A man was passing, who had on his back a bundle of Clover-grass, in which there happened to be a four-bladed leaf of Trefoil. He saw things as they really were, not as they appeared to those over whom the magician had cast his glamour and spell. The man with the birn (bundle) of grass asked what they were looking at.

They said, "Don't you see a cock drawing more than a yoke of oxen could move?" He replied, "You fools, they are only two windle-straws (bents)!"*

The Rowan or Mountain Ash is probably the most celebrated of all our plants employed for superstitious purposes. The Rev. Mr. Lightfoot, the author of the first 'Flora Scotica,' "thinks there are sufficient traces in the Highlands of the high esteem in which the Druids held the Quicken-tree or Mountain Ash, *Sorbus* or *Pyrus Aucuparia*." He states that "it is more frequently than any other tree found planted in the neighbourhood of Druidical circles of stones, so often seen in Scotland." The tree was, and is probably still, planted about farmhouses and cottages as a preservative against the charms of witchcraft and the "evil eye." Some say it is planted in churchyards, but this is not the case, or if it be, it is only to a limited extent. Its celebrity in the north of Europe dates from a period very remote, long prior to the introduction of Christianity. The ancient belief in incantations, charms, and witch- and wizard-craft, and their pagan antidotes, the light of the Gospel has never quite eradicated in some places.

In the beginning of the present century a ploughman used a shoot of the Rowan-tree for the handle of his *pettle*, the instrument with which he cleaned the mould-board of his plough. While this wood was present, no power could stop his labour without his consent, the cantraips of sorcerers had no potentiality. A bit of Rowan-tree placed over the lintel of the byre- (cowhouse-) door, effectually preserved the cows from the influence of the evil eye, and secured their milk to the right owners.

On the subject of the superstitious uses of this tree enough and more than enough has been already published in these pages.

St. John's Wort, *Hypericum perforatum*, was also a notable remedy or preventive of all the ills that witches and warlocks can inflict on the human race, by bewitching either them or their cattle. One of the most intelligent men of the part of the country where he lived, and who has been dead scarcely forty

* Shamrock is the common Trefoil, *T. repens*.

"Where'er they pass, a triple grass
Shoots up with dewdrops streaming,
As softly green, as emeralds seen
Through purest crystal gleaming
Oh, the Shamrock!
Chosen leaf of bard and chief;
Old Erin's native Shamrock."—*Moore*.

years, told the following story about the efficacy of this plant, which he devoutly believed. One of his cows gave her milk very unwillingly or ungraciously, *i. e.* she kicked and flung, either hurt the milker or upset the milk-pail. Also the little that she gave was good for nothing: if kept a week it yielded no cream, a sure symptom of witchery. Both the cow and the milk were bewitched. A wise-woman was consulted on the case, and she advised that when the maid went to milk the cow, she was to put a bit of St. John's-wort in the pail, and this would counteract the charm. The cow would be gentle as a lamb, and the milk as plenteous and rich as ever. And so it was, the cow became peaceable, gave her milk without any trouble, and the cream was restored. To prevent the possibility of the occurrence of a similar incantation, the herb St. John's-wort was directed to be placed over the lintel of the cowhouse.

The Fern certainly was known in very ancient times, and its reproductive spores, or fern-seed, as it was named, obtained great celebrity in the Middle Ages. The efficacy of fern-seed is often assumed by our great national poet.

The botany of Ceridwen, one of the ancient Welsh bards, is described by Davies, in his 'Celtic Researches,' as follows:—"Ceridwen, with due attention to the books of astronomy and to the hours of the planets, employed herself daily in botanizing, and in collecting plants of every species which possessed any rare virtues" (Dav. p. 220).

The decoction of the herbs, prepared, as above described, in the mystic cauldron, was sprinkled by the hierophant on the assembled neophytes.

The contents of the mystic cauldron were five distinct ingredients. First, *berries,* by some supposed to have been the fruit of *Tamus communis,* or Lady's-seal, a plant subsequently dedicated to the Blessed Virgin, and probably one regarded with some superstitious reverence. But the berries of *Solanum Dulcamara,* or of *Bryonia dioica,* might have been substituted for those of the former and rarer herb, and might have done just as well. The Foam of the Ocean may be assumed to have been a marine Algal, probably one of the *Lavers,* which in warm seasons float on the sea. Cresses (*Berwr*) of a purifying quality, and laved in the cool stream, can scarcely be ought but the plant so well known by this name, and so much beloved by the inhabitants of Lon-

don. Wort, or Wyrt, the ancient word for 'plant,' has been already explained as signifying a species of Mint. It is not probable that the placid, cheerful *Vervain* was the plant known in modern times by this name, viz. the Vervain of our ancient poets.

"Here holy Vervain, and here Dill,
'Gainst witchcraft much availing."

The Oak and the Yew are not unnoticed in Celtic poetry. The former is qualified as the "fiend's aversion;" the latter is characterized by pliability and elasticity,—the "bended Yew." The Thistle is also commemorated in these ancient Celtic strains:—

"But ye have been sporting on plains
And pursuing the Thistle's beard,"

spoken to an indolent hero or unwarlike wight. But the allusions to modern poetic flowers, such as the Cowslip, the Primrose, the Daisy, the Lily, and the Rose, are not numerous in Celtic poetry.

MOSSES OF FIFESHIRE.

By C. Howie.

Encalypta vulgaris, Hedwig. On Largo Links; the var. γ on St. Andrew Links, also sparingly.

Encalypta ciliata, Hedw. On hills above Newburgh, on the north aspect.

Hedwigia ciliata, Hedw. Common over the county, presenting several marked variations.

Schistidium apocarpum, Br. and Sch. Of universal distribution over the county. Var. *gracile* in a den above Falkland. Var. *rivulare* in Kenly, and other streams, with various other forms. —Much variation is observable in various species that distribute themselves under conditions differing widely as regards soil and situation, not only among plants of cellular structure, but also among the higher phanerogamous plants, observable in the species of various genera.

Schistidium maritimum, Br. and Sch. On rocks by the Tay and Firth of Forth; also east of St. Andrew's.

Grimmia pulvinata, Smith. Common on walls and rocks.

Grimmia leucophæa, Greville. On Norman Law, located on the south-west cliffs.

Racomitrium aciculare, Bridel. On stones and rocks by rivulets; common.

Racomitrium sudeticum, Br. and Sch. On rocks; Drumcarro Crag; sparingly.

Racomitrium fasciculare, Bridel. On rocks and walls; common.

Racomitrium lanuginosum, Bridel. On the seacoast, and over the county; common.

Racomitrium canescens, Bridel. On the sandy links of the seacoast, and over the county, presenting several variations.

Ptychomitrium polyphyllum, Br. and Sch. On walls and stones, among crags, over the high grounds of the county.

Orthotrichum cupulatum and *anomalum.* On rocks at Elia, and occasionally met with over the county.

Orthotrichum affine, Schrad. Of general distribution over trees, rocks, and walls.—Variations apparent under different conditions.

Orthotrichum rupestre, Schleich. On rocks by Fifeness, and occasionally found on rocks over the county.

Orthotrichum Lyellii, Hooker. On old trees, west-end of Stravittey Wood, and Kenly den; sparingly.

Orthotrichum rivulare, Turner. Found sparingly in a den near Magus Muir, by the streams; and in a den near Largo, on the stems of trees by the stream.

Orthotrichum diaphanum, Schrad. On walls by Crag Elia and St. Andrew's.

Orthotrichum leiocarpum, Br. and Sch. On trees, Chester's Woods and Stravittey, etc.

Orthotrichum pulchellum, Smith. On a wall near Crail, and on trees near Lathallan House.

Orthotrichum crispum, Hedw. On trees; common. The form *Bruchii* is often met with.

Orthotrichum Drummondii, Hooker and Grev. Frequently found over the more elevated woods, on trees.

Orthotrichum phyllanthum, Br. and Sch. On rocks by the margin of the sea, at Fifeness and near Elia.

Atrichum undulatum, P. Beauv. Common.

Pogonatum nanum, Bridel. On the *débris* of an old quarry, Kinaldy.

Pogonatum aloides, Bridel. Common, with variations.

Pogonatum urnigerum, Bridel. In an old quarry by Cupar, and above Falkland; abundant.

Pogonatum alpinum, Bridel. On the margin of the north cliff of Drumcarro Crag.

Polytrichum formosum, Hedw. On the summit of Norman Law, Dura Den, Kinaldy, etc.

Polytrichum commune, L. Common. Var. *minus* on the dry heaths of Tent's Muirs.

Polytrichum juniperinum, Hedw. Abundant on Tent's Muirs; var. *strictum* in more marshy situations.

Polytrichum piliferum, Schreb. Abundant on crags west of Drumcarro; also on wall-tops.

Aulacomnion palustre, Schwægr. In marshes; common.

Leptobryum pyriforme, W. On the face of old sandstone quarries, and on the sandy links of the sea-shore; sparingly.

Bryum nutans, Schreb. On Bank-head Moss, and similar places; common.

Bryum carneum, L. On damp or wet grass parks, top of Craghall Den; associated with *Hypnum salebrosum.*

Bryum Wahlenbergii, Schwægr. On wet banks and ditches; common. The var. *gracile* associated with *Bartramia fontana,* by Kiness Burn.

Bryum pseudotriquetrum, Schwægr. On the north side of the West Lommonds, Kenly Den, etc. Var. *compactum,* Tent's Muirs.

Bryum alpinum, L. On hills south of Norman Law.

Bryum pallens, Swartz. In a ditch, Tent's Muirs; Lommonds. Kenly and other dens.

Bryum cernuum, Hedw. On Tent's Muirs.

Bryum inclinatum, Br. and Sch. On Largo Links, Tent's Muirs, etc.

Bryum intermedium, Bridel. Tent's Muirs, etc.

Bryum bimum, Schreb. A small form is found sparingly on Tent's Muirs.

Bryum torquescens, Br. and Sch. On a wall near Priorlethem House.

Bryum capillare, Hedw. Common, in several varieties.

Bryum cæspititium, L. Common.

Bryum argenteum, L. Common; variable.

Bryum Marratii, calophyllum, and *warneum,* were discovered about the same time on the Tent's Muirs as they were noticed

on the coast near Southport, Lancashire. They grow along the more recent-formed beach, where the *Catiscopia nigrita, Distichium inclinatum, Meesia uliginosa,* and *Ambyodon dealbatus,* all growing in the greatest profusion (they are protected by drifted sand-hillocks on the margin of the sea), located on damp flats partly undulated, forming the basis of a peat formation.

Bryum roseum, Schreb. In patches among woods; sparingly.

Mnium affine, Bland. Var. *rugicum* by the margin of Kilconquhar Loch.

Mnium rostratum, Schwægr. Common.

Mnium hornum, L. Common.

Mnium undulatum, Hedw. In fruit, Cambo and Kenly Dens; abundant.

Mnium punctatum, Hedw. Common.

Meesia uliginosa, Hedw. On Tent's Muirs.

Amblyodon dealbatus, P. Beauv. On Tent's Muirs.

Funaria hygrometrica, Hedw. Common.

Physcomitrium pyriforme, Br. and Sch. On wet ground and ditches; common.

Bartramia fontana, Bridel. Variable; common in wet places.

Bartramia calcarea, Br. and Sch. More limited in its distribution.

Bartramia pomiformis, Hedw. Common.

Bartramia ithyphylla, Bridel. Common.

Bartramia Œderi, Swartz. On Drumcarra Crag; sparingly.

Bartramia arcuata, Bridel. Common; occasionally found in fructification.

Catascopium nigritum, Bridel. Tent's Muirs; in dense fruit, distributed by the mile.

Splachnum ampullaceum, L. and S.; *sphæricum,* Hedw. Collected betwixt the East and West Lommonds, on crossing over the top, among some cattle-parks.

Fissidens bryoides, Hedw. Common.

Fissidens adiantoides, Hedw. On wet banks and grass fields; common.

Fissidens taxifolius, Hedw. Common.

Antitrichia curtipendula, Bridel. On walls and trees near Ceres, by Birkhill, etc.

Anomodon viticulosus, Hooker and Taylor. On trees in Kenly, Craghall, and other dens.

Pterogonium gracile, Swartz. On trees and rocks; common.

Isothecium myurum and *myosuroides*, Dill. On trees and rocks; common.

Isothecium alopecurum, Dill. This fine Moss covers the rocks and stones through which the rivulet flows in the deep-shaded ravine of Ghoul's Den.

Climacium dendroides, Web. and Mohr. Common; found in fruit, Tent's Muirs.

Leskea sericea, Dill. On rocks by the sea-coast; common, etc.

Omalia trichomanoides, Dill. Sparingly distributed.

Neckera complanata, Bryol. Eur. On the sea-coast east of St. Andrew's, etc.; common.

Neckera crispa, Dill. On the Lommonds.

Hookeria lucens, Dill. On rocks, Kenly Den, in fruit; east sea-coast, and about old coal-pits.

Fontinalis antipyretica, L. Common in the waters of the Kenly and other streams.

Hymenophyllum tunbridgense *and* H. Wilsoni. *From the Proceedings of the Dublin Natural History Society. By* Wm. Andrews, *President.*

My present remarks will be confined to the genus *Hymenophyllum*, a family the most beautiful and minute of our native Ferns, and when seen in all their luxuriance of growth in their primeval woods, or on the rocks of the alpine districts of the mild and moist atmosphere which characterizes the south-western parts of this country, their beautiful and singularly delicate fronds extensively spread like a velvet carpet of the most rich and verdant hue. Of this genus we have two well recorded and described species, *Hymenophyllum tunbridgense* and *H. Wilsoni;* but the latter, in Mr. Bentham's recently published Handbook, has been discarded, but with what usefulness is to be seen. It is needless to refer to the works of the older botanists, as Ray's 'Synopsis,' Withering's 'Arrangement,' Hudson's 'Flora Anglica,' Bolton's Filices Botanicæ, and others; for such confusion appears with regard to the species *H. tunbridgense* and its localities, that its habit and peculiarities appear to have been but indifferently known, especially when we

find that delicate species quoted by Ray and by Withering as growing amongst pebbles at Cockbush, on the coast of Sussex; and when we still further refer to that excellent work, 'Species Filicum,' of Sir William Hooker, we again find such numerous affinities and synonyms given of the views of different botanists, at pages 95 and 147 and following, that completely perplex the species *H. tunbridgense*, *H. Wilsoni*, and *H. unilaterale*. On such grounds I presume that Mr. Bentham considered the propriety of excluding the two latter, and retaining but one British species, that of *H. tunbridgense*. There are no tribes of plants to which I have devoted more patient investigation and practical research amid the alpine and subalpine districts, and the wooded glens and ravines of the western and south-western parts of this country, than to those of the genera *Trichomanes* and *Hymenophyllum*. As my remarks are with reference to the latter genus, it is proper that the distinctive characters should be given, and to submit to you, in the recent state, masses of each species. It is not necessary to go into detail, when the excellent descriptions, which are well defined, can be readily referred to in Hooker and Arnott's 'British Flora,' p. 592, Hooker's 'Species Filicum,' vol. i. p. 95, and Wilson's observations in Hooker's 'Journal of Botany,' vol. i. p. 317, and again in 'Supplement to English Botany,' t. 2686. With regard to *H. Wilsoni*, I may however mention that the characteristics of *H. tunbridgense* from *H. Wilsoni* are, in the broader, almost lanceolate, and more delicate structure of frond, and which is of large size; pinnæ pinnatifid, with numerous segments, distichous, or pointing in opposite directions, and flat; the involucres, both in the early stage and in the ripened state of the capsules, broadly ovate, or, more properly, subrotundate, invariably toothed or spinous, and swollen only at the base; colour, pale glossy-green. In *H. Wilsoni* the pinnæ are unilateral, scarcely pinnatifid, and with fewer segments than in *H. tunbridgense*, and with the rachis curved in a direction contrary to that of the fructification; involucres numerous, truly ovate, each valve remarkably convex, gibbous or inflated throughout, touching only by their edges, which are entire, and destitute of the toothed or spinous character of the valves which distinguish *H. tunbridgense*; plant of smaller size than *H. tunbridgense*, more rigid, of a strongly reticulated nature, and of a darker or lurid green. It is however in the

distribution of these plants in this country that we find a wide separation. The *H. tunbridgense* is decidedly a subalpine plant, affecting and assuming a luxuriance of growth only in those moist and sheltered glens and ravines of the south-western parts of this country, especially amid the screen of aged woods, where perpetual shade and a moist and even temperature favour its full development. There it may be found extensively mantling the broad surfaces of vertical rocks and of banks, and where its drooping and overlapping or imbricated fronds spreading in masses display a most lively and delicate green. In such densely-shaded localities *H. Wilsoni* cannot be traced. It is also more rarely met on the trunks of trees than *H. Wilsoni*, and in its habit more sheltered from undue moisture. In the south-western parts of Ireland, in the glens around Killarney, more especially in those of Cromaglouin, and in those of Glouin Caragh, westward of the Reeks, it is met in all its beauty. In my botanical excursions in the county of Wicklow, with the late Mr. Nuttall, I have not met with *H. tunbridgense*, although *H. Wilsoni* is most frequent; neither have I seen it in Connemara or in Sligo, where, very likely, glens have been explored. In all those localities I have never found a departure from the described habit of growth, nor alteration of the characteristics given, neither any intermingling nor approach of growth of the two species. The habits of *H. Wilsoni* are very different, affecting much more elevated and exposed positions, and greater exposure to atmospheric influence and rain, as well as on arid and exposed rocks. In the recesses of the rocks of our highest mountains, particularly their northern and eastern aspects, the *H. Wilsoni* there exhibits the same characters as found in the more exposed glens where it coats rocks and trunks of trees with its peculiar crisped, curved, and rather erect habit of growth. On the summits of Brandon, Benisgeach, Cahir Conree, and Mounteagle in Kerry, and even on the cliffs of the Great Blasket Island, this species is met in rich abundance; but no approach in those localities can be traced of *tunbridgense*. *Wilsoni* is much distributed in the western parts of Ireland, as also in the northern and eastern counties. To the more general distribution of the Ferns of Ireland, Professor Kinahan has given much attention and indefatigable research. It is clear that in this country *H. tunbridgense* delights in localities where shade and a mild and

even temperature encourage its growth. In warmer countries and tropical climates high altitudes are more conducive to the healthy existence of *Hymenophyllum* and *Trichomanes*. Bory de St. Vincent, to whom I shall have particularly to refer, mentions in his notes on Algerine botany the delightful temperature of the province of La Calle, where a perpetual spring exists, for the centigrade thermometer has never stood below 11 degrees, nor risen above 30 degrees in the shade. The forests of La Calle abound in beautiful Ferns, and where he mentions the great height of *Osmunda regalis*, and the gigantic leaves of the Ivy. He singularly states that the Male Fern, *Aspidium Filix-mas*, does not occur in Africa; nor, according to Low's Memoirs of the plants of Madeira, does the genuine *Aspidium Filix-mas* exist there. Höll, on the plants of Madeira, alludes only to one species of *Hymenophyllum*, the *tunbridgense*, growing at an elevation between 2,000 and 3,000 feet. In the Floras of France the species *tunbridgense* is recorded, and is mentioned as growing on the trunks of trees at Cherbourg. I shall now come to a more important point, the opinion generally entertained by botanists that *Hymenophyllum Wilsoni* of British botany is none other than the *H. unilaterale* of Willdenow's 'Species Plantarum,' p. 521. We are aware how very nearly some of the exotic *Trichomanes* and *Hymenophylla* approach in form and habit of growth; yet the character and position of the involucres in many species are very different. What may be the true characteristics of the involucres of *H. unilaterale* we are in some measure led to conjecture. No descriptive terms can clearly determine the doubts entertained of a species. Accurate drawings of the recent plant, or authenticated specimens, should only be advanced as confirmatory of the decision of disputed views. Again, there are difficulties of deciding species of exotic Ferns, when reference is to an ill-preserved herbarium, and where accurate notes do not exist of peculiarity of locality and of habit. According to Hooker's 'Species Filicum,' *H. unilaterale* of Willdenow, from a specimen from Martius, proved to be the species *H. tunbridgense;* and *H. unilaterale* of Willdenow, according to description, was *H. Wilsoni*, but not according to a specimen from Martius. Some years since, being much interested in the affinities of *Trichomanes* of this country with the forms of *Trichomanes alatum* and *T. radicans* of Jamaica, I had many communication with that amiable and liberal

promoter of science, Sir William Jackson Hooker, Director of the Royal Gardens, Kew. I had also favourable opportunities of communicating with the celebrated Bory de St. Vincent, with the desire of knowing the characters and obtaining specimens of *Trichomanes longisetum* and of *Hymenophyllum unilaterale* discovered by him in the isle of Bourbon. I give an extract of his reply, dated Paris, 14th of February, 1845 :—"The plants which interest you were discovered by me in the thick forests of the island of Bourbon, and these were communicated at the time to Willdenow, to Ventanal, and to the old Jacquin of the neighbourhood, who were then my correspondents of those countries. They have not yet found them, no more than three or four other rare species." There therefore does not really exist in any of the herbaria in Britain an authentic specimen of the *Hymenophyllum unilaterale* of Willdenow. Under these circumstances, and with reference to the distinct habits of the two species of this country, I would venture to suggest that the species *Wilsoni* be retained in the list of our Irish Ferns, as a slight tribute to the merit of so zealous an observer and so distinguished a cryptogamic botanist as William Wilson, Esq., of Warrington, who, in August, 1829, first drew attention to the distinction, in the neighbourhood of Killarney, of the two species of *Hymenophyllum*.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Wednesday, the 1st of June. W. F. Rooke, M.D., Belvidere House, Scarborough, and John S. Ward, School Hill, Lisburn, county Antrim, were admitted members of the Exchange Club. Mr. J. G. Baker communicated the following notice :—

"*Muscari racemosum.* Mr. John Barton sends an example of this from the Gogmagog Hills, Cambridgeshire. He writes:—'I had some conversation with Mr. Babington about it, and he said that he had not the least doubt of its being truly wild. The locality has been known from twenty to thirty years. Latterly it has turned up in a great many new spots, and seems indeed as

widely dispersed over the chalk country as the *Anemone Pulsatilla* and *Astragalus hypoglottis*. The *Muscari* of the gardens in and about Cambridge is, so far as I have been able to observe, a different species.' "

He also exhibited specimens of *Asperula arvensis* and *Amaranthus Blitum*, two introduced species, collected by Mr. Hebblethwaite in the neighbourhood of Camphill, North Yorkshire; and of *Veronica peregrina*, cultivated at Camphill from seeds stated to have been procured from wild Guernsey examples of that species. This latter is a plant of France, and respecting its occurence in the Channel Islands it may therefore be worth while to seek further information.

BOTANICAL NOTES, NOTICES, AND QUERIES.

Plants of Moncrieffe Hill.

Taking a walk the other day on Moncrieffe Hill, I observed the following rare plants, viz. *Doronicum plantagineum*, *D. Pardalianches*, and *Anchusa sempervirens*. *Doronicum plantagineum* and *D. Pardalianches* are both found generally growing together, the former by far the more abundant of the two. They occupy secluded situations under the shade of the trees, preferring a dry and somewhat sandy soil. These plants are widely and plentifully distributed all over the hill, and are undoubtedly truly wild.

Anchusa sempervirens is very abundant all along the foot of the hill, growing in situations shaded or exposed indiscriminately.

John W. Crowe, *Gardener*.

Moncrieffe Gardens, June, 1859.

New Brighton Violet. *By F. M. Webb.*

This Violet seems to be rather plentiful on the sand-hills, growing generally on those parts which are more or less carpeted with *Galium verum*, *Anthyllis Vulneraria*, *Thymus Serpyllum*, etc.: the roots penetrate a great depth into the sand. In several plants out of the few I have as yet collected, a small hole is eaten, by some insect, into the spur, the hole (or sometimes two) being at the tip or end of the spur.

Description. Roots (underground stems) very long, branching and jointed, throwing out fibrous radicles from the joints. Stems branched and leafy, springing from the rhizome. Leaves ovate-lanceolate, crenated or toothed, rigid, thick, quite smooth, on long stalks; stipules lanceolate, ciliate, with long teeth. Flowers axillary, lateral, alternate, on long peduncles, with a pair of small linear-lanceolate bracts near the top of the flower-stalk. Sepals entire, lanceolate, tapering, rounded at the base. Spur thick, blunt, yellow, considerably longer than the sepals (twice as long as the part of a

sepal between its point of attachment and its base). Spurs of the two spurred stamens flattened, lunulate; style straight.

Note. This Violet does not correspond with the description of *V. pumila* as given in Godron's 'Flore de France,' p. 180, where the leaves are described as "*ovales-allongées, arrondies ou en coin à la base, largement décurrentes* sur le petiole, stipules . . . *surpassant* le petiole."

Our plant agrees well enough with *V. canina* of this author.

Complaints have been made about the uncertainty of the synonyms of the Dog Violet of Gerard; and our Continental brethren do not appear to be unanimous in their interpretations of *Viola canina, V. sylvatica, V. sylvestris*, etc. The *V. sylvestris* of Koch is not the *V. sylvestris* of Lamarck; and the *V. pumila* of Fries is not *V. pumila* of Villars.

The production of the flowering stems from the rhizome, and not from the tuft of leaves terminating the stem produced the previous season, appears to be the only tangible difference between *V. sylvatica*, Fr., and *V. canina*, Linn., as now generally understood in England; a difference more apparent than real. The stem of the present year of the Brighton Violets will probably be added to the rhizome previously formed, and next season the flowering stem will again be a continuation of the rhizome. The stem and the inflorescence are both indefinite or undetermined, or in other words the apex of the stem does not perish, but, with the rhizome, etc., sinks into the soil or herbage, and is ready to start afresh next season. That such is the case with *V. canina*, or the North Brighton Violet, there can be little doubt, and it is probably so with *V. sylvestris*, Koch (*V. sylvatica*, Fr.).

More Things not Generally Known.

The following quotation from a report of a floral show, evinces very clearly that the knowledge of botany is not extending among our popular instructors, the daily and weekly press. This new production "out-Herods Herod." It beats Mr. Timbs's "things not generally known." . . . "Lastly, there was a remarkable hybrid-looking contribution, called the *Spergula pilifera*, a floricultural cross between common grass and common moss, and having all the appearance of the human hair after having been subjected to a close cropping, or to grass itself after having been browsed upon by cattle. There can be no question that this new graminiferous production will furnish a fine material for lawns and verges, since it is emphatically an evergreen, retaining its verdurescence uniformly throughout the year, unaffected by cold or drought, and besprinkling itself at certain seasons with snow-white starry blossoms. In addition to these peculiarities it bears all the rolling and pressure of ordinary grass, and, what is a still more recommendatory matter in its favour, anomalous as it may appear, unlike other grasses, it requires no mowing!" What will botanists say to this hybrid, a mule between a common Grass and common Moss? Its qualities are wondrous, and set forth with great magniloquence! A. B.

Monkshood.

The following sad account is an illustration of the ancient classical adage, "Where can we find a teacher for an octogenarian (the original says sexagenarian)?"

"Deaths from eating Monkshood.—A lamentable event has occurred at Ecclesfield Hall, near Sheffield. The occupiers of the hall were Mr. and Mrs. Greaves, the former of whom was eighty-one years of age, and the latter was seventy-six. Mrs. Greaves prepared a salad for dinner, and, unfortunately, when she plucked the materials for the salad in the garden, she gathered with them a quantity of green leaves from a plant of Monkshood. Both she and her husband ate heartily of the salad, soon after doing which they were both seized with violent pains, and died poisoned." S. B.

Nicandra physalodes.

The above plant appeared in abundance in 1846, about Shalford, near Guildford, Surrey, in the cottage allotments. It also sprang up the same year as a weed in a garden at Guildford. There is no botanical garden in that neighbourhood, and the plant does not appear to have ever been cultivated for economical purposes.

It is a native of Peru, and was introduced into England in 1759. It is figured in Curtis's Bot. Mag. fig. 2458. It has not yet been registered as a spontaneous production of Europe. Its appearance in the above locality was accidental. It could not be called an escape from cultivation, because it was not cultivated there. A. I.

Guildford.

Cumbrian Lichen.

(See vol. ii. p. 251.) A correspondent writes,—"Tell me what Gilpin means here: 'We found many old people and children from the adjacent villages gathering a species of Lichen that grows on the crags, and we heard that it was found very useful in dyeing a murray colour (a dark or reddish purple).'"

Dr. Lindsay, a contributor to the 'Phytologist,' is doubtless best qualified to answer the query; but till his attention is directed towards it, I beg leave to suggest that it was probably *Lecanora tartarea*, Ach., a plant celebrated as Cudbear, used extensively by Mr. Cuthbert, a manufacturer. It abounds in alpine countries. If it be objected that this plant grows in more northern counties than Cumberland, it may be replied that there are many other *Lichens* which contain colorific substances, and to one of these, if not to the genuine Cudbear, the plant of Gilpin may be referred.

Non-Lichenologist.

Viola lutea, varieties of.

1. All the petals yellow.
2. All the petals yellow, the two upper ones purple on the under side.
3. All the petals yellow, the two upper ones margined with purple.
4. The two upper petals purple, the others yellow, margined with purple.
5. The two upper petals purple, the lateral ones with a shade of blue, the lower yellow.
6. The two upper petals purple, the lateral ones blue, the lower yellow.

7. The two upper petals purple, the others blue.
8. All the petals purple, the lower one yellow on the under side.
9. All the petals deep-purple.

From Gardiner's 'Botanical Rambles in Braemar.'

Names of Plants.

Maiden's-Lips, Shepherd's-Rod, Teasel.

It is sometimes difficult to trace the logical connection between synonymous names of plants; Maiden's-Lips and Teasel are an example. They both signify *Dipsacus sylvestris* or *D. pilosa*. The middle term, Shepherd's-Rod, or Churnstaff, both synonyms of the same plant, helps to resolve the enigma. The two latter are not incongruous ideas. There is often a closer connection between shepherds' and maidens' lips than there is between Teasel and the latter. The transition from the Rod, the Churnstaff, the Shepherd, and the Maid, is not far-fetched. Philologus.

Welsh Botany.

Llandderfel, Merioneth, N. Wales.—The *Myrrhis odorata* grows hereabouts. Our parish clerk, John Jones (who, by the way, is much pleased with your 'Illustrated Handbook of British Botany'), has just pointed it out to me. I am indebted to the same kind friend for much local information upon the botany of the neighbourhood, which I will endeavour from time to time to put into order for the pages of the 'Phytologist,' if it be worth notice. The *Botrychium Lunaria* is pretty general upon old pastures of moderate elevation all around, and where you do find it, it occurs in abundance. Some specimens were gathered above nine inches in height. W. P.

To the Editor of the 'Phytologist.'

Sir,—If you, or any of your botanical correspondents, could kindly inform me if any recent habitats have been discovered for *Cypripedium Calceolus*, or *Latyrion hivenia* (Lizard Orchis), you would much oblige,

Phil-Orchis.

P. S. Has the *Cypripedium bulbosum*, found by Linnæus in Lapland, ever been discovered in the northern part of Scotland? I was informed to that effect last month, but do not think it probable.

Norham, Northumberland.

Communications have been received from

Edwin Lees, F.L.S.; E. M. Attwood; W. Gissing; A. Jerdan; Sidney Beisly; Phil-Orchis; John Sim; John W. Crowe; F. M. Webb; A. B.; S. B.; A. I.; Non-Lichenologist; Philologus; W. P.

BOOKS RECEIVED FOR REVIEW.

The Critic, four Numbers. The Friend, etc.

CHAPTERS ON FUNGI.

By Archibald Jerdon.

CHAPTER I.

Mycology does not, at first sight, appear a very agreeable or attractive study, as Fungi—at least such plants as are popularly known by that name—are, especially when in a state of decay, not very pleasant objects. Fungi however are not always the disagreeable-looking things which we are in the habit of associating with Mushrooms and Toadstools; but, on the contrary, in very many instances beautiful and interesting productions of Nature.

Those who have not had their attention turned to the subject, can have no idea of the vast variety and multiplicity of forms of vegetable life contained in the class of plants comprehended under the general name of Fungi, and we are introduced into a new world, as it were, when the study is commenced.

Though generally the accompaniments of decay or disease in the substances on which they grow, and probably in some instances the causes of such decay or disease, Fungi are often very beautiful objects, especially the minuter kinds, such as the small *Pezizæ, Sphæriæ*, etc., and some of the nobler genera, as *Agaricus, Boletus*, etc., exhibit forms of great beauty and variety.

They differ greatly in *size*, from the mighty *Lycoperdon giganteum*, which sometimes attains a diameter of two or three feet, to the minute crimson dots known as *Sphæria episphæria*, which are barely visible to the unassisted eye, or to the Mould which appears to the naked eye as a thin crust or film.

They present also great variety in *shape* and *substance*. Some resemble an umbrella with its handle and spokes; others are cup-shaped, with or without a stalk; some are club-shaped, and others again appear as little round bodies of various colours and arranged in various ways; some are hard and woody in texture; others soft and gelatinous; others of a waxy consistence; and others, again, thin and coriaceous. Some consist almost entirely of the spores or reproductive bodies, while in others these form the least part of the plant.

In *duration* too they vary much, some lasting for many months, while others, as the delicate *Agaricus ephemerus*, scarcely

survive the day of their birth. Most Fungi however are short-lived,—springing up, attaining their maturity, and decaying in the course of a few days. Their rapid growth indeed is proverbial.

Fungi occur of almost all *colours*, except green, which is very rare; and in the few instances in which that colour appears, it is of a verdigris tint, and not a pure vegetable green. Many species exhibit very beautiful and brilliant hues, and it has been said that "in the colouring of figures of Fungi, the artist need be under little apprehension of committing excess." In these lower vegetables the element of colour, which has very little weight in the discrimination of species of phænogamous plants, is allowed a large share of attention, and often determines the species.

The *qualities* of Fungi are various, but not very well known. A few possess medicinal properties, as the Ergot (*Spermœdia clavus*), but hardly any are used in modern medicine. Many species possess deleterious or poisonous properties, as the Ergot, just named, and many individuals of the higher tribes, as the genera *Agaricus*, *Boletus*, etc. A considerable number of the more perfect Fungi, particularly in the genus *Agaricus*, are edible, and furnish a savoury addition to the dinner-table; but in this country there exists a great prejudice against the use of Fungi, and the common Mushroom (*Agaricus campestris*) is almost the only one employed. On the Continent, however, a number of species is habitually used as articles of food, without any bad effects. A great deal depends on the state in which the Fungi are when gathered. If decay has begun, or if attacked at all by insects, then even wholesome and edible species become dangerous. The Mushroom, as is well known, is cultivated in the gardens of the wealthier classes in this country.

Fungi are found at almost every season of the year, and the student of these productions thus enjoys an advantage over the phænogamic botanist, whose objects of research are confined to particular seasons. There is no period of the year when Fungi of some kind or other are not to be found; and in the depth of winter, when not a flower is to be seen, the lover of Fungi finds a harvest in almost every heap of decaying sticks or dead leaves.

Fungi occur almost everywhere. At their proper seasons they

abound in our woods and fields; they are found in our gardens and hothouses, and even in our dwelling-houses. Some species grow on the dead or dying stems or branches of trees and shrubs, others on the ground; some are parasitic on dead or decaying substances of various kinds, and occasionally on other Fungi in those states; and others are found on living substances, generally the leaves of herbaceous plants.

Most Fungi are very uncertain and capricious in making their appearance, which seems to depend on certain atmospheric conditions. In some years a particular species will abound, and in others not a single plant of it will appear. And this is the case even with the commoner kinds. Fungi seem to thrive best in a moist climate, with a moderate degree of heat, and thus the temperate zone is more productive of these plants than other regions of the earth. Of all the countries of Europe, Sweden, which contains large forests of various kinds of trees, is said to be the most productive; though in other countries, as Germany, Russia, etc., large numbers of Fungi are produced. Our own country, for its size, exhibits a long list of Fungi, as upwards of 2,000 species have been found in it, and in all probability it contains many more which have not yet been discovered. A very wet season is said to be inimical to Fungi, but without a considerable supply of moisture most species soon dry up and wither away. Some, however, like the Mosses, revive, after shrivelling, on the application of moisture.

Fungi are often very destructive both to natural productions and to the works of man. They sometimes prove great enemies to the gardener, attacking his fruit-trees and flowers, and causing disease and decay. A species of Mould (*Oidium*) is frequently very hurtful to Vines; and another Mould (*Botrytis*) has lately almost deprived us of that valuable esculent the potato. To the farmer also several species of Fungi are very injurious, in the shape of Smut, Mildew, Rust, etc., which attack various corn-crops and often do serious damage to them. Our woodyards and the woodwork of our houses are often infested by Fungi in the form of Dry-rot, etc.; and the bread, preserves, etc., of the housewife also suffer from their attacks.

The great office of the Fungi, in fact, appears to be that of hastening the decomposition and decay of dead or dying bodies of various kinds, but principally of the Vegetable Kingdom, and

this they effect both by feeding on and disintegrating (by means of their mycelium, or spawn) the substance of the matrix on which they grow. This, combined with atmospheric influences, soon produces complete decay. Some species, however, which grow on the ground, do not appear to be actually parasitic, but are probably nourished in the same manner as the higher plants.

The mode in which Fungi are propagated is still somewhat uncertain, and their appearance is often so strange and unexpected that some writers have asserted that they are produced by equivocal generation. But we know that in favourable circumstances all Fungi produce spores, or reproductive bodies analogous to seeds, and it is therefore not unphilosophical, reasoning from all the analogies of Nature, to allege that they are propagated by means of these spores; indeed this has been proved by actual experiment in several instances. These seeds or spores are generally inconceivably minute, and quite invisible to the naked eye; and this being the case, it is not wonderful that their dissemination should escape our notice. They may float in the air, swim on the water, and be carried from place to place by the rains and the winds of heaven, wholly unnoticed by us, until they find a fit locality for germination, and even then they may only germinate under certain conditions, concerning which we are ignorant. Or they may penetrate the interior of other plants along with the sap, and be developed when they reach their proper habitat, and at their proper season.

In concluding this chapter, let me recommend the study of the Fungi to those botanists who have exhausted the phænogamous plants of their district, and who may not have taken up any particular branch of cryptogamic botany. It will impart an interest to their every walk, of which they have probably no idea. Almost every dead branch or stump of a tree, almost every dead leaf or decaying vegetable, has a Fungus on it, and in many cases peculiar to it. The examination of these, and especially of their internal structure, by the aid of the microscope, is highly interesting, and will afford much gratification to those who take pleasure in tracing the hand of the great Creator in all his works. The wonderful and beautiful organization displayed in these lower vegetables, especially in the smaller kinds, fills the mind with astonishment and admiration, and we are tempted to

exclaim with the philosopher of old (though his exclamation did not refer to Fungi), "In his tam parvis atque nullis, quanta ratio, quanto vis, quam inextricabilis perfectio!"

Mossburnford, Jedburgh, N. B.

INDIGENOUS PLANTS.

There have been several questions asked and many grave doubts expressed in your Journal upon the subject of indigenous plants; but I do not find any satisfactory definition of the term, and I therefore repeat the question with the following observations, that I may know the rule to be applied when I look into the history of plants *called* British.

1st. Does the title or claim to *indigenous* depend upon the rule that they have grown in Britain for a period "whereof the memory of man runneth not to the contrary"?—that is, are all plants indigenous the importation of which has not been within the memory of man? If not, for what period must a plant exist here to give it a clear title to indigenous? If this is to be defined by length of time, it should be fixed at some particular period, that we may know what plants are included.

Indigenous, according to its general signification, as applied to persons, means 'native,' 'born in a country;' and as applied to vegetables, means 'native,' 'produced naturally in a country or climate:' so says Noah Webster.

If we take this definition as correct, all plants may be said to be natural to a country where they will grow out-of-doors, or produce perfect seed, which seed will also produce plants and seed.

But if this definition is to be rejected, and such plants are to be admitted as natural which have grown in Britain at a time whereof the memory of man runneth not to the contrary, then we ought to be informed how many of the plants now named in the London Catalogue would be excluded as aliens.

A list of the names of plants known in Britain during the earliest periods, divided according to the Saxon, Roman, and Norman eras, would be very interesting, and if possible the number, described as belonging to different counties or divisions of the island, so as to help us to a knowledge of the time of their introduction, and from whence.

Referring to these, and having regard to the plants found fossilized, it might be ascertained which of them were extinct, and which were not, and the circumstances of their growth. It is well known that the plants which first grew in Britain must have been at the period when dry land appeared above the ocean, and these were produced from seeds deposited by the agency of birds and animals, and brought from land which at that period was near or adjacent to the island.

Seeds of different kinds would germinate and grow according to the temperature of the earth's surface, affected by the relative position of land and water.

We are often told of plants being produced in a spot where a well had been sunk, from the earth thrown up containing seeds which had been buried many years, or even centuries.

The vitality of seed in a sepulchral bed has been proved; and the grains of wheat found in some of the Egyptian mummies have vegetated and produced seed.

In comparing the Flora of different counties of England as they are now known, we might be led to inquire which of these counties were the first to produce particular plants, and if such counties are situated nearer to the Continent than other counties are; and also to a further inquiry, how far the Flora of parts near to continents agrees with the Flora of other parts of the island. I hope these observations may lead some of your intelligent contributors to write a paper on this subject. S. B.

Note. Among other books to be referred to for early names of plants, I would direct attention to the following:—'An Antient British Herbal; or Description of divers Plants of this Island, observed by that famous physician Scribonius Largus, when he attended the Emperor Claudius in his expedition into Britany.'

WOAD.

On certain Localities for the Woad (Isatis tinctoria).
By Edwin Lees, F.L.S., etc.

It appears to me to be important, in the case of rare or doubtfully native British plants, to record the localities where they are

certainly established, and can be *constantly found* in any quantity, and especially where the presumption is in favour of their being *indigenous* at that spot. Yet knowledge progresses at so slow a pace, and the records of observation are so often slighted, that the very latest botanical works in too many instances only copy habitats or localities from the old Floras preceding them, even in cases where better facts might be easily and advantageously given. Thus, with regard to the Woad, Mr. Babington merely states in his Manual, as to its whereabouts, "Cultivated and waste land, rare;" and Hooker and Arnott, "Cultivated fields about Ely, Durham, etc." This is very loose and unsatisfactory, and as far as I have seen, whether in the south, west, or middle of England, it never appears in "cultivated fields" at all. In Mr. Irvine's recent 'Handbook of the British Plants' a more certain and satisfactory locality is given for the *Isatis*, of "chalk-quarries near Guildford, Surrey;" and here, whether truly indigenous or not, the plant must be firmly established, for I have a specimen gathered long ago at these very quarries, and my friend the Rev. J. H. Thompson, who is familiar with that vicinity, tells me it is always to be found there.

More than forty years since, when a very young botanist, I found the *Isatis tinctoria* growing in considerable quantity on the bare red-marl cliff that forms the eastern, very precipitous, bank of the Severn, at the Mithe, a mile north of Tewkesbury, where the river divides Worcestershire from Gloucestershire; and however long it might have flourished here, no botanist, as far as I know, had previously recorded its existence at the spot. No 'Phytologist' at that time was published, but I sent a notice to Mr. Watson for his 'New Botanists' Guide,' where I believe it appeared; but no Flora has copied the locality, as perhaps it was deemed not persistent at the spot, though I again verified the profusion of the plant here in 1850, as mentioned in my 'Botanical Looker-out.'

It may not then be undeserving of remark, that a few days ago, having mentioned the Woad as growing at the Mithe, a party of the Malvern Naturalists' Club, in returning from a field-day at Apperley, near Tewkesbury, stopped in the dusk of evening at the Mithe Cliff, to gain specimens of the *Isatis*, if possible; and even in the gloom its towering golden clusters were seen studding the ledges of the cliff, at some distance from the base. I left

my younger and more enthusiastic friends to mount the perilous breach, and gain the prize for themselves, and this, after rather a dangerous escalade, Captain Veyton and Mr. Lingwood, of the Woolhope Club, were able to accomplish, to their great satisfaction, obtaining some splendid specimens more than four feet in height.

I should remark, that the summit of this long marl-cliff forms pasture-land apparently unbroken, so that Nature alone would seem to have located the Woad on the steep marl escarpment at this spot. The line of cliff, however, ends abruptly southward with a rounded grassy tumulus, scarped towards the river, called the "Tout," which is ascribed by antiquaries to ancient British times, dedicated, as supposed, to the worship of the god Teutates; so that here are traces of very old occupation, to which time we may perhaps be induced to carry back the introduction of the *Isatis*, or believe that it grew wild on the rough marl-cliff even then. At any rate, the Woad is persistent at this station, and has been as far as living memory goes. Such a certain locality might, I think, be much better recorded in British Floras than the delusive statement of "cultivated fields," where it would be vain to look for it. Any exploring botanist may now go to the Mithe, and find plenty of the *Isatis* growing on the cliff, and even if no craigsman, a long hooked stick would effect a capture.

I presume that where the Woad has really appeared in "cultivated fields," that the plant had itself been under culture *at the spot* in former days, but I do not know where this takes place at present at England; and it would be well to know whether any Woad is *now* grown in Ely or Durham; and if not, when its cultivation was given up. The *Isatis* is certainly not much disposed to travel about, for familiar as I am with the country in the vicinity of Tewkesbury, I have never once observed a vagrant plant away from its native marl-cliff, and it could not thrive better or grow taller on any other soil than it does on this barren ridge, which supports scarcely anything else.

Worcester, June 4th, 1859.

BOTANICAL SKETCHES FROM CHESHIRE.

(*From a Correspondent.*)

This county is almost a *terra incognita* to British botanists. The parts of the shire contiguous to Manchester and Warrington are well investigated by the scientific in the metropolis of the cotton trade, and by the celebrated Mr. Wilson, now one of the patriarchs among the amiable brotherhood. About a century ago the journey from London to Chester was a serious undertaking. Mr. Pennant, the antiquary and naturalist, wrote a large book on the subject. Travelling in England affords now no scope for book-making. What was a ten days' journey in Pennant's time is now performed in about as many hours, and the adventures and incidents amount to nothing. Description is impossible with such rapidity of locomotion.

As few London botanists, it is presumed, visit Cheshire, while many visit Wales, therefore one of the fraternity hopes that the following brief account of the way he went to Cheshire, and a list of what he saw when there, will not be without interest to his metropolitan brethren.

The pleasantest way to North Wales or to Chester is by the Great Western Railway. I have gone by this route both alone (not *solus* in a carriage by myself) and in company (with a mate), and I prefer this way, and commend it to other botanical tourists.

The scenery by the Great Western is not so monotonous as that by the London and North-western; and though the distance may be nearly twenty-five miles over or above or beyond that of the direct line, the traveller generally reaches Chester as early by the Western as by the North-western line.

In going to Chester by Reading, Oxford, Birmingham, and Shrewsbury, the traveller passes through four distinct, well-defined series of natural scenery, each division being pretty clearly defined by these three grand places, Oxford, Birmingham, and Shrewsbury. London and Chester are the two assumed *termini*, or the place of departure and the ultimate destination. The other places are the intermediate stages of the journey. I intend to show that there is one kind of scenery between London and Oxford, another between Oxford and Birmingham, a third between Birmingham and Shrewsbury, and a fourth between

Shrewsbury and Chester. Each of these well distinguished rural scenes is further subdivided into two subordinate divisions.

For example, from London to Maidenhead the line passes along the Thames basin, over a flat extent of country, composed of alluvial accumulations of soil, or of diluvial gravel or drift. This soil, having been highly cultivated for years, is very fertile, not naturally, but artificially: being near the Metropolis, abundance of manure can be had for little more than the expense of fetching it. This portion of the country is cultivated, or, in technical language, is arable, or under the shift system of tillage. The cereal crops this year (1859, June 20th) were luxuriant and far advanced, *i. e.* wheat full-grown, barley in the ear, oats beginning to ripen. They sow oats very early in this part of Middlesex, viz. before the winter, and in early seasons they are ripe about the beginning of July.

Wormwood Scrubs, where the Horse Artillery used to be reviewed years ago, the pretty village of Hanwell, with its noble viaduct over the Brent, and the grand and regal castle of Windsor, the noblest of royal residences, are the most interesting objects on this part of the route.

The country in this the first subdivision of the route is not very picturesque; yet here we have the rather picturesque village of Hanwell, the famous Osterley Park, Harrow on the Hill, and the river Thames, the resort of the peace-loving anglers.

On the Berkshire or south side of the Thames the scene changes. Here the chalk crops out, and there are some hills here and there till the line approaches Goring and Whitchurch, where the scenery becomes as lovely as charming vales, wood-crowned summits, and fringed hangers and borders can make it. The rich green of the fertile meadows, the upland pastures with grazing flocks, the charming lawns or park-like open spaces, interspersed with the finest timber, form altogether a scene which can scarcely be paralleled even in England: it is like some other scenes that we have had the pleasure of seeing; it sets all description at defiance. The painter on canvas cannot convey to the beholder any adequate representation of a large extent of scenery; to attempt to do this by word-painting would be only ridiculous.

Beyond this, at Didcot and Wallingford, toward Oxford, the landscape becomes anything but interesting. To the cultivator it is very satisfactory, for the fields are miles in extent, open,

level lands, with scarcely a tree or a hedgerow to mar the dull monotony of the scene. What is interesting to the lover of the picturesque is not always profitable to the owners. The ancient University of the south of England, the favoured abode of the muses, as a poet would say, with her beautiful towers seated in the very richest of fertile meadows, now lends interest if not enchantment to the view. This is the first stage of the outward journey from London to Chester.

From Oxford to Birmingham the traveller, by the road recommended, passes through a country diverse in its aspects from that on the London side of Oxford. The face of the country is rather pastoral than agrarial; and although the surface is by no means flat, like much between London and Oxford, there are no hills of considerable elevation like those betweeen which the river flows near the Goring Gap.

From Oxford to Banbury the line takes the Vale of Cherwell, near the line of the ancient canal, if the term ancient can be applied to works erected or constructed in the days of our grandfathers; but as canals are disappearing, they may be classified as belonging to the things that were; they are the memorials of a period now past, and will be, in some parts of the country, objects of antiquarian investigation to the grandchildren of the present generation.

This part of the country, an extent of twenty-three miles, is entirely in grass, producing both hay and pasturage. This is subdivision first of division second.

From Banbury to Birmingham, a distance of above forty miles, there is another change of scene. The country is richly wooded, mostly in grass, but interspersed here and there with a few cornfields. The general aspect is undulating, with no very prominent elevation, and no extensive flats. This part of the route is agreeably diversified by the modern town of Leamington, which the writer of this notice remembers about thirty years ago, when there were only many brickfields and a few houses, hotels, and a church, where there is now a fine, large, fashionable town.

Guy's Cliff, the Avon, Warwick Castle, and the fine tower of St. Mary's church, Warwick, are all noticeable objects, and they convey reminiscences, either pleasurable or disagreeable, according to the feelings of the individual who now contemplates them, or as they were associated with pleasant or sad recollections in

times past; but the train has no sympathy with these sentimentalisms, and time has as little; the old adage about "time and tide" may be modified into time and train; they tarry not on the scenes of ancient or bygone memories. Before these are reproduced and have *saddened* the heart, the train is at Birmingham, the end of the second stage.

From Birmingham to Shrewsbury everybody who has travelled by either of the lines—for there are two now—is conscious of a change in the scenery, which is as disagreeable as it is striking: it is like nothing else in England. The saline wells and salt-pits of Cheshire, the coal-pits of Lancashire and Durham, the foundries of Derbyshire—and the Potteries may be added—are all very unpleasant objects; but the scenery between Birmingham and Wolverhampton combines the unpleasant features of the whole. The entire country, for about a dozen miles, may be characterized as a series of ash-heaps, interspersed with blast-furnaces, houses and huts, coals, lime, iron, stone, canals, roads, etc. etc. The population is immense. Wednesbury, Dudley, Bilston, are populous towns. Birmingham and Wolverhampton are among the busiest and most thriving towns in the country.

This is the first subdivision of the third division of our route.

From Wolverhampton to Shrewsbury there is nothing very remarkable. We are in the Vale of the Severn, and the scenery is flatter than between Birmingham and Oxford, but not so flat as much that lies between Oxford and London. The land is partly cultivated, but there is a great portion of it in grass.

At Oakengates near Wellington there are iron and coal works; these however do not much affect the beauty of the landscape, which here is rendered doubly interesting by the vicinity of the Wrekin, and the beautiful river which nearly surrounds the ancient town of Shrewsbury.

This is the second subdivision of the third stage from London to Chester.

The fourth stage has, like the three foregoing, its distinct features, impressing an individuality upon that part of the journey between Shrewsbury and Llangollen-road station, and that between the last-mentioned place and Chester. The line passes through a rather fine hilly and open country; the high hills of Stipperstone, on the borders of Wales, and possibly Craig Breiddon itself, also the ridge bounding the Vale of Llangollen, are on the

left of the line, and the rich lower grounds of Salop are on the right. The country is pretty well cultivated, but villages are few. The population on this part of the line is but scanty, and the proximate scenery of a neutral character, *genus neutrum*, neither good nor bad.

At Chirk, however, the last of our subdivisions, the scenery assumes an aspect totally distinct from any which this line, from London to Chester, passes through. Here the railway is led across a deep ravine, beautifully wooded on its steep sides, and having the Ceiriog, a little Welsh-looking river, at the bottom; the viaduct is 180 feet high and 850 feet long; the aqueduct—for the canal is also in view—and the rocks, trees, and lawns of Chirk Castle are very pleasing objects.

Llangollen-road station is on the verge of the fine vale of Llangollen, and the railroad passes over the "ancient hallowed Dee" by a grand viaduct, which is almost parallel with the aqueduct of the canal.

A fine view of the valley of the wizard Dee, of the ancient fortress of Dinas Brân, on a steep conical hill, and also of that remarkable range of limestone hills called the Eglwyseg Rocks, are obtainable from the viaduct and from Cefn station, the first in Wales by this line.

From this station the line passes by the fine park and woods of Sir W. W. Wynne, Bart., whose noble residence was nearly totally consumed by a great fire, accidentally kindled, some eighteen months ago; the great library, containing many Welsh manuscripts relating to the church and the affairs of the Principality, was unhappily consumed.

Ruabon, famous for its collieries, ironworks, and monuments of the Wynnes in its church, and Wrexham, on a branch of the Dee, is famous for possessing one of the largest and handsomest churches in North Wales, are soon passed by the train, which gives but a short time to look at and admire the beauties of this part of North Wales.

The next station is Gresford, on the Alyn, a spot more picturesque than any one occupied by a station between this and London.

The Vale of Alyn, with its river, woodland scenery, and secluded meadows and cottages, is as lovely a scene as even the Principality, famed for its admirable landscapes, possesses.

Eaton Hall, the noble mansion of the Marquis of Westminster, with its grand park, is the last attractive view on the line from London to Chester.

The whole country from Chirk to the ancient city, through which the railway passes, is of exquisite beauty, variety, and interest, both to the lover of the picturesque and to the local historian and antiquarian. It is totally unlike any other tract traversed by this line, and probably surpasses in charming views any line of equal extent, either in England or in Wales.

If there be any readers of the 'Phytologist' who carp at such descriptive notices of the road by which the botanist travels to the scene of his ultimate and professional operations, to them I say that my esteem of the proprieties is not less than theirs. I hope there are few to whom any justification will be needed. In deference, however, to these few, I beg to observe that physiologists and the most intelligent medical professors assume as an established fact, that the mere essences of meat and drink are not so nutritious, *per se* (when used alone), as the same quantity of alimentary substance is when diffused through a considerable amount of grosser and innutritious elements. I am not a physiologist, and therefore I take this *on trust.*

Naturalists are generally prone to assume analogies as existing between the two kingdoms of Nature, the vegetable and the animal; therefore, as a naturalist, I assume that there is a not very remote analogy between the body and the mind of the human subject; and I infer that mental *pabulum,* or knowledge, cannot be conveyed—to speak metaphorically—in a nutshell; it must, to render it agreeable, suffer some dilution. Few would relish the mere facts of botanical science, unaccompanied with certain accessories, which help to fix on the memory the dry fact. My object, after all, is utilitarian, the only object worth entertaining. My objects are not æsthetical, which I do not despise, although I know but little about such matters; these are also utilitarian. My desire is to convey useful information, and to allure to the study of Nature, the beautiful, and the true, those who are wearied with the artificialities of modern life, and thirst after novelties as the traveller in a hot, sandy desert desires the refreshing drink from the cool spring.

The science of botany in particular, and that of all natural objects in general, have long lain under the opprobrium of being

repulsive, not in themselves, but by the manner in which they have been treated; but as the 'Phytologist' is not the medium for circulating such facts, the less said on this head the better.

It has been shown that the scenery from London to Chester is of a very diversified character; it has now to be shown that the cereals, or, in plainer language, the grand sustainers of life, the corn-crops, vary much in all these different parts of the country. Not in bulk or luxuriance, and probably not in the amount of produce, but they do differ considerably in their state of forwardness. Between London and Oxford, the wheat on the 20th June was fully grown, or, rather, it was beginning to fill. This was the rule. Between Shrewsbury and Chester the wheat was, with few exceptions, not yet fully grown. These exceptional cases, however, show what good management and skill can effect. Plants that were out of flower in London and Middlesex a week or a fortnight before I left home, were still blooming freshly in the gardens of Cheshire.

Hence it is evident that the seasons are a week or ten days later in the county palatine than in the metropolitan county.

But where good farming prevailed, the difference in the forwardness of the crops was not so great between those of Middlesex and Shropshire as the natural difference in time between the flowering of certain plants. Hence we learn the lesson that industry, skill, capital, and watchfulness, can overcome even climate, changing it or forcing a late and unproductive into an early and productive soil, and the cultivator thus gets a sufficient recompense for his labour and outlay, and the community gets the benefit of a larger and better supply at a smaller cost. While on this subject, I may mention the *essence* of a conversation on this head with an intelligent Lancashire farmer. When I told him that a Middlesex farmer usually reaped his oats about the middle of July, and in early seasons at the beginning of the month, he replied that the winter-sown oats did not succeed in their county; that the plant, being much tenderer than the wheat-plant, would not keep the ground in winter.

I informed him that a Middlesex farmer never suffered the almost total loss of his oat-crop from a long and severe drought in the spring and beginning of summer, a state of things of which some of the Lancashire farmers have painful testimony.

Not being a practical agriculturist, I cannot give any opinion on the matter, but I can state facts.

Chester presents a rather unattractive field for a botanist. An antiquarian would fare better here. But the 'Phytologist' is not an antiquarian repository. It deals with recent, not antiquated facts.

I walked around the more ancient city. The modern place has extended itself far beyond its still existing wall. Here, on the old coping, or, rather, under it, grew plenty of Wallflowers, Lady's-finger, Stonecrop (*Sedum acre*), the common Hawkweed (*Hieracium vulgatum*), *H. Pilosella,* etc. etc. The Wallrocket of some ancient botanists (*Sinapis tenuifolia*), which is said to have been common on the walls of Chester, was not so common when I saw them as the plants above quoted. At the foot of the walls, outside of the city, but inside of the gardens, courts, moats, etc., there were gigantic specimens of Hemlock (*Conium maculatum*), Cow Parsnip (*Heracleum Sphondylium*), and probably other Umbellifers. In similar places under the walls of York, I observed plants not visible when I was in Chester.

A botanist need not tarry long in Chester unless his objects be other than botanical.

This ancient city has long been famous, or, rather, infamous, for the badness of its inns. The tariff alone was good, good for the landlord to get; the fare and attendance bad. This, being satisfactory only to one of the contracting parties, has been the fertile source of some rather acrimonious productions, which have even found their way into books. Since Johnson's time (1639) Cheshire does not seem to have mended her ways. Cestria is still in bad repute.

Those who speak in proverbs say, "Rouse (praise) the ford as ye find it." I found to my great content that the host was civil, even obliging, the hostess attentive, and the maid cleanly. I cannot affirm that I did not spend some time in rather dismal apprehensions that the hour would soon come when my rest was to be broken and myself stung by those foes to repose not altogether unheard of nor unfelt in the great metropolis. But the fatigues of a long journey, the habit of early rising and of going early to bed, soon rendered me forgetful of all external things whatever. I can safely say that the bed-leeches of Chester did not indulge their sanguinary propensities at my expense.

I spent a single day at Chester, and looked at and into the cathedral, the market, the streets, the river, and the bridge, and in the evening set out again by rail for my destination, which was in the vicinity, if not in the centre, of the salt-works of this cheese-making county. From Chester to Beeston* the aspect of the country is not remarkable, but about Tarporley and Beeston the sandstone crops out, and there are some interesting views. From Beeston to Crewe, and from Crewe to Hartford, where I left the rail, the land is flat. From Hartford to Over by Vale Royal and Marston, the country is rich and the scenery eminently English, another synonym for beauty and comfort.

Cheshire, as before observed, is scarcely known to botanists. Many counties have a Flora of their own. Some places even have several local Floras. Manchester has its Flora. Liverpool has two. Even Southport has its list of plants. Cheshire has not had a due or just share of the attentions of the fraternity. The county palatine, although not sufficiently appreciated by the small and select botanical public, is not unheard of. It is known even to the readers of such small books as Pinnock's 'Catechism of Geography.' Every cheesemonger and every lover of good cheese knows Cheshire; it is a name given to public-houses. With Marston Moor, the five Parliamentary boroughs, and, above all, with Chester herself and the little accessories of salt, silk, cheese, and New Red Sandstone, she is pretty well known to antiquarians, merchants, and geologists, and has a fair share of fame among the sister counties of England. But the place whereunto I was bound, and where I was right courteously entertained for a couple of weeks, was never entered in the annals of botany prior to this its first appearance. That no botanist ever sojourned at Over before, I will not venture to state, but I may hazard the affirmation that no one has left any traces even of having ever been there.

But assertions are hazardous, and they are sometimes rashly published. A botanist not long ago wrote to the 'Phytologist' that he had found an original tract in Worcestershire, barely known even to Mr. Lees. But this aspirant to fame in the bo-

* Beeston Castle, which I visited from Over, forms an episode in this narrative, and some account of this singular rock and of its productions may probably be supplied at some future period.

tanical line was soon informed, through the same medium, that there were some who knew Clent better than he did, and had not been inattentive to the curiosities of its vegetation.

This, for anything I know, may be my hap. I may have only discovered a mare's-nest after all. Mr. Wilson, or some of the long-legged Macclesfield weavers, may claim the honour of having visited Over and carried off its botanical rarities. We are cockneys, and carry our cockney minds wherever we go. *Cœlum non animum mutamus qui trans campum currimus.* I have slightly altered, not amended, the passage, but it signifies that we cannot change our ways so easily as we change our habits; we cannot put off our preconceptions as we put off an old coat. We think that whatever is new and interesting to us is interesting and new to all the world, and in the exuberance of our joy we call on all our fellows to come and rejoice with us.

I entertain the fullest conviction that Over in Cheshire is utterly unknown to London botanists. I will not say English botanists, because I have the fear of Mr. Wilson and Mr. Borrer before my eyes, and as this is the first time its name has appeared in connection with botany, I hope the readers will excuse a longer paper than usual, and let me treat the subject in a manner worthy of its novelty and interest.

Over is on the left-hand side of the London and North-western Railway from London to Liverpool. The most direct way from London to it is by Rugby, Tamworth, the Trent Valley, and Crewe Junction. The nearest station is Winsford, from which Over is distant about a couple of miles. The distance from London is 174 miles by rail and two by the road through Winsford and Over Lane. My route by Chester was upwards of 240 miles, but the additional attractions of most of the London and Chester line amply compensate for the additional cost of time and money.

The subjacent rock of Cheshire is the New Red Sandstone, or the Permian, as it has been recently named in modern times. Geology itself is but of modern origin, although it deals very largely in the remoter periods of existence. Yet it has undergone mutations, and has had occasion to change its nomenclature. The soil on the New Red formation is usually a stiff red clay. But it is not in these parts of equal stiffness. Here and there it is of a light sandy nature; sometimes it is alluvial, in

the bottoms; and probably there are diluvial accumulations which have modified much of the surface. The town lies on the left bank of the Weever, on a table-land which may be about 200 feet above the level of the river. This table-land is intersected by rather deep glens or ravines, which terminate in the Vale of the Weever. These give great variety and much beauty to the face of the country. Vale Royal was selected by the monks as a place where they lived and prepared themselves and their brethren for heaven, and they usually chose the most beautiful and fertile spots as the scenes of their secular and spiritual labours.

Cheshire is characterized by great uniformity of soil, and hence a rich Flora is not to be expected. There are plenty of flowers in Cheshire, as there are in most places, for the earth is crowned with flowers as she is clothed with grass, but the number of species is not very great.

Of this the following is an example. The spotted-leaved Orchis was the only plant of this genus or family that I saw in Cheshire. There are no doubt other Orchids besides *Orchis maculata;* yet I was there nearly a fortnight, and was out by the lanes or in the fields or on the moors every day more or less, and this was the only *one* that I saw. There were of these great numbers almost everywhere, but it was the only one. Earlier in the season the early red Orchis might be seen in the woods. But if Orchids were plentiful, more than two would be met with within a circuit of twenty miles. Our walks extended to at least four miles in every direction from the town, or they embraced a radius of eight miles, which would give a circumference or exterior limit of a circle of about twenty-five miles. We botanized within an imaginary ring-fence of upwards of twenty miles at least, and only saw one Orchis, or rather only one species of Orchis, for we saw many thousands of individuals of this one species.

But there are plants about Over, and interesting plants too, but they are not to be picked up by the roadside nor found on the sides of paths across the fields. There are a few choice plants even there, but the gems of the *Flora Overiensis* have to be sharply looked for in less accessible localities.

My primary object in the herb line was to ascertain what influence the salt springs had on the vegetation. This I soon found was imperceptible. Where the brine boiled over, or where

there was a gutter leading from the pan or salt-brine tank to the river, there the vegetation was entirely destroyed with the exception of what is called *Spergularia marina*, a maritime form of *S. rubra*, if not a genuine species. But salt brine is too precious to be wasted either in destroying the native vegetation or in encouraging a race of plants differing in habits and properties from the common productions of the soil, and consequently these examples are like angels' visits.

The saline springs and the solid salt rock lie several hundreds of yards under the surface, and their effects on the vegetation cannot be perceptible. Yet marine plants may grow there. In the "Flora of Clent," published in the April, 1858, number of the 'Phytologist,' there is an account of one marine plant, *Erodium maritimum*, which was observed in a solitary spot at the base of the Clent Hills, near the church. Clent is eight miles from Droitwich, where there is a salt spring. But as I did not find any saline or maritime species near the salt springs and mines of Cheshire, I cannot give any account of them.

There is, however, a very remarkable phenomenon which has been known for years, and is still going on, viz. the subsidence of large portions of the earth, and the formation of large depressions which either become marshy spots or are, when near the river, converted into large pools, which give a lacustral character to the aspect of the country. On the Weever, above Winsford, not far from Darnhall, there is a lake called the *Flash*, formed not less than a mile long, perhaps more, and in some parts as much as several hundreds of yards in width.

Subsidences are reported from other parts of the salt-producing districts, and subscriptions are made among the owners and occupiers of saltworks to compensate the unfortunate sufferers by such casualties, if the operation of natural laws may be so called. These depressions or sinkings appear to be the consequence of the removal of what the upper strata rest on, viz. the saline aquatic reservoirs.

Our first expedition was to the vicinity of the salt-pans and brine-pits of Winsford, in order to ascertain the effects of the saline incrustations, etc., on vegetation. As already stated, these were inappreciable. Where the waste brine was strong, it had entirely destroyed the grass and everything else, except in one puddle, where the sooty bog was bordered by thriving plants of

Spergularia marina. In other parts the salt had acted as a manure, and strong plants of the Dock genus, Fat-hen, Ragweed, and Thistle-kinds abounded. Plants that grow in a nitrogenous soil flourished here in luxuriance and undisturbed, but of rare plants or of plants indicative of a sea-side situation we saw none.

We next took the western shore of the large piece of water formed by the subsidence of the ground, and found this also barren of results. The subterranean water only is salt, and it is pumped up at too high a cost to be suffered to escape and form lakes, or even bogs, on the surface. The water of this newly-formed lake is derived from the Weever and the neighbouring drainage, and is as free from salt as its margin is from saline vegetation. In the water near the shore we observed the flowering Rush, *Butomus umbellatus,* not a common plant anywhere.

This was but indifferent success on, as we believed, ground hitherto untrodden by botanist's foot. Still there is good botanizing ground even near Over, but it does not lie by the roadsides.

On the face of one of the steep hills that bound the south side of the Weever, there is a deep glen, or what in the chalk-downs would be called a 'comb,' narrow at the bottom, with very steep flanks entirely covered with trees, bushes, and luxuriant vegetation, an excellent cover for game. Into this tangled, woody dell we entered, not being afraid of the gamekeeper, for we had no evil thoughts against the gentle creatures of his care. Here we discovered a considerable number of interesting plants, of which the following is a sample.

We give the precedence to the lovely Wood Vetch, *Vicia sylvatica,* not because it was the rarest of these pretty flowers, but because it was by far the most abundant. I have seen it in the south-west of England, on both sides of the Bristol Avon, also in Wales and in Scotland, but I never saw it in greater luxuriance and beauty than in this woody ravine at Winsford.

Its elegantly-divided leaves, its large, drooping clusters of flowers, its graceful habit, climbing over the lower vegetation and festooning the more prominent shrubs and trees, were more easily admired and appreciated than described. To convey any idea of the loveliness of this bit of sylvan and floral beauty, the

painter's art would be required. Word-painting is inadequate to give any idea of the effect of colours harmoniously blended by Nature's own art. We should not, however, forget that we are botanists, not artists; and "every man should stick to his trade," as the boy said to the bishop.

On the stiff clay soil turned up and poached by the treading of the cattle, and now as hard as a heap of bricks, and not much flatter, grow the pretty yellow Wood Loosestrife (*Lysimachia nemorum*), also the Wood Mouse-ear (*Myosotis sylvatica*). Of the latter I am not quite certain, having lost the specimens, but I am quite certain that this productive glen yielded *Veronica montana* in great plenty. The *Viburnum Opulus* was then almost past flowering, but is by this time (the end of July) beginning to re-open its ruddy, glistening berries.

The rough walking along a plane that dipped into the dell on our right at a larger angle than was agreeable, and the impediments from the trailing Rose, the Bramble, and some thorny plants destructive to the apparel and not conducive to good temper, admonished us to get out of this Cheshire Vallombrosa. This we accomplished with some difficulty, and then wended our way across some pleasant-enough fields till we came to another tangled ravine, exactly like the one we had left. Neither the coaxing of my companion nor the hope of finding *Paris quadrifolia* could tempt me to venture into this second treacherous defile. These ravines all look easy of access. The entrances are inviting enough. The beginnings of the paths, like many other beginnings, are hopeful; but, alas! soon—too soon—the path is lost in a blind track, and the track in a thicket of Blackthorns and Rosetrees with stems like broomsticks. Woe to the unhappy cockney in his bran-new hat, as black as a sloe and as sleek as beaver-pile! He now knows experimentally the feelings of the mayor of a certain town in this county who had to lie in bed till the continuations to his coat and waistcoat were mended.* In the ponds on these fields we saw both the common kinds of *Alisma, A. Plantago* and *A. ranunculoides,* and in a stiff, wettish

* It is a local proverb, that "the mayor of Altrincham lay in bed while his breeches were mended." Ray remarks that the mayor of any other town must have done the same if he had only one pair. But he is a poor mayor who is not better supplied with vestments, and a poor mayor implies a poor population. This is probably still characteristic of some Cheshire towns.

part several very stunted plants of *Chlora perfoliata*, rather unexpected in such a place.

Our most successful day's botanizing was in the direction of Marston, a mile or two from Over, on the road to Hartford.

We walked across several fields and past some cottages, turning down a lane or bye-path, which led to a broomy, sandy, banky, very dry, open pasture, where the Sheep's Scabious (*Jasione montana*) flourished in great luxuriance. This was accompanied with the never failing Foxglove, the Harebell of Scotland, only just beginning to flower, and the plants usually seen on such situations and soils.

In a purling, clear rivulet, that trotted along under these shady banks, the usual water plants abounded. Among these were observed *Chrysosplenium oppositifolium*, and my friend said the alternate-leaved species also was found there: very likely, for in such parts it is usually found. Passing along the wood, through which there is a good path, we reached a larger stream, and in the marsh through which this passes there were large colonies of *Scirpus sylvaticus*. Many of the examples, speaking within bounds, were two yards high. The Bog Strawberry, as it is called in some parts, though better known by its Linnæan name *Comarum palustre*, and in more recent times recognized under *Potentilla*, as *P. Comarum*, was particularly fine here.

This is one of the very commonest plants of Cheshire and Lancashire; not in bogs merely, as in some remote parts of Surrey and the south of England, but in the pasture-fields, in ponds, and in ditches.

Other common marsh plants flourished here, such as *Sparganium*, *Angelica sylvestris*, and *Iris Pseudacorus*, the Yellow Flag.

On the adjoining pastures the common Lady's-mantle (*Alchemilla vulgaris*), the Rest-harrow (*Ononis repens?*), and *Orchis maculata* were plentiful. I never saw banks more likely to yield the rarer Orchids, such as *Habenaria viridis*, *Orchis Morio*, etc. We searched them most carefully, and never saw on them a trace of any *Orchis* except the one already mentioned; this one, however, abounded.

On a bank, under a garden- or orchard-hedge, my companion discovered fine plants of *Dipsacus pilosus*. If this were an ornamental, popular plant, we should have inferred that it owed its

existence here to cultivation. This, however, is not the case; it is rather a forbidding plant, interesting only to botanists.

In the mill-pond, however, we observed the whole surface covered with the queen of British flowers, the white Waterlily, with only here and there the yellow one intermixed. We contemplated this lovely scene for some time, and made out the difference in shape between the leaves of these two handsome aquatics. Potamogetons and Water Milfoil, and both the species of *Typha*, the broad- and narrow-leaved sort, were there. These last-mentioned formed a fine background to the picture in front. The meadows through which the water that supplied the mill-pond glided was here and there blue with the flowers of the Meadow Crane's-bill, *Geranium pratense*. I have seen this fine plant in many parts of the island, viz. from the woods of Ury, in Kincardineshire, through which the Cowie flows, to the banks of the Thames, and especially about Reading, but I never saw it of finer growth nor of a deeper and lovelier colour than here. It is far more plentiful about Settle, in Yorkshire, but it is not finer than in these mill-meads of Marston, in Cheshire. Bistort (*Polygonum Bistorta*) also abounds here.

Passing along the deep glen by the mill, we saw many more plants of the same handsome species, and enormously large examples of *Equisetum Telemateia*, a Horsetail which we rarely see without being disagreeably reminded that the place of growth of this plant formed a subject of rather acrimonious discussion in the 'Phytologist' several years ago. The one learned observer maintained that it grew in water, the other as stoutly maintained that it grew on land. Much good ink and some good (? bad) temper was spilled during the continuance of this unseemly squabble. It reminds the general reader of one of Gay's fables, that of the Chameleon and the two Arabian travellers; also of the two knights of old, one of whom asserted that a shield was black, another said it was white; so after they had agreed to decide whether the shield was white or black by the usual mode of deciding such disputes, a bystander told them that the shield was painted black on one side and white on the other. It was ultimately discovered that *Equisetum Telmateia* grew both in water and on land.

At last we reached the banks of the Weever, where we saw nothing uncommon; but on retracing our steps to the mill on

the other side of the brook we detected both *Crepis paludosa* and *Valeriana dioica*. The former I saw last in the Highlands, not far from Loch Lubnaig, and the latter near Finchley, in Middlesex, many years since.

By a hedge, on our homeward route, we collected *Pimpinella magna*, not yet in flower. Thus terminated our most successful day's botanizing at Over.

Our next best day's work was done in the vale and along the brook adjoining Darnhall, two or three miles from Over, on the Minshull road.

In going to Darnhall we crossed the fields and looked into several ponds, in most of which the white and yellow Waterlilies were plentiful, and the former in full flower. In one of these we observed *Potamogeton natans* and *P. pusilla*, with the much rarer *P. graminea*. The drier parts of the pastures were as yellow as a broomy bank in May, with the flowers of the *Genista tinctoria*, Woadwaxen, or Dyer's-weed. This is one of the stock plants of Cheshire. After leaving Over, and while going by rail to Warrington, this plant was profusely distributed over the fields and meadows, and was very conspicuous, even at considerable distances from the observer.

In the vale below Darnhall we collected along the brook *Pimpinella magna*, only showing flowers, and considerably lower down the magnificent Broad-leaved Bellflower, *Campanula latifolia*. The usual burnside plants were present here in great luxuriance; but they need not be mentioned here, as they abound everywhere as well as in Cheshire. Our search for Orchids was fruitless.

One day we drove over to the village and church of Little Budworth, and looked at the vegetation of a large moor. On the drier parts we saw all the common Heaths together, the Bilberry, *Vaccinium Myrtillus*, and in a boggy part one of the Droseras, *D. rotundifolia;* also the pretty Cotton-grass, *Eriophorum angustifolium*, with its dwarf variety, *gracile*, not *E. gracile*, Koch. In returning, we saw a large patch of *Saponaria officinalis* (Soapwort), contiguous, as usual, to a cottage-garden.

On the second day of my arrival we visited Pettypool,* where

* Round about this lake or pool, named Pettypool, there is some of the most exquisite scenery of Cheshire, or perhaps of England. It is a charming spot. From the heights of the park, and from the road which is the highway to Chester from Middlewich or Northwich, there are very extensive views obtainable.

there is a fine piece of water, that might be dignified with the name of a lake by a liberal describer, and which would be called a tarn in Cumberland.

The plants here consisted of those usually seen in marshy places. The Buckbean, *Menyanthes trifoliata,* abounds in that spot, but was now past its beauty. Like many other beauties, it was born to blush unseen, and waste its beauty on the marshy air.

This charming scenery is celebrated. We enjoyed the pleasing views presented from several points, but we did not carry home anything for the herbarium. But the place is well worth a visit, and even its floral treasures may be more estimable than we supposed them to be.

The agrarial or colonial plants of Over are not numerous, judging from the few cornfields we looked into. *Chrysanthemum segetum* and *Lychnis Githago* were just beginning to flower. *Galeopsis Tetrahit* and *G. versicolor* had not yet flowered. We were too early for most of the cornfield plants.

Cheshire is rather a grazing than an agrarial county: cheese, not corn, is the staple produce. Hence much of the land is in grass. This season grass was most abundant everywhere; stock was wanted to eat it up; yet, judging from the grass of some fields laid up for hay, and also by the rather light swathe on some meadows which were then just mowed, the graziers of this part of Cheshire are not entitled to the praise of being high cultivators. Their ambition is confined to the production of good cheese, and they have the reputation of being well-to-do, a good practical evidence of fair farming.

Thus ended my Cheshire botanizing, and I hope the readers of this rather long account of it will not say, "Great cry and little wool."

THORNS AND THISTLES,

In the Parable of the Sower.

Since Mr. Hind kindly replied to my note on this subject, I have referred to a copy of the Bible, printed by Barker, date 1595, and there is a marginal note to the word translated 'thorns,' as follows:—"Or rather this: 'And some fell among thistles, and the thistles sprang up with it, and choked it.'" This certainly favours the view I originally took of the passage, namely

that 'thistles' is a more correct or appropriate translation than 'thorns.'

Mr. Hind referred us to Lady Calcott's work on the Plants of Scripture, and upon that authority the *Prunus spinosa* was considered to be the thorny plant which sprang up with the seed, as she tells us that this plant grows abundantly in the Holy Land.

I observe, however, in the last number of the 'Phytologist,' p. 134, the Editor, in his excellent Chapter on British Botany, says, "There are many thorns in Palestine; those, however, which are common to the British Isles and the Holy Land are but few: our common Whitethorn, *Cratægus Oxyacantha*, is perhaps the only one."

A better authority than Lady Calcott might be asked for, and I hope it may be found. S. B.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Tuesday, the 28th of June. Mr. Wm. Bean, of Liverpool, was admitted a member of the Botanical Exchange Club. Mr. J. G. Baker communicated the following notice relative to *Fumaria capreolata* as a British plant.

"In the short address at the conclusion of the third volume of their 'Flore de France,' MM. Grenier and Godron speak of having united in their first volume, under *Fumaria muralis*, three species which they now consider truly distinct, none of which is identical with the true *muralis* of Sonder and Koch. One of these is, I presume, the plant described as *muralis* in the second edition of Boreau's 'Flore du Centre,' the same that M. Jordan has since designated *F. Borœi*. From *capreolata* it is defined as differing by its smaller and shorter sepals,—'sepalis subrotundo-ovatis, corollæ tubo haud triplo brevioribus,'—and fruit somewhat longer than broad. Unless I am under a misapprehension, this plant is not uncommon in our country, usually passing muster as *capreolata* unchallenged, and is the same that has occasionally been labelled *agraria* by British botanists. I have met with both varieties in this neighbourhood,

and received both from various parts of Britain. In *Borœi* the racemes are shorter, the flowers are fewer and deeper in colour, the pedicels thicker and less inclined to curve than in the normal form of *capreolata,* so that it shows an approximation towards *officinalis* in appearance and habit of growth, but, so far as I have as yet seen, I should not be disposed to regard the distinctions of specific value. *F. confusa* of Jordan differs from the two others by its blunter leaves, flowers one-half smaller, and sepals oval and entire, not broader than the corolla. It occurs in many places in the western departments of France, and may probably be met with in a wild state in Britain. Indeed, I have found it in waste ground in the neighbourhood of Middlesbro', on the Yorkshire side of the Tees, but would not undertake to say that it had not been introduced there with foreign ballast.

"For convenience of reference, I subjoin a brief diagnosis of these *F. Borœi* and *speciosa.*—*F. speciosa,* Jord. in Cat. Gren. 1849; Lloyd, Flore de l'Ouest, p. 24. *F. capreolata,* Auct., in part.—Sepals half as long as the corolla, oval, acute, toothed at the base; fruit round; flowers large, pure-white or tinged with purple; pedicels recurved when mature; leaves acute.

"β *Borœi. F. Borœi,* Jord. Cat. Gren. 1849; Pugillus, p. 4; Lloyd, Flore de l'Ouest, p. 24. *F. muralis,* Boreau, Fl. du Cent. ed. ii.; Gren. et Godr., non Sonder. *F. capreolata,* Auct., in part. *F. agraria,* Aryl., non Lagasca.—Sepals about one-third as long as the corolla, broadly oval, peltate, toothed at the base; fruit rather longer than broad; flowers purplish, smaller than in the preceding; pedicels straight or recurved when mature; leaves acute.

"γ *confusa. F. confusa,* Jord. Cat. Dijon, 1848; Pugillus, p. 5; Lloyd, Flore de l'Ouest, p. 24. *F. Bastardi,* Boreau, Flore du Centre, edit. ii.—Sepals about one-third as long as the corolla, oval, entire; fruit round; flowers purplish, much smaller than in either of the preceding; leaves blunter."

BOTANICAL NOTES, NOTICES, AND QUERIES.

Notice of a few Plants near Chirk Castle, Salop.

(*To the Editor of the 'Phytologist.'*)

Sir,—Having an hour and a half to spare while waiting at the Llangol-

len Road station for the up-train, I availed myself of the opportunity of looking at Chirk park and castle. On the way thither I noticed the following plants:—

Cotyledon Umbilicus is very plentiful and very luxuriant on the stone walls. *Geranium lucidum* is not scarce. *Fumaria capreolata* occurs here and there.

On the bank of a wet ditch *Carex axillaris* was observed, only one or two patches or tufts of it; this was at the Chirk Castle side of a meadow, through which there is a path leading from a bridge which crosses the canal about a mile from the station. Not far from the same place, viz. at the head of a quaggy, spongy corner of the meadow, *Agrimonia odorata* was collected. The locality is precisely indicated in order that those who are interested in these plants may look for them. They were in good state at the beginning of July this year, 1859.

On the canal towing-path side there are a few plants of *Polyporus dryadeus* on the roots of the Thorn?; also in a pasture-field near the gate of Chirk Castle there is a great mass, or several masses, of the same Fungus, growing on stumps and stems of Oak, which appear to have been grubbed up, and which are heaped up there, and partly decaying; this heap of logs and of lumps of wood is near a timber-yard, and not more than fifty yards from the high-road which leads from the station to Chirk Castle.

In the canal near the station there was growing a fine patch of *Anacharis Alsinastrum;* and in the ditch of the adjoining field there grew immense numbers of *Œnanthe crocata,* but without the yellow juice which abounds in the plants that grow near London. CAMBRICUS.

ART SUPERIOR TO NATURE.

The following is taken from a notice in the 'Standard,' May 26, 1859, of the flower-show in the Regent's Park Royal Botanic Gardens:—"The Azaleas especially were remarkable for their rich and rare hues, and the perfection and profusion of their *blooms,* rendering it difficult to believe at first sight that they were really natural, but rather *that they were the handywork of some cunning artist of waxwork celebrity.*" This is a rich specimen of the Art of Criticism, and shows how little the writer believed in the perfection of Nature, which he before states was so perceptible in the flowers: he had probably studied in the school of Madame Tussaud.

S. B.

DORONICUM PARDALIANCHES.

(*To the Editor of the 'Phytologist.'*)

Dear Sir,—In reply to Mr. Jerdon I beg to say that I have seen *Doronicum Pardalianches* and *Digitalis purpurea* in flower at the same time, which is, I should say, no uncommon thing, as the latter plant is commonly in flower in the south and west midland counties by the first week in June, and not unfrequently in May. I have myself seen Foxglove this year in full flower in Breconshire on 23rd May, and in former years in other counties quite as early. At the same time I think I should not have contrasted these two plants, because the Foxglove is common, and the Leopard's-bane rare. T. W. GISSING.

P. S. As Mr. Jerdon does not give the district from which he writes, of course it may be very different there to the place I refer to. I speak only from my own experience.

Wakefield, June, 1859.

Doronicum Pardalianches. *By George Jorden, Bewdley.*

In the 'Phytologist,' No. 50, N. S., inquiry is made, Are the two plants, *Doronicum* and *Digitalis*, in bloom at the same time? Both are now in bloom, June 24th, the *Doronicum Pardalianches* in several localities in the neighbourhood of Bewdley, and the *Digitalis* everywhere in profusion; the former comes into bloom generally about the middle of May, the latter in the first or second week in June; they are in bloom together about three weeks. The *Digitalis* remains much longer in bloom, after the end of July, or longer.

[Our kind correspondent sent a blossom of both plants, quite fresh, as a proof that they *do* flower together.—Ed.]

Doronicum Pardalianches.

In the June number of the 'Phytologist,' A. Jerdon says in his neighbourhood the *Doronicum* flowers in May, and the Foxglove not till July or August.

I saw the *Doronicum Pardalianches* in flower here (Cumberland) near the end of last May, and on the 16th of June instant I observed the *Digitalis* in full bloom, over an extent of some acres of the sunny slopes of Embleton, near Cockermouth, in this county.

Wm. Dickinson, F.L.S.

Workington, June, 1859.

Brassica oleracea and Common Cabbage.

> "All is the gift of industry, whate'er
> Exalts, embellishes, or renders life
> Delightful."

If I were to go and seek for the origin of the countless varieties of Cabbage, Kale, Greens, Savoys, Cauliflowers, and Brocoli, I would not go to the ancient site of the garden of Eden, even if I knew where it was; but I would go to Belgium or Holland, the traditionary native place of these and many other culinary vegetables.

It would be a quixotic enterprise, and as fruitless as the Barren Strawberry. We may learn a lesson from these fruits, Strawberries. Keen's Seedling did not exist from the beginning, nor did the British Queen; and scores might be named which had no existence when we were children.

When Adam was a boy,—when young in years, not short of stature or of small size,—I ween there were few or none of these delicacies we now enjoy. The Ripston Pippin, the Jargonelle Pear, had not then a being. The famous Battersea, Early York, Sugarloaf, and other celebrated breeds (races) of Cabbages, were undiscovered until recent times, when industry and ingenuity united, raised up innumerable varieties, good, indifferent,

and bad. To ascertain with exactness the parents of these is as hopeless an enterprise as the attempt to detect the exact proportion of the Celtic, the Roman, the Anglo-Saxon, the Danish, the Norman physical or mental idiosyncrasies now existing in the present English race. If the question were capable of solution, its answer would be of no practical or scientific value to any human being. HORTULANUS.

CHANGE OF NOMENCLATURE.

(*Extract from a Letter to the Editor.*)

These perpetual changes of name are very perplexing, *e.g.* one's old friend the Dog Violet becoming *V. sylvatica*, and *V. canina* a plant found only in peat-bogs, which Mr. C. E. Parker tells me is the case.

DIGITALIS PURPUREA.

A. Jerdon's comment, in the June number, on the sentence quoted by Lynx in the May number of the 'Phytologist,' induces me to make the following remarks. A. J. states that in his neighbourhood *Digitalis purpurea does not flower till July or August*. In other neighbourhoods, however, it doubtless flowers in *June*, or there would not have been a statement to that effect in Macgillivray's 'Withering.' In other localities again it flowers in *May*, otherwise Hooker and Arnott's 'British Flora' is poor authority in such matters.

On the 11th of this month of June I myself saw it in flower in abundance at Sea Scale, a bleak and open place on the Cumberland coast. I am not acquainted with *Doronicum Pardalianches*, but according to the above-mentioned authorities it is in flower in July. On the whole, therefore, I am inclined to think that the author of the sentence quoted by Lynx knew what he was about when he wrote it." E. GREEN.

NOTES ON NATURAL HISTORY, ETC., FOR APRIL, 1859.

(*From 'The Friend.'*)

GLOUCESTER.—Mean of the highest readings of the thermometer 55·51; mean of the lowest 39·35. Thunder (the first this year) on the 10th. There were ten frosts in the month, and six of them with the air temperature *below* the freezing-point of water. A magnificent aurora for several hours on the 21st. The mean temperature of the 6th and 7th nearly 15·0 *above* the average. On the 14th, 0·54 of an inch of rain fell.

KENDAL.—The early part of this month was very wet, and the latter part as dry. In the former the winds were from the south-west, and the last week from the opposite quarter, which is always the case at this season. We have about $1\frac{1}{4}$ inch more than the average of rain, and $3\frac{3}{4}$ more the last four months. Except two days, we have had ozone every day this month, average 4·2. The mean of the dry bulb thermometer is 45·6; of the wet ditto 41·3; that of solar radiation 82·3; and of terrestrial ditto 34·6.

BERKHAMPSTEAD.—Mean of highest temperature 55·32; lowest 36·64.

6th and 7th extremely hot for the time of year. 11th, thunder at 5 P.M. We had sharp frosts from the 15th to the 23rd, which did much damage to the fruit: Laburnum flower-buds destroyed, and Lilacs much injured. 21st, aurora borealis during the night. 22nd, swallows first seen, and the cuckoo heard.

North Shields.—More snow has fallen during the past month than during the previous months of winter. Vegetation has received a very severe check.

Betchworth.—The register of 21° on the 1st of this month is the *minimum* of the whole winter season in this locality, which is remarkable as happening in this month. It will be still more remarkable should the register of the 7th, viz. 80·25, prove to be the *maximum* of the year, which is quite possible, and in which case the maximum and minimum will have occurred within a week of each other. All the early fruits in this neighbourhood were killed by the late frosts; and vegetation, both agricultural and floral, much nipped and retarded by the subsequent east winds.

Dover.—On the 13th and 15th, ozone 7. Snow on 16th. Evaporation during the month, 2·33.

Street.—Whitethorn (or May) in blossom on the 22nd.

About London the Hawthorn was in flower the last week of April: that was in the parks and squares of London. In the last week of June, just two months later, the same was in full flower on the north slope of the Berwyn Mountains, in Merionethshire, between Pont-Cwm-Beddws and Llandrillo, about eight miles from Bala. A. I.

The Poisonous Property of Yew.

Two fine steers, the property of Mr. J. Taylor, Summer Hill, Gainsborough, were seen to be unwell on Saturday week, and one of them immediately fell, and died before any remedy could be obtained. To the second (which also fell) a bottle of gin was given instanter by the owner. The animal rallied, and with other remedies applied by Mr. Chapman, veterinary surgeon, is now fast recovering. The steers had been in the garden cropping a Yew fence, which was the cause of the illness, as in the *post mortem* examination was clearly defined.—*Times, January* 2, 1858.

Communications have been received from

C. Howie; F. V., with a dried plant of *Orobanche elatior;* Rev. H. W. Webb; T. W. Gissing; Cambricus; S. B.; George Jorden; E. Green; Wm. Dickinson, F.L.S.; W. P.; A. I.; T. F. R.; Benevolus; E.; John Lloyd, with a living? plant of *Orobanche elatior;* Rev. T. F. Ravenshaw, President of the Birmingham Nat. Hist. Association; Dr. Lindsay; M. Attwood; the Right Hon. the Earl of Ilchester, with a specimen of *Astragalus glycyphyllus.*

BOOKS RECEIVED FOR REVIEW.

Birmingham Daily Post. Flora Hertfordiensis, Supplement No. 11. *Plantes Rares ou Critiques de la Belgique; par F. Crepin. Hooker's Species Filicum, vol.* iii. *pt.* 1. *The Critic. The Friend, etc.*

SOME REMARKS ON MONŒCIOUS AND DIŒCIOUS PLANTS.

(*From a Correspondent.*)

Among the numerous subjects for inquiry presented to the botanical observer, few stand in greater need of complete investigation than the monœcious or diœcious condition of certain plants. Not but that the condition itself is sufficiently well explained by the suppression of the stamens, or pistils, as the case may be, but the cause of such suppression is still in the main utterly unknown; albeit, the few facts we have in reference to this subject are of so interesting a character, that it is a matter of surprise that they have not tempted observers to further research in these all but untrodden fields.

Perhaps an overweening sense of the difficulties to be met with in penetrating into so obscure a subject has deterred many from making the attempt, still, a difficulty is a "thing to be overcome," and there are many points within the compass of an ordinarily intelligent observer, which would not necessitate laborious and protracted research on his part, and yet would add to our somewhat meagre stock of information on this subject, and perchance lead to the most important results. The best way to illustrate these remarks, and to supply suggestive hints to those who have it in their power to make observations, is to throw together a few *excerpta*, which will show in part, at least, what has been already done.

One of the most remarkable, and, at first sight, puzzling circumstances, is the rarity with which the male and female plants, in the case of diœcious plants, are found collected together in anything like equal proportions, even when all the circumstances are taken into consideration. Thus, how rarely are male and female plants of the wild Hop, Bryony, Nettle, Black Bryony, and perennial Mercury, etc., associated together. The plants just mentioned are perennial plants, and the prevalence of plants of one sex in one situation to the entire or partial exclusion of the other has been accounted for by referring to the *shoots* by which such plants are propagated, which shoots produce flowers of the same sex as those on the plant from which they sprang. But are the sexes more intimately blended, as far as numbers go, in the case of annual diœcious plants, where such propagative shoots are not produced? We think not. On this point our experience

is opposed to that of M. Lecoq, who, in his elaborate work on the 'Botanical Geography of Europe,' says that in *Mercurialis annua* he has always seen the two sexes mixed in about the same proportions. According to our own experience the female plants of this species are not so commonly met with as the male, but this is a point on which we should be glad to have the experience of other observers. Annual plants dependent upon the fertilization and dispersion of seeds for their reproduction, ought naturally to have greater facility for promoting the fecundation of the ovules than plants provided with other means of reproduction. Thus it is that M. Lecoq accounts for the great rarity of diœcious annual plants. From this author we cite the following facts. Unisexuality is more common in perennial than in annual plants, and in both, monœcious plants are more common than diœcious. Referring especially to Central France, he gives these statistics, which will apply nearly as well to the rest of Europe. Of 563 annual plants 16 are monœcious, or 1 in 35. Of 1,245 perennial and woody plants, 147 are unisexual, or 1 in 8·5; and of the 147, 103 are monœcious, or 1 in 12 of all perennials, and 44 diœcious, or 1 in 28, and of these latter the majority are trees and shrubs, often lofty, and provided with an abundance of pollen.

Another provision of Nature for ensuring the fertilization in unisexual plants, especially in diœcious ones, is shown in the fact that such plants have either small and imperfect floral envelopes, or, it may be, none at all, and thus access of the pollen to the stigma is facilitated. In hermaphrodite flowers the provisions are equally marked to ensure the due contact of the pollen with the stigma, but here it is by the presence of protecting envelopes, by the situation of the stamens, etc.

From these circumstances it becomes a question whether it would not be possible to convert a diœcious plant into a monœcious, or even into an hermaphrodite one, by checking the formation of shoots, by encouraging the formation of flowers at the expense of leaves, or by other means. That this is not so wild a notion as at first sight it may appear, is shown by the numerous recorded instances of diœcious plants becoming occasionally monœcious, or even perfecting hermaphrodite flowers.

What are the circumstances which have tended to such results? Again, is there any possibility of ensuring with certainty the growth of either sex from seed?

In the 'Gardeners' Chronicle,' 1851, is an account and figure of a monœcious Hop, and the writer, Mr. Masters, of Canterbury, therein states that in his own garden he has known an instance wherein a hop-plant has, after producing female blossoms only, in the next year produced both male and female, and in the following year male flowers only.

We are not entirely without evidence as to the effect of temperature on unisexual flowers. Thus Nolte, of Copenhagen, states that *Stratiotes aloides*, which extends from 48° to 68° of latitude, produces perfect flowers only between 52° and 53°: north of that, female flowers alone are met with; south of that, males alone.

This plant is one which, as is well known, increases rapidly by off-shoots. This is in accordance with the observation of Knight, that a high temperature favours the formation of stamens; a low one that of pistils. That accurate observer found this to be the case in the Water-Melon, Cucumber, and other plants. In this country *Honckenya peploides* is diœcious, in America it is not so, according to Dr. Gray.

Mr. Hampe observed in *Salix repens*, that twigs above the water blossomed as females, whilst those twigs that had been in the water, and subsequently blossomed when the water was dried up, had only male blossoms. (Linnæa, vol. xiv. p. 367.)

But there are other and still more striking facts lately discovered which throw much light on the distribution of the sexes in diœcious plants, by showing that the presence of the pollen is not in all cases necessary to ensure the formation of the embryo.

Thus Radlkofer has submitted to renewed examination the *Cœlebogyne* at Kew, a female plant which year after year has produced seeds without possible contact of pollen. In this plant Radlkofer has traced some stages of the development of the embryo, but has not been able to detect any trace of pollen.

Naudin also has observed the like phenomena in Hemp, Mercury, and *Bryonia*, where all precautions to exclude pollen have been taken.

These facts are analogous to what has been found to be the case in bees and butterflies by Siebold and other naturalists.

PLANTS OF ROUEN.

A List of Plants growing in the vicinity of Rouen.
By E. Marcus Attwood.

July 13, 1859.

Sir,—I send you a list of the most interesting plants I have gathered near Rouen. I fear you will find it very meagre, but I had no botanical friend to point out the localities, and consequently my list only contains plants that attracted my attention during my walks; such as it is, however, I think it will show that this district is well worth the attention of English botanists. In the 'Flore de la Normandie' there are vast numbers of curious plants mentioned as growing near Rouen.

I am unluckily not a geologist, but judging from a map I have of the Seine Inférieure, the country round Rouen is composed almost exclusively of the upper chalk formation and superficial beds. The chalk differs from the Kentish chalk: the flints are grey; sometimes they are in small quantities and sometimes in such abundance as to form continuous beds of flint, sufficiently solid to serve as a roof to the quarries, whence is procured some sort of stucco. Near Caumont the chalk is so hard as to form valuable building-stone; they even make horse-troughs out of it. It has but few flints, and these are very large.

Just behind Rouen there is a little of the lower chalk. The superficial soil is in some places rich and loamy, in others sandy, and in some of the forests almost entirely composed of flint stones. There are several places where there are valuable beds of clay.

The forests and woods are very large. Close to Sottiville the forest district commences, and extends nearly without interruption for twenty miles; in some places it is five miles across. In this district there are still wolves, which last autumn did much mischief to the sheep and heifers; they are not considered dangerous to human beings.

The country may be described as a table-land, varying from 400 to 600 feet in height. The river Seine winds very much, in a deep valley. It is a very beautiful river, full of islands, and in one or two places half a mile wide. The alternate sides of the river are hilly and low; the hills are very dry and steep, and

frequently terminate in cliffs. The views from them over the river are beautiful, but unfortunately the distant outline of the view is always flat.

Rouen is a very convenient town for a botanist, as omnibuses go frequently in four or five different directions into the country, and steamers go six times a day, calling at every village both up and down the river.

Opinions vary so much as to what are varieties in England, that perhaps I have inserted many plants which had better be omitted; if so, pray strike out the uninteresting ones.

I have taken the names from the 'Flore de la Normandie,' and I believe I have been very careful only to insert such plants about the identification of which I was sure. I think I could gather very nearly every one of them in the same places in which I found them before.

Thalictrum flavum; Anemone Pulsatilla; Ranunculus Philonotis (R. hirsutus?); Helleborus fœtidus; Aquilegia vulgaris; Delphinium Consolida; Papaver somniferum; P. Argemone; Sinapis alba, very common on the chalk; Arabis arenosa, rare; Nasturtium anceps; Alyssum calycinum; Iberis amara; Isatis tinctoria; Helianthemum canum; H. apenninum; H. pulverulentum; Viola rothomagensis; Dianthus prolifer; D. Armeria; D. Carthusianorum; Silene gallica (S. anglica?); Linum tenuifoulim; Malva Alcea; Hypericum montanum; Geranium sanguineum; G. rotundifolium; Ononis Natrix; Medicago media; Coronilla varia; Vicia villosa (*Cracca varia* of Grenier and Godron),—this is the only plant I have found that is not mentioned in the 'Flore de la Normandie;' Lathyrus sylvestris; L. Aphaca; Mespilus germanica; Potentilla verna; P. argentea; Epilobium spicatum; Sedum Telephium; S. album, common; S. sexangulare; Caucalis daucoides; Bupleurum falcatum, not uncommon; Eryngium campestre, very common; Cornus mas, much valued here for walking-sticks; Sambucus Ebulus; Valerianella carinata; V. Auricula; Cineraria spatulæfolia; Erigeron canadensis, very common; Calendula arvensis; Onopordon Acanthium; Silybum Marianum; Cirsium oleraceum; Kentrophyllum lanatum; Chondrilla juncea; Barkhausia fœtida; B. taraxacifolia; Crepis biennis (plants of both the last-mentioned species are common near here: the *Crepis* flowers about a month after the *Barkhausia*; it is a taller, stronger, more leafy, and

less branched plant than the *Barkhausia*. It can at once be told by the ripe seeds. The 'Flore de la Normandie' says it is distinguished at sight from the *Barkhausia* by its pedicels bristling with blackish hairs, and by its stem being scabrous on the angles in the upper part. Both plants grow at Barming, near Maidstone, the *Barkhausia* very common, and the *Crepis* near the little gate in a small shaw, a little below Burming bridge, where I have seen it more than five feet high. The picture of *Crepis biennis* in English Botany, though not good, is much more like it than the *Barkhausia;* the achene is too much narrowed upwards, and more like the achene of the *Barkhausia*); Hieracium murorum (maculatum); Hypochœris glabra; Tragopogon orientalis (distinguished by the florets being much longer than the scales of the involucre, by the external achenes being covered with small scales, and by their being longer than the stalk to the pappus. I am not sure that these characters can be relied on. *T. minor* was common in Burming and by the river: it varied so that sometimes I could not distinguish it from *pratensis*. I have also seen *porrifolius* in a garden, with the florets longer than the scales of the involucre); Thrincia hirta; Arnoseris minima; Phyteuma spicatum, common in woods; P. orbiculare; Campanula Rapunculus, very common; Vincetoxicum officinale; Chlora perfoliata; Pulmonaria angustifolia; Atropa Belladonna; Verbascum thapsiforme; V. phlomoides (I am not quite sure that I can always distinguish the plants of the last two species; perhaps I do not know the latter, which is, however, said to be the commoner near here. I have not yet seen the *Thapsus*, also said to be common. *Thapsiforme* is a very handsome plant, and notwithstanding Bentham's opinion, I think it differs from *Thapsus*. I sowed its seeds in three gardens in England, in very different soils; in all of them it came up afterwards self-sown, and never could be confounded with *Thapsus*. Hudson must have made a mistake about its being common in Kent. The *Thapsus* is there abundant); Verbascum pulverulentum; V. Lychnitis; V. nigrum; V. Blattaria (there are also some other showy sorts I could not make out; I believe they are considered hybrids, and are very handsome plants. I saw no ripened seeds); Digitalis lutea, common: Linaria Cymbalaria; S. spuria; S. supina; S. stricta; S. minor; Veronica Teucrium, a very handsome plant; Orobanche Rapum; O. cruenta, and var. citrina; O. minor (I

have found other sorts I could not make out); Salvia pratensis; Mentha rotundifolia; Calamintha officinalis?; C. Nepeta; Melittis Melissophyllum; Stachys alpina; S. germanica; S. recta; S. annua; Galeopsis dubia (*ochroleuca*, Lam.),—I have never seen the *Lamium maculatum* here; and at Tours, in eighteen weeks, I only saw one plant of *album*: it was quite replaced by *maculatum*, the leaves of which, however, were not spotted;—Lamium amplexicaule; Teucrium Chamædrys; T. montanum; T. Botrys; Ajuga Chamæpitys; Anagallis cœrulea; Primula elatior (I suppose this plant is the same as the Essex plant, which I have never seen: it grows here in woods, not mixed with the *officinalis* and *acaulis*); Globularia vulgaris; Armeria plantaginea; Daphne Laureola; Thesium humifusum; Aristolochia Clematitis; Euphorbia dulcis; E. gerardiana; E. Cyparissias; Mercurialis annua, very common; Orchis conopsea; O. odoratissima; O. militaris (*galeata*, Lam.); O. purpurea (*fusca*, Jacq.); and var. O. pallida (the last three species are not uncommon at the edges of the woods on the chalk banks: the picture of *militaris* in English Botany has the label more like that of the *purpurea* (var. *O. pallida*) than the label of *militaris*. The 'Flore de la Normandie' says the plant is often taken for the true *militaris*); Aceras pyramidalis; A. (Orchis?) hircina, common on the chalk slopes; Ophrys muscifera; O. aranifera; O. arachnites; Cephalanthera grandiflora; Epipactis latifolia; E. atro-rubens; Neottia Nidus-avis; Narcissus Pseudo-Narcissus; Phalangium ramosum; Polygonum vulgare; P. multiflorum, very common; Convallaria majalis, very common; Colchicum autumnale; Digitaria sanguinalis; Setaria viridis; Bromus secalinus; B. tectorum; Brachypodium pinnatum; Sesleria cœrulea.

The following are all the Ferns I have noticed here:—Pteris aquilina; Blechnum Spicant; Scolopendrium officinarum; Asplenium Adiantum-nigrum; A. Ruta-muraria; A. Trichomanes; Cystopteris fragilis, at the cavern at Mr. Colembel's, Caumont; Athyrium Filix-fœmina; Polystichum Filix-mas; P. spinulosum; P. dilatatum; Aspidium aculeatum; A. angulare; Polypodium vulgare.

A DESCANT ON CREATION.

Some Observations on the Vicissitudes of our Climate on Organic Life.

The significant adage, "As uncertain as the weather," is suitably applied to our climate, when from day to day we know not what may occur, and so variable are our seasons that nothing can be adduced to show anything like regularity even during an age. The last winter has been singularly anomalous in that respect. We had nothing in the weather to indicate winter but in November and the last two days of March and the first two days of April. In November the weather was unusually severe for that time of the year during a fortnight. By the 24th of the month, the pools were covered with skaters and sliders, and those who availed themselves of the opportunity filled their ice-houses. Afterwards the weather was remarkably mild, with little or no frost or snow until the 29th of March, when it became again very severe. On the 30th, a great fall of snow, when the Damson, Cherry, and Plum, and some Pear-trees were in full bloom, and were now loaded with snow.

On the 31st an intense frost,—thermometer 12° below the freezing-point,—which continued on the 1st of April; the roads a sheet of ice. Vegetation, which had made unusual progress during the winter, suffered much. Such of the fruit-trees as were in bloom suffered materially; in many places there will be no fruit at all.

Before this severe weather happened, the bees were abroad in abundance, feeding on the flowers of the different fruit-trees and other plants; they were seldom seen afterwards notwithstanding the weather was very fine: they did not seem to visit any flower, even those which appeared afterwards; so that it appears that the frost had some effect on the nectary or honey, the bees therefore not liking it.

I observed in the first week in January the following native and exotic plants in bloom,—*Primula vulgaris, Corylus Avellana, Eranthis hyemalis;* in the last week in January,—*Galanthus nivalis, Daphne Mezereum, Daphne Laureola,* with Crocuses and Hepaticas.

In the first week in February, *Heleborus fœtidus, Potentilla*

Fragariastrum, Cardamine hirsutum, Ulex europæus. Last week, *Ranunculus Ficaria, Mercurialis perennis, Draba verna, Lamium album.* First week in March, *Ulmus major, U. campestris, Alnus glutinosa, Narcissus Pseudo-Narcissus, Corydalis solida, Vinca minor.* The following are some of our hardy native plants, Flora's plebeians, that follow the spade and plough, continue in flower the winter through, and some of them through the whole year. *Veronica hederæfolia, V. agrestis,* spread on the earth their little cerulean gems; *Lamium purpureum, Senecio vulgaris,* provided for the linnet's winter repast; *Capsella Bursa-Pastoris. Stellaria media,* studs the cultured soil with its nebula of tiny stars, of little magnitude, brilliant and cheering in the winter solitude until Flora arrives in more gorgeous array.

On each bright day, as winter wanes and spring begins to dawn,—for fine the day will be, when far from its hive the reconnoitring bee appears, exploring the woods, the meads, and gardens, anxiously awaiting for the tardy flowers to open their bosoms to refresh her with their ambrosial sweets. In the garden the busy bee finds better fare; here the Crocus opens its golden vase, and the *Eranthis hyemalis* (Winter Aconite, or Fair-Maids-of-February) presents its salver full of sweets, bidding the weak and weary wanderer come and feed. It then surveys the garden-wall to find the honeyed Prunuses in bloom, to it a friendly flower. Being now well refreshed, it fast hurries home before the sudden close of eve, to report the results of its mission.

Ere long comes forth from its long nap the obstreperous humble-bee,—arrived too soon for its favourite flower, *Salix Caprea,* which is not yet in bloom, but it will not return without some refreshment to appease its hunger. If it finds *Helleborus fœtidus, Daphne Laureola,* with their yet unopened flowers, which it surreptitiously unfolds, soon imbibes all their store, or plunges into the weak corolla of the Crocus and bends it to the earth. It sedulously labours late and early, wet and dry, to supply its necessities. From the dawn of spring until the close of summer, as the flowers come into bloom, the numerous tribes of insects appear for their daily fare.

The late-blooming Ivy affords them the last social banquet: many die, others depart to their hibernaculum to repose until the genial ray of spring bids them awake and come forth and enjoy anew their ephemeral existence and continue their species.

The *Umbelliferæ,* how conveniently designed, so that from the little midge up to the larger *Lepidoptera* may conveniently come and feed! Then, afterwards, the various species of *Rubi* come into flower, an ample supply to all the hymenopterous, coleopterous and dipterous insects. The coleopterous feed much upon the pollen.

It is not the flower that yields all the food for the insect tribes. There is another source from whence they procure an ample supply, provided for them by their benign Creator. I allude to the countless millions of the several species of Aphides, infesting every species of plant during the summer months, converting the crude juices of every species, either malignant or benign, into the melliferous substance honey. This may be called the chemistry of vegetation,—the little Aphides the operators, superintended by the mighty Alchemist. Those little operators are constantly attended by all the insect tribes, grateful recipients of their bounty, who caress them with affection, particularly the *Formica* tribes.

We ought to have more compassion on all those our fellow-tenants of this earth, more particularly when we observe the provident care and kindness of that Being on whose sufferance all things exist. Therefore the study of natural history would render mankind more amiable and less selfish, and add much to his earthly happiness.

When man is happy he is amiable. GEORGE JORDEN.

Bewdley, July 25th, 1859.

LASTREA SPINOSA AND L. MULTIFLORA, *Newm.*

By A. JERDON.

Though tolerably conversant with the Ferns of this district, I was not aware until lately, that *Lastrea spinosa,* Newm. (*L. spinulosa,* Presl), occurred here. Indeed I was disposed to regard the species as a very doubtful one, supposing it to be a mere variety of *L. multiflora,* Newm. (*L. dilatata* of authors).

About the middle of last month (June), whilst walking in an open, heathy fir-plantation, I observed in several places, intermixed with *Lastrea multiflora, L. Filix-mas,* and *Athyrium Filix-fœmina,* a Fern which struck me as different from any I had seen

before, and which on examination proved to be the *Lastrea spinosa* of Newman. I have since observed it sparingly on a sheltered bank in a moor, and I suspect that it is not uncommon in similar localities, and that I have hitherto overlooked it, supposing it to be a form of *L. multiflora*, Newm., which is very common in this vicinity.

The marks of distinction between the two species, as stated by Newman and Babington, appear to be tolerably constant and certain, but I observed the involucres of *L. spinosa* to be *slightly* fringed with glands in one or two instances. I also observed the scales on the stem to be generally distinctly *acuminate*, or rather, mucronato-acuminate? which is not mentioned by Newman, though well given in his figure.

Besides the distinctive characters above referred to, the *habit* of the two Ferns is very different. The fronds of *Lastrea spinosa* grow nearly upright and are crowded together (a manner of growth better expressed by the Latin word *strictus* than by any other epithet), while those of *L. multiflora* droop gracefully outwards in a radiate form. The two species also differ in *colour*, *L. spinosa* being of a paler and yellower green than *L. multiflora*, which is generally of a dark bluish or even blackish green, though it sometimes occurs paler, especially in open ground.

In his first edition of 'British Ferns,' Mr. Newman states that "he has not seen *L. spinosa* in Scotland or Ireland," and that "it is seldom recognized as distinct from *L. multiflora*." Not having seen his second or third editions, I do not know whether any alteration in these statements has been made, but I quite agree with him as to its being confounded with *L. multiflora*, and probably overlooked thereby.

Hooker and Arnott do not appear to recognize *L. spinosa* as a distinct species at all, including it under their '*Aspidium spinulosum*,' of which they make no less than four varieties. Though generally agreeing with these authors in their restriction of species, it seems to me that they have here erred on the side of too great exclusiveness, and that there are good grounds for making *L. spinosa* a distinct species.

Mossburnford, Roxburghshire, 13*th July*, 1859.

LIZARD ORCHIS.

(*To the Editor of the 'Phytologist.'*)

Sir,—I notice in your last impression (July, p. 224) an inquiry as to the Lizard Orchis (by the bye it is fortunate the English name was given, else your readers might have been much puzzled to know what plant was meant!), and as, through the kindness of G. C. Oxenden, Esq., I have been furnished with a specimen of that singular plant, accompanied with notes concerning it and some of its congeners, I am in a position to reply to your correspondent, and to give you some extracts from Mr. Oxenden's letters, which may be of use or of interest to you.

"*Orchis hircina* is certainly *extremely* rare, but where he is found, there he shows abundantly. I have found seven this June (1859). One is growing just under my very window, perhaps the finest Lizard Orchis in England. It is about twenty-five inches in height, with an immensely strong stem, and about forty flowers on it. There are also five other plants within a hundred yards, but the difficulty of preserving them is excessive, inasmuch as slugs and snails have a stronger affinity for them than for any other green thing, and also because in the spring the exuviæ of the buds of trees and plants carried by the wind lodge in the foot-stalks of the leaves of *O. hircina* as it were in a cup, decay there, rot a portion of the stem, and finally destroy it."

Mr. Oxenden alludes, in terms which will be readily appreciated by "Phil-Orchis," to the systematic devastation of the Kentish downs of the rarer Orchids, by a Gipsy woman who digs them up and carries them off to Guildford and Croydon for sale.

Of the specific difference between *Epipactis latifolia* and the form called *purpurata*, Mr. Oxenden entertains no doubt; both plants are tolerably abundant in his neighbourhood, and from the means of comparison thus afforded, he is enabled to say that "the enormous contrast in the shape of the leaf, colour of the leaf, flower, habit of growth, suffice to separate them altogether." "What botanist," he says, "ever yet knew *E. latifolia* to throw up ten or a dozen flowering stems from the same root, each stem very close to the rest like ears of corn?—but every one of these contingencies occurs with *E. purpurata*."

I do not know precisely the spot where the Lizard grows, but it is on the chalk downs of that part of the county. Last

summer Mr. Oxenden noted twenty-seven plants of it between Charing on the west, and Walmer on the east.

M. T. M.

"THORNS" NOT "THISTLES."

I find that your esteemed correspondent S. B. still clings to the idea that the '*thorns*' of the parable of the Sower are '*thistles.*' I am sorry that he is so hard to be convinced. His original authority of Turner's 'Herbal' is supported by a marginal note in a Bible printed A.D. 1595. Surely, these two isolated authorities do not outweigh the general consent of all scholars and translators as regards the true interpretation of the original word. Would S. B. translate ἄκανθαι, '*thistles,*' in all other passages where the word occurs? If not, he is not consistent. Or, why should this passage be singled out for giving the word an unusual translation; especially when it does not in the slightest degree assist in simplifying the meaning? When it is borne in mind that the note to which S. B. refers in support of an altered translation of the passage, saw the light just twelve years before forty-seven of the most learned men in England commenced the great task of giving to the world our authorized version of the Scriptures, and that the proposed emendation, of '*thistles*' for '*thorns,*' was not accepted by them, we may surely gather that they regarded it as of little or no value. Should S. B. still uphold the translation proposed by Turner, of course he is welcome to his opinion, only he must not expect many followers.

My reference to Lady Calcott's Herbal was simply to answer your correspondent's query, 'Whether the *Prunus spinosa* grows in Palestine.' I did not mean, in attempting an answer, to pronounce any opinion as to the particular species of Thorns spoken of in the parable of the Sower.

Even friendly controversy (and I trust the pages of the 'Phytologist' is open to none other) is an awkward business. In the present case it has caused me and my good friend the Editor very innocently to fall foul of one another. In fact he has been caught napping: "*Quandoque bonus dormitat Homerus.*" In saying that "our common Whitethorn, *Cratægus Oxyacantha,* is perhaps

the only Thorn common to the British Isles and the Holy Land," he has spoken without book. There are at least four species of thorny plants common to the two countries, viz. *Prunus spinosa*, Sloe; *Ononis spinosa*, Rest-harrow; *Rosa rubiginosa*, Sweet-briar; and *Ruscus aculeatus*, Butcher's-broom. Whether the White-thorn be a native of Palestine we have no evidence; but the silence of authors would argue the contrary.

A better authority than Lady Calcott is sought. Perhaps it may be difficult to obtain a better. The preface to the 'Scripture Herbal' will show that its lamented author did not attempt a task for which she was unfitted; or enter upon it without having made herself acquainted with those authors, ancient as well as modern, who could throw light upon the subject, which she had taken in hand. Whatever Lady Calcott's obligations to Celsius, Hasselquist, Förskal, and others, may have been, the advice and assistance afforded by her friend the late Robert Brown, give an authority to her work which we shall not do well to call in question. In proof of this statement I refer to the following passage from the preface to the 'Scripture Herbal,' and a note to the same:—"I owe the use of it (the 'Hierobotanicon' of Celsius) to my excellent friend Robert Brown, Esq., without whose kindness in advising me and procuring for me books which I could not otherwise have commanded, my own little work, if executed at all, must have been defective indeed." Note.—"It may seem vainglorious thus publicly to boast of the friendship of this great botanist, who, by the universal voice of the naturalists of the continent of Europe, has received the title of *Princeps Botanicorum*, a title hitherto bestowed only on Linnæus. But I shall soon be beyond the power of expressing gratitude in this world, and I am willing with what breath I have to thank him, and to express a regard which has lasted long and can only end with life. His friend Mr. Bennet has also done much for me, and must receive my thanks here for all his trouble." Nothing more need be added in support of the authority of Lady Calcott's work.

W. M. HIND.

Harrow, August 5, 1859.

Early Names of Plants.—Culverkey, John-in-the-Pot, Broom, Twill-pants, etc.

It would confer a great favour on some of the younger readers of your excellent journal, particularly the fair sex, if the aged and wise in the science of botany would give us the benefit of their knowledge of plants, to enable us properly to understand the works of our early poets; and assuming that they will be kind enough to do so, will you allow me to ask for information, that I may comprehend the following passages in Shakespeare, which are not to my mind explained by the notes to the editions I have referred to.

In the play of 'Hamlet,' reference is made by the poet to the "juice of cursed hebenon,"—which was poured from a phial into the ears of the king, as he lay sleeping in his orchard,—called a *leperous distilment*. I want to know what "juice of cursed hebenon" is.

Again, in the 'Tempest,' act iv. scene 1, Iris enters, and says:—

> "Ceres, most bounteous lady, thy rich leas
> Of wheat, rye, barley, vetches, oats, and peas,
> Thy turfy mountains, where live nibbling sheep,
> And flat meads thatched with stover, them to keep;
> Thy banks with *pionied* and *twilled* brims,
> Which spongy April at thy hest betrims
> To make cold nymphs chaste crowns."

Mr. Steevens, in a note to this passage, tells us he is in doubt whether we ought not to read *lilied brims;* for Pliny, book 26, chap. 10, mentions the Water-lily as a preserver of chastity; also, that Mr. Tollett informed him that Lyte's Herbal says, "one kind of Pionie is called by some, 'Maiden' or 'Virgin Pionie;'" also in Ovid's 'Banquet of Sense,' by Chapman, 1595, he, Mr. Steevens, met with the following stanza, in which *Twill-pants* are enumerated among flowers:—

> "*White and red Jasmines*, merry Melliphill,
> Fair Crown Imperial, emperor of flowers;
> Immortal Amaranth, white Asphrodill,
> And cup-like *Twill-pants* strewed in Bacchus' bowers."

He then says, if *Twill* be the ancient name of any flower, the present name 'pionied' and 'twilled' may incontrovertibly stand. I have looked for the name of Twill-pant in my books, but can-

not find it. I intended to ask the learned editor of 'Notes and Queries' for information, but feared I might not get a satisfactory answer, as some of his notes on the *ancient names of flowers* are *puzzling;* for instance, the question was asked in last month's journal, what herb *John-in-the-pot* was, referring to the word in Gurnall's 'Christian Armour,' who says, "*It does not much good nor harm;*" and the editor, after exhausting all the *Johns* he could find, including *John-go-to-bed-at-noon,* which he tells us is the *Pimpernel,* goes to the *Jacks,* which he says are *Johns one degree removed,* and gives his opinion that "Jack-by-the-hedge, or Sauce-alone, Alliaria," might have been the ancient herb *John-in-the-Pot.*

There have been in 'Notes and Queries' many definitions of the *Culverkey,* to show what flower Izaak Walton intended in the following passage (chap. 16 of his 'Angler'):—"Looking down the meadow I could here see a boy gathering Lilies and Lady-smocks, and there a girl cropping *Culverkeys* and Cowslips, all to make garlands suitable to this present month of May." Walton also refers to the same plant in some lines by Jo. Davors (which he quotes), called "azure Culverkeys."

A correspondent in 'Notes and Queries,' in answer, says:—"Culverkeys: I think this is White Clover—*Cleofer-wort* in Saxon, from *cleofan,* to cleave. As to *key,* the parts of a clover-leaf much resemble the top of an ancient key. White Clover blossoms at the same time as the Cowslip, and flourishes in a like situation, *moist, not wet.* The Ash and Catkin-keys I consider of another class, and they resemble keys on a lady's chatelaine.—F. C. B."

This explanation is to me incomprehensible. The 'Phytologist' told us in a recent number that Culverkey was the Snake's-hood (*Fritillaria Meleagris*), which is nearer the mark; but looking to the distinctive colour, *azure* Culverkey, I would venture to say that Walton's flower is the Harebell, *Hyacinthus non-scriptus.*

In Shakespeare's 'Tempest,' he speaks, in act iv. scene 1, of—

> "Broom groves
> Whose shadow the dismissed bachelor loves,
> Being lass-lorn!"

In Steevens and Johnson's edition of the poet's works, Mr. Tollett has the following amusing note:—"Disappointed lovers

are still said to wear the Willow; and in these lines *Broom groves* are assigned to that unfortunate tribe for a retreat. This may allude to some old custom. We still say that a husband *hangs out the broom,* when his wife goes from home for a short time; and on such occasions a *broom-besom* has been exhibited as a signal that the house was freed from uxorial restraint, and when the master might be considered as a temporary bachelor. *Broom grove* may signify *Broom-brushes.*"

I think the editor of 'Things not Generally Known' might find a rich harvest in some of the notes to Steevens's edition of Shakespeare, and also in the notable 'Notes and Queries'—particularly with reference to plants. S. B.

COMMON NAMES OF PLANTS.

We have been favoured with some interesting articles in your periodical upon the common names of plants, some of which have derived their appellations from animals, such as the horse and dog, but you have said nothing about the *Cat-plants,* or plants named after the feline race. There must have been some good reason for the origin of these names, with regard to some peculiarity in the plants, or their property.

1. I find there is a *Cat-pear,* called, in one of our dictionaries, "a kind of Pear, ripe in October or November."

2. *Cat-mint.* A herb which cats delight to eat.

3. *Cat's-tail.* A red Plum; a long, round substance that grows in the winter upon Nut-trees, Pines, etc.; also a kind of Reed, bearing a spike like a cat's tail, called also Reed-mace.

4. *Cat's-foot.* A herb otherwise called Alehoof, or Catapuce, mentioned by Chaucer.

5. *Cataputia.* A sort of Spurge or herb.

6. *Caterpillar.* A kind of plant only esteemed for its seed-vessels; they are like green-worms, or caterpillars, some bigger and some lesser.

7. *Cataria.* The herb Cat-mint, or Nep.

8. *Catkins,* or *Ragged Catkins.* A kind of substance that grows on Nut-trees, Birch, and Pine-trees.

9. *Catalpa.* A large tree of Carolina and the South, which in

blossom has a beautiful appearance, and belongs to the genus *Bignonia*.

I should like to know what the word *cat* is derived from, and its original meaning.

Gold Flowers.—I find several of our plants have taken their names from the precious metal; and it appears to me that they have been so named with reference more to the colour of the flowers and fruit than to their qualities. I give you the result of my reading, and hope it may find a place in the pages of the 'Phytologist.'

In the glossary to Tyrwhitt's edition of Chaucer, "Gold" is said to be "a flower commonly called a Turnsol." Gower says that Leucothea was changed

> "Into a floure was named golde,
> Which stood governed of the sonne."

Phillips's Dictionary says, "Turnsole, a plant so called, because its flowers turn towards the course of the sun. Goldilocks, or Golden-tufts, a sort of herb. Marigold, a flower of a golden or yellow colour. Golding, a kind of Apple. Golden-rod, a herb of a cleansing and binding quality. Gold-of-pleasure, the name of a certain herb." Gerarde has, "Gold-flowers, Golden Moth-wort or Golden Cudweed, Golden Flower-of-Peru, Golden Thistle, Golden Trefoil, Golden-drops, Golden Flower-gentle." We have Apples called the Golden Pippin and the Golden Rennet; also the Golding, which an old dictionary says is a kind of Apple.

Dr. Trench, in his 'English, Past and Present,' p. 235, says, with reference to the Orange, that "it is no doubt a Persian word, which has reached us through the Arabic, and which the Spanish *Naranja* more nearly represents than any form of it existing in the other languages of Europe. But what so natural as to think of the Orange as the golden fruit, especially when the '*aurea mala*' of the Hesperides were familiar to all antiquity?" There cannot be a doubt that *aurum, or*, made themselves felt in the shapes which the word assumed in the languages of the West, and that here we have the explanation of the change in the first syllable, as in the low Latin *aurantium, orangia*, and the French *orange*, which has given us our own.

It is probable that some of the readers of the 'Phytologist' can add more to this golden list, and give us further information and synonyms.

Query.—There is a plant called by Shakespeare *Cuckoo-bud:* is there any plant in the English Flora now called by this name, and what is it? S. B.

CYTISUS LABURNUM, VAR. PURPURASCENS.

Reference was made to the peculiarities of this tree, p. 184, which has come under our observation for the last twenty years. No satisfactory physiological explanation illustrative of such remarkable appearances has yet been given. We have seen branches bearing racemes of the normal form of *Cytisus Laburnum.* In some cases we have observed the side of a branch and side of a raceme indorsed with the yellow flowers. From this there is nothing to distinguish the tree from other plants, viz. the white-flowering Currant, *Ribes sanguineum*, var. *albidum*, which has presented exactly a similar appearance. The Carnation, and other florists' flowers, are well known among florists by what they term sporting; and fruits, as in the case of the Peach and Nectarine, which have (to use the florists' phrase) sported upon the same tree and also upon the same branch. But the most striking phenomenon is the spontaneous production of the true form of *Cytisus purpureus*, a dwarf-growing shrub (in addition to the normal form of the Laburnum), a common plant in nurseries, specifically distinct, which is generally grafted on the stem of the common Laburnum for decorative purposes. Of the laws that regulate varieties in the Vegetable Kingdom the writers and, I may add, the readers of the 'Phytologist,' acknowledge with that due caution which is taught us by the examination of plants in their native habitats, viz. the circumstances under which they are found relative to soil and situation, the effect produced by hybridizing and high cultivation, together with the more extensive development of individual organs, all direct us to the desirableness of registering primary data as in the origin of the plant in question, where and by whom introduced, and under what circumstances, etc. To the practical botanist there is thus a wide and useful field of investigation throughout the phænerogamous and cryptogamic plants of our British Flora, together with the more common plants placed under cultivation.

We beg also to refer to what has been quoted by numerous

authors, in which a variegated Jasmine, grafted on a common one, communicated its variegation to leaves below the graft. A similar phenomenon has been observed in connection with *Pyrus Aria* grafted upon *Pyrus Aucuparia,* wherein branches of *Pyrus Aria* have appeared 2½ feet below the junction of the graft with the stock *P. Aucuparia.* C. Howie.

MACBETH AND THE DANES.—MEKILWORT.

Although many articles have appeared in your Journal respecting the plant from which the juice was obtained that overcame the Danish soldiers when they were encamped against the Scots, I do not find any evidence in favour of the *Atropa Belladonna,* nor have we yet been informed what the true plant was. I have lately referred to Hollinshed's 'History of Scotland,' which, after stating that the Danes were in a famishing state, says, "The Scots hereupon took the juice of Mekilwort berries, and mixed the same with their ale and bread, sending it thus spiced and confectioned in great abundance unto their enemies, which being taken by them produced a fast, dead sleep, that it was impossible to awake them."

Then follows Macbeth's victory, etc.

The principal commentators of Shakespeare agree that he found the materials for this Play in Hollinshed's 'History of Scotland,' and it is plain from what is above stated, that the plant called Mekilwort bore berries; and if this is to be considered the 'Insane Root,' also referred to in the same Play by Duncan, after his interview with the witches, we may at once reject the Henbane and the Hemlock, which some writers have named as the Insane Root.

It may be observed, that in the same Play (act ii. scene 2) Lady Macbeth, alluding to what she had done to Duncan's chamberlains, preparatory to the murder of Duncan, says,—

> "That which hath made them drunk hath made me bold:
> What hath quenched them, hath given me fire.
> . . . . . He is about it:
> The doors are open; and the surfeited grooms
> Do mock their charge with snores. I have drugged their possets,
> That Death and Nature do contend about them,
> Whether they live, or die."

The drug here referred to by Lady Macbeth might have been the juice of the berries of the same plant, "Mekilwort," as the effect produced was a fast, deep sleep, similar to that which affected the Danish soldiers.

I hope that some of your contributors will be able to give us the description and properties of this plant, its place of growth, and other names, if any, to enable us to clear up this doubtful question. S. B.

WORCESTERHIRE NATURALISTS' FIELD CLUB.

The members of this club assembled at Droitwich on Friday last, the 8th instant, for their July meeting. A breakfast was hospitably provided on the occasion by Richard Smith, Esq., of Westacre, and numerous gentlemen responded to the invitation. Amongst those present, besides the members of the family and some lady visitors, we observed the Vice-President of the club (Edwin Lees, F.L.S.), Wm. Matthews, Esq., A.M., Hon. Sec., Revs. D. Melville, W. Lea, John Adlington, Whiteley (Pedmore), T. Wilde, and G. Hough; R. Smith, Esq., Dr. Shorlock; Messrs. Whitmore Jones (Pensax), J. Robertson, Jeffery, R. Binns, H. K. Lines, J. Smith, Parkes, and Allport (Birmingham), Kent, T. Westcombe, G. Piercy (Kidderminster), W. Ponting, Haywood, etc.

The rose-garden of Mr. Smith was an object of much attraction, many of the finest forms of that beautiful tribe appearing at this time in full perfection, and scenting the air with their fragrance. Various Rock-ferns are also growing very well here, benefited perhaps by the pervading influence of the Droitwich salt, for we actually observed the little *Erodium maritimum* growing as an interloper on the gravel walks here. The various botanical curiosities treasured by Mr. Smith having been fully inspected, the exploration of the day commenced in the open country. The first point made was a headland of the Keuper marl, which stands out boldly from the vale to the west of Briar Mill, like some great earthwork formed by Roman hands, but which, in the former overflow of the country during the Estuarine Period, has resisted the action of opposing currents, and so been left like an islet in the waters. A pleasing view of the surrounding

country may be here remarked. On descending this hill, the botanists manœuvred about the deep-burrowing brook that skirts its northern base, and captured the local *Samolus Valerandi*, that generally confines itself to the vicinity of the coast, while the other side of the millpool at Briar Mill, as well as the bank of the salt-water Droitwich canal, was noticed to be covered with a profuse growth of wild Celery (*Apium graveolens*). The pretty little *Glaux maritima* was also noticed by the canal-side.

The following aquatic plants were gathered either at the great lake or by the reedy pools on the northern side of the park. White Water-lily (*Nymphæa alba*), *Sium angustifolium*, *Œnanthe fistulosa*, *Cardamine impatiens*, *Scutellaria galericulata*, *Myriophyllum spicatum*, Mudwort (*Limosella aquatica*), *Lysimachia Nummularia* (Moneywort), narrow-leaved Reed-mace (*Typha angustifolia*), *Scirpus Tabernæmontani*, *Carex Pseudo-Cyperus*, and *C. pendula*. The woody border of the lake only yielded a few species of St. John's-wort (*Hypericum*), *Daphne Laureola*, and the rather local Fly Honeysuckle (*Lonicera Xylosteum*).

The rare broad-leaved Bell-flower (*Campanula latifolia*) adorned the bank of this quiet brook, and here the Black Currant (*Ribes nigrum*) was growing apparently in a wild state. Advancing to Hadley Mill, the naturalists, after passing it, soon came to a remarkable quarry of New Red Sandstone, a part of the Triassic system. But the sandstone, though close to the Keuper marl, is white, or of a cream-colour, and seems elevated out of its place by "a fault." A singular vein in the marl, brilliantly coloured with deep-blue and verdigris-green, probably by copper, attracted much attention. Many remains of ancient plants, some with well-preserved markings like those of calamites in the coal-fields, are met with in the white sandstone of this quarry, and some quantities were carried off by the raptorial geologists, whose bags and pockets became pretty well ballasted, though increasing their difficulties when in marching order.

BIRMINGHAM NATURAL HISTORY ASSOCIATION.

A second excursion of the members of this Society took place on Tuesday last, on this occasion to the Trench Woods, in the county of Worcester. An occasional day's absence from the

arduous occupations of town life, an occasional plunge into the secluded recesses of the forest must be considered one of the choicest privileges of the town-dweller. New life is given to the feelings in these interesting and beautiful solitudes, peopled as they are with myriads of mysterious creations. Strange and agreeable perfumes, the essences of Nature's floral laboratory, steal on the senses, while the luxuriant foliage of the wood, and the bankside,—all these must needs exert a most attractive influence upon the mind, especially of those who are accustomed to the daily contemplation of tall smoky chimneys and pestiferous emanations of sewer-'traps,' or the too often tainted atmosphere of the manufactory.

Amongst the pleas for such a pleasure, calculated as it is to give tone to the hardly-wrought brain, stands unsurpassed that of the naturalist, who may be said to be ever at home in the forest and in the field.

From one side of these woods, placed on an elevation, a complete panorama meets the view, with the distant Malvern Hills on the horizon.

The spot is unusually rich in some of our choicest plants. As we pass from Stoke, a complete change becomes observable in the Flora. The locality of Trench, in a geological point of view, belongs to the secondary formation—the oolite and lias groups. The soil is calcareous, and all along the lanes in the vicinity are seen heaps of lias with fossil shells imbedded in great abundance. Some of the fields are literally covered with the wild Carrot and Parsnip, the beautiful *Carduus nutans*, or Musk-thistle, and others; and many choice plants, as *Chlora perfoliata*, the *Astragalus Glycyphyllos*, or Sweet Milk-vetch, sometimes also termed the Liquorice-vetch, grew here in great abundance, as do also *Malva moschata*, the Musk-mallow, and *Anthyllis Vulneraria*, or Kidney-vetch, or sometimes Ladies'-fingers, doubtless from the peculiarly elegant and graceful delicacy of the divisions of the flower-head. The gay little *Helianthemum vulgare*, or Rock-rose, completely lines the bank, rich in its golden glory; and in the open were also observed *Helminthia echioides* (the Ox-tongue), *Poterium Sanguisorba* (the Salad Burnet), *Euphorbia exigua*, or Dwarf Spurge, *Medicago sativa* (Lucerne), and the gorgeous yellow Bed-straw (*Galium verum*) fills the shallow dyke. In the wood itself creeps here and there *Lysimachia Nummularia*, the Money-

wort, or creeping Loosestrife; and here and there also are *Circæa lutetiana*, the Enchantress's Nightshade, *Sanicula europæa* (the wood Sanicle), and other interesting species.

I must not forget to mention that by the side of the canal near Trench was found the rare and beautiful Flowering Rush (*Butomus umbellatus*), with its large umbels of purple blossoms towering above the beds of modest green *Juncus* which line the side, and that a forest of *Conium maculatum* in perfect blossom was also met with.

Only a very few specimens of ornithological and entomological interest were met with on this occasion.

At the recent meetings of the Association have been given important ornithological papers,—one on the Ruff, another on the Night-jar, and one also on that interesting little member of the family, the Redstart.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Wednesday, the 10th of August. Mr. J. G. Baker communicated the following notices.

"*Sedum albescens*, Haworth. This is the *Sedum glaucum* of 'English Botany,' but the name was preoccupied by Waldstein and Kitaibel. Last autumn Mr. John Lloyd courteously sent me a living tuft of it from the rocks at Babbicombe Bay, in Devonshire, and this year I have grown it side by side with *S. reflexum* and *S. elegans* (*rupestre*, Angl.). In the size of all its parts,—leaves, stems, and flowers,—*albescens* is only half the size of *reflexum*, and thus corresponds pretty much in this respect with the other species. In habit of growth and in rapidity of increase by means of creeping shoots all the three coincide. *S. albescens* has the acute, subcylindrical leaves of *reflexum*, smaller in size and more glaucous in hue, and upon the barren shoots they reach low down upon the shoot and are scattered irregularly, the upper loosely adpressed, the lower spreading from the stem at an acute or even a right angle, thus offering a decided contrast to *elegans*, in which the leaves are flattened and form at the flowering-time

a closely imbricated rosette at the end of the shoot. In *reflexum* the branches of the panicle spread widely, and present a peculiarly stiff and rigid aspect: in *albescens* and *elegans* they are much more graceful and slender. In *albescens* the petals are narrower, and paler in colour than in either of the others, and the sepals are also narrower (they may be called elliptical in *elegans*, ovate-lanceolate in *reflexum*, and lanceolate or linear-lanceolate in *albescens*). If, following out a recent suggestion of M. Crépin's ('Notes sur quelques Plantes rares ou critiques de la Belgique'), this section of the genus was divided into a couple of groups of species, characterized, the one by granulose carpels and ciliolate filaments, the other by smooth carpels and filaments, *reflexum* and *albescens* would belong to the former of them, *elegans* to the latter. At the date when this note is written (late in July) *reflexum* and *albescens* are in full flower, whilst *elegans* was in flower a month ago, and now all the petals have fallen, the stems are denuded of leaves, and the fruit is nearly ripe. The stations mentioned for *albescens* (under the name of *glaucum*) in the 'British Flora' are rough hills near Mildenhall, in Suffolk, and Sunday's Well and Glaskeen in Ireland. Upon the Continent it is reported from France and Italy.

"*Galium commutatum*, Jordan. During a recent visit to Teesdale, in company with three of our members, this species was met with on the Yorkshire side of the river, amongst the *débris* below Cronkley Scars, on the sugar limestone on the top of Cronkley Fell, and on the scar limestone of Mickle Fell, and on the Durham side of the river on the sugar limestone on the summit of Widdybank Fell, so that the range of elevation in the district is from 450 to upwards of 800 yards above the sea-level.

"*Carex rigida* was met with on the Gritstone Peak, at the west end of Mickle Fell, at an elevation of upwards of 850 yards. It is near to Yorkshire, but was known previously as a plant of the Tyne and Lake provinces, and also as an inhabitant of North Wales.

"*Hypnum aduncum*, Linn. (*H. exannulatum*, Bryol. Eur.). New at the time to North Yorkshire, was picked by Mr. J. H. Davies in boggy ground at Upper Cronkley; and I have since seen it in plenty in Cleveland, about the springs at the head of the northern or Ingleby Greenhow branch of the Severn.

"*Cylindrothecium Montagnei* was found amongst abundance

of *Hypnum rugosum*, whilst searching for *Arenaria uliginosa*, on the banks of the streamlet on the sugar limestone on the top of Widdybank Fell, on the Durham side of the Tees."

Reviews.

Species Filicum. Descriptions of all known Ferns, illustrated with plates. By Sir W. J. Hooker, D.C.L., F.R.S., F.L.S., etc., Director of the Royal Gardens of Kew. Part IX., or Vol. III. Part I. London: Pamplin, Frith Street, Soho Square.

It is gratifying to have to report that this important work is advancing towards completion more steadily than heretofore. The author informs his readers that the obstacles which retarded the publication are now removed, and that the succeeding Parts will now appear with regularity, and with as much "despatch as is consistent with accuracy in description and illustration."

This Part contains part of the suborder *Lomarieæ*, viz. the genus *Lomaria*, and part of the genus *Blechnum*. Of the former genus fifty-five species are described, and of *Blechnum* forty. *Blechnum boreale* of some British botanists (*Lomaria Spicant*, Desv.) is described on pp. 14, 15, 16. The following is an extract from the account of its range, statistics, etc.:—"Every European botanist is familiar with the Fern now under consideration, for no species is more general in this quarter of the globe; but, eastward, it seems to become rare in Russia, and Lithuania is perhaps its limit in that direction. I do not find it recorded as a Siberian plant till it makes its appearance in Kamtschatka (stretching south to Japan), and crossing the sea of Kamtschatka, in nearly the same parallel of latitude, it again occurs at the southern extremity of the Russian possessions in North-west America, and the northern extremity of the British possessions there; nor does it appear to exist in any other spot of that vast continent. Nowhere in the United States."

Its range in Europe is from Lapland to Spain, and from Madeira and the Azores to the middle of Russia. It re-appears, as above observed, in the north-west of America.

About a dozen synonyms for this Fern are given by the learned author of 'Species Filicum,' and he invariably spells the specific name *Spicant*, not *spicans* as suggested in the 'Phytologist,' but

which suggestion does not seem to have been adopted by any writer on the subject. Here we have *Lomaria Spicant, Blechnum Spicant, Osmunda Spicant, Onoclea Spicant, Asplenium Spicant, Acrostichum Spicant, Struthiopteris Spicant,* etc.

Another species of this genus, *L. alpina,* has recently been recorded (see 'Phytologist,' vol. iii. p. 157, May 1859) as a British or rather a Scottish plant (for its locality is stated as not more than twenty miles from Killin, in Breadalbane). The range of this doubtful British stranger (see p. 16) is as follows:—"*Hab.* (Is found in) temperate and cold regions of the southern hemisphere, apparently first discovered by Commerson, in the Straits of Magellan, where it is very abundant, as well as on Hermite Island (*J. D. Hooker*), Cape Horn, and along the west coast of Patagonia, Valdivia (*Lechler, Pl. Chil. n.* 196) and as far north as Concepcion, in Chili." It has also been seen in the islands of Juan Fernandez, Falkland, Tristan d'Acunha, Tasmania, etc. Its vertical range is from the coast-line to 6,000 feet. It circumscribes the globe from lat. 55 S. to 35 S. where there is land, and has a more extensive range in the southern than the British species *L. Spicant* has in the northern hemisphere. (See p. 17.)

On p. 16 there is a notice of a variety of the latter, or a monstrosity, found in West Derbyshire, near Liverpool, by Mr. Henry Robson. There is no part of Derbyshire near Liverpool. It can scarcely, in the common acceptation of *near,* be said to be near Manchester. Is the latter meant, and the former printed by mistake? Manchester is not near Liverpool unless a space of thirty miles distant qualifies a place for bearing the epithet *near.*

A native of Godalming, to spite the natives of Guildford, addressed a letter to an indweller of the latter town,—"To A. B., Guildford, near Godalming." The distance is only four miles. It is forty miles from Derbyshire to Liverpool.

Index Filicum. A Synopsis, with Characters of the Genera and an Enumeration of the Species of Ferns, with Synonyms, References, etc. etc. By Thomas Moore, F.L.S., F.H.S., Author of the 'Handbook of British Ferns,' the 'Ferns of Great Britain and Ireland,' etc., and Curator of the Chelsea Botanic Garden. Part VI. London: Pamplin.

In this last published Part of this useful work on Ferns the

generic definitions are continued from p. 141 to 152 inclusive, and the British genera included in this half-sheet are *Polystichum, Lastrea, Cystopteris, Woodsia, Trichomanes, Hymenophyllum,* and *Osmunda.* The species enumerated are contained on pp. 109–144 inclusive. The British species, with their synonyms, etc., are the following, viz. *Asplenium Adiantum-nigrum,* with thirteen synonyms,—*Asplenium acutum,* Bory, is entered as a variety of the above,—*A. fontanum, A. germanicum, A. lanceolatum,* and *A. marinum.*

This, when completed, will be one of the most elaborate Indexes ever published.

BOTANICAL NOTES, NOTICES, AND QUERIES.

Guernsey Plants.

I have been a few days in Guernsey and Sark. I send a list of the plants I saw which I thought most worthy of notice; they are all well-known Channel Island plants, but were most of them new to me. In a garden at Monnaie-de-Bas, near St. Andrew's, where I was on a visit, there was a magnificent *Agave,* showing for flower; its growth was most rapid; on June the 4th the plant looked dead, but by the 13th it had grown more than five feet in height. It was by far the largest I saw in the island. Guernsey appeared to me a little paradise.

Ranunculus hirsutus, Valeriana carinata, Fumaria capreolata, Raphanus maritimus, Cochlearia danica, all common. *Matthiola sinuata:* Roquaine Bay. *Arenaria marina,* common on rocks (this appears to me very different from the plant I have gathered at Strood). *Alsine peploides, Silene maritima,* very common. *Silene anglica:* Windmill, above Perelle Bay. *Silene conica:* L'Ancresse; common. *Linum angustifolium:* Vazon Bay. *Erodium moschatum. Lavatera arborea:* Grande Mare, Vazon Bay, etc. *Crithmum maritimum:* Sark. *Trifolium subterraneum:* Sark. *Ornithopus perpusillus:* St. Andrew's Valley. *Carduus tenuiflorus:* Petit-Bo Bay. *Scrophularia Scorodonia,* common. *Convolvulus Soldanella:* Roquaine Bay. *Euphragia viscosa:* Vazon Bay, Sark. *Plantago maritima:* Sark. *Beta maritima, Euphorbia Paralias:* L'Ancresse; common. *Euphorbia portlandica,* common, seaside, Sark. *Orchis laxiflora:* St. Andrew's Valley, Vazon Bay. *Allium triquetrum,* common. *Lagurus ovatus:* Vazon Bay. *Phleum arenarium, Bromus diandrus, β rigidus:* Sark. *Asplenium lanceolatum,* common; Sark. *Asplenium marinum:* Sark. E. M. A.

Canlochan Plants.

(*To the Editor of the 'Phytologist.'*)

Sir,—It may interest some of your readers to learn the fruits of a third expedition to Glen Canlochan (compare 'Phytologist,' vol. ii. p. 581–590.)

which I accomplished on the 8th of July last. Though I made few new discoveries, I was able to note several new habitats for most of the alpine rarities, and am quite sure that nothing short of an absolute raid of voracious plant-collectors could ever exterminate the rarest gems of Canlochan from their rocky fastnesses. I also made the important discovery that the richest part of the rocks is not, as I supposed, midway along the face of the precipices, so conspicuously veined with white quartz, but at their base, immediately above the talus of *débris*. The rock on which the best plants grow, seems to be a sort of mica-slate, very close in texture, and dark in colour, in places slightly honeycombed, reminding me extremely of the honeycombed rock on which the rare Snowdon plants grow (*vide* 'Phytologist,' vol. ii. 145, 148). My delight was very great on turning an angle of the precipice to see the whole surface of the rocks literally blue with the exquisite petals of the rock Saxifrage (*V. saxatilis*), interspersed pretty freely with *Erigeron alpinus*, and occasional plants of *Gentiana nivalis*. Higher up were thick tufts of *Dryas*, *Saxifraga oppositifolia*, and the rare Willows *Salix reticulata* and *nigricans*, and I also found several tufts of *Carex capillaris*. *Carex rariflora* was very abundant in the bog at the head of the glen. We returned by the corry of Loch Ceander and Glen Callater to Castleton of Braemar, after being absent eight hours, two of which were spent in the glen, and the other six in getting there and back. J. Barton.

Glaucium phœniceum.

On June 14th I gathered a single specimen of *Glaucium phœniceum* on the seashore near the east end of Brighton. It was in flower, and a tolerably good specimen. Only two instances seem to have occurred in which the flower has been seen in England before: once in Norfolk, and once in Portland Island. My specimen does not at all favour the idea that it was an escape from cultivation. I have thought your readers might be interested in hearing of its occurrence. Gerard Burton.

Cumbrian Lichen.

Happening to observe in the last number of the 'Phytologist' an inquiry concerning the name and use of a "Cumbrian Lichen," I believe that the said Lichen may be referred to *Roccella tinctoria*, from which the dyes orchil and cudbear are extracted (purple and brownish-red). That this Lichen contains a certain amount of colouring matter is, I think, sufficiently obvious from its name: it is also probably identical with the *Fucus* mentioned by Virgil (Georg. iv. line 39) from which bees sometimes collect the colouring matter of the "propolis," or substance used by them to narrow the entrance of the hive. W. Bryant.

Durham.

Sempervivum tectorum.

In 'Phytologist,' 1858, July, p. 491, there is this passage:—"The testimony of botanists is uniform, viz. that the Houseleek grows exclusively on walls." Koch, in his 'Synopsis,' p. 288, second edition, says, "In rupibus Alpium (in der Schweitz, auf dem Gotthard und andern hohen Gebirgen)." He says also, "Commonly planted on walls."

In England I believe it is not only never spontaneous, but is never found but where it has been planted with care. It is a most popular rustic remedy for cuts. It is not so common in Normandy as in England. About Rouen, though used sometimes, the Orpine is preferred. I have been told near Coventry, where it is called Sengreen, that it preserved the houses on which it was planted from being struck with lightning, and that when it blossomed it was a sign of death. The orthodox way of attaching it to a roof is with cowdung. E. M. A.

Mural Plants.

In Mr. Jorden's paper upon Mural Plants, 'Phytologist,' N. S. vol. iii. p. 49, he alludes to some plants as growing with difficulty upon walls, viz. *Grammitis Ceterach*, *Hieracium sylvaticum*, and *Scolopendrium vulgare*. It appears by his allusions that it is brick walls he has observed. In this district stone being universally used for that purpose, the interstices being so much larger permits a much freer growth of the plant. *Grammitis Ceterach* I have not found growing anywhere except upon walls (both dry walls and those built with mortar); *Adiantum nigrum* the same. *Scolopendrium vulgare:* I have seen very fine tufts of it growing upon walls, in fact I have two patches of it at the present time on the wall of my back yard, with a dozen fronds in each. *Hieracium sylvaticum* grows quite as vigorous upon the walls as in the woods; the spotted variety (*maculatum*, Smith) I have always found on walls from two to three feet high, and not elsewhere; the green variety in general in the woods and hedgerows. J. B.

Adulterations of Tobacco. (p. 57.)

I have known *Datura Stramonium* cultivated in private gardens for the purpose of mixing it with tobacco, being used medicinally for asthmatic affections and diseases of the lungs (its name here is a corruption of the Latin *Steramonia*). I always understood that it and *Achillea Millefolium* were two chief constituents of the celebrated British herb-tobacco. J. B.

Derivation of the word Mustard.

('Phytologist,' November, 1857, p. 280; February, 1859, p. 59, etc.) I have always thought the word 'mustard' was derived from the French. I have, in some French authority, read the following account of the derivation of the word 'moutarde.' It seems to me correct.

The city of Dijon was formerly celebrated for its mustard, and the manufacturers put the arms and motto of the town on the pots: the motto was "Moult me arde." As they copied the inscription from the carving over the gate of the town, and as time had effaced the word "me," they wrote it "Moult arde:" hence the derivation. My authority said others derived the word from *multum ardet*, but that was not correct.

The Black Mustard is a very common weed between Tewkesbury and Gloucester; it is in fact the commonest of the Cadlochs near Twigworth, where I was told by a farmer that sometimes, when the crop of corn failed in the spring, they left the wild Black Mustard to take its place, and gathered the seeds for mustard. E. M. A.

Doronicum Pardalianches and Digitalis purpurea.

I find from the numerous answers to my question regarding the simultaneous flowering of these two plants in this month's 'Phytologist' (August, 1859), that I have been somewhat hasty in doubting the fact that they do in some places flower together. Indeed I perceived this in the course of the summer, which is now nearly over, and thank the observant correspondents who have established the fact.

At the same time I may observe that here (Roxburghshire) the *Doronicum* is often in flower in the end of April, while the Foxglove hardly ever begins to flower till June. When I stated that the Foxglove does not flower here till July or August, I spoke too much from memory, which is apt, with me, to be treacherous. A. Jerdon.

Mossburnford, Jedburgh, N.B.

I perceive the *Doronicum* came into flower May 16; *Digitalis*, June 8th.

G. J.

Hypericum dubium.

('Phytologist,' August 1858, p. 535.) This plant is common between Birmingham and Clent. (I do not know if the *H. maculatum*, Crantz, of Bab. Man., ed. 2, be distinct or no, or if it be the Clent plant.) The best way to distinguish the plant from *perforatum* and *quadrangulum* is by its leaves, which are marked with numerous pellucid veins, but which are destitute of pellucid dots (or nearly destitute). Gerarde gives a good figure of the plant in his Herbal, at page 542, under the name of St. Peter's-wort; he particularly mentions the comparative absence of pellucid dots, therefore his plant is not *quadrangulum*, called St. Peter's-wort in most English authorities.

There was a discussion some years ago as to the real *quadrangulum* of Linnæus. The French authorities consider our *dubium* the Linnæan *quadrangulum*, and call our *dubium*, *tetrapterum*. Whoever may be right, it seems clear from Gerarde that our *dubium* is the true St. Peter's-wort.

E. M. A.

Trees in Churchyards.

The churchyard of Sandridge, Hertfordshire, has two rows (about six in each row) of upright Lombardy Poplars in it. The one row near the north border of the churchyard, the other near the eastern. The size as well as the age of these poplars exceeds that of any ever noticed by me before. There is no Yew-tree in this churchyard, a peculiarity remarked in several neighbouring Hertfordshire parishes.

A row of very fine large Lime-trees runs parallel with the western boundary of the churchyard of St. Peter's (St. Alban's), Hertfordshire; no Yew-tree is there.

Redbourn, Hertfordshire: an extremely aged Hawthorn is in this churchyard, and if I recollect right, no Yew-tree. W. P.

Note on Erythræa pulchella, etc.

('Phytologist,' vol. iii. June, p. 176.) Should not *Chironia pulchella* be *Erythræa pulchella? C. littoralis, E. littoralis?*

Mr. Editor, I have gathered hundreds of examples of what might be called *Erythræa pulchella*, and they varied from the height of two inches up to two feet. They were usually bushy, but not uniformly so. Some examples of the common form of the Centaury are quite simple, without a single branch; some are bushy. They are more bushy in open, exposed places than they are in woods, or when they are found growing among long grass or in rushy places.

The contributor who sent the article on New Brighton plants, etc., to whom reference is made by Mr. Robinson, saw plenty of what is called *E. linariæfolia*, but he believed it to be only a not very distinct form of *E. Centaurium*, and so overlooked it.

Is *squozen* a Lancashire or a Cheshire form of *squeezed?*

The contributor of the New Brighton plants, published in the December No. vol. ii., saw abundance of *Rosa spinosissima* and *Plantago Coronopus*, also of *Sagina nodosa* and *Malva moschata*, *Cakile maritima*, etc. He saw all the plants mentioned by Mr. Robinson, except *Erythræa linariæfolia*, or rather, he did see *it*, but thought it only a slight variety of the common state of the plant.

Again, is *Convolvulus sepium* better known by the term *Calystegia* than *Convolvulus?* Not by the readers of such common books as Smith's 'English Flora,' Babington's 'Manual,' Hooker and Arnott's 'British Flora,' etc. etc. PHILOBOTANICUS.

VEGETABLE PHYSIOLOGY.

Shakespeare, in 'Troilus and Cressida,' act i. sc. 3, says,

> "Checks and disasters
> Grow in the veins of actions highest reared,
> As knots, by the confluence of meeting sap,
> Infect the sound pine and divert his grain
> Tortive and errant from his course of growth."

I ask, Mr. Editor, if the above quotation is not a proof that our great dramatist was conversant with one of the laws of vegetable physiology?

QUERIST.

Communications have been received from

D. Stock; J. W. Guise; Rev. John Barton; Rev. R. H. Webb; Rev. R. E. Cole; Rev. A. M. Norman, M.A.; Rev. W. M. Hind; S. P.; S. B.; E. M. Attwood; John Lloyd; John Sim; W. Sutherland; J. G. Baker; Dr. Windsor; C. Howie; Edwin Lees, F.L.S.; President of the Birmingham Natural History Association; E. M. A.; Gerard Burton; W. Bryant; J. B.; Arch. Jerdon; W. P.; Philobotanicus; Querist.

BOOKS RECEIVED FOR REVIEW.

Natural History Review for July. Moore's Index Filicum, Part VI. *Friend. Critic, etc. etc.*

ERRATUM.

Page 224, for *Latyrion hivenia* read *Satyrion hircina.*

THE VILLE OF DUNKIRK AND ITS FLORA.

By the Rev. W. M. Hind.

My short summer holiday was spent at the ville of Dunkirk. Do not suppose, good reader, that I have been across the Channel, or that this paper has aught to do with Continental botany. Halfway between Faversham and Canterbury, on an eminence commanding the whole country for many miles round, stands the modest church of Dunkirk. It is a modern structure, wholly devoid of architectural beauty; yet it has a history of which many older and more beautiful churches cannot boast. It is, in fact, a monument. It tells more simply and more touchingly the same sad tale which is recorded on a mural tablet in Canterbury cathedral. The story is soon told. William Tom, or, as he called himself, Sir William Courtenay, a man of commanding person and great natural powers, but insane, imagined that he was the Saviour of the world. Having impressed the same vain belief on the minds of a band of ignorant peasantry, he appeared in arms to assert his claims. The first step in the tragedy that followed was the assassination, by Tom's own hand, of a policeman sent to reconnoitre. A party of military was then called out to act against him, when an affray took place in Bosenden Wood, on the 31st of May, 1838, which resulted in the death of Lieutenant Bennett, in command of the soldiers, who was shot down by Tom, and of the poor maniac himself and several of his deluded followers. In all, thirteen persons lost their lives in the affray. Public attention was called by this lamentable event to the neglected state of the district and the gross ignorance of its inhabitants; and a remedy was provided by the erection of a church, parsonage, and schools: with what effect, let a large and attentive congregation every Sunday, and the quiet civil manners of the rustics tell.

The Ville of Dunkirk includes parochially a district of about five thousand acres, two-thirds of which are underwood. As the plantations are cut periodically, there is scarcely any large timber. The soil of the district is for the most part plastic clay, sandy loam, or gravel. In one spot an ironstone appears close to the surface, which is used for metalling the roads, and would not likely be of any value for the furnace. Chalk is abundant in some of the neighbouring parishes; but my investigations did

not extend far beyond the woods of Dunkirk, with the exception of the marshes and seacoast about Seasalter. There is a straggling hamlet, to which the name of the "Ville," or rather, in the dialect of the neighbourhood, the "Willy," is given. The boundary-stones of the parish are marked with a V; and when an explanation was asked, the ready answer was, "Why, Sir, you you see V stands for 'Willy.'" This answer will doubtless appear as reasonable to our cockney friends as it does to the men of Kent. The so-called "Willy" had at one time the reputation of being a smugglers' nest, and a stranger stood a good chance of being roughly handled if found in the neighbourhood after nightfall. In the present day he would be as safe in the "Willy" as in any part of her Majesty's dominions.*

The Flora of this neighbourhood possesses considerable claims to the attention of English botanists from its lying near to Faversham, a district which has been so fully investigated and illustrated by Jacob, in his 'Plantæ Favershamienses' (1777); Cowell, in his 'Floral Guide' (1839); and Stowell, in his papers in the 'Phytologist' on the "Flora of Faversham" (1856–7). Having been preceded by such reapers, but little has been left for me to glean. The ground over which I have gone is partly the same that they have so well searched; and where I have broken new ground it was so immediately adjoining that which came under their observation, or of such a uniform character (woodland), as to give faint hope of greatly adding to the Flora of the neighbourhood. The general result of a three weeks' search may be briefly summed up as amounting to 525 species and varieties, included in 233 genera and 70 families. This is much about the same number of species enumerated by Cowell in his 'Floral Guide' (498); the number of genera however being 60, and of families 4 fewer than those which he mentions. Instead of giving an extended list of the plants observed by me, I believe I shall best consult the convenience and patience of your readers by setting down only such plants as are not found in the lists furnished by the Rev. H. S. Stowell, marking by italics those

* Carrying a large vasculum with me in my walks, I fancy I fell under the suspicion of having dealings with smugglers. Having gone into a cottage near the seacoast to rest after a long walk, its owner closely questioned me as to the contents of my tin case: "Have you got tea in your can?" When I told him that I had been collecting plants, he replied, "Oh, I see, to make yarb-tea."

that were formerly acknowledged as natives of the district, but supposed to have since become extinct.

Family.	*Gen.*	*Species.*	*New Species.*	*Habitat and Locality.*
Ranunculaceæ	3	11	Ranun. confusus, *Gr.&God.*	Ditches, Seasalter.
Nymphæaceæ	2	2	Nymphæa alba, *L.*	Ponds, Dunkirk.
			Nuphar lutea, *Sm.*	Ponds, Dunkirk.
Papaveraceæ	3	6		
Fumariaceæ	1	1		
Cruciferæ	12	14	Sinapis muralis, *Br.*	Chalk-pit, near Faversham.
Resedaceæ	1	2		
Cistaceæ	1	1		
Violaceæ	1	5	Viola arvensis, *Mur.*	Cornfields, Dunkirk.
Polygalaceæ	1	2		
Caryophyllaceæ	9	20	*Spergularia rubra*, St. Hil.	Cornfields, Dunkirk.
			Cerastium triviale, *Link.*	Pastures, Dunkirk.
Linaceæ	1	1		
Malvaceæ	1	2		
Tiliaceæ	1	1		
Hypericaceæ	1	7	*Hypericum Andros.*, L.	Woods, Blean Wood.
			Hypericum macul., *Bab.*	Woods, Dunkirk.
Aceraceæ	1	2		
Geraniaceæ	1	4		
Oxalidaceæ	1	1		
Celastraceæ	1	1		
Rhamnaceæ	1	1		
Leguminiferæ	13	28	*Genista tinctoria*, L.	Pastures, Bosenden.
			Trifolium scabrum, *L.*	Seashore, Seasalter.
			Lotus tenuis, *W. K.*	Cornfields, Dunkirk.
Rosaceæ	11	23	*Prunus insititia*, L.	Hedges, Dunkirk.
			Rubus discolor, *W. & N.*	Hedges, Dunkirk.
			Rubus corylifolius, *Sm.*	Hedges, Dunkirk.
			Pyrus scandica, *Fr.*	Woods, Dunkirk.
Onagraceæ	2	7		
Haloragiaceæ	3	4	Callitriche platycarpa,* *Kütz.*	Wet places, Dunkirk.
			Ceratoph. demersum, *L.*	Ditches, Seasalter.
Tamariscaceæ	1	1	Tamarix anglica, *Webb.*	Sea-banks, do. & Whitstable.
Cucurbitaceæ	1	1		
Scleranthaceæ.	1	1		
Crassulaceæ	1	2		
Araliaceæ	1	1		
Cornaceæ	1	1		
Umbelliferæ	22	25	Carum Carui, *L.*	Cornfields, Seasalter.
			Œnanthe crocata, *L.*	Ditches, Dargate.
			Silaus pratensis, Bess.	Pastures, Dunkirk.
			Torilis infesta, *Spr.*	Cornfields, Dunkirk.
Loranthaceæ	1	1		
Caprifoliaceæ	3	5		

* Can this plant, which is common both in the ditches and damp places in the woods, have been mistaken for the much rarer *C. autumnalis*, L., by Messrs. Cowell and Stowell?

Family.	*Gen.*	*Species.*	*New Species.*	*Habitat and Locality.*
Rubiaceæ	3	11	Galium elongatum, *Pres.*	Ponds, Dunkirk.
			Galium scabrum, "*With.*"	Hedges, near Faversham.
Valerianaceæ	1	2	Fedia Auricula, *DC.*	Cornfields, Dunkirk.
Dipsaceæ	3	4		
Compositæ	31	56	Thrincia hirta, *Roth.*	Pastures, Dunkirk.
			Lactuca Scariola, *L.*	Roadside, Seasalter.
			Sonchus asper, *L.*	Waste ground, Dunkirk.
			Hieracium umbellatum, L.	Hedges, Dunkirk.
			Hieracium boreale, Fries.	Hedges, Dunkirk.
			Arctium pubens, *Bab.*	Hedges, Hernehill.
			Tanacetum vulgare, L.	Fields, Dunkirk.
Campanulaceæ	2	2		
Ericaceæ	3	3	*Erica Tetralix*, L.	Woods, Fax.
			Monotropa Hypopitys, *L.*	Woods, Bosenden, etc.
Ilicaceæ	1	1		
Jasminaceæ	2	2		
Gentianaceæ	1	1		
Convolvulaceæ	1	2		
Solanaceæ	2	3	*Verbascum nigrum*, L.	Seashore, Seasalter.
Scrophulariaceæ	10	21	Veronica polita, *L.*	Gardens, Dunkirk.
			Antirrhinum Orontium, L.	Hop-gardens, Dunkirk.
			Linaria spuria, *Mill.?*	Cornfields, Dunkirk.
Orobanchaceæ	1	1	*Orobanche major*, Angl.	Woods, Blean Wood, etc.
Verbenaceæ	1	1		
Lamiaceæ	15	25		
Boraginaceæ	5	6		
Primulaceæ	3	6	Primula elatior, *Jacq.*	Pastures, Dunkirk.
			Anagallis carnea, *Schrank.*	Cornfields, Dunkirk.
Plumbaginaceæ	2	3	Statice Bahusiensis, *Fr.*	Seashore, Seasalter.
Plantaginaceæ	1	5		
Chenopodiaceæ	5	14	*Chenop. polyspermum*, L.	Gardens, Dunkirk.
			Atriplex arenaria, *Woods.*	Seabeach, Seasalter.
			Atriplex hastata, *L.*	Waste ground, Dunkirk.
			Atriplex marina, *L.*	Seabeach, Seasalter.
			Salicornia radicans, *Sm.*	Seashore, Seasalter.
Polygonaceæ	2	13	*Polygonum amphibium*, L.	Ditches, Seasalter.
			Polygonum Fagopyrum, L.	Cornfields, Dunkirk.
			Rumex sanguineus, *L.*	Pastures, Dunkirk.
Euphorbiaceæ	2	6		
Urticaceæ	4	8	Parietaria diffusa, *Koch.*	Garden wall, Hernehill.
			Ulmus montana, *Sm.*	Woods, Dunkirk.
			Ulmus suberosa, *Ehrh.*	Woods, Dunkirk.
Amentiferæ	8	18	Populus alba, *L.*	Woods, Dunkirk.
			Populus canescens, *Sm.*	Woods, Blean Wood.
			Populus tremula, L.	Woods, Blean Wood.
			Salix alba, L.	Woods, Dunkirk.
			Salix viminalis, *L.*	Hedges, Dunkirk.
			Salix cinerea, *Sm.*	Hedges & woods, Bosenden.
			Salix aquatica, *Sm.*	Hedges & woods, Bosenden.
			Salix oleifolia, *Sm.*	Hedges & woods, Bosenden.
			Salix aurita, *L.*	Hedges & woods, Bosenden.

Family.	*Gen.*	*Species.*	*New Species.*	*Habitat and Locality.*
			Salix prostrata, *Eng. Bot.*	Woods, Fax.
Coniferæ	1	1		
Orchidaceæ	2	4	*Epipactis latifolia*, Sw.	Pastures, Dunkirk.
Iridaceæ	1	2	Iris fœtidissima, *L.*	Woods, Blean Wood.
Liliaceæ	3	3	Convallaria majalis, *L.*	Woods, Dunkirk.
Tamaceæ	1	1		
Hydrocharideæ	1	1		
Alismaceæ	2	2		
Fluviales	3	6	Potamogeton flabell., *Bab.*	Ditches, Seasalter.
			Potamogeton pusillus, *L.*	Ditches, Seasalter.
			Zannichellia pedicell., *Fr.*	Ditches, Seasalter.
Araceæ	3	6	Lemna gibba, *L.*	Ditches, Seasalter.
Juncaceæ	2	13	Juncus supinus, *Mœnch.*	Wet places, Blean Wood.
			Luzula multiflora, *Lej.*	Woods, Blean Wood.
Cyperaceæ	2	19	Scirpus setaceus, *L.*	Wet places, Blean Wood.
			Carex remota, *L.*	Woods, Blean Wood.
			Carex divisa, *Huds.*	Ditches & pastures, Seasalter.
			Carex Œderi, *Aut.*	Damp places, Blean Wood.
			Carex pallescens, *L.*	Damp places, Blean Wood.
			Carex lævigata, *Sm.*	Damp places, Blean Wood.
			Carex Pseudo-Cyperus, *L.*	Ditches, Herne Hill.
Gramineæ	27	57	Agrostis canina, *L.*	Woods, etc., Dunkirk.
			Agrostis pumila, *Light.*	Pastures, Dunkirk.
			Triodia decumbens, *Beauv.*	Pastures & woods, Dunkirk.
			Molinia cœrulea, *Mœnch.*	Woods, Blean Wood.
			Glyceria loliacea, *Lond. Cat.*	Seabeach, Seasalter.
			Poa polynoda, *Parn.*	Woods, Dunkirk.
			Festuca bromoides, *L.*	Pastures, Dunkirk.
			Festuca ovina, *L.*	Woods, Dunkirk.
			Festuca tenuifolia, *Sibth.*	Woods, Dunkirk.
			Bromus commutatus, *Sch.*	Cornfields, Dunkirk.
			Triticum littorale, *Host.*	Seabeach, Seasalter.
			Triticum laxum, *Fries.*	Seabeach, Seasalter.
Filices	7	9	Polystich. angulare, *Newm.*	Hedges, Selling.
			Lastrea spinulosa, *Presl?*	Woods, Dunkirk.
			Lastrea dilatata, *Presl?*	Woods, Dunkirk.
Equisetaceæ	1	3		

Of the species enumerated above, 19 have been recorded by Jacob or Cowell as found in the district, but were supposed to have become extinct. In addition to these recovered species there are 77 remaining to be added to the Flora of the neighbourhood. Thus the total increase to the Faversham plants, as recorded by the Rev. H. S. Stowell, is 96 species and varieties. Some of these occur plentifully, but in a very circumscribed area; as *Trifolium scabrum*, L.; *Lotus tenuis*, W. K.; *Œnanthe crocata*, L.; *Erica Tetralix*, L.; *Statice Bahusiensis*, Fr.; *Atriplex marina*, L.; *Convallaria majalis*, L. Others are tolerably common over a wider range, as *Rubus discolor*, W. and N.;

Callitriche platycarpa, Kütz.; *Silaus pratensis,* Bess.; *Thrincia hirta,* Roth; *Salix cinerea,* Sm.; *S. aquatica,* Sm.; *S. oleifolia,* Sm.; *S. aurita,* L.; *Luzula multiflora,* Lej.; *Carex divisa,* Huds.; *C. Œderi,* Aut.; *Triodia decumbens,* Beauv. Others again are rare, as *Sinapis muralis,* Sm.; *Spergularia rubra,* St. Hil.; *Torilis infesta,* Spr.; *Monotropa Hypopitys,* L.; *Epipactis latifolia,* Sw.; *Scirpus setaceus,* L.; and in several cases only single plants were found, as *Hypericum Androsæmum,* L.; *Galium scabrum,* "With.;" *Fedia Auricula,* DC.; *Lactuca Scariola,* L.; *Antirrhinum Orontium,* L.; *Linaria spuria,* Mill. I entertain a doubt whether I have not recorded one species of *Lastrea* as two. Most of the plants which I examined had the scales of *spinulosa,* and but a small portion the pointed, dark-centred scale of *dilatata.* All the plants were alike in habit and shape of frond, and in this respect seemed more like to *dilatata* than *spinulosa.* In some cases the indusium was furnished with marginal stalked glands, but this character was not constant, or confined to the plant having the dark-centred scale.*

A large portion of the rarer plants of the district recorded by former observers were noticed, but to a great extent in other localities than formerly noted. *Peucedanum officinale,* L., was plentiful at a short distance from Whitstable; *Lathyrus Nissolia,* L., common on the roadsides near Seasalter. Knowing that Kent is famed for its richness in the Orchis tribe, I was disappointed with finding so very few, and those too amongst our most common species; but as I had not much opportunity of searching in the chalk districts, my want of success is easily explained. I am at a loss to name a Grass which occurs in several parts of the woods; it looks like a variety of *Anthoxanthum odoratum,* with a dark-purplish panicle, and which, so far as I can make out, is an *Agrostis;* if so, it is not only new to the district, but also to the British Flora, or is a remarkable variety of a British form.

A three weeks' examination of the district cannot have so far exhausted its resources as not to leave room for further discovery. In the *Rubi* and *Salices* alone a competent inquirer may do much for the further illustration of the Flora of the district. A spring or autumn visit would also exhibit many plants which are hidden from a summer visitor.

* The plant named *Statice Bahusiensis,* Fr., is not unlikely a form of *S. Limonium,* L., with narrow leaves.

CHAPTERS ON FUNGI.

By Archibald Jerdon.

CHAPTER II.

It may perhaps appear somewhat presumptuous to attempt to *initiate* the readers of the 'Phytologist' in the study of the Fungi; but as I have good reason to believe that very little attention is paid to these plants by the generality of botanists, I venture to give some explanations regarding their structure, in so far as known to myself.

Fungi exhibit such diversity, both in outward form and inward structure, that it would be impossible, in an article such as this, to enumerate them all; but I shall endeavour to indicate some of the principal forms under which they appear in this country.

I may here premise that Fungi, in common with other Cryptogamous plants, do not possess a *vascular* system, but consist solely of *cellular* tissue (which often becomes *filamentous*), and are, in fact, aggregations of minute cells, varying in shape and density. No organs similar to the reproductive organs of phænogamous plants have been observed in Fungi, except in a few instances in which spermatozoids (or bodies analogous to these) have been discovered; but this subject is still involved in doubt and obscurity. Bodies analogous to the reproductive buds of some phænogams, have however been observed in many Fungi, and have been denominated *conidia*.

The true seeds, or *spores*, of Fungi are produced on two different plans. They are either *naked*, and are then frequently borne on *sporophores*, or they are enclosed in little sacs, or *asci*; and this difference forms the basis of the modern system of classification. Some genera, as *Erineum*, etc., which were formerly classed as Fungi, are now excluded, on account of their not producing spores, and are considered as mere metamorphoses of vegetable tissue.

Beginning with the more perfect Fungi, we find in the higher tribes the following organization:—a *pileus*, or cap, bearing the *hymenium*, or fructifying part of the plant, on its inferior surface, and supported by a *stipes*, or stem, which is rooted in the ground or fixed to the substance on which the Fungus grows. It may here be remarked, that the roots of Fungi are generally small

and inconspicuous, except in the larger and more perfect kinds, in which they are sometimes developed to a considerable extent.

The pileus is generally of a rounded or orbicular shape, and varies in being hemispherical, flat, campanulate, etc. Its *flesh*, or substance, is sometimes very thick, and sometimes hardly appears at all. It varies a good deal in texture also, being soft, coriaceous, membranaceous, etc.

The hymenium assumes various forms: in the large and extensive genus *Agaricus* it appears in the shape of *lamellæ*, or gills, which radiate from the stem to the margin of the pileus. In *Boletus* and *Polyporus* it assumes the form of *tubes* and *pores*, and in the *Hydnum* and others that of *spines*, or teeth; and there are various modifications of these forms.

The spores in the genus *Agaricus* are produced on the surface of the gills. They are normally borne on sporophores, and are sometimes arranged in groups of four. In *Boletus, Polyporus*, etc., they are also produced on the surface of the tubes or pores, etc., but do not appear to be definitely arranged.

The stipes is in some instances much developed, and in others is wanting, or nearly so, when the pileus is said to be *sessile*. It varies in being solid, hollow, bulbous, etc.

Sometimes the whole Fungus, in its young state, is enclosed in a *volva*, or membranous bag, which remains at the base of the stem after the plant has burst through it and shot up to maturity, and in other cases the margin of the pileus is connected with the stem by a membrane of greater or less density, called the veil (*velum*), and serving to cover and protect the gills in their young state. This appendage is generally ruptured during the growth of the plant, and the remains of it often form a collar or ring (*annulus*) round the stem. Sometimes both the volva and annulus are found in the same plant.

I have been somewhat particular in the description of the above forms, as they are the most perfect ones assumed by Fungi, and as they occur in a large number of our British species. There are many modifications of them however as we descend in the scale.

In some genera, as *Thelephora*, etc., we find the pileus and hymenium united, and forming one homogeneous body, and the hymenium, which is often resupinate, generally smooth and scattered over with little tubercles (*papillæ*). The *Thelephoræ* and

allied genera often appear in the form of thin, variously coloured strata on the dead branches of trees.

Another group presents us with an erect form, generally stipitate, and varying in shape, being sometimes simple and clavate, and at others branched in various ways. In these forms the hymenium generally occupies the whole external surface of the plant, except the stem, when that occurs.

Other Fungi again form gelatinous masses, often variously contorted, with their spores imbedded in their substance.

In a large group of Fungi we find the hymenium occupying the *whole interior* of the plant, and often accompanied by slender branched *flocci*, or threads. The external case, or coat, of such Fungi is generally membranaceous, and often, in the small species, very tender and delicate. The internal mass is often soft and pulpy when in a young state, and becomes dry and powdery when the plant is mature; and this powder consists of the spores, which are usually very numerous. In this group the outer case is denominated the *peridium*, and the mass of flocci (when present) the *capillitium*. There is often also a *columella*, or little column, in the centre of the interior. When the peridium contains smaller bodies, which contain the true spores, these bodies are generally termed *sporangia*. The common Puff-ball is a good example of this group, but there are many variations of form.

Another considerable group consists of small heaps or aggregations of naked spores, generally produced on the leaves or stems of living plants, and often surrounded by the ruptured epidermis of the plant. Many of these Fungi are beautiful microscopic objects, and though in most cases injuring and distorting the plants on which they grow, often impart to them a beauty and interest which they would not otherwise possess.

The spores of this group are usually of a round shape, but in some instances, as in the genera *Aregma*, *Puccinia*, etc., they are elongated, septate, and sometimes stipitate. In the genus *Æcidium* the ruptured epidermis assumes the form of a peridium, generally margined with recurved teeth, and is called by some authors the *pseudoperidium*.

A numerous body of Fungi is known to us by the general name of "Moulds." Under this name is comprised a variety of different forms, agreeing in having a floccose base, or substratum of interwoven threads, and in bearing their fruit on little pedi-

cels, or stalks, arising from their base. The manner in which the spores are borne on the pedicels is various. Some are included in little bladder-like vessels; others are attached to slender threads diverging from the summits of the pedicels; and others again are produced on little branchlets, which spread out from the main stem like the branches of a tree.

The Fungi of this group are, in general, very minute and evanescent, and require very careful manipulation and a good microscope for their elucidation.

A very extensive group of Fungi is distinguished by having the spores contained in seed-vessels, or *asci*. These are little transparent sacs, generally of a slender and elongated form, and are sometimes *fixed*, or arranged in a definite hymenium, side by side, as in the genera *Peziza*, *Morchella*, etc., or *free*, as in *Sphæria*, etc., in which case they are usually dispersed in a gelatinous mass, or divergent from the walls of the perithecia. The spores, or *sporidia*, as they are termed, which are contained in these *asci*, are generally eight in number, and usually quite pellucid, though they sometimes occur of a brown or yellow colour. In many cases they are septate, and in many other cases they contain little round bodies, still more minute than themselves, and which are denominated *sporidiola*.

The forms assumed by the Fungi of this group vary much. Some are cup-shaped, as *Peziza*, bearing the hymenium on the (generally concave) upper surface of the cup, which is either sessile or stipitate; others, as *Sphæria*, are more or less of a rounded form and hard substance, and produce their fruit in the interior of *perithecia*, or little spherules, and immersed in a gelatinous, semifluid mass; others again, as *Morchella*, have a honeycombed pileus, supported on a stem, or are club-shaped, as *Spathulea*. Another form is presented in the horny perithecia of *Hysterium*, and a somewhat anomalous form is typified by the Truffle, which, with its allies, is only found underground.

The large and extensive genus *Sphæria* contains a great variety of outward forms, agreeing in a common internal structure. Many species of this genus are *compound*, *i. e.* a number of perithecia are united into a common mass by a receptacle, which is termed the *stroma*. Other species are *simple*, *i. e.* each perithecium stands alone: but these are generally gregarious. The general colour is black; but brown, red, and even yellow species

occur. The *Sphæriæ* grow chiefly on dead branches of trees, and almost every kind of tree has its peculiar species.

I may here make a few remarks and give a few hints on the microscopic examination of Fungi.

The *Agarics* and other allied genera generally shed their spores spontaneously when mature, and the best manner of collecting these for observation is, to cut off the pileus from the stem, and place it with the gills (or pores) downwards on one of the slips of glass with which every good microscope is furnished. In the course of a few hours there is usually a sufficiently copious deposit of spores, and the student is enabled to ascertain both the *colour*, and, which is sometimes of importance, the *shape* of these. The colour is best perceived by viewing them *en masse*, and the shape by viewing them as transparent objects under the microscope. In some genera, as *Peziza, Morchella, Hysterium*, etc., the best mode of ascertaining and studying the structure is to cut off a thin vertical slice of the Fungus, and after moistening it with a drop or two of water, submit it to pressure between two slips of glass, and then examine it. In the genus *Sphæria* a portion of the gelatinous mass contained in the perithecia must be taken and pressed between slips of glass, with a little water, as above. Some of the simple *Sphæriæ* are so small that it is necessary to break up the entire plant by pressure before a knowledge of its structure can be obtained. In the more delicate kinds of Fungi, as the Moulds, etc., much pressure is unnecessary, but a certain degree of moisture, varying with the texture of the Fungus, is a great assistance in microscopic examination.

A good compound microscope is indispensable to the student of the Fungi; and a simple one, of the description known as "dissecting microscopes," is very useful, both for making dissections and for examining the outward conformation.

WOAD.

The Woad, Isatis tinctoria. *By* W. V. Guise.

I have read with interest a paper by my friend Mr. Lees on the 'Woad' in the August number of the 'Phytologist,' to which I beg permission to add some remarks, which had indeed

suggested themselves to me previous to the appearance of the paper referred to, I having had the advantage of forming one of that "goodly company" to whose notice the plant was introduced by the uncertain light of a June twilight, as described by Mr. Lees.

There appears to me nothing so very surprising in the appearance of the Woad at the Mythe Toot, near Tewkesbury, nor does it seem necessary to introduce a *deus ex machinâ* in the shape of a certain British god, "*Teutates*," in order to account for the presence of the plant on that spot. It is rather a matter of surprise, considering how largely the plant was cultivated in this country as a blue dye, previous to the introduction of indigo, that it should not be found more widely distributed over England than is said to be the case. Perhaps, however, a closer and more careful scrutiny of out-of-the-way fields and hedges may yet reveal a more extensive distribution of the Woad than is at present recognized: in illustration of which I may add, that on mentioning the subject to a very accomplished naturalist, the Secretary of the Cotteswold Field Club, he informed me that a botanist had pointed out the plant to him in considerable quantity in a field on Churchdown Hill, near Gloucester.

That it was used by the ancient Britons to stain their bodies is shown by Pliny, whose words, as translated by quaint old Philemon Holland, will bear extraction:—"Certes I do find and observe that there be forrein Nations who time out of mind have been ever accustomed to annoint their bodies with the juice of certain herbs, for to imbellish and beautifie them as they thought. And verily in some of these barbarous countries ye shall have the women paint their faces, some with this herbe and others with that: yea and among the Dakes and Sarmatians, in Transylvania, Valachia, Tartaria, and those parts, the men also marke their bodies with certain characters. But to go no farther than into Gaule, there groweth an herb there like unto Plantain, and they call it *Glastum* (Woad); with the juyce whereof the women of Britain, as wel the married wives as yong maidens their daughters, anoint and dy their bodies all over, resembling by that tincture the color of Moores and Ethyopians: in which manner they use at some solemne feasts and sacrifices to go all naked."

This account clearly connects the use of Woad with occasions of religious solemnity, and the name of the locality in question, the

'Mythe Toot,' as certainly bears reference to the place of one of the hill-altars dedicated to heathen worship,—but there all connection between these two facts, as respects the presence of the plant at the locality referred to, ceases; and in the absence of connecting links, it is a mere exercise of the imagination to infer its descent from such remote and uncertain antecedents.

Respecting the origin of the word 'Toot,' and its derivation, according to Mr. Lees, from the god "*Teutates*" (whosoever he may have been), I will ask permission to say a few words, as the subject is not devoid of interest. The term is extensively distributed, either alone or in combination, throughout the length and breadth of England, and is recognizable in 'Tutbury' and 'Tetbury,' in 'Tot-hill' and 'Tuthill,' and in innumerable others. It appears in our word 'Tuesday,' and in the German designations 'Teuton' and 'Teutonic,' and appears to have the same root as *deus* in Latin and *θεὸς* in Greek; it may perhaps even be recognized in the 'Thoth' of the Egyptians. In fine, the word 'Teu' or 'Teut' appears to mean simply 'the god who was worshiped on high places, and had his altars upon such hills as the 'Mythe Toot' near Tewkesbury, the 'Toot' near Clevedon, Somersetshire, and many others.

But to return to the Woad. Its firm establishment at the Mythe appears to be due not less to a favourable soil, than to the protection afforded by an inaccessible station, which will probably long continue to preserve it on the same spot. But its presence, irrespective of heathen worship and the hand of man, leads to the consideration of that most difficult problem comprised in the question, "Unde derivatur?"

Here and there occur special illustrations of the limitation of plants to certain localities from whence they do not extend themselves; examples of which occur to the recollection of every botanist, as in the case of *Dianthus cæsius*, on the Cheddar Cliffs, *Draba aizoides*, on the walls of Pennarth Castle, near Swansea, and the Peony, *Pæonia officinalis*, on the Steep Holme in the Bristol Channel. But in tracing these to their origin, the question still presents itself, by what mysterious agency comes it that plants suddenly make their appearance in particular stations where the circumstances are such as to afford no clue to their introduction? Probably this question has suggested itself to every botanist, however limited the field of his observations, in-

asmuch as it is in the plant-world more especially that these startling anomalies most frequently present themselves. Who, for instance, but must have noticed the strange and unaccountable growths which frequently make their appearance upon newly cleared ground, in fields, in woods, and on railway-embankments, the progenitors of which must be looked for far afield, if indeed they are to be found in the neighbourhood at all. Of such facts, more than one recurs to my memory, but I will limit myself to a single instance which has fallen lately under my own observation, in the hope of inducing other observers to put upon record any circumstances they may have noted bearing upon the interesting point in question.

In May last I had occasion to go in company with a brother-naturalist to Birdlip Hill, near Gloucester, in search of a rare land-shell (*Clausilia Rolphii*), which has certainly been found there, though we were not so fortunate as to discover a specimen. Two years had elapsed since our last visit, and in the interim the ground had become much changed in appearance. The fine Beech-woods which then clothed the slope of the hill below the 'Black Horse' (the hostelry on the summit) had been felled, and a rank herbage had sprung up, which by no means facilitated our search for the shell we were in quest of. But of this leafy growth, which made green the space that had been formerly bare and brown under the shade of the Beech-trees, the staple consisted of dwarf Sycamore-plants, from two to three feet in height, which flourished in profusion, and seemed to promise in due time to establish a wood of Sycamore-trees on the spot,—yet no parent tree was observable, nor is the Sycamore known to grow in the immediate neighbourhood; nevertheless I was assured by an intelligent man residing on the spot, that whenever the Beech-woods are cleared to any extent, the Sycamore immediately makes its appearance.

Whence come the seeds of these intruders? Have they lain dormant in the earth, or have they been wafted in the air?

I am aware that it is usual to attribute such growths to a power of unlimited vitality in seeds, to transport by birds, winds, and waters; but after all, these things remain an enigma, to explain which successfully may perhaps necessitate the recognition of a more recondite agency than any that has hitherto suggested itself to the minds of philosophers.

Elmore Court.

BOTANIZING IN THE CHANNEL ISLANDS.

By the Rev. A. M. Norman, M.A.

Having spent the two last weeks in June and the two first in July in a zoological and botanical expedition to the islands of Guernsey and Jersey, a list of the rarer plants met with during my rambles may prove interesting. It will show how much may be done in a short time in these wonderfully productive islands, and perhaps induce others to visit scenes with which they could not fail to be delighted.

Delphinium Consolida, Papaver somniferum, Chelidonium majus, Glaucium luteum, Coronopus didyma, C. Ruellii, Koniga maritima, Matthiola sinuata, Sinapis nigra, S. incana, S. tenuifolia, S. Cheiranthus, Raphanus maritimus, Reseda lutea, Helianthemum guttatum, Dianthus prolifer, Silene anglica, S. conica, S. noctiflora, Linum angustifolium, L. perenne, Radiola Millegrana, Lavatera arborea, Hypericum linariifolium, H. Elodes, Erodium moschatum, Oxalis corniculata, Medicago maculata, M. denticulata, M. minima, Trifolium scabrum, T. glomeratum, T. fragiferum, T. incarnatum, Lotus angustissimus, L. hispidus, Vicia lutea, V. tetrasperma, Arthrolobium ebracteatum, Œnothera biennis, Lythrum hyssopifolium, Herniaria glabra, Polycarpon tetraphyllum, Sedum anglicum, Eryngium maritimum, Apium graveolens, Petroselinum sativum, Bupleurum aristatum, Fœniculum vulgare, Crithmum maritimum, Pastinaca sativa, Daucus maritimus, Centranthus ruber, Centaurea Isnardi, Diotis maritima, Gnaphalium luteo-album, Erigeron acris, Inula Conyza, I. crithmoides, Anthemis nobilis, Vinca minor, V. major, Erythræa pulchella, Convolvulus Soldanella, Cuscuta europea, C. Trifolii, Solanum nigrum, Verbascum Thapsus, V. nigrum, Bartsia viscosa, Scrophularia Scorodonia, Antirrhinum Orontium, Linaria Cymbalaria, Orobanche minor, O. Hederæ, Orobanche cœrulea, O. arenaria, Verbena officinalis, Salvia verbenaca, Borago officinalis, Echium violaceum, Anagallis arvensis, A. γ carnea, A. tenella, Samolus Valerandi, Armeria plantaginea, Beta maritima, Rumex Hydrolapathum, Thesium humifusum, Euphorbia Paralias, E. portlandica, E. amygdaloides, Mercurialis annua, Epipactis palustris, Allium vineale, A. sphærocephalum, Ruscus aculeatus, Ruppia maritima, Zostera nana, Juncus acutus, J. maritimus, J.

obtusiflorus, J. compressus, Cyperus longus, Cladium Mariscus, Scirpus pungens, Carex extensa, C. distans, C. hirta, Polypogon monspeliensis, Aira canescens, Lagurus ovatus, Briza minor, B. maxima, Cynosurus echinatus, Bromus madritensis, B. β rigida, B. maximus, Triticum laxum, Lepturus filiformis, Asplenium lanceolatum.

The plants enumerated were all in bloom. Many other rarities were observed which were either over or had not yet flowered, for example:—*Trichonema Columnæ, Orchis laxiflora, Tamarix anglica, Centaurea Calcitrapa, Ononis reclinata, Crambe maritima, Althæa officinalis, Knappia agrostidea,* etc. It was useless to look for *Gymnogramma leptophylla* and *Ophioglossum lusitanicum,* as those Ferns sprout and fructify in the early spring, and by the end of May have withered away. Although it has been mentioned that I spent a month in the islands, yet as the primary object I had in view was conchology and other branches of marine zoology, and at least half my time was spent in dredging and shore-collecting, this catalogue does not represent all that might be done by an active botanist who devoted a summer month to the exclusive and careful examination of the Channel Island Flora.

I have duplicates of many of the rarest species found, and shall be happy to send them to botanists in exchange for other rare British plants.

Sedgefield, Ferry Hill.

EXTRACTS FROM CORRESPONDENCE.

Plants of Kinnoul.

From Mr. John Sim, Perth.

I have just returned from another visit to Kinnoul Hill. . . . I congratulate myself upon making a couple more acquaintances this morning. I have now discovered the *Viola hirta* as well as *V. odorata:* it is so far from being rare, or rather, spare in the wood, that it is really abundant, growing along with its family relative *V. canina,* but the difference of the two is at once apparent to the most cursory observer. The hill of Kinnoul, I venture to affirm, is second to no hill in Britain for rare plants. . . . Just

consider the following list at random in this parish (Kinnoul) :— *Cynoglossum sylvaticum* (plentiful), *C. officinale, Allium vineale, A. Scorodoprasum,* and *A. oleraceum, Hesperis matronalis, Primula veris, Lactuca virosa,* and *Dipsacus sylvestris,* and many others far from common. I also found a variety of *Lamium purpureum* with white flowers; it is, I presume, only a variety, but it is certainly distinct from *L. purpureum.* There is a brown spot on the top of the corolla, and several other minor differences. I enclose a specimen for you I gathered in dry cultivated ground this morning: there grew a great number of plants of it, and I was struck at once with their appearance. I also enclose a recent plant of *Viola hirta,* which I gathered this morning: it is certainly quite different from *V. odorata;* for one thing, it is scentless, and the leaves are differently shaped, and the plant more hairy. I most certainly consider it a different species, but as doctors differ, as they say, so do botanists: "Quot homines, tot sententiæ." This *V. hirta* is really a lovely plant, and it is also luxuriant and plentiful in Kinnoul Wood, indeed far more so than *V. canina;* for, like a vanquished enemy, *V. canina* almost seems to retire and leave its fair rival sole occupant of the field. I wish I had a little more physical energy to cope with my intellectual abilities; there would be few holes or corners, mountains or moors, banks or braes, in this neighbourhood, unexamined by me.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Tuesday, the 6th of September. Mr. J. G. Baker exhibited specimens as under.

"*Glaucium phœniceum.* A single specimen of this species was found by Mr. Gerard Burton, in the month of June of the present year, under the cliff near the east end of Brighton, and this has been courteously sent for our inspection by Mr. John Barton. As a well-established weed of cultivated ground in France, it is confined to the provinces bordering upon the Mediterranean, and therefore it is hardly likely to be found in Britain, except as a casual straggler, like *Specularia Speculum* or *Phalaris paradoxa.*

"*Veronica peregrina.* Mr. Wolsey's Sarnian station for this, before adverted to, is an apple-orchard or nursery at St. Sauveur's, in Jersey.

"*Aremonia agrimonioides.* This plant of south Europe has also been forwarded to us from West Yorkshire by Mr. T. W. Gissing. He has met with it in a subspontaneous condition, on the banks of the canal, near Wakefield.

"*Fedia Auricula.* Found by Mr. T. J. Foggitt, in cornfields between Thirsk and Sandhutton. New to North Yorkshire.

"*Potamogeton flabellatus.* Met with by Mr. W. Foggitt and myself in plenty in the river Swale, at Skinton Bridge and Toncliffe. New to North Yorkshire.

"*Daphne Mezereum.* Mr. W. H. Brown has sent a supply of specimens of this from Tunstall Hope, a dene in the magnesian limestone, near Sunderland. It is not admitted in the 'Cybele' as a plant of Tyne province, but is spoken of by its finder as likely to be indigenous here.

"*Habenaria chlorantha.* Sent by Mr. John Dugdale, from the vicinity of Accrington, in Lancashire. In the fourth volume of the 'Cybele,' No. 9 is the only blank in the line of provinces from 1 to 16.

"*Sparganium minimum.* Sent by the Rev. J. H. Thompson, from Crymbyn Bog, near Swansea. Not given in the 'Cybele' as a plant of the South Wales province."

Carex rigida. In the notice of this species, as printed last month, for "near to Yorkshire," read "new to Yorkshire."

Reviews.

Tobacco: its History and Associations, including an Account of the Plant, and its Manufacture, with the Modes of Use, in all Ages and Countries. By F. W. Fairholt, F.S.A. London: Chapman and Hall, 1859.

In this volume of 362 pages, Mr. Fairholt has given the public the benefit of much information respecting this plant, and in so doing he has consulted and taken advantage of almost every author who has written on the subject. We recommend our readers to peruse it, not because we think it will improve

their taste for smoking, but to be acquainted with the history and singular associations of this plant, its extensive use, and properties. We believe no one has satisfactorily answered the question "Cui bono?" respecting tobacco, but as far as concerns the revenue of our country, it is a singular fact that the enormous sum of five millions and a quarter sterling is paid for duty on tobacco and snuff, the end of which is smoke, dust, and ashes. The benefit or advantage to the human system by smoking tobacco or inhaling snuff has been seriously questioned, and we doubt whether more can be said in its favour than that it is a luxury to those who like it.

It appears that tobacco was first used, both for smoking and snuffing, more for its smell, aroma, or odour, than for its taste, and that smoking did not at first consist of drawing the smoke into the mouth and puffing it out again, but its exit was through the nostrils. A smoker, therefore, to be original, should, after filling his mouth with smoke, let it escape through his nose.*

Mr. Fairholt has divided his work into six chapters:—1. The Tobacco-plant. 2. Tobacco in America. 3. Tobacco in Europe, and its Literary Associations. 4. Tobacco, Pipes, Cigars, and the Smoker's Paraphernalia. 5. Snuff and Snuff-Boxes. 6. The Culture, Manufacture, and Consumption of Tobacco.

He tells us in the first chapter that there are forty varieties of the Tobacco-plant noted by botanists, who class them all among the *Solanaceæ* and narcotic poisons, and he says, "The *Atropa Belladonna*, or Deadly Nightshade, is a member of the family, and it may be of use to the nervous to know that the common Potato is in the same category, and that though tobacco will produce a violent poison, Nicotine, by the chemical condensation of a large quantity, in a similar manner the Potato-plant and leaves give us Solanine, an acrid narcotic poison, two grains of which given to a rabbit produced paralysis and death in two hours. Traces of this are also found in the healthy tubers. It is therefore evident that in a moderate manner we may equally smoke our tobacco or eat our potato as regardless of the horrors that chemistry would seem at first to disclose, as when enjoying the flavour of the bitter almond, which we know to be owing to the presence of prussic acid."

* Minshew calls the keeper of a tobacco-shop "Fumivendulus."

The quantity of poison in the potato-tubers must be small indeed, or we should sometimes hear of slow poisoning by this wholesome food. Some writers tell us that tea is a slow poison: not so Nicotine.

The varieties of the plant are given by Mr. Fairholt, accompanied with illustrations, and the different kinds of tobacco prepared from them, and he states that the plant would grow freely in Great Britain if Government would allow its cultivation, but this is restricted by the Act of 19 Geo. III., which allows only half a rood of land to be cultivated by any one person, for medicinal purposes, or the destruction of insects.

We have tried English-grown tobacco, but could never find the aromatic flavour of that grown in foreign parts. It is cultivated in Germany to a large extent, but the choice smoker will not choose it, and we have heard German cigars called by the characteristic name of 'stinkers.'

Mr. Fairholt refers to Mr. Prescott's work on 'Tobacco and its Adulterations,' noticed in the 'Phytologist' some months since, which informs us that in manufactured tobacco there have been discovered leaves of Rhubarb, Dock, Burdock, Coltsfoot, Beech, Plantain, Oak, and Elm; and cheap cigars are made of the leaves of Cabbage and Lettuce.

We may ask, if these cheap cigars, manufactured in millions for the million, at a penny each, are made of cabbage- and lettuce-leaves, what damage can the lower classes suffer from smoking? Cabbages and lettuces are good to eat, and no reason is given why they are not good to be smoked, although we should be inclined to take them fresh and green for eating, and not old and dry for smoking. It is clear they do not contain Nicotine, although in the Lettuce we should expect to find Narcotine.

A few years ago, as Mr. Fairholt tells us, a cigar-manufacturer successfully defended an action for penalties by proving that in making cigars he did not use tobacco at all.

It might be worth while for some of these cheap manufacturers to consider whether, as tobacco belongs to the Solanaceous Order of plants, the *Solanum Dulcamara, S. nigra,* and even the *Atropa Belladonna,* which anciently had a place in this family, or the *Datura* genus, might not be admitted into the adulterous combination of leaves. The leaves of the Potato could also be

procured in abundance, and as they contain, according to Mr. Fairholt, Nicotine, would perhaps answer better than Cabbage.

Mr. Fairholt then proceeds to notice the physical properties of tobacco as given by the works of Dr. Edmund Gardener, London, 1610, and Dr. John Neander, Leyden, 1622, who prescribed it for almost all the diseases of life, but we are not informed whether these ills of life were cured by smoking, snuffing, or chewing. He refers to the question so often asked, whether tobacco is injurious, and this has not been satisfactorily answered: it must therefore be left to the decision of the consumer himself. We know many of our readers differ in opinion on this subject, but the fact remains clear to all, that tobacco is a poisonous plant, and its effect on the stomach is injurious, as it weakens it, and lessens the appetite.

'Every Man his own Doctor,' by John Archer, one of his Majesty's physicians in ordinary, 1673, says, tobacco heats the body and defrauds the stomach by offending it, so there may be the less appetite or craving for food; and he adds, if you abstain from smoking, you will find your breath sweeter, your stomach better, your eyes stronger, your teeth the whiter and sounder, and yourself wiser.

There is a peculiarity in this plant, namely, that when destroyed by fire, the smoke contains an intoxicating property, and it would be worth inquiry whether other plants of this genus have the same. Some plants lose their aroma by being burnt, others give off an aroma by decomposition, as the bark of *Cascarilla,* etc.

The second chapter, "On Tobacco in America," tells us that in 1492 Columbus first noted the Indian custom of tobacco-smoking, and the natives were smoking the leaves rolled up like cigars, and puffing the smoke from their mouths and noses; and the Indians of Hispaniola, according to Oviedo's History (1526), used tobacco by inhalation through the nostrils by means of a hollow forked cane, the forked ends going into the nostrils, and the other end being applied to the burning leaves of the herb, and this tube had the name "*tabaca*" by the Indians. It appears from Roman Paine, who accompanied Columbus in his voyage in 1494, that snuff was taken in a similar manner by the Indians, the tobacco being reduced to powder and drawn through a cane into the nostrils. This is the earliest

notice of snuff-taking. The natives of San Salvador were seen by Columbus smoking tobacco rolled in a shape like a tube. This gives us the origin of snuff-taking and cigar-smoking. The pipe was invented afterwards.

Other historical works are quoted and referred to, showing the use of tobacco, and Mr. Fairholt says that in the old Indian grave-mounds, which are of remote antiquity, pipes of ingenious fabrication have been found, some of which are cut in the form of heads, and it would appear that the mound-builders were inveterate smokers, as a great number of pipes are discovered in the mounds. Figures are given of some of these: they have perforations without tubes.

We are not much skilled in the knowledge of old Indian pipes, but if what are found on the mounds referred to by Mr. Fairholt were pipes for smoking tobacco, it throws a doubt on the antiquity of cigars.

The third chapter, "On Tobacco in Europe, etc.," informs us that the name *tobacco* appears from the testimony of the oldest writers to be that applied to the *tube* used by the Indians to inhale the smoke, and that the plant bore other names; that it was about the year 1560 that tobacco was introduced into Europe. Its curative virtues and medicinal uses are then detailed; and Gerarde's 'Herball' referred to, as giving us Sana Sancta Indorum, in 1597.* Both Spencer and Lilly praise its virtues: the first calls it divine, and the second holy herb; and Henry Buttes speaks of "tobacco cordial."

Although many writers of the sixteenth century are referred to as speaking of tobacco, including dramatists, and we are told smoking was common in public places, including the theatres, the Globe, and the Bear-garden in Southwark, we do not find Shakespeare named as an authority. We think tobacco is not named in his works, but he describes a fop who held a pouncet-

* Gerarde calls this also tobacco of Trinidada, and he has another kind called *Hyoscyamus peruvianus*, or Henbane of Peru. He tells us that "upon taking of the fume at the mouth there followeth an infirmitie like unto drunkenness, and many times sleepe; and the dry leaves are used to be taken in a pipe set on fire and suck'd into the stomach, and thrust forth again at the nostrils. Some use to drink it (as it is termed) for wantonness, or rather custome, and cannot forbeare it, no not in the midst of their dinner, which kind of taking is unwholesome and very dangerous; but I commend the syrrup beyond this fume or smoky medicine." Gerarde enumerates about twenty-five virtues of this plant in medicine.

box, which ever and anon he plied to his nose, etc., and talked of "parmaceti for an inward bruise." This box might have been a snuff-box, made according to the older fashion, to feed the nose with its contents; but Mr. Fairholt does not notice it.

Tobacco in the beginning of the seventeenth century was an expensive luxury, and Aubry says, "in his early days it was sold for its weight in silver, and in 1610 the customes of it are the greatest his Majesty hath."

Adulteration of the weed began very early in England; and Ben Jonson in his 'Bartholomew Fair' speaks of Coltsfoot being mixed with it to eke it out, and the adulterative mixture named by him in the 'Alchemist' (1610) is disgusting.

According to a calculation made by Barnaby Rich, in his 'Honestie of the Age,' 1614, "he makes £319,375 a year, *summa totalis*, all spent in smoke." And according to him the three great companies for gain were ale-houses, tobacco-houses, and brothel-houses. These three sister vices have kept hand-in-hand ever since.

Then follows an account of the persecution of persons for taking tobacco and snuff in the early part of the seventeenth century, including the violent attack of King James I. in his 'Counterblast;' some laudatory songs; Puritanic smokers; military smokers; prevalence of smoking during the Great Plague of London in 1665, at that time considered a preventive of infection, and used accordingly.

We have heard it seriously stated by some of our eminent physicians that tobacco is not an antidote against infection. We have read a great deal about its antidotal properties during the Plague of London, but remember not to have heard that it has been equally efficacious during the plagues in Turkey, etc.

This chapter concludes with an account of coins of tobacconists, tobacco-papers of celebrated smokers, distinguished smokers, and the consolations of a pipe.

The fourth chapter is interesting to those who desire to know the history of pipes and their manufacture, and much use is made of the information supplied to the author by the late Thomas Crofton Croker, Esq., who possessed a large collection of antique pipes. The history of ornamental and figure pipes is interesting to the lovers of art-design; these pipes are, in the present age, numerous, the artist and the manufacturer doing

their utmost to produce them in every variety of shape, size, and colour, derived from both the Animal and Vegetable Kingdom. They have been fashioned to portray both human and bestial features, and the more abstract beings of Sin and Death; and even the author of both has been depicted on smoking or snuffing apparatus. If this fashion should be continued by the pipe artists, we may expect a history of some of the prominent characters of the age perpetuated in this plastic clay.

It appears to us that in all branches of art, design should have reference to its subject, and that a pipe made after the simple antique form is well suited for the smokers' use; but Mr. Fairholt considers that the pipe may be properly represented in any shape or figure, and has a propriety in all. The soldier may therefore chose one shaped like a cannon, the smoke from which would doubtless be more agreeable than that of gunpowder; and he might properly call this his pipe of peace. The literary gentleman might prefer one shaped like the head of some of the ancient philosophers, and feel pleasure in burning his weed in the head of Plato, the satirist out of the head of Juvenal, and the melancholic would probably choose his pipe shaped like a skull, and so every man to his liking. Mr. Fairholt recommends one pipe in particular, made in France, shaped like an old birch-broom, which he says is good for its truthful character and fitness of form for the smoker's use. As this is the only pipe we find shaped after any object from the Vegetable Kingdom, we might venture to ask whether some of our readers who indulge in smoking might not select it for that purpose.

There is a long account of the names, history, and peculiarities of cigars; also of tobacco-boxes, stoppers, and pouches, ancient and modern. The celebrated box belonging to the parishes of St. Margaret and St. John, Westminster, is fully described.

The fifth chapter gives a full account of snuff and snuff-boxes, and the origin of the names of the several kinds of snuff; and here the fact is stated that tobacco originally had its claims as a curative agent; one mode of using the leaves being to pulverize them and inhale the powder by the nose. It was then considered a remedy for all diseases of the head, brought on by colds, particularly that called a *pose*, a dry stoppage, which much puzzled our ancestors. Several old receipts are given.

But Tobacco, according to our reading, is not the only plant

which has been used for the purpose of medicine to the nose; and we believe at a very early period the *Achillea Millefolium* was used to produce bleeding of the nose, and the powder of the *Achillea Ptarmica* to stop bleeding. Shakespeare, although he makes no mention of tobacco, speaks of Spear-grass to tickle noses with; and the valorous Sir John Falstaff recommends his ragged soldiers to tickle their noses with Spear-grass to make them bleed. In Holland's translation of Pliny there is mention made of a Grass, which being put up the nose caused bleeding.*

The first snuff-takers made their own snuff by grating tobacco into powder and filling their boxes as occasion required, and other herbs and scents were often added. One of the receipts tells us that Mint dried and powdered makes a pleasant snuff, or some rose-leaves and cloves distilled and powdered and put to snuff, or what herb or flower you please.

We think few snuff-takers of the present day would like the powdered Mint for snuff: it seems to us more palatable to the stomach, particularly in sauce.

Chapter six, "On the Culture, Manufacture, and Consumption of Tobacco," we do not think necessary to add to our notice, and we leave our readers to refer to the work itself; the fact every day noticed of the very general use of tobacco is sufficient to give us an idea of the extent of our manufacture of the article. We must not conclude without noticing the preface to Mr. Fairholt's work, in which he modestly tells us "that his father was a tobacconist, and that he when a child rolled in the tobacco-leaf as country children would roll in a hayfield," and played at "hide-and-seek in the empty barrels." Mr. Fairholt admits that he is not a smoker, yet he strongly advocates its practice, and writes in praise of smoking the weed as one "of many virtues excellent;" and concludes by terming smoking "the contemplative man's recreation" and "the anodyne of poverty." S. B.

* Yarrow is called Nosebleed and also Sneezewort, and White Hellebore is called Neesewort or Niesing-root, in some of our old dictionaries and herbals. In the 'Homish Apothecary,' printed in 1561, we have the following for a pain in the head:—"If the head-ache cometh of superfluity of blood, then make him thus to bleed at the nose without smarte. Take seedes of red nettles and braye them to powder in a morter, blow a littel of the same into his nose with a quill. But if ye cannot get seedes of Nettles, put a bole of the herb called Millefoil or Parbe into the nose, and rub the nose outwardly and then shall it bleed."

Huddersfield; its History and Natural History. *By* Charles C. P. Hobkirk, Hon. Sec. of the Huddersfield Literary and Scientific Society. *With Illustrations.* London: Ward and Lock. Huddersfield: B. Brown.

This comprehensive account of Huddersfield is divided into five sections, viz. descriptive, historical, geological, botanical, and zoological. In the first section the town itself is described, with its most noted buildings and public institutions. This account of the town, villages, and seats within an easy distance of Huddersfield, is contained in about seventy pages. The historical and geological sections follow, and occupy together about thirty pages. The botany and zoology fill up the remainder of the volume, about sixty pages. Our business is only with the former of these two subjects—botany.

The soil (sandstone) appears to be very productive, and the following are given as examples, viz. *Vaccinium Vitis-idæa* and *V. Oxycoccus, Drosera rotundifolia, Andromeda polifolia, Pinguicula vulgaris, Empetrum nigrum, Gnaphalium dioicum, Samolus Valerandi, Narthecium Ossifragum, Petasites vulgaris,* var. *hybrida, Chrysosplenium alternifolium, Actæa spicata,* in Lilywood, seldom found on the sandstone.

The naturalized plants are *Petasites alba,* presenting "every appearance of being truly wild," *Leonurus Cardiaca, Doronicum Pardalianches, Senecio saracenicus,* etc. *Vinca minor* and *Saxifraga umbrosa,* "certainly introduced, but well naturalized by at least fifty years' growth." How many years will entitle them to take rank as denizens, and how many more must elapse ere they can establish their claims to full citizenship? This matter is respectfully referred to S. B., who appears to take more interest in these exiles than any of our contributors.

This list of Huddersfield rarities, or the names of some of them, will remind our northern readers of the Scottish proverb: "They ne'er saw great dainties that think a haggis a feast."

The aliens at or near Huddersfield muster in great numbers, both of species and individuals: at least a baker's dozen are in the writer's possession. We are anxious to ascertain what may have been the ultimate fate of these interesting strangers; the greater part of them, it is to be feared, have passed away with the warm, or rather, hot days of July and August, or have been

consigned, with many of the newly-discovered *Rubi*, *Ranunculi*, etc., to the limbo of oblivion, probably to figure at some distant period among "things not generally known," as discoveries of West Indian plants in the West Riding of Yorkshire. Mr. Hobkirk enumerates at least a score of exotics, and names eight of them. Of these latter *Digitaria sanguinalis* and *Setaria verticillata* are reputed British species, relics of our time-honoured prejudices.

The author of the 'History, etc., of Huddersfield' considers its Flora as a rich one. The number of native species is 442, of introduced and alien plants 38, total 470, or 40 per cent. of the Yorkshire Flora. If it be assumed that the diameter of the circle or circular area on which the plants enumerated grow be eight miles, the number of square miles comprehended in the investigated tract will be at least sixty square miles; but under 500 plants in such a space is rather a poor Flora in the latitude of Huddersfield.

An area of sixteen square miles around Hampstead, in Middlesex, yielded upwards of 670 species of phænogamous plants and Ferns; and the soil is of the most uniform and unfavourable nature, viz. Bagshot sand, gravel, and plastic clay; these do not form a surface favourable to the vegetation of a large number of species. A district of the same size in Surrey, including the chalk, iron or green-sand, and of course gravel, marl, clay or gault, etc., yielded about 800 plants, or at least half the entire Flora of the British Isles.

We will not say that the historian of Huddersfield has overlooked any of the plants; but it can hardly be said that the district is rich in the number of species.

There are some common or frequent plants however which we miss in the list, of which the following are given as examples.

Order *Malvaceæ*.—*Malva sylvestris*. It is well known that in the west and north of England *Malva moschata* is the commonest Mallow, and ascends several hundred feet above *M. sylvestris*, but the latter is seldom altogether absent from large tracts of sixty or a hundred square miles. It is found on rubbish in shady places in several parts of Scotland. Is it a total stranger to the vicinity of Huddersfield?

In the genus *Geranium* there are but three species entered, *G. molle*, *G. dissectum*, and *G. robertianum*. The botanists of Hud-

dersfield might look for *G. sylvaticum, G. pratense,* and *G. pusillum.* Under *Rubus* there are two species, *R. Idæus* and *R. fruticosus.* Does Mr. Hobkirk include *R. cæsius* as a variety of the latter? Perhaps it does not grow in his district; and if it does, he may possibly be right in entering it as a variety of *R. fruticosus.* What will Messrs. Babington and Bloxam think of this?

Is *Epilobium palustre* absent? It is usually a commoner and more widely distributed plant than *E. hirsutum.* Is there not a single plant of *Lythrum Salicaria* on the beautiful streams or brooks that flow through this district? Again, is *Conium maculatum* entirely absent in waste rich spots near farms and about the borders of fields? In this district I would look for *Pimpinella magna,* and if I did not find the rarer species, I might find the common *P. Saxifraga.* The latter is probably there; and possibly the former may reward some diligent explorer. In the genus *Hieracium,* the puzzle of modern botanists, *H. vulgatum* is not forthcoming in the Huddersfield district: is it one of the absentees? We will undertake for *Carduus lanceolatus,* the genuine Scotch Thistle, that it is not absent from the district, but its name is absent from the list. *Centaurea nigra* must be put in the same category, "absent without leave."

Further, it appears remarkable that our two commonest Habenarias, *H. chlorantha* and *H. bifolia,* should have no representatives here. *Aira caryophyllea* and *A. præcox* are not in the list of Grasses, though they might be expected. *Equisetum fluviatile,* Fr., a variety of *E. limosum,* is entered, and *E. Telmateia* is invisible: is it unseen in the district?

The following slips of the pen or the press have been observed, and are very respectfully submitted to the author and printer, viz. *Centauria nigra,* for *Centaurea,* only entered among the doubtful species: I ween there are few parts of England, or Wales either, where this plant is doubtful. *Eleocharis vaginatum* should be transposed, and the specific name set under or after *Eriophorum. Fagapyrum* should be *Fagopyrum. Oleraceous* should be *oleraceus.*

The botany of this useful local history is susceptible of improvement, which it will receive in due time. "Rome was not built in a day."

Supplement No. II. to the Flora Hertfordiensis. By the Rev. R. H. Webb, Rector of Essendon, Hertfordshire. London: W. Pamplin.

This supplementary list "exhibits," as the revcrend author informs us, "several plants new to the 'Flora' since the publication of the Supplement in 1851, as well as many localities for plants not observed before in the particular district." Professor Bentley and Mr. Edwards are specially mentioned as contributors to the botany of the Hitchin and Wheathamstead districts. Other correspondents are encouraged to imitate their good example.

Among the novelties the following are mentioned, viz. *Hesperis matronalis,* near Barnet Station, L. Powis. *Sagina ciliata,* Hatfield Park, Miss L. Soames. *Hypericum calycinum,* Marford Bridge, E. Edwards. *Oxalis stricta,* Essendon. *Vicia Bobartii,* Welham Green, Mrs. Church. *Carum Carui,* Bourne End. *Galium anglicum,* Brocket Park wall, R. H. Webb. *Achillea serrata,* Ayott Green, E. Edwards. *Villarsia nymphæoides,* Totteridge Green (probably introduced), L.Powis. *Myosotis sylvatica,* lane leading to Offley-holes near Wellhead, R. Bentley, M.D., *Cynoglossum sylvaticum,* Cashiobury Park, L. ? (S.) Powis. *Lilium Martagon,* Totteridge Park, Mr. Mackay, 1855. Ascertained to have been there not less than a hundred years.

Some of the most interesting additions to the localitities are those for *Corydalis solida,* a station pointed out to us about four years ago, by our obliging correspondent Mr. Mackay; *Galanthus nivalis,* near Mr. Mackay's, Totteridge Green; and *Narcissus biflorus,* Davis's Farm, Totteridge, by the same.

It is only but justice to state that the botanists of Hertfordshire have taken much pains in collecting and publishing the natural vegetable productions of their county. Their zeal and assiduity is proposed as an example to local explorers, and their success is an encouragement to the botanists of England.

Mr. Webb wishes it to be known that he will still enter on his list of memoranda the names and localities of all plants hitherto unknown in the county, and also all new stations for rare or interesting plants, and that such lists will be published from time to time as supplementary additions to the 'Flora Hertfordiensis.'

BOTANICAL NOTES, NOTICES, AND QUERIES.

Biblical Botany.

Cockle.—*Nigella sativa*, Heb. *Ketzach*, Job xxxi. 40, Isa. xxviii. 25.—So the Rabbins explain the word, and the seeds of *Nigella* are used to this day in the East as a sort of condiment. Sprengel, Hist. Rei Herb. vol. i. p. 14. Compare *Dioscorides*, iii. 93, μελανθιον. Matthiolus, in his commentaries on *Dioscorides*, mentions three kinds of *Nigella*, viz., *N. sativa*, *N. arvensis*, and *N. damascena*, 580. Bauhin added two other species, viz. *N. hispanica* and *N. orientalis*. Omicron.

Henbane.

"Hyoscyamus, sive Apollinaris herba, (Altercum quoque veteribus dicta,) propter nimium suam frigiditatem inter narcoticas plantas, id est, stuporem inferentes, refertur, sumtaque copiosior etiam propter quandam facultatem occultam amentiam parit. Unde hodie etiam incolæ vallis Ananiæ (ut Matthiolus refert) sua lingua propter hunc effectum Italice nominant *Disturbio*, id est, mentem turbans. Ad hyoscyamum quoque si aves advolent, et potis. Semine ipsius non adeo ingrato pascantur, tandem stupide in terram decidunt, ut facile capi possint, etc." Camerarius, 85.

'Ut volucres dementat Hyoscyami gravis herba,
Sic insana stupent pectora divitiis.' "

The above extract from 'Camerarius' not only illustrates Shakspeare's lines, "Have we eaten of the insane root," etc., but also gives the reason of the European name *Henbane*. Alpha.

Cursed Juice of Hebenon.

Dr. Gray says, *Hebenon*, a poetical modification of *Henbane*. "The poisoning *Henbane* and the *Mandrake* dread."—*Drayton, Barons' Wars.*

In Marlow's 'Jew of Malta' there is the juice of *Hebon* (*ebony*); and in Gower, "Hebenus, that sleepie Tree." There is a French tract entitled, 'Hebenin, newly discovered, 4to.' Zeta.

A lethale Gift.

(From 'Buchanan's History of Scotland.')

"That gift was acceptable to the Norwegians not so much on the account of the Scots' bounty or their own penury, as that they thought it was a sign that their spirits were cowed, quite spent and broken. Whereupon a great deal of bread and wine was sent them, both wine pressed out of the grape, and also strong drink made of barley-malt mixed with the juice of a poisonous herb, abundance of which grows in Scotland, called *Sleepy Nightshade*. The stalk of it is above two feet high, and in its upper part spreads into branches; the leaves are broadish, acuminated at the extremities, and faintly green. The berries are great, and of a black colour when they are ripe, which proceed out of the stalk under the bottom of the leaves; their taste is sweetish, and almost insipid; it hath a very small seed, as small as the grains of a fig. The virtue of the fruit, root, and especially of the seed, is *soporiferous*, and will make men mad if

taken in too great quantities. With this herb all the provision was infected, and they that carried it, to prevent all suspicion of fraud, tasted of it before, and invited the Danes to drink huge draughts of it." The consequence was what the King anticipated. The Danes fell an easy prey to the Scottish King.

Buchanan's description of the above plant agrees well with that of *Atropa Belladonna*, the Deadly Nightshade. DELTA.

Atropa Belladonna.

It is plain enough that Buchanan's description of the above plant, and his identifying it as the *Sleepy Nightshade*, are both quite just and correct. His characters are evidently drawn up from the plant, or are copied or abridged from some of the herbals which were in existence even in the sixteenth century.

The *Solanum majus* of Matthiolus is, according to Smith, our *magnus coryphæus* on these points, the *Atropa Belladonna*, Linn., which the ancient herbalists described as possessed of the same properties as the *Solanum somniferum*, Matth. Yet a very moderate portion of prudent scepticism will show us that the whole account is exactly as *vraisemblable* as that of the poetic fact which gave rise to this question. The historian does not state at what season this occurred, nor even the year, but he states enough to throw grave doubts over the whole narration. The gift was wine pressed out of the grape and strong malt liquor. Grapes fit for pressing were at that period, it may be believed, as rare in Scotland as the Deadly Nightshade is now rare in that country. If he means wine pressed out of the grape, as most wine is, and which was preserved in casks or bottles, as wine is at the present day, and probably was *then*, it would have been just as easy to have procured a narcotic draught wherewith to drug or poison the wine as it was to procure the wine itself. Only a few pages before the account of the slaughter of the Danes at Perth, there is a history of the killing of Malcolm, the son of Duffus, by poison. — (See Buch. vol. i. 244. Translation, London, 1733.) THETA.

Geranium molle and G. pusillum.

(From Dr. Bromfield's 'Flora Vectensis.')

G. pusillum, L. *Small-flowered Crane's-bill.* "Petals notched, anther-bearing stamens 5, leaves rounded or reniform palmate, with 5–7 deep trifid lobes, capsules smooth, carinated, downy, with erect, appressed hairs, seeds without dots."—*Br. Fl.* p. 84. *E. B.* t. 385. *Fl. Dan.* xii. t. 1994 (bona).

The present plant so very closely resembles the preceding (*G. mollè*) as to be easily overlooked for that species. The following characters will be found to distinguish *G. pusillum*. *Stems* generally redder in colour, the pubescence far shorter, finer, and more or less deflexed. *Leaves* more deeply cleft. *Flowers* much smaller, except in var. γ of *G. molle*, more inclining to blue or purplish, their pedicels I think rather longer in proportion to the peduncles, and more suddenly bent or at a more acute angle

immediately beneath the flower than in *G. molle*, in which the curvature is lower down on the pedicel, and more considerable in amount of flexure. *Sepals* somewhat less obtuse. *Petals* much narrower, wedge- rather than heart-shaped, with longer, more slender claws, simply 3-, not as in the last sub-5-nerved, appearing from their greater narrowness to stand widely apart, usually about the length of the calyx, rarely considerably (nearly twice) longer. *Anthers* 5, the other stamens (always?) abortive. *Styles* pale, erect, not as in *G. molle*, spreading, scarcely so long as the stamens. *Capsule* very downy, not wrinkled, when unripe with a broad conspicuous green keel down the centre, not found in those of *G. molle*. *Seeds* oblong, subreniform, slightly compressed, dull brown, smooth.

The herbage is destitute of the faint musky smell perceptible in that of *G. molle* when fresh gathered.

Astragalus Glycyphyllos.

The specimen of *Astragalus* sent by the Earl of Ilchester to the office of the 'Phytologist,' appears to be the above species. An advanced specimen, *i. e.* one with mature fruit, would be more satisfactory. The editor's thanks are tendered to his Lordship.

Orchis fusca.

This May, at La Bouille, a farmer seeing a considerable number of the *Orchis fusca* in my botanical box, asked me if we made any use of the plant in England. I told him, not that I knew of; he then said the roots were very useful to be given to women "pour les rendre amoureuses."

E. M. A.

Farmers cultivate two kinds of *Trifolium pratense*, one of which they call (1) *Broad-leaved Clover*, and the other (2) *Cow-grass*. Although I can find no botanical difference in them they have practically this difference, that (1) produces two crops of hay and (2) only one; (1) also comes to maturity somewhat earlier than (2), and (1) has a hollow stem, whereas (2) has a solid one. Can your readers give me any information on this point?

G. B.

Communications have been received from

A. Jerdon; Rev. W. M. Hind; J. P.; John Sim; M. A. Atwood; Sidney Beesly; W. S.; W. P.; John Lloyd; Omicron; Alpha; Zeta; Delta; Theta; Rev. R. E. Cole; Rev. J. Barton; F. M. Webb; Rev. A. M. Norman; D. Stock.

BOOKS RECEIVED FOR REVIEW.

The Critic (four nos.) *The Friend*. *Notes on Books, etc.*

ERRATUM.

Page 288, line 34, for *J. W. Guise*, read *W. V. Guise*.

CUMBRIAN BOTANY.

Plants about Sea Scale, on the Cumberland Coast. By E. Green.

Having made a fortnight's stay at the above-named place last June, for the purpose of endeavouring to recruit my health, I made, in promoting this object, a few short excursions in search of what plants might turn up. Sea Scale is on the Whitehaven and Furness railway; I can designate it no better than as a meagre scattered hamlet. There is, it is true, a tolerable hotel, and a row of lodging-houses is in course of erection, and there are a few farmhouses here and there at no great distance. It possesses, to my knowledge, no features of geological interest, and the traveller, as he is whirled past on the railway, can see nothing on the land side to interest him, excepting perhaps some of the Lake mountains in the distance: on the other side, however, is a fine open sea, with an extensive range of excellent beach, where marine botany and conchology may be studied to advantage. Many invalids resort hither during the summer season to enjoy the pure fresh breeze, and the bathing; and doubtless the lately enlarged facilities for reaching the place, its retirement, its reputed salubrity, and last, though not least, its adaptability as a starting-point for Lake tourists, will annually attract a steadily increasing number of visitors. Tourists visiting the English lakes for the first time generally make direct for the Windermere terminus; and perhaps this is their best plan. To such as have once "done" the Lakes by the regular coach route, but have left out of their programme Black Comb, Eskdale, Wastdale, Scafell Pike, Ennerdale, etc., I would say, when you next go, strike off from the Lancaster and Carlisle railway at Carnforth, across the head of Morecambe Bay by the new railway. Visit, if you will, Furness Abbey (where *Atropa Belladonna* grows); proceed thence by rail to Sea Scale; then, if you are a botanist and the following notice of plants has any charms for you, stay a night or two at the hotel: any of the above-mentioned "Lions" of the Lakes are easily accessible for pedestrians from this point. You may even *drive* to Wastdale Head, and enjoy scenery unsurpassed by any of its kind in the district. The rugged rusty-iron-coloured Screes, rising majestically as you approach, strike the stranger as singularly impressive and give him

a foretaste of what he may expect further up the valley. But whether the tourist be a botanist (by which, I mean, a plant collector like myself) or not, he will certainly find this an advantageous starting-point. The hotel is separated from the shore only by the railway, and, parallel with this on the shore side, a belt of densely-tufted vegetation, amongst which, now in the middle of June, grows the beautiful *Geranium sanguineum;* here also is the delicate *Convolvulus Soldanella,* with the somewhat forbidding *Glaucium luteum* for its nearest neighbour. A slight search will reveal *Anthyllis vulneraria, Veronica Beccabunga,* and *Erodium cicutarium,* the segments of whose awns it is curious to watch, as they curl up into a spiral form when meddled with. *Lotus corniculatus,* with its golden petals, is conspicuous everywhere. Ascending the first hill, on the road to Drigg, *Anagallis tenella* and *A. arvensis* are soon met with, the latter being not yet generally in flower. Here also are *Bartsia Odontites,* and what I take to be *Habenaria bifolia* and *Orchis latifolia;* then there are *Pinguicula vulgaris, Pedicularis sylvatica,* and *Polygala vulgaris,* with its ordinary varieties; *Viola tricolor* is also frequently met with. I also observed on this road,—which is bordered on each side by a belt of green, backed by a hedgerow,—the following Ferns:—*Lastrea Filix-mas, Athyrium Filix-fœm.;* and, nearer Drigg, *Blechnum boreale,* several of the last-mentioned being two feet long from the ground to tip of the frond; and one monstrosity had two fronds on a common rachis; *Lastrea dilatata* very fine, *Lastrea Oreopteris,* and *Osmunda regalis,* which is so plentifully distributed over the district that the natives may, for a long time to come, continue to cure their sprains with its healing roots. Of this Fern I saw some fronds upwards of four feet high.

Both on the Osmund Royal and on the Lady-fern I observed numbers of a species of Beetle (locally termed Bracken-clock, and a favourite bait for trout) very busily employed; so numerous were they that, on the tufts being shaken, they tumbled off, with the helplessness they are accustomed to feign when molested, like drops of rain after a heavy shower. By keeping my eye upon individuals at work, and examining the places they quitted, I found they had actually been feasting on the Ferns, the epidermis being apparently quite eaten through on one side. I mention this the rather as I have heard that insects rarely at-

tack Ferns. Just before reaching the railway bridge, about three-quarters of a mile from the hotel, a gate opens into a marshy field on the right. In this field flourish *Hypericum Elodes* and *Veronica scutellata*, both of which I found in flower on a former occasion in the month of July.

On the road to Gosforth, about a quarter of a mile from the hotel, I noticed growing sparingly *Polypodium vulgare* and *Asplenium Adiantum-nigrum*, whilst nearer Gosforth the hedge-banks are mostly monopolized by luxuriant plants of *Stellaria graminea* and *Potentilla reptans*; *Lotus major* also sends up its straggling stems here and there. Neat, impenetrable hedges of *Ulex europæus* line the road and adjoining fields for a considerable distance. As you go from the hotel to Gosforth, the first or second divergence to the right, down a grassy lane, then to an angle of a field on the right, remarkable at first sight for nothing but a tangled network of thorns and briers, will lead the plant collector to *Scutellaria galericulata* and *S. minor*; the latter was a welcome sharer of what room my vasculum still afforded, as it was new to me. Proceeding towards Gosforth, a road branches off on the right to Calder Bridge; following this, we find our old friend *Potentilla reptans* still present. After securing a few sprigs of *Genista tinctoria* by the way, a pond on the right, surrounded with rank vegetation, is too tempting to be left unexplored. The water, owing to the late drought, was scanty, so that I had no difficulty in securing *Ranunculus cœnosus* and *R. aquatilis*; on the margin grew *Solanum Dulcamara* and gigantic specimens of *Rumex Acetosa*.

Behind the hotel is a grassy ravine, the further slope of which, later in the season, is beautified by *Erythræa Centaurium*. Here also, and elsewhere in the neighbourhood, are dense tufts of *Iris Pseudacorus*.

Such is a very imperfect notice of plants in the immediate vicinity of Sea Scale. I have chiefly confined myself to such as are not *generally* met with. If my simple "pencilling by the way" should induce any reader of the 'Phytologist' to make this his starting-point for the Lakes, I should be glad if such a one would add a supplement to my list. A short ride by rail takes the traveller to St. Bees, near which is a headland composed of New Red Sandstone. Large fragments of rock, which have from time to time become detached from the frowning

precipice above, lie scattered in wild confusion over the strand. Picking my way through these, I observed on a moist ledge in the rock, *Cochlearia officinalis* and *Samolus Valerandi*. Had time permitted I should doubtless have found some good things here; as it was, I left the spot almost entirely unexplored.

This bold promontory, called St. Bees' Head, is subject to dense mists, which come on suddenly from the sea, and in which if the stranger get suddenly enveloped, he had better remain stationary until it clears away, as the effect is most bewildering if any attempt is made to proceed. And now I leave the pedestrian of firm nerve and cool determination to scale the Westmoreland heights, with the caution to beware of mists and precipices, merely informing him that he may pick up *Empetrum nigrum* on Wastdale Screes, and in the descent from Scafell Pike by Mickledore, *Thalictrum alpinum*, whilst on the summit of Black Sail abundance of *Alchemilla alpina* is there to welcome him after a somewhat toilsome ascent.

BOTANICAL RAMBLES IN JUNE, 1859.

By JOHN SIM, A.B.S.ED.

RAMBLE I.—*To Hill of Moncrieffe.*

Early about the middle of June, 1859, I left Perth by rail for the Bridge of Earn village, four miles S.S.E. of the "Fair City;" on arriving at the station (as determined by previous arrangement), I met with one of Sir Thomas Moncrieffe's gardeners, who, though very little acquainted with botany, kindly conveyed me to the Loch of Moncrieffe, a small sheet of water near the left bank of the Earn, and about a mile to the southward of Moncrieffe Hill. Arrived at the lake, the gardener took a boat and soon procured for me a fine specimen of that queen of aquatics, *Nymphæa alba;* the petiole and peduncle were each six feet in length. A number of leaves of *Nuphar pumila* floated on the loch, but no flowers. The *Polygonum amphibium* was thickly distributed over its entire area, and formed an attractive and pleasing feature of the scene. The margin of this little lake was thickly and extensively fringed with the tall stems of *Glyceria aquatica* just coming into flower; here and there were to be seen

plants of *Iris Pseudacorus* with its golden blossoms just bursting into beauty. This small lake is, I should say, about a quarter of a mile in length and half as broad.

We next steered our course through the plantations for about three quarters of a mile, and on arriving at the bothy had some breakfast, and about ten o'clock set out for the "Moredun," the highest top of the hill (from *mor*, great, and *dun*, a heap or fort—Gaelic). Passing along the foot of the hill at the south side, I soon discovered several luxuriant plants of *Scrophularia vernalis*, which the gardener told me were plentiful, and on looking up to the left, on the face of the hill among the trees, I descried, I should say, about half an acre of ground thickly covered with this plant, reaching the height of six feet under the shade of the trees. I was struck with amazement at the profusion of a plant so very rare. As may be supposed, I did not leave the place empty-handed; I half filled my case with it, and congratulated myself in discovering such a rarity. But if rarity is the chief thing sought after by the botanical fraternity, I must inform my brethren that this plant has nothing else to recommend it. Its small monopetalous corollas are of a dirty greenish-yellow, and as to its scent, it is disgusting in the superlative degree: rotten fish or putrid carrion are fragrance compared to the odour of *Scrophularia vernalis*.

Along the margin of the hill a more lovely object drew my attention; *Anchusa sempervirens* with azure eye looked vividly upward to the sapphire sky above. This rare plant is also plentiful here, of which I procured a good supply. In the same place grew abundance of the two disputed natives, *Doronicum Pardalianches* and *D. plantagineum*. The former is rather frequent in the neighbourhood of Perth, the latter not so. These two plants, let botanists say what they may about their being escapes from cultivation, or express their disbelief of their being true natives, I must confess that in my opinion, and as far as my observation goes, they appear to be truly wild, and as much at home along the margin of this wooded hill as either dandelions or daisies.

We next set about the task of climbing the hill, which, the day being very hot and sunny, was no easy matter, especially to one who has been a sort of invalid for several years; however, as the Scotch say, I "set a stout heart to a stay (steep) brae," and commenced the ascent. After proceeding through a thicket of trees

along with my guide, we came all at once upon a forest of Ferns, most decidedly the tallest I ever saw in Britain, and by nature the most closely planted. It was with great difficulty we could force our way through, and having my little boy with me (seven years old) we had to carry him. At this early period of the season these Ferns were upwards of six feet in height, and the gardener told me he had frequently cut them down among the trees, and found some of them nine and ten feet in length. They reminded me of the groves of cocoa-nut trees so common on the sandy shores of the West India Islands. These Ferns were, without exception, species of the common Brake, *Pteris aquilina*, and were extremely abundant throughout the entire southern side of the hill. Proceeding still upwards by an artificial walk constructed long ago, nothing remarkable was noticed by us except *Solanum Dulcamara*, which occurred about halfway to the summit; this, though not a very rare plant, and widely distributed throughout the British Isles, is not common in Scotland.

"Higher! higher" still! and all on a sudden we discerned at some distance before us a profusion of lilac-coloured blossoms, which on nearing we found to be the fragrant Dame's Violet, *Hesperis matronalis*. I opened my vasculum, and filled it to the brim. This sweet-scented Crucifer is well spread over an extent of at least an acre and a half, and appears even more abundant than on Kinnoul Hill, on the opposite side of the Tay. A few hundred yards more of a steep climb, through rocks and rugged stones, brought us safe to the "*Moredun*," or highest summit of Moncrieffe Hill, which is much about the height of that of Kinnoul, five or six hundred feet, and, like to its neighbour on the northern side of the river, wooded to the summit. The view from the top of Moncrieffe, like Kinnoul, is very good, but far inferior to that obtained from Birnam, near Dunkeld. To the north the trees intercepted the view, and hid the Grampians, Carse of Gowrie, and "Fair City" (Perth) from sight. Westward the spacious valley of Strathearn was plainly visible, terminated in the distance by the mountains of Ben Ledi and Ben Voirlich. To the south and south-west the long line of the green Ochils formed the bounds of the visible horizon. South-eastward, about three miles distant, was seen the long wooded den of Glen Farg, a highly picturesque and romantic spot, containing many objects of great attraction to the practical botanist. Amongst

other rare plants grow the *Lychnis viscaria, Dianthus deltoides* and *Stachys Betonica,* all three rare in Scotland.

Beyond this glen appeared the Lommond Hills, with their two conspicuous conical tops, and to the eastward the waters of the German Ocean.

After resting an hour on the "Moredun," we now retraced our steps by a winding pathway to the foot of the hill, and visited the pleasure-grounds and flower-garden of Sir Thomas Moncrieffe, Bart. In the flower-garden are many beautiful exotics, both herbaceous and arborescent. The garden, in my opinion, evinces great taste and skill in the arrangement and disposition of its plants, both in the stove and parterre. On the wall of an old fruithouse 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.

After inspecting the garden we went to the bothy from whence we started. I was very tired and fatigued, and glad of rest, but my companion, being only a youth (seventeen years old), was nothing worse.

After dinner, my friend the gardener went out to the adjoining plantation, and brought me in two plants which grew there pretty freely, but knew not their names. I found them to be *Valeriana pyrenaica* and *Atropa Belladonna,* both in flower. The latter I had never before seen in a wild state in Britain, though I have in Malta, where it is abundant at the foot of the walls and fortifications during certain seasons of the year.

Knowing that the train would be at the Bridge of Earn at five o'clock P.M., and as it was now past four, I took my departure, tired and weary and laden with spoils, and by half past five I and my little son were safely in Bridge End at my own fireside.

JOHN SIM.

Bridge End, Perth, Sept. 1859.

EXTRACTS FROM CORRESPONDENCE.

. . . We left home on Tuesday last to enjoy for a few days the cool breezes of the Chiltern Hills, and to see nature in its

autumnal dress. At Henley, Oxon, (which Camden calls the oldest town in the county,) we lost the motion of the railway and the noise of steam, and proceeded on our journey to the north-west, a distance of seven miles. The road through this district, from the valley of the Thames, is on the ascent until you reach an extensive heath, with gravel containing angular flints, overlying the chalk, being part of the range of the Chiltern Hills. You know that this part of the country near Turville, Ibstone, and Stoken Church is full of elevations, covered mostly with woods of beech-trees, and some of the broad valleys are very deep and cultivated as corn-fields. The roads, or more properly lanes, are very picturesque and delightful to the eye of the botanist, for he finds many of his old friends stretching their arms from the hedges on both sides to meet him. The foremost is the *Clematis Vitalba* (called here Honesty), in many places Traveller's Joy, Virgin's Bower, and other names: all, I doubt not, indicating some peculiar habit or property of the plant. It certainly adorns the hedgerows in a profuse manner. There is also the White Bryony, which is equally luxuriant in its growth, and at this season of the year enlivens the hedges with its graceful branches, covered with berries of a *coral-red hue*. The leaves of this plant are very rough, in shape like a vine-leaf: in the woods we find the Black Bryony. The leaves of this handsome climber are smooth, heart-shaped; and the clustered berries of a *cornelian-red hue*.

The Bitter-sweet (*Solanum Dulcamara*) also shows its love of liberty by ascending to the top of the hedge, and adds its red berries to the garland of nature.

The usurping Bramble is also here, and is now in full fruit, reminding us of days when we went blackberrying, and in truth I do not even now refuse to partake of this fruit, as it is wholesome and palatable. Of the same climbing nature of growth appears the common Hop, *Humulus Lupulus*; and what plant, may I ask, in our hedges is more graceful than this? There is an elegance in the arrangement of its flowers which I am not able to describe. There is also the Dog-rose, with its fruit called *heps*, and the Honeysuckle still bearing its fragrant blossoms. Add to these the prickly Holly, which Southey has poetized as an evidence of the wisdom of God. The beautiful *Viburnum Opulus* is in full fruit. The Maple, the Hazel, the Hawthorn, the

Buckthorn, and Sloe, and you will have a true picture of these hedgerows.

As these are mostly on high banks, the latter are covered with many plants now in flower. The largest and most beautiful in shape and colour is, I think, the *Digitalis purpurea*, commonly called Foxglove. The *Verbascum* (*V. nigrum*) grows very large and branching, with thick clusters of yellow bloom; near it is the Viper's Bugloss, *Echium vulgare*, the *Campanula rotundifolia*, a favourite of the poets, and so appropriately noticed by Sir Walter Scott in his poem 'The Lady of the Lake.' The *Linaria repens* is in full flower, and grows in company with the *Campanula*. The *Glechoma hederacea*, Ground Ivy, Alehoof, or Gill-go-by-the-ground, is very common: the latter name is characteristic of this plant, for I gathered a branch in length four feet. The wild Marjoram, *Origanum vulgare*, is here large and abundant, including the pink and white varieties. You know how fragrant this plant is, and that Clare, our rural poet, speaks of "Marjoram so doubly sweet." And Shakespeare, in describing the lover looking at wild flowers, in the absence of his mistress, makes him say,

> "The lily I condemned for thy hand,
> And buds of marjoram had stolen thy hair."

Leaving the roads, the hedges, and the banks, we find the heath showing many of our favourites. The *Calluna vulgaris* is conspicuously in bloom, growing among the Fern *Pteris aquilina*. The *Ulex europæus*, though not in flower, is very ornamental, through which peeps the Foxglove and the *Galium verum;* beneath it grows the *Potentilla reptans*, with a pale golden-yellow flower; and the *Euphrasia officinalis;* in dense patches, and in the spaces between clumps of Furze, the wild Thyme is so plentiful that its fragrance scents the air.

Many other flowers I might name, but you will cry, "Hold, enough!" and look forward in hope that we may have the pleasure, in the joyous spring-time, of a ramble over this district together, and add to our collection some of the fresh flowers of the season.

S. B.

12*th September*, 1859.

Sydenham Plants.

From Harriet Beisly.

It may be interesting to some of your readers to know that within a short distance of the Crystal Palace there may be gathered, *in their season*, the following plants:—*Sedum sexangulare*, on a wall, Lower Sydenham, with the spotted variety of *Hieracium vulgare* and *Linaria Cymbalaria*; *Verbascum Lychnitis*, Lawrie Park; *Euphorbia Cyparissias*, Lawrie Park; *Atropa Belladonna*, Lawrie Park; *Chenopodium polyspermum*, Lawrie Park; *Linaria minor*, Lawrie Park; *Achillea Ptarmica*, Lawrie Park. *Trifolium resupinatum*, Lawrie Park; *Nymphæa alba*, pond, Lawrie Park;* *Nuphar luteum*, Lawrie Park.

I had a specimen of *Trifolium resupinatum* left at my house some years ago. It was brought by a gentleman who gathered it near the Crystal Palace, and was uncertain about its identity. As he was chary about communicating the locality, this notice was never published. It is so plentiful that all the botanists of London,—I may say, of England,—can *now* be supplied with specimens, and there will still be a large stock for future increase. I am not certain that Mrs. Beisly's station is the same as that communicated to me privately by my careful correspondent.

A. I.

WANDSWORTH PLANTS.

A Notice of some Exotic Plants which have been collected about Wandsworth, Battersea, Chelsea, and Pimlico, from 1851 *to* 1859 *inclusive; with some remarks on their origin and distribution. By the* Editor.

"Botanical aims are the practical and the practicable, or, in other terms, the useful and the possible. Any person of ordinary information may tell where plants grow, and under what circumstances they were observed, but in many assignable cases it will be impracticable for the best botanist or the most learned man to tell positively how they came there, to point out precisely the *unde* or the *quo loco*. He may suppose or infer; but science is

* On the bank above this pond, *Hypericum calycinum* and *Vinca minor* are well established.

not made up of guesses and inferences, however ingenious; it is the systematic arrangement of facts."

The locality of the plants entered in the following list, is a waste piece of ground between the steamboat-pier, Wandsworth, on the west, and Messrs. Watney's granaries, distilleries, or rectifying establishment, etc., on the east. It is bounded by the river Thames on the north, and by a row of cottages on the south. Since 1856, much of the ground has been used for the extension of the buildings used by Messrs. Watney, on the one end, and by a coal-wharf on the other. Originally a large portion of it was a swamp, twice in twenty-four hours filled with the tidal water. Till very recently the tide had free access to the depressed part, which was at no distant period the ancient shore of the river, which has now been contracted by a stone pier, whereby the water is confined to a narrower channel. The extent of the whole might have been, ten years ago, two or three acres. But its former dimensions have been considerably circumscribed by the encroachment of buildings.

The Battersea plants grew on the soil, mud, etc., which was all brought up the river and laid on the surface of the new park to elevate the ground which is now converted into roads and shrubberies.

The few plants observed at Pimlico grow where the ground had been disturbed at the mouth of the Grosvenor canal, now in the process of conversion into the West London Railway, mostly where fresh earth had been laid down.

The ancient descriptive expressions, viz. "escapes from cultivation," or the "remains of garden plants," "introduced in ballast," etc., will not denote the causes for the appearance of these strangers in any of these localities. The Wandsworth locality was at no very distant period a part of the ancient strand of the river. At high tides the water flowed up to the cottage-doors, and sometimes into the dwellings. There are gardens there, as there are everywhere else in England where there are cottages; but none of these plants grew in them except accidentally.

Few of them have been at any time in cultivation anywhere, but least so in cottage gardens, where objects of utility or of ornament are preferred to such uninviting things as compose the following list.

This place is a good mile from the Chelsea Botanic Garden,

and three miles from Kew, the Royal establishment. Hence it may be inferred that the plants found at Wandsworth were not brought hither from either of these establishments. They were mostly unknown at both these places.

Again, they did not originate on ballast-heaps, because there are no such heaps in all these parts. Lighters discharged their cargoes, but they threw out no ballast.

The proprietors of the ground and of the adjoining erections, have been for some years encroaching on the river; and to fill up the ancient channel and shore, they have shot much earth and rubbish into the swampy part. The material here shot was obtained from gardens and from old houses pulled down to make room for the extension of dwelling-houses and cottages. It was principally on this newly deposited earth that the plants grew.

Quantities of timber have always been put here, and during the extension of the Lambeth Water Company's works, their pipes were also laid down on this ground. Many of the plants enumerated, such as the *Sisymbria*, the *Lepidia*, the Centaureas, and other kinds, that love a dry soil, grow, or grew, near the timber-logs. Several grew close to the water, viz. the Trefoils, the Umbellifers, and the *Lythrum hyssopifolium*; whilst on the fresh loose soil between the water and the hardened portions of the place, myriads of such things as *Lathyrus Aphaca, Asperugo procumbens, Melilotus parviflora, Eruca sativa,* Sinapides of several sorts, and many others, flourished luxuriantly. Only a small proportion of the whole of the exotic and reputed British species propagated themselves, or reproduced themselves by perfecting seeds. Some did, and they are expressly mentioned in the remarks which follow the list.

It would be ridiculous to speculate on the mode or means of their introduction; only negatively it may be noted, that their seeds were not conveyed on the "wings of the wind," nor in currents, nor on the hairy hides of beasts, nor in the stomachs of birds, nor in the clothes of people, nor in ballast, as already stated; also, they are not escapes from cultivation.

The first of these alien plants observed was *Melilotus parviflora,* which is only beginning to gain a footing in the few bits of cultivated ground still remaining between Battersea and Wandsworth. Several others were noticed, among which *Asperula arvensis, Plantago Lagopus, P. arenaria, Trifolium resupinatum, Le-*

pidium Draba, and *Sinapis incana,* were the most conspicuous. The place at Wandsworth has been visited repeatedly every year since 1851, and the result of every visit has been something not hitherto observed there.

The origin of the plants growing there was easily determined. The Messrs. Watney are millers, brewers, distillers or rectifiers, and dealers in corn, which they import from all parts; from the east and south of Europe, from Egypt and America. It was manifest from the appearance of the place, that a part of this open space had been used for screening, winnowing, or removing the dust and refuse from the imported grain. This was a very natural inference, made with a small expenditure of observation and reflection. But in order to make security surer, the ticket-issuer at the steamboat-pier was asked if corn was ever sifted there, for the appearances seen might have been the result of the sweepings of the granaries, laid down there, with other stuff, to help to fill up the hollow. He replied that the men did clean the corn there, which he knew by painful experience, for that when the wind happened to be in the east when this work was going on, he was half-blinded and almost wholly choked by the dust. He was asked if he ever saw any person looking for plants there; he replied, "None but yourself."

The mode of the introduction, growth, and distribution of these plants is as simple and intelligible as possible; far too simple for the botanical geographers who are pleased to take this department of the science under their special patronage, and who are as jealous of their pet plans of plant-immigration as a fond lover is of his mistress. A simple historical fact may upset the most profound and ingenious speculative hypotheses. The tidal currents in the Thames, the capability of seeds to resist the action of water on their vegetative power, the vicinity of the botanical collections of Kew and Chelsea, the probability of the existence of a garden or gardens on these spots, where the seeds had dropped and remained in the ground for hundreds of years, are all unnecessary suppositions. There is a shorter and more feasible way of accounting for their existence here.

It may be asserted, without any risk of contradiction, that if any of the men engaged in the storing, airing, and sifting of the foreign corn had been asked, "How comes it that there are so many unusual plants on these heaps of mould and refuse?" he

would have replied, "They all sprang up from seeds separated from the corn." By scientific men and great observers, these plants have been gravely said to have originated in some ancient garden, or were conveyed from a distance by currents, etc. That the seeds of plants are conveyed by winds and currents, in the stomachs and on the coats or skins of animals, is not denied. It is only affirmed that there is no necessity for assuming that the following plants were transported to their present locality by such or similar modes of conveyance. They did not arrive in ballast, like the famous plants which appeared at Sunderland half a century ago. They did not migrate from the regal and medicinal establishments of Kew and Chelsea, for the gardeners of these places ignored them. They knew some of them, but few or any of the identical species were then, or at any previous time, remembered to have existed in their collections.

Note. In the following list, the names of the hitherto unobserved exotics are in italics; those of previously recorded species are in roman.

Ranunculaceæ.—Ranunculus Philonotus (R. hirsutus, *Curt.*), *R. muricatus?*, *R. trilobus*, Delphinium Consolida, *Nigella sativa:* these are south European plants; R. Philonotis and *R. muricatus* reach on the Continent a latitude nearly equal to that of England.

Papaveraceæ.—Papaver Rhœas, P. Argemone, Glaucium phœnicium, Rœmeria hybrida, *Hypecoum procumbens*: the two latter-named are almost exclusively south Europeans.

Fumaria agraria, etc.

Reseda gracilis: a native of Naples, Dalmatia, and Austria.

Cruciferæ.—Malcolmia maritima, M. littorea?, M. africana, Arabis arenosa?, Erysimum orientale, *Sisymbrium austriacum, S. orientale* (S. Columnæ), Jacq.; *S. pannonicum*, Sinapis alba, *S. dissecta*, S. monensis?, S. Cheiranthus, S. nigra, S. incana, *S. hispida, Brassica arvensis?*, Linn.; *Moricandia arvensis*, DC.; *Eruca sativa, Diplotaxis erucoides*, D. tenuifolia, D. muralis, *D. bracteata*, Kœniga maritima, Camelina sativa, *Neslia paniculata*, Vella annua, Thlaspi arvense, Lepidium Draba, L. ruderale, *L. graminifol.*, Linn. (*L. Iberis*, Poll.), *Raphanus Landra*, Erucastrum obtusangulum, *Rapistrum rugosum*, All., *R. perenne, Enarthrocarpus lyratus*, DC.

Malvaceæ.—Malva ambigua, M. parviflora, M. microcarpa?,

Rchb., *Lavatera cretica ?*, *L. punctata*, *L. Olbia*, Althæa hirsuta, *Hibiscus vesicarius*.

Geraniaceæ.—*Erodium ciconium*, *E. littoreum*, Willd., on the Middlesex side of the river, near Pimlico.

Impatiens parviflora: near Nine Elms; also in the same place, I. fulva, but very scarce; the former abundant. *I. parviflora* abounds also on the Mortlake side of Kew Green.*

Caryophyllaceæ.—*Saponaria vaccaria*, Linn.; Silene anglica, S. quinquevulnera, S. Armeria, S. noctiflora, Agrost. Githago.

Linum usitatissimum: plentiful, especially at Battersea.

Lythrum hyssopifolium: at Wandsworth only.

Leguminiferæ.—Medicago denticulata, *Willd.*, M. var. apiculata; *M. orbicularis*, *M. scutellata*, *M. tenoreana*, DC.; *M. ciliaris*, *M. sphærocarpa ?*, *M. recta*, Desf.; Melilotus officinalis, *Willd.*; M. vulgaris, *Willd.* (M. leucantha, *Koch.*); *M. parviflora*, Desf.; *M. messanensis*, Desf.; *M. cærulea*, Pers.; *M. sulcata*, Desf.; Trifolium ochroleucum, T. stellatum, T. maritimum, T. resupinatum, *T. spumosum*, *T. agrarium ?*, *T. elegans ?*, Vicia lutea, V. bithynica (Battersea), V. tenuifolia, *Roth* (Battersea); *V. Pseudo-Cracca*, *V. Gerardi*, Vill. (Battersea); *V. villosa*, Roth (Battersea); *V. agrigentina* (Ervum agrigentinum), Guss.; *Ervum pubescens ?* (Battersea), Lathyrus Aphaca, *Arthrolobium scorpioides*, *Scorpiurus sulcata*, Linn., or *S. subvillosa*, Linn.

Rosaceæ.—*Potentilla recta*, Linn.; *P. supina*: the former at Wandsworth and Parson's Green; the latter only at Battersea, and but once.

Umbelliferæ.—*Ammi majus*, Coriandrum sativum, Torilis nodosa, Caucalis daucoides, Archangelica officin., W. and Battersea; Fœniculum officin., Carum Carui, Bupleurum aristatum, *Bartl.*; B. protractum, *Link*; *Anethum graveolens*.†

Rubiaceæ.—Asperula arvensis, Galium tricorne.

Compositæ.—*Centaurea calcitrapoides*, C. Calcitrapa, C. solstitialis, *C. iberica*, *C. aspera*,‡ *Pinardia coronaria*, (Chrysanthemum coronarium), Crepis fœtida, Anthemis tinctoria, Erigeron canad., *Rhagodiolus stellatus ?*, Xanthium Strumarium.

* It may be supposed that this is an escape from the Royal Botanic Gardens. Perhaps so; but I have seen hundreds of plants in the former, but not one in the latter place.

† Of the genera *Ammi* and *Peucedanum* there were, or are, more than one species of each at Wandsworth.

‡ A *Centaurea* of the *C. nigra* section was observed last summer (1859).

Boraginaceæ.—Asperugo procumbens, Echium violaceum ?, Lithospermum arvense.

Solanaceæ.—Datura Stramonium, *Hyoscyamus albus*, H. niger ?

Scrophulariaceæ.—Veronica Buxbaumii.

Labiatæ.—*Galeopsis bifida*, Bœning; G. versicolor; *Salvia viridis*, Linn.; *Verbena supina*, L. ?

Primulaceæ.—Anagallis cœrulea.

Chenopodiaceæ.—*Chenopodium opulifolium*, Schrad.; C. ficifolium, C. glaucum, sparingly at Battersea; C. murale, etc., *Blitum virgatum*.

Amaranthaceæ.—Amaranthus Blitum, *A. retroflexus*.

Plantaginaceæ.—*Plantago Lagopus*, *P. arenaria*.

Urticaceæ.—Urtica pilulifera, Cannabis sativa.

Gramineæ.—Bromus diandrus, *Curt.*; B. arvensis, *Linn.*; B. patulus, B. tectorum, *B. scoparius ?*, Ægilops ovata, Lolium italicum, L. linicula, L. temulentum, with var. arvense, Cynosurus echinatus, *Poa sudetica* (Chelsea), Phalaris canariensis, *P. paradoxa*, Setaria viridis, Polypogon monspeliensis, Panicum Crus-galli, at Battersea, plentiful for many years; *Crypsis aculeata ?*, at Battersea; *Digitaria ciliaris* (*Panicum ciliare*, Retz), and other undetermined species of this genus.

This list does not contain the names of all the species collected in the above-named localities. Several of the memoranda of plants noticed have been mislaid or forgotten. Some of the species could not be satisfactorily determined by comparison with authentic specimens in the herbaria of the Linnæan Society and of the British Museum. Most of them are in my own private collection, but not *all*; for one or two parcels were sent to Kew to be compared with the specimens in the herbaria of that magnificent collection, and these were never returned. A few were sent to the Botanical Society of London, and were dispersed when the plants and effects of the Society were sold.

The list, such as it is, is submitted as the most complete that can be compiled at this remote period; for it is now nearly ten years since the observations were first made.

The notice of these plants is offered to the readers of the 'Phytologist' in consequence of a suggestion made by some of the more zealous supporters of the Magazine, that a *précis*, or a synopsis, of the discoveries of the year, should be printed at the close of the volume, so as to give a connected outline of

what has been accomplished during the previous months. This could not be consistently carried out, because of the amount of previously unpublished matter of this kind which could not conveniently be prepared for publication until now. Henceforward, a *résumé* of what has been done in the course of the year will be practicable.

It will be observed that many of the plants named in the list have been already recorded as spontaneous productions of England: most of them, indeed, have been published as aliens, or as plants which have been introduced either in a recent or at a remote period; but there may be a few which have never been suspected as aliens, though it be plain enough that in this place they are as certainly importations as the hitherto unobserved aliens, and perhaps, therefore, ought to be placed in the same category as the undoubted exotics, or at least regarded as *plantæ suspectæ: Trifolium ochroleucum* and *Lythrum hyssopifolium* may be given as examples.

In the subsequent remarks on these species, their other English localities will be stated, and also their places in the more general Floras of Europe and the world.

The *Ranunculi* collected at Wandsworth—and they were not observed anywhere else—approach *R. arvensis* in habit; the latter, however, was not observed among them. *R. hirsutus* (*R. Philonotis*) was by no means common. A form which, if it had occurred anywhere else, would have been collected for *R. parviflorus*, appeared now and then. These all grew on the fresh or lately deposited soil. As stated in the list, they are plants of the south of Europe, and have never till now been reported as of spontaneous English growth.

Glaucium phœniceum has appeared in England so rarely, except in collections, that its occurrence here has been, in recent times, deemed a myth. It has been classed with *Gentiana acaulis, Swertia perennis, Echinophora,* and *Vella annua.* It appeared for above one season at Wandsworth, but the reporter would not undertake to affirm that its subsequent appearances were connected with its first. It may perfect seeds here, but it is not certain that it reproduced itself in England. Many of these plants ought probably to be placed in this category, viz. among such as were reproduced by fresh importations of seed rather than by seeds which the plants produced in this country.

Some of them unquestionably ripened seeds. Examples were removed to my garden at Chelsea, and are still flourishing and in great abundance, quite as common weeds as Groundsel and Chickweed. This *Glaucium* has been reported from the southern shores of the English coast, and *Rœmeria hybrida* from Swaffham, in Suffolk: the latter probably grows there still; it appeared several seasons at Wandsworth, but never in great force, and always as poor, tiny specimens.

Hypecoum procumbens is confined to the south of Europe, as Spain, Naples, Peleponnesus, etc. *Fumaria agraria*, Lag., has been reported from other parts of England, but doubtfully.

The *Cruciferæ* are numerous, as may be seen by the list. *Malcolmia maritima* is, about Chelsea, one of the commonest of garden annuals; yet it was a very scarce plant as an escape. *M. africana* and *M. littoralis*, *M. littorea*, Br., were exceedingly common about Wandsworth, appearing every year in great force. Neither of these are cultivated,—a proof that cultivation has not been the origin of all our new acquisitions. The former is almost exclusively a south European plant; the latter reaches to the north of France on the west.

Arabis arenosa? has every season been very common in the Wandsworth station. This plant abounds in Belgium (see 'Phytologist' for June, 1859); also in Normandy. *Erysimum orientale*, Br., *E. perfoliatum*, Crantz, *Sisymbrium austriacum*, Jacq., *S. orientale*, Linn. (*S. Columnæ*, Jacq.), *S. pannonicum*, Jacq., have been exceedingly common, and self-propagated. They grew not only on the fresh soil, but on the hard-trodden ground with *S. officinale*. That these were propagated by seeds which they produced in this locality there can be little question, for some of their remains are growing now in my garden.

The *Sinapides* were confined to the fresh soil. *S. dissecta*, Lag., was more abundant at Battersea, one season, than at Wandsworth. It is a plant of the south of France, and also grows in Spain, Naples, Sardinia, etc. *S. Cheiranthus* appeared one year on the Chelsea Hospital grounds. There were in this case good reasons for inferring that its seeds came originally from South Wales with coals. Its appearance at Wandsworth is not to be attributed to this cause.

Erucastrum obtusangulum, *Eruca sativa*, *Diplotaxis erucoides*, etc., were seen only on the fresh mould. *D. muralis* grew on the

hard-trodden parts. This latter plant is now well established in the valley of the Thames; it is almost, if not quite, as common as *D. tenuifolius*. *Koniga maritima* may probably in some rare cases be semi-spontaneous, or possibly spontaneous in its growth, but such does not appear to be the case in these parts. It has been collected in great abundance at Battersea Park pier, also at Parson's Green, and in some other parts near London; but in all these places it may have sprung up from seeds which were in the soil, mould, or rubbish laid on these spots where this plant was seen growing. *Camelina sativa* is one of the unintentionally cultivated weeds, and is not uncommon among crops of Flax. In Lincolnshire it has been seen among growing wheat.

Vella annua (*Carrichtera* of some botanists), in books localized on "Salisbury Plain, and not seen since the time of Ray," was plentiful for two or three years at Wandsworth steamboat-pier, and sparingly about Battersea: it must be reckoned among the accidental plants which appear about as rarely as the comets.

Lepidium iberis, L., or *L. graminifolium*, was seen only once, and then only one specimen. This species was identified at Kew. *L. Draba* has been well established for at least eight years at Wandsworth, where it covers a great extent. At Battersea also it has appeared for the same length of time, but it has not spread so much in the latter locality. In a chalk-pit at Northfleet, near Gravesend, it is now well established.

Rapistrum rugosum and *Enarthrocarpus lyratus* have also abounded at Wandsworth. They perfect seeds, and are probably self-propagated. These grow only on fresh soil.

The *Malvaceæ* entered in the list grew abundantly and luxuriantly, both on the soft and on the hardened ground. *Althæa hirsuta*, peculiar hitherto to Cuxton, appeared sparingly and at intervals.

Erodium ciconium was plentiful and strong for some years. *E. littoreum* was only observed one year, late in the season, at the mouth of the Grosvenor canal. These are both south European plants; only *E. ciconium* has a greater northward range than *E. littoreum* has.

Impatiens parviflora appeared pretty well established about Battersea, but the works necessary for the Crystal Palace and West End Railway have probably exterminated it. In 1851 I took a few plants into my garden, and it has grown up spontaneously

ever since; it has been extremely plentiful, and a troublesome weed. It appeared also by the riverside near Kew. In 1857, I observed it near Ryde, Isle of Wight. I do not believe that in any of the recorded cases it was an escape from cultivation. This plant has not hitherto been recorded as European, though I have a specimen marked from "near Geneva." *Impatiens fulva*, which has been known in England as a spontaneous plant (I may not say *native*) for a century, does not find a niche in Nyman's 'Sylloge.' The *I. parviflora* increases more rapidly than *I. fulva*, as I have ascertained by inspection. I observed the *I. fulva* for twenty years,—it is nearly twice that space of time since I first made its acquaintance,—and it has not extended its limits very considerably. The *I. parviflora*, which grows as well on hard, gravelly soil as in rich, moist spots, is very likely to prove a permanent acquisition to the Flora of England.

Saponaria vaccaria, Linn., has been already recorded as an accidental and uncertain visitant. It is not nearly so common about Wandsworth and Battersea as the common Flax, *Linum usitatissimum*, is; yet it appeared plentiful for several years. The seeds of the former are economical; those of the latter are not so. The common Flax will always be found on rubbish-heaps, by roadsides, and among other cultivated crops. The *Saponaria vaccaria* is possibly not capable of so wide a range as the Flax; and probably for good reasons, because it is not so useful. But it is quite as plentiful as *Silene Armeria*, which has long been honoured with a place in our British floral catalogues.

Lythrum hyssopifolium appeared at Wandsworth for three successive seasons, and only for three. The first, 1853, only one stray plant, not more than a finger's length high, was seen in the rut of a cart-wheel; next year a good many close to the water, now and then covered by it; in 1855 there were thousands on the verge of the swamp and up the bank also, some of them very luxuriant. I transplanted a few, and they throve well in the garden; but they did not reproduce themselves. Since 1855, I have not seen a single example of the species at Wandsworth: they have all perished. From my own observation and acquired knowledge of the distribution of this plant in England, I infer that it is one of our uncertain species. I do not say that it is an alien, although I know but few or any of our reputed British species of greater uncertainty and of rarer occurrence. I will

not originate even the suspicion that it may possibly be only a doubtful native. The principles on which investigations on the origin of our plants are carried out, are as unsatisfactory and uncertain as many of our species are. It is marked by Ray, *rarius*, "rather rare,"—by Haller, 'Flora Helvetica,' *rare;* and it is rare in Germany. In England it passes muster unquestioned.*

The *Leguminiferæ* were next to the *Crucifers*, the most abundantly distributed at this station, and the best established. Of the *Medicagines* scarcely one-half have been determined. They were more plentiful at Battersea than at Wandsworth, but as they cannot be identified, and as they are not likely to be permanent, much need not be said about them.

Melilotus parviflora and *M. messanensis* have both been seen permanently and plentifully. The former has straggled into the cultivated patches in the neighbourhood; the latter has not been seen beyond the single station at the steamboat-pier. *M. parviflora* has been reported from Ireland, and from the vicinity of Manchester. It is likely to attain, in British lists, the same place which *Trifolium resupinatum*, etc., have obtained. In the last edition of the London Catalogue, it is very properly classed with the latter plant, but it is improperly said to owe its introduction to "ballast" or "cultivation." In none of its recorded stations can its origin be attributed to these *popular causes*. Its origin at Wandsworth has already been determined. It is found in France, and there are no geographical, or rather, climatical reasons against its ultimately establishing itself as a spontaneous British plant.

It should be stated that some of the *Medicagos* which abound at Wandsworth, etc., were collected on the west side of the Itchin in 1853, along with some of the *Plantagos* which grow also in the vicinity of London.

Trifolium resupinatum was one of the commonest of these exotic species. It grew both in the swamp, on the bank, and also on the hard gravelly part of the waste ground. This plant has, as is well known, been reported from several places in the south of England as also from Lancashire. From the latter place *Sisymbrium pannonicum* has also been sent. *Trifolium resupinatum* has been sent to me twice from Sydenham, the first

* It turned up again this summer (1859) at Wandsworth, but very sparingly.

time in 1855, the last only a few days ago (May 19th, 1859).* *T. stellatum* and *T. spumosum* were so scarce that I could not see more than *one* example of each. *T. maritimum*, var. *Xatardi*, was pretty common, and what I believe to be *T. ochroleucum*, very abundant in some years and very scarce in others, but always there. This is, I believe, one of our unsuspected natives; far be it from me to cast a shade upon its fair fame, as a genuine production of the British soil, as being found here since the days when Brut, from Troy, laid the foundations of England's greatness! But it may be observed that Ray does not vouch for this plant; he only enters it on the authority of Merret; and both these eminent botanists enter several plants, now discarded by us, their more fastidious, or, if you will, *lector suavissime*, more critical descendants. *T. ochroleucum* and *T. maritimum* are no more natives of Wandsworth locality than are *T. resupinatum* and *T. stellatum*.

The *Vicias* are like the *Medicagos*, very abundant, but many of them undetermined. *V. tenuifolia* and *V. Pseudo-Cracca* approach *V. Cracca* both in appearance (habit) and characters. *V. Gerardi* and *V. villosa* have a strong family likeness. It is to be hoped that the appearance of *V. lutea* and *V. bithynica* among these notorious aliens will not bring suspicion upon the latter pair. The purity of their descent in the two localities of Wandsworth and Battersea may fairly be questioned. One of them, at least, has the authority of Ray in its favour. Dr. Smith, the very learned author of the English Flora, appears to doubt this, but in courts of law the accused has the benefit of *the doubt*. *V. bithynica* is not so fortunate; it cannot plead ancient prescription in its favour.

Lathyrus Aphaca is generally believed to be a more recent introduction than either of the above. *Arthrolobium scorpioides* and *Scorpiurus sulcata*, or *S. subvillosa?*, are quite new, and must enlarge at some future time the list of excluded species.

Of *Rosaceæ*, the only species observed or recorded are *Potentilla recta* and *P. supina*. The former appeared very sparingly at Wandsworth; and at Parson's Green, in Middlesex, more plentiful than in the former station. The latter was only collected at

* In the latter station it is well established on the verge of the road which skirts the Crystal Palace grounds on the Forest Hill side. It extends for about a hundred yards, partly on the path and partly in the gutter and extreme side of the road. Here it is an ornamental plant.

Battersea, and it was never again seen there. Neither of these have appeared in any list of British plants. On the Continent they both approach in our direction as far as Paris and Belgium, but it will be long ere they attract notice as spontaneous British productions.

The *Umbelliferæ* have been numerous at Wandsworth, and, as usual, only a few have been determined. The species observed and hitherto unrecorded as of British growth, are only *Ammi majus*, *Bupleurum protractum*, both abundant, and *Anethum graveolens?* The first-named plant appears well established, and may probably at some future period rank among our naturalized species. *Archangelica officinalis* was observed both at Wandsworth and Battersea. This plant is generally recorded as an escape from cultivation; but it is not improbable that it may have been introduced from its native localities into the garden. It is common on the heights of Scandinavia and Lapland, and the inhabitants of these countries transplant it into their gardens, where it grows more luxuriantly than in its native localities, but with diminished flavour. The Coriander, the Caraway and Fennel, have long been known as of spontaneous British growth. They are all cultivated more or less. But there is no cultivation of these economical species near Wandsworth or Battersea.

The *Centaureas* are the most prominent of the *Compositæ* at Wandsworth. The Composite plants muster stronger than those of any other Order, the *Cruciferæ* and *Leguminiferæ* excepted. *Pinardia coronaria* (*Chrysanthemum cor.*) is well established along with *Chrysanthemum segetum*, its near ally. *Erigeron canadensis* has long been known as a weed about Chelsea, Battersea, etc., where it is as common as Groundsel. *Rhagadiolus stellatus?*, or whatever else it may be, has been seen there (Wandsworth) on the gravelly part of the ground. *Anthemis tinctoria*, and infinite numbers and forms of *A. arvensis*, cover large spaces.

Asperula arvensis was plentiful at Wandsworth for a few years, but it has now disappeared. This plant has been reported from other localities, but not very circumstantially. Another reputed British species, *Bupleurum aristatum*, was collected quite 18 inches high, and another example, presumed to be the same, barely 2 inches long. Several other *Bupleura* were seen, one somewhat like *B. angulosum*.

One of the most common plants in the same place was *Plantago Lagopus;* a less common one was *P. arenaria,* a plant which reaches to the north of Germany. The former, *P. Lagopus,* does not extend quite so far north, but it is far more durable and plentiful at Wandsworth than the other is. The former has disappeared, the latter is always present, and, to all appearance, if the ground was not certain to be diverted to other and more useful purposes, this plant would probably reproduce itself *ad infinitum.*

Asperugo procumbens has always been present (in the Wandsworth station), but only on the fresh and newly deposited mould. It produces seed in abundance. *Lithospermum arvense* grew very sparingly, cheek-by-jowl with its prickly neighbour. Is it also an alien?

Amaranthus retroflexus in these parts, *i. e.* Battersea, Chelsea, and Wandsworth, is far more common than *A. Blitum.* I had forgotten *Hyoscyamus albus,* "one of the plants erroneously recorded or subsequently extinct in Britain." I will not presume to assert that it was not erroneously recorded, but I can affirm that the Wandsworth *Hyoscyamus* is not *H. niger.* Also, it may very safely be asserted, that three plants in this part of the excluded list, published under the direction of the Botanical Society of London, are (were) neither "erroneously recorded nor subsequently extinct in Britain," viz. *Glaucium phœniceum, Vella annua,* and *Stachys annua,* or, if extinct now, they were seen very lately, and they may be seen again ere long. *Stachys annua* was unwittingly collected by a gentleman not long ago (1856?), and not far from the place where it was seen by Mr. J. Woods many years ago. The specimens are *penes me,* and may be seen. The others were collected by myself, and the specimens are in my possession.*

The Chenopods of Wandsworth are unmanageable. The only species determined were *C. opulifolium,* new to the British catalogue, and *Blitum virgatum.*

The foreign species of *Polygonaceæ* were abandoned as hopeless.

It should be remarked that *Chenopodium opulifolium* was more common at Battersea and Wandsworth than *C. glaucum,* which occurred only at Battersea. But the latter is an unchallenged native; the former has been neglected.

* A specimen of *Glaucium phœniceum* was recently sent to the Thirsk Bot. Soc., and its discovery near Brighton was published in the Phytologist for October, 1859.

Several of the *Gramineæ* of the above list have been already recorded, except *Crypsis aculeata*, *Poa sudetica*, and some unknown Digitarias. *Poa sudetica*, a Grass found in the interior of Germany, is now well established in the grounds of the Royal Hospital, Chelsea, where it is not likely to be disturbed. It is a perennial, hassocky, spreading Grass, bears abundance of broad, succulent leaves, and will probably become an important agricultural Grass. It is an acquisition to the British Flora.

The above are all that have as yet been observed and identified. They are probably not more than half the entire number of species introduced in these places. Some have doubtless been overlooked; several have been forgotten, or memoranda of their discovery cannot be produced, being mislaid; and a very large proportion cannot be satisfactorily determined.

In future the stragglers from foreign parts and the new stations for uncommon species will be entered at stated periods, and the room occupied by them will be insignificant compared with the space necessary for a notice of nearly two hundred.

A question has been raised about the propriety and utility of publishing such notices as this. This question is a very proper one. It deserves a proper answer; and it may be answered with at least as much amenity as has sometimes been manifested in its proposal.

What is the use of recording the numerous waifs or strays that are manifestly the *rejectamenta* of gardens, the produce of muck-heaps, things that have sprung up from among the sweepings of the granaries and warehouses of London? These plants are not British, and therefore, say some, why enter them among native productions? Were we to reject every plant which cannot historically be traced from that remote period, when the British Isles first emerged from the lap of *Thetis*, to the present time, our Flora would shrink within humble dimensions. It would not be quite so distinguished either for numbers or interest, among the Floras of the nations, as the mixed races of Britons are distinguished among the inhabitants of the world.

Every object which the great Creator caused to grow either on the earth or in the water, has a history from which something may be learned, if observers will open their eyes to see, and enlarge their minds to receive and entertain the instruction thereby conveyed. It cannot be unknown to the most superficial ob-

servers, that the geographical and statistical relations of plants are subject to considerable change. Advancing intercourse with distant countries, and facilities of locomotion between remote parts of the same country, have not slightly disturbed the previous relationships that existed both in the vegetable and in the political kingdoms. The British Flora, during the last half-century, has received an accession of upwards of 300 plants, most of which have unintentionally been conveyed to our shores; only a few of these are "escapes from cultivation." This is about one-fifth of the estimated number of all the phænogamous plants growing spontaneously in Great Britain. If the aliens and doubtful species be withdrawn, the proportion of the new comers to the genuine Flora of the Island will be about one-fourth.

It is not convenient, to junior botanists especially, that such a large proportion of our spontaneous vegetation should be entirely ignored by botanical historians. It may be urged that these plants are not British; but admitting this, there may be several botanists and plant-collectors who do not know what is British and what is exotic, and who may wish to know something about the species they may chance to stumble on. A plant though not British may be worth notice and investigation.

It may be granted that this is a sufficient answer to the question, What is the use of enumerating those stragglers which appear and disappear with most provoking uncertainty?

But further, the preceding account of the largest inroad of aliens ever recorded, will be of some use to the systematic *staticians* themselves. By it they may enlarge, amend, modify, or correct the lists of "plants occasionally found wild on ballast," in places where now the "garden-flowers grow wild," or lists of species which have been erroneously recorded as growing, etc., or the list of "doubtfully distinct and of ambiguous plants."

The compiler would be gratified to learn that it had been available in aiding the learned compilers of the London Catalogue to amend their lists; but he will be quite as much delighted to hear that it has been useful to the less knowing or simpler portion of the fraternity, who value plants simply on their own intrinsic merits, and not exclusively by their accidental qualities of native birth, indigenousness, aboriginal descent, etc.

The rule adopted by common-sense men in judging of the value of domestic animals, and even higher classes, in the scale

of being, is just as applicable to plants as to persons. The question is not exclusively, Where was he born, and how or through what agency did he reach this land? A more important inquiry is, What are his qualities, or what can he do? It may be of some use to us, as it is of some interest, to know the history of the migration or immigration of plants. This is a curious subject, and withal generally very unsatisfactory. But the most useful portion of the investigation is neither uncertain nor uninstructive. The question, "Is the plant good for any purpose?" can be easily answered. Is it likely to be permanent? is a question which time only can answer. But it is worth while to record its appearance, in order that these two important questions may be answered, or at least that some *data* may be given for their satisfactory solution. If the immigrants be like the Thistles in Australia, injurious weeds, it may be useful to the farmer to know that he is threatened with a fresh agricultural pest. If the alien be useful, as the *Poa sudetica* is honestly believed to be, it should be cultivated. The famous Falkland Islands Tussac Grass, which, as it was prognosticated, might make the fortunes of our west-country farmers and Orkney lairds, has been utterly forgotten. The Pampas Grass and the *Holcus saccharatus* have taken its place. May they have a better fate!

Again, the spontaneous growth of these plants at Wandsworth and elsewhere, proves that the atmospheric or meteoric conditions of a part of this island at least, are not uncongenial to plants whose home appears to be the south of Europe or the basin of the Mediterranean. The causes which produced and are producing (they are still in activity) the above-stated effects at Wandsworth, are and have been in operation in other and distant parts of the country. The shores of the Itchin were examined only one season, and then for a short period; but there all the aliens observed were of the same species as those seen at Wandsworth. But they were probably brought there from a different part of the Continent, and in goods of another description.

At Huddersfield lately (see 'Phytologist' for October, 1859), many aliens have been detected on shoddy-heaps and on fields manured with the refuse of the same. Some of those plants probably belong to the New World. One of them, at least, is a West Indian.

From other parts of the country, as Manchester, Nottingham, Middleborough, etc., reports arrive from time to time of plant-

immigrations which, like Buttercups in May and June, "will be seen, whether we *will* or no."

The readers of this periodical are hereby invited and encouraged to look after their stray species, and to record them with all their attendant accidental circumstances of place, origin, and duration. Genuine botanists are cosmopolitans in the most comprehensive sense of this hackneyed term. They do not ignore a plant merely because it did not happen to exist in a given place in the remote ages when Ray, Johnson, and Gerarde were the great lights of the botanical firmament. Some plants, it may be surmised, might possibly have eluded the keen glance of these worthy and sharp-sighted fathers of the past and present generations of plant-seekers.

The writer of this, who is an old stager, though in a quiet way, takes the liberty of exhorting his younger brethren to avoid pedantry, which abounds in botany as in every other science. It is not convenient to dogmatize about the nativity of a newly observed or discovered plant. Young reporters scarcely know the difference between spontaneous and indigenous. Let them, as they love science and dislike contention, eschew the latter and cleave to the former term. Let them use *spontaneous*, about which they need never be in hesitation, and avoid *indigenous* as they would shun acrimonious disputes. A moderate degree of circumspection will be sufficient to determine if the plant be spontaneous, while no amount of historic and scientific knowledge will suffice to prove that any plant is an aboriginal inhabitant. It may be indigenous or aboriginal, but it is not susceptible of absolute proof. It may probably be assumed that there are aboriginal species here; but our most learned and profound botanists have not yet agreed among themselves about the plants entitled to the honourable station of *ancient natives*.

The following particulars about newly observed species are worth reporting, viz.:—

1st. The duration of the immigrant, whether annual or perennial. The great proportion of the new arrivals are annuals, but some of recent introduction are perennial, viz. *Mimulus luteus, Lepidium Draba,* and *Poa sudetica*. Some annuals appear only at intervals or periods of a few years, and are generally seen in certain crops; such are *Bupleurum rotundifolium, Petroselinum segetum,* etc.

2nd. The extent of ground occupied by the new species should

be stated as closely as possible, and also the frequency of the species on the spot, in order to help to an approximation to its numerical statistics.

3rd. It is always worth while to state the nature of the surface of the ground; if in tillage, the crop growing thereon; if on rubbish, where most of the new plants are seen, what sort of rubbish it is, and the probable place whence the rubbish or soil was derived.

4th. Historical information, when accessible, is above all most satisfactory.

For example, there are two plants well-established, known in their present localities at least a century, but neither of them evincing much tendency to spread. The one is *Maianthemum bifolium* (*Convallaria bifolia*), Linn., only certainly known at Hampstead, in Ken Wood, where it occupies a single spot, slightly enlarged within the last forty years: but thirty years ago there were two patches of it in the same wood, at a considerable distance (several hundred yards apart), now there is only one. The other example alluded to is *Impatiens fulva*, the existence of which was ignored for many years, although the plant was well known. This plant does not appear to increase. Has it been seen out of Surrey, or in any part of this county except in the vale of the Tillingbourne, the Wey, and the Thames? It is plentiful at Albury, Chilworth, Shalford, and Guildford. At Shere, which is not above a stone's-throw from Albury Park, the cradle of this Balsam, there is not one plant. At Godalming, on the Wey, only two miles from Shalford, there is none of it.

Finally, the primary objects to be ascertained are, is the species truly spontaneous? Next, has it been produced from seeds, ripened in the place where it is observed? This last is not very material; for if garden plants produce seeds capable of germination and reproduction, fields under certain conditions may also produce productive seeds. Does the species cover or grow on a considerable space of ground? And, how long has it been observed to appear there? A plant may have all the appearance of an aboriginal, or at least of some so called, and it may not have been seen here before. A striking example of this was observed at Guildford thirteen years ago. *Nicandra physaloides* appeared over a space of scores of acres of cultivated land, as well as in some gardens. It was never observed there before, and probably has not been seen since.

The observer, especially if a tyro, will do well if he adheres rigidly to facts and forbears drawing inferences; he cannot communicate too many of the former, he may do something nearly as foolish as running his head against a lamp-post if he meddles with the latter. The natural historian has to record facts and to observe the appearances and circumstances of things, and to report them in sincerity and simplicity, without infringing on the borders of the natural philosopher.

BOTANICAL NOTES, NOTICES, AND QUERIES.

Important Sale

Of dried specimens of Plants, an extensive Herbarium, and a Botanical Library, at Stevens's, King Street, Covent Garden, on Friday, October 21st, 1859.

Several lots and separate collections of dried plants from all parts of the world, amounting in all to sixty-four lots, were sold in prices varying from 2*s*. to 47*s*. 6*d*. The whole did not realize much above £30.

Lot 65 was the Herbarium thus described in the Catalogue. The biddings for this important lot began at £50, and it was purchased by Mr. Pamplin for £205. It was generally understood that it is for a Public Institution, and that not an English one.

"A most extensive and valuable arranged Herbarium, containing more than 38,000 species of Phænogamous plants, *i. e.* more than one-half the known number of that division of the Vegetable Kingdom.

"Each species is, in most cases, represented by several (sometimes as many as a score, or even more) well-preserved specimens from various countries and by various collectors; the plants are, generally speaking, in excellent order and preservation; they are arranged in their natural families, and are placed within (but not fastened down to) separate sheets of paper; they are strapped up in convenient-sized bundles, of which the number amounts to upwards of four hundred and thirty parcels.

"Each plant is accompanied by a ticket, either manuscript, printed, or lithographed (named on the authority of the Paris Museum Herbarium), with locality, source whence derived, and is often accompanied by memoranda or annotations of the original collector or former possessor.

"It may with safety be affirmed that a collection so important, so extensive, so valuable, has never before been offered for public sale, in one lot. The nearest approach to this Herbarium in importance being that left by the late Mr. Feilding, of Lancaster, and which was by that gentleman's munificent liberality bequeathed to, and is now deposited in the University of Oxford; but the present Herbarium is in some respects an advance over that: it is of very considerably larger extent, which a few details of its contents will at once show, as follows:—

"Embodied in the collection will be found a perfect and complete collection of the plants of Europe, especially rich as regards number of examples in the Floras of Italy, Portugal, and Spain.

"A fine collection of plants (formerly belonging to Professor Ledebour) from the Russian Empire, not European only, but from Asiatic, American, and Arctic Russia.

"Somerfeldt's plants of Sweden, etc.

"From Africa this Herbarium includes the collections of Verreaux, Despréaux, Bourgeau, Kralik, Bové, Drége, Ecklon and Zeyher, Sieber, Kotschy, Aucher-Eloy, Boissier, etc.

"And from other parts of the world large numbers of plants, by the following collectors, are included:—Belanger, Griffith, Gaudichaud, Fortune, Siebold, Gardner, Fraser, Watson, Blanchet, Perottet, Wallich, Webb, Boivin, Goudot, Richard, Jurgensen, Jamieson, Hartweg, Welwitzsch, Cuming, Bertero, Galleotti, Claussen, Linden, Zollinger, Vauthier, Pœppig, D'Orbigny, Kegel, Sagot, Schomburgk, Lobb, Hostmann, Kappler, Drummond, Preiss, and Leprieur; in addition to which, this collection includes the valuable Herbaria left by Sprengel and by Walpers."

The following sumptuous botanical works were subsequently sold, at the prices affixed:—

Andrews, Botanists' Repository, 10 vols. 4to, bound in 5, containing 664 engravings, coloured. £5. 10*s*.

Batemann's Orchidaceæ of Mexico and Guatemala, elephant folio, 40 coloured plates, black morocco. £13.

Cavanilles, Icones et Descriptiones Plantarum quæ aut sponte in Hispania crescunt aut in hortis hospitantur, 6 vols. folio, 600 plates, red morocco. £8. 10*s*.

Duhamel, Traité des Arbres et Arbustes que l'on cultive en pleine terre en Europe, avec les Planches d'après les Dessins de Redouté Bessa, 7 vols. folio, 500 coloured plates. £12.

Flora Danica, Icones Plantarum in Dania et Norwegia Sponte Nascentium, 15 vols. folio, viz. A. Flora Danica, 14 vols., 2520 coloured plates; B. Flora Danica, fasciculus 43, 60 coloured plates; and C. Supplementum Floræ Danicæ, 60 coloured plates. £15. 10*s*.

Humboldt, Monographie des Mélastomacées, Mélastomes, etc., 2 vols. folio, 120 coloured plates, morocco. £4. 10*s*.

Jacquin, Selectarum Stirpium Americanarum Historia (the scarcest of Jacquin's works), plates are not printed, but original drawings, folio maximo, 137 pages, 264 plates of original coloured drawings (only 18 copies made). £25.

Jacquin, Icones Plantarum Rariorum, 3 vols. folio, bound in 4, 648 plates, very rare. £10.

Jacquin, Plantarum Rariorum Horti Cæsarini Schœnbrunnensis Descriptiones et Icones, 4 vols. folio, morocco, 500 coloured plates. £12.

Martius, Genera et Species Palmarum (the celebrated Martius's work on Palms), 3 vols. elephant folio, 245 coloured plates, black morocco, a perfect copy. £22.

Martius et Endlicher, Flora Brasiliensis (all published), viz. fasciculus 1 to 9, 154 plates, 2 vols. folio, brown morocco, and fasciculus 10 to 22, about 352 plates and 2 maps, unbound (all published). £11.

Plenck, Icones Plantarum Medicinalium, 6 vols. folio, 600 coloured plates. £5.

Redouté, les Liliacées, 8 vols. atlas folio, 486 coloured plates, red morocco. £17. 10*s*.

Redouté et De Candolle, Plantarum Succulentarum Historia, 2 vols. folio, black morocco, 185 coloured plates. £4.

Reichenbach, Flora Exotica, 5 vols. 4to, 360 coloured plates, black morocco. £8.

Roscoe, Monandrian Plants of the order Scitamineæ, 1 vol. atlas folio, 112 large and finely-coloured plates, very rare. £3. 10*s*.

Roxburgh's Plants of the Coast of Coromandel, 3 vols. atlas folio, containing 300 coloured plates, half-morocco. £17. 10*s*.

Saint-Hilaire, Flora Brasiliæ Meridionalis, 3 vols. folio, half-morocco, 192 coloured plates, vellum paper. £11. 10*s*.

Thornton's Philosophy of Botany, 4 vols. imperial 4to, numerous plates, russia, scarce. £3. 3*s*.

Wallich, Plantæ Asiaticæ Rariores, 3 vols. imperial folio, 300 coloured plates, half-morocco. £11. 5*s*.

Wight, Icones Plantarum Indiæ Orientalis, 6 vols. 4to, 2,100 plates, half-bound, rare. £24.

Wight, Illustrations of Indian Botany, 2 vols. 4to, 134 coloured plates. £6. 5*s*.

Griffith's Palms of British East India, 1 vol. folio, 139 plates. £2. 10*s*.

Blume, Rumphia, 4 vols. in 2, folio, 200 coloured plates of Orchids, etc., half-morocco. £15.

Pœppig et Endlicher, Nova Genera et Species Plantarum, quas in regno Chilensi, Peruviano et terra Amazonica, 3 vols. folio, with 300 coloured plates. £10.

There were present at this sale many of the botanists, plant-buyers, and booksellers of the Metropolis. These classes were represented by Dr. J. D. Hooker, Mr. Syme, Mr. Brocas, Mr. H. J. Bohn, Mr. Willis, Mr. Wheldon, Mr. Pamplin, etc. etc.

'British Wild Flowers.' *By J. E. Sowerby and C. Pierpont Johnson.*

A long notice of the irregularities in the publication and the nonfulfilment of engagements and promises in reference to the above work has been received. It is too long to be printed *in extenso;* and besides, it is a matter which only concerns the publisher and the purchasers of the work.

'British Wild Flowers' have been noticed in the 'Phytologist' more than once; and it is believed that any further formal notice of the publication would be useless both to the public and to the publisher.

The author is advised to send his papers to Mr. Sowerby. A communication will be left for him at the office of this journal if he will favour the Editor with his address.

"West Derbyshire, near Liverpool," a locality given in Part IX. of Sir W. J. Hooker's 'Species Filicum,' for a monstrosity of *Lomaria Spicant*, to which you have made allusion, is no doubt a misprint for *West Derby*, near Liverpool. J. H. D.

Glenmore, September, 1859.

Sir,—Your reviewer makes a great error in cavilling at the description of West Derby as near Liverpool: he seems to be ignorant that West Derby is a district in the neighbourhood of Liverpool, containing upwards of 50,000 acres. I believe Toxteth Park is in West Derby. From

A Londoner.

15*th September*, 1859.

Mr. Sim, of 9, Commercial Street, Bridge End, Perth, wishes to exchange specimens of *Claytonia alsinoides*, *Carex limosa*, *Scheuchzeria palustris*, etc., for *Cyclamen hederæfolium*, *Villarsia nymphæoides*, *Hyoscyamus niger*, *Isnardia palustris*, *Simethis bicolor*, or other plants of interest.

Communications have been received from

A Londoner; J. H. Davies; Henry Lascelles Jenner; also a long communication about Sowerby's 'British Wild Flowers;' a Reader of the Word; Harriet Beisly; S. B.; W. P.; F. Y. Brocas: John Barton; J. G. Baker; A. Jerdon, etc.

ERRATA.

In September number, p. 285, for *Gerard Burton*, read *Gerard Barton*. Also, in October number, Thirsk Report, *Mr. Gerard Burton* is printed for *Mr. Gerard Barton*.

REMARKS ON THE FLORA OF IRELAND.

By John Sim.

So much has been said and written by more talented individuals than I respecting the climate and vegetable produce of this truly interesting country, that I am afraid I can bring little to light of a novel or interesting character. I shall however avoid as much as possible repeating what has already appeared respecting its Botany in the previous numbers of the 'Phytologist,' and advance nothing relative to its Flora but what has come under my own personal observation. During a period of almost nine years' uninterrupted residence with my regiment in different parts of the island (from April, 1846, till January, 1855), I had ample opportunity of exploring its Flora.

The Flora of Ireland approaches more nearly that of England than Scotland. With the vegetation of England I have no personal acquaintance; with that of the other two countries I am pretty conversant. It is with Ireland, at present, that we have to do. I shall mention only those plants I have seen and gathered in the different counties in which it was my lot to be stationed with my regiment. I first entered Ireland in 1832, and as I travelled from Dublin toFermoy, county Cork, the most common plant appeared to be the common Bramble (*Rubus discolor*), Buttercups and Daisies not excepted. The former lines the sides of every road, skirts every pathway, is here, is there, and everywhere in great abundance. Another very common plant under hedges is the *Arum maculatum;* this plant I never remember to have seen wild in Scotland. On the banks of the Blackwater, near Fermoy, the Grape Hyacinth (*Muscari racemosum*) is frequent. If an alien in England, it appears to be there naturalized and well established. The common Pimpernel (*Anagallis arvensis*), so rare about Perth, is plentiful in the cultivated fields around Fermoy. I left Ireland in 1833, and did not return till April, 1846.

About Dublin *Hypericum Androsæmum* is frequent along the banks of the canal west of Dublin. I left Dublin with my regiment in December, 1847, and came to Limerick, where I set about the study of plants in earnest, and explored the country for miles in different directions, the result of which was

the discovery of many plants I had never seen, some of which in Scotland are seldom or never found. In the vicinity of Limerick I found the following, viz. *Œnanthe fistulosa,* in a marsh, abundant; *Erodium moschatum,* plentiful by grassy waysides; *Ceterach officinarum,* abundant on all old stone dykes, by waysides and in similar stations; *Samolus Valerandi,* in the ditches two miles south-east of the city; and *Chlora perfoliata,* in turfy soil along with *Anagallis tenella,* in perfect beauty. *Scolopendrium vulgare* is here, as everywhere, frequent in Ireland. In the same direction I gathered *Hippuris vulgaris* and *Scutellaria galericulata. Inula Conyza* is found two miles to the east of Limerick and *Cotyledon Umbilicus* on old stone dykes the same distance north of the town. *Malva sylvestris* is abundant everywhere, four feet in height. *Orchis pyramidalis* occurs near the Shannon to the southward of the town; it I did not gather, but saw a recent specimen in a child's hand, who told me it was from that place it was got. I went to Clonmel in December, 1848; I found the following plants in the vicinity of the town:—*Jasione montana,* plentiful in a ravine among the hills south-east of the town; *Asperula odorata,* near the same place; *Melampyrum pratense,* near the road on the south side of the Suir; and *Symphytum officinale,* plentiful along the borders of fields; *Lysimachia nemorum* was frequent near the same place. In a woody den, *Sanicula europæa* was found growing luxuriantly; and in a small pond, *Potamogeton crispum* in great abundance. In 1850 I went to Kilkenny; here I saw few new plants: *Listera ovata* in meadows by the riverside, and *Mercurialis annua* abundant in potato-fields, and *Salvia Verbenaca* near a streamlet half a mile west of the town. *Vinca major* and *minor* are frequent here by hedge-sides, and likewise in the county of Limerick. In February, 1851, I went to Carlow, where I found *Nuphar lutea,* abundant in the river Barrow beside the town, and *Pulicaria dysenterica,* plentiful on the dry banks of the same stream; *Caucalis daucoides* on dry ground in a small plantation by the riverside; *Linaria repens,* eighteen inches in height, maintaining its position on a low wall beyond a hedge; *Saxifraga tridactylites* is here, as elsewhere in Ireland, abundant on the tops of walls and often on the ground. *Erigeron acris* occurs two miles north-east of the town by the wayside, and *Chlora perfoliata* is abundant near the same place. *Lepidium campestre* grows one mile west of the town, and *Malva*

moschata is found in many parts of the neighbourhood. *Campanula rotundifolia*, so common in Scotland, I seldom or never saw in Ireland; and *Digitalis purpurea* and *Sarothamnus scoparius* are by no means frequent. *Parietaria officinalis* is extremely common everywhere in Ireland, literally covering the walls of old castles and old buildings of every description. The common Ivy (*Hedera Helix*) occupies similar situations, but it is not content with buildings; for, like the *Convolvuli* and other climbing plants of the West Indies, it mounts to the top of the highest trees, investing their stems and branches with a rich vesture of evergreen leaves.

From Carlow I next proceeded to Naas, about twenty-five or twenty-six miles northward; there I found few, if any new plants. I got a dwarf species of *Ophioglossum vulgatum* in a marshy locality about a mile north-east of the town, and *Sanicula europæa* about a mile to the south, and *Verbascum Thapsus* near the same place; in a ditch, *Samolus Valerandi*, and in the canal, *Glyceria aquatica*, six feet in height. I left Naas in February, 1853, and proceeded to Galway. To the west of the town along the north side of the bay I gathered *Malva rotundifolia;* proceeding westward, found on a rock *Sedum villosum* (?), I think. Near this spot *Glaux maritima* grew abundantly and luxuriantly, and *Honckenya peploides* among the stones and sand on the beach. Still steering westward, I found, upon a tongue of elevated land jutting into the mouth of the bay, *Dryas octopetala*, displaying its snowy blossoms to the waves of the Atlantic, elevated only a few feet above highwater mark; there it grew freely, exposed to the briny spray and the sweeping tempest. Its usual and only station (this excepted) is high mountains or hills, but in this miniature peninsula it thrives at the level of the sea. About one hundred yards to the north arises a barren promontory (to the farmer it may be so, to the botanist it is otherwise), with little to be seen upon it but a few stunted bushes of the *Ulex europæus*, and occasional examples of *Rosa spinosissima*, and straggling stems of *Erica cinerea*, but to compensate for this deficiency, there is one "bonny gem" growing in abundance, the *Gentiana verna;* this low, unassuming plaint, with its petals of dazzling azure, covers the summit and southern side of this lonely wilderness, far removed from the busy haunts of men: it is here "born to blush unseen and waste its sweetness on the desert air."

About a mile nearer the town, near the roadside, is found *Circæa lutetiana* and *Fœniculum officinale*, the latter apparently truly wild, at any rate naturalized. *Lythrum Salicaria* grows everywhere, by the sides of rivers and streams throughout all Ireland,—at any rate wherever I have been. In Scotland this beautiful plant is very rare; I have only one Scotch specimen from the banks of Loch Lomond. *Linaria Cymbalaria* is common on old wall-tops in and about Galway, and frequently in other parts of the country. On an elevated moor, two miles west of Galway, I gathered the following plants:—*Menziesia polifolia*, *Osmunda regalis*, *Myrica Gale*, and *Drosera rotundifolia*; *D. Anglica*, in a bog; *Nymphæa alba*, in a small loch; *Sparganium natans* and *Utricularia vulgaris* (?) (one of them at least) in peaty pools. *Hypericum elodes* also grew abundantly in the bog; the beautiful *Menziesia* grew luxuriantly, in great profusion, ornamenting this lonely moor with its reddish-purple racemes; the *Myrica Gale* covered some acres, looking like a forest on a small scale; the *Ceterach officinarum* is in Galway and almost every other county of Ireland, luxuriant and abundant.

I left Galway in July, 1854, and proceeded by rail to Belfast,—a long ride indeed. I saw but few plants, and few one can see from a railway-carriage, so as to be able to distinguish species, yet I could make out that *Jasione montana* covered in many places the slopes on either side of the railway. I forgot to mention that *Senebiera Coronopus* and *didyma* grow abundantly near Galway and Carlow by the waysides, and *Stachys germanica*, near to the Queen's College at the the former place. At Belfast, near the mouth of the Laggan, in an oozy ditch, grows *Butomus umbellatus* plentifully; and I was informed by Professor Dickie that about a mile and a half further up the river occurred the *Typha latifolia*. On the pleasure-grounds in the Botanic Garden, grows the *Sibthorpia europæa*, and on the precipices of the trap rock of Cave Hill grows parasitic on *Thymus Serpyllum* the rare and strange-looking *Orobanche rubra*; it is frequent, but as far as I saw not plentiful: owing to the precipitous nature of the rocks I could only with considerable difficulty obtain a few specimens. From the crevices of the same rocks grows the *Saxifraga hypnoides*, and near a quarry on the south side of the hill, *Lithospermum officinale*. Professor Dickie informed me that *Trollius europæus* is found on this hill. With the exception of

Melica nutans, growing among the heather, no other rare plant did I detect.

The foregoing desultory remarks I have committed to paper as they occurred to my mind; and if I can induce others who read this most excellent periodical ('The Phytologist') to a more earnest study of our British wild flowers, in order that they may be partakers of the pleasures, the pure and soul-ennobling pleasures, that spring from the examination of that fairest portion of God's creation, the vegetable kingdom, I have gained my object. Finally, Reader, if you have not in earnest studied botany, begin now; the outlay of a few shillings is all that is required to enable you to be acquainted with the habits and habitats of our British plants.

In a word, I would say, if you want to be a botanist, buy a book, read it, and go to the fields, and you will, beyond doubt, succeed.

John Sim.

PLANTS AND PROVERBIAL PHILOSOPHY.

It appears that the science of botany is still in its infancy, or, at most, its boyhood; when will it grow into manhood, so that every one who has a mind to, may know something more of it? Some persons might exclaim, when they take up the ponderous Herbals of Gerarde, Parkinson, and Salmon, that botany must be a heavy, dull affair, and will never become fashionable. But let us not despair. *Excelsior!* must be the botanist's motto, as he culls the bright flowers from the carpet of Nature; for in that alone he is not satisfied; they have a history beyond a "local habitation and a name." They have virtues and uses given by the Divine power by whom they were created for the benefit of man. We must learn as we live, and not forget that life without knowledge is death.

I wish to call the attention of your readers to a work called 'Proverbial Philosophy,' a fashionable work, as books are sometimes called, written by Martin Tupper, in which he tells his readers something about plants and flowers; but not being so far advanced as most of your readers are in the science of

botany, I cannot comprehend Mr. Tupper's meaning. The following is a passage from chapter 5, called 'Hidden Uses':—

"Not long to charm away disease hath the Crocus yielded up its bulb,
Nor the Willow lent its bark, nor the Nightshade its vanquished poison;
Not long hath the twisted leaf, the fragraut gift of China;
Nor that nutritious root, the boon of far Peru.

"Even so there be virtues yet unknown in the wasted foliage of the Elm,
In the sun-dried Harebell of the downs, and the Hyacinth drinking in the meadow,
In the Sycamore's winged fruit, and the facet-cut cones of the Cedar;—
And the Pansy and Geranium live not alone for beauty,
Nor the waxen flower of the Arbute, though it dieth in a day.

"The world may laugh at famine when forest-trees yield bread,
When Acorns give out fragrant drink, and the sap of the Linden is as fatness,
For every green herb, from the Lotus to the Darnel,
Is rich with delicate aids to help incurious man."

I wish to know what particular Nightshade, Crocus, and Willow, is respectively referred to as "having power to charm away disease"?

The tuberous root above named may be intended for the Potato. But did this plant come from Peru? Did it not come from Virginia, with Drake or Raleigh? There was, I think, a plant which came from Peru called *Sisarum peruvianum*, or Skyrrets of Peru; but the introduction of it was a long time ago, so Gerarde tells us.

Leaving in darkness the unknown virtues of the "foliage of the Elm," I wish to know what the "sun-dried Harebell of the down" is; and the "Hyacinth in the meadows drinking."

I conclude Arbute is intended for *Arbutus*, but is there one, the flowers of which "die in a day"?

I am puzzled about the "fragrant drink" of the Acorn, and the "fat sap of the Linden." In Hooker's 'British Flora' I find a quotation from some writer under Lime-tree, who says its flowers "at dewy eve distilling odours."

The "delicate aids" of the Darnel I must leave as mysterious, for I only know the one which botanists call *Lolium temulentum*, and the property of this is anything but delicate, and it would be well were its uses, in Mr. Tupper's language, hidden.

S. B.

BOTANICAL RAMBLES IN JUNE, 1859.

By John Sim, A.B.S.Ed.

Ramble II.—*To Birnam Hill.*

This is now the third visit I have paid to this interesting mountain. On a former occasion (in August 1856) I ascended to its eastern summit. My second visit was confined to the north-east corner near its base. This year my researches were more extensive.

It was a lovely day toward the end of June, 1859. I and two of my children left Perth by excursion-train for Birnam Hill; we left the grand terminus at Perth about 2½ P.M., and were at Birnam terminus and station about a quarter past four. At the foot of this mountain and at the north side runs from west to east a small stream; along its margin is a narrow cart-road, used in the conveyance of timber from the wood. The north side and east end of the mountain is wooded about half-way to the summit.

I ascended the margin of this murmuring brook, gurgling in its rocky bed, and had not gone far until I observed in its margin a fine bushy plant of *Polypodium Phegopteris;* passing onward and upward a little further, I saw on the left in the edge of the wood several fine plants of *Aquilegia vulgaris,*—the first time I ever saw the plant wild in Scotland, although in Ireland I have seen it near Kilkenny; I collected several plants of it, and still steering westward, I came upon an immense quantity of *Polypodium Dryopteris.*

I had now wandered about a mile, and was getting very tired and weary, but, loath to turn back, I determined to ascend the hill at the first hollow I came to. I had not gone far until I arrived at a rocky ravine, in the bottom of which was a tiny rill, almost dried up from the long drought which had been severe for the space of two months.

I and my children now commenced a laborious ascent, clambering over rocks, boulders, and prostrate trees, etc., which almost precluded the possibility of our onward progress. I did not like to go back the road we came, so struggled onwards and upwards, through trees and stones, until I had ascended about five or six hundred feet above the level of the Tay; at this height I escaped from the den and came all at once upon an almost im-

passable barrier of "heather" (*Calluna vulgaris*). Now I had not only to wend my own way through this formidable heathy forest, but to drag the two children.

I never saw so much of long heather in my life; it was six or seven feet, and in a half-procumbent position; had it been erect as it was slanting, it would have been impossible for any human being to have gone forward: as it was, it taught me a lesson never to attempt such a task again. Passing slowly forward and upward, at the height, I should imagine, of seven or eight hundred feet, the heather became considerably shorter, and progress became less tedious and difficult; I sat or rather fell down and lay for half an hour; I then arose, and looking around me saw the heath spotted with abundance of the snowy blossoms of *Trientalis europæa*, and prostrate here and there occurred the trailing stems of *Lycopodium clavatum*.

Passing upwards until, I should say, I was about 1,000 feet above the town of Dunkeld, and 500 feet below the summit of the mountain, and being now quite clear of the wood, I sat down on a hillock and took a survey of the beautiful and extensive landscape, stretching far and wide its picturesque scenery, consisting of hill and dale, mountain and moor.

Right before me to the northward and westward lay the fertile vale of Strath Braan, through which the impetuous little river Braan pursued its precipitate course, until it mingled with the waters of the majestic Tay. In the distance rose the huge Grampians, with their rugged and rocky summits and sides skirted with trees and shrubs planted by nature, and not by man. Directly northward in the distance rose Ben-y-gloe. Standing prominent, head and shoulders above its companions, and alongside its rival neighbour, stood Ben Vracky.

Looking eastward, the little town of Dunkeld, with its Gothic cathedral, lay before me, and 1,000 feet below where I sat. Eastward of it the Loch of Cluny was seen obscurely, partly hid by the intervening woods. The vale of Strathmore was all but invisible to me, being on the northern side of the mountain, and more than 500 feet from its summit.

Finding I had neither strength nor time to reach its top, I wended my way downwards by a footpath to the terminus; and on my way collected the following plants:—*Carex binenis, C. pulicaris* and *C. pilulifera*. Among the heather I gathered a few

plants of *Gymnadenia* or *Habenaria albida*, *Vaccinium Vitis-idæa*, and plenty of *Antennaria dioica* and *Trientalis europæa*. I collected nothing else worthy of notice, unless *Polygonum viviparum* be considered such, of which I procured a good supply, and am willing to give any botanist a specimen of it and *Trientalis europæa* as long as they last, upon writing to me and enclosing a penny stamp to pay postage. At 8 P.M. the train left Birnam, at which time I stept into the railway carriage, and in less than an hour was in Perth.

RAMBLE III.—*To Wood of Scone.*

On the 21st of June, 1859, I went in search of the *Moneses* to the wood of Scone, where I had been on a former occasion and collected a good supply. This summer, I am sorry to state, I was not so fortunate, for instead of, as I expected, finding another locality for this rare and fragrant flower, I could only obtain a few rather stunted specimens from the place where I found it formerly. I wandered backwards and forwards in expectation to find it in another station, as reported to me by a Scone gardener, and my hopes were the more brightened as he stated that it was in that place abundant. After fruitless search, until I was completely fatigued, I abandoned the task of further search, and turned to come home, when lo! at my foot, under the shade of a tall Scotch Fir tree, I discovered a bed, about three or four square yards in extent, of what seemed to me to be a stranger not unlike to the common *Veronica officinalis;* on a closer inspection I soon discovered my mistake, and seeing two of its tiny branches bearing each two delicate, drooping flowers, I at once recognized it to be the lovely *Linnæa*.

I was overjoyed at meeting with this unexpected stranger in the neighbourhood of its fair companion, *Moneses grandiflora*. Like the *Moneses*, it is very sweet-scented, the odour exactly resembling our common *Spiræa Ulmaria* and that of the *Moneses*, the willow-leaved, shrubby Verbena. I am sorry I could only obtain two small sprigs of it in blossom; had I got a good supply I should most willingly have shared with my botanical friends. The same remark holds good respecting the *Moneses;* I only got a few specimens, and it is almost all gone. I make these statements to prevent the readers of the 'Phytologist' making application for a specimen of either plant.

Elated with my success at finding the *Linnæa borealis*, and more so at being the first to discover it in the wood of Scone, I returned home, considering myself amply compensated for the want of the *Moneses* by the discovery of the *Linnæa*. I discovered no other rare plant in the wood that day.

I collected a few specimens of *Pyrola minor* and *Habenaria bifolia*, when I could get nothing better.

Bridge End, Perth, Sept. 1859.

CHAPTERS ON BRITISH BOTANY.

CHAPTER III.

Pliny's Notice of Early Grecian Writers on Plants: Orpheus, Homer, Hesiod.—Medical Authors: Hippocrates.—Philosophers: Pythagoras, Aristotle, Theophrastus.—Catalogue of Plants recommended as Remedial Agents by Hippocrates.

Pliny the Elder, book xxv. chap. 5, Bohn's edition, vol. v. p. 81, informs us, that "the first person of whom the remembrance has come down to us, as having treated with any degree of exactness on the subject of plants, is Orpheus."* He proceeds to enumerate other ancient authors who treated on this subject. "Next to him Musæus and Hesiod, of whose admiration of the plant called *Polium* we have already made some mention. Orpheus and Hesiod, too, we find speaking in high terms of the efficacy of fumigation. Homer also speaks of several other plants by name, of which we shall have occasion to make further mention in their appropriate places."

"In latter times again, Pythagoras, that celebrated philosopher, was the first to write a treatise on the properties of plants, a work in which he attributes the origin and discovery of them to Apollo, Æsculapius, and the immortal gods in general."

If Pliny's account of this work by the Sage of Samos is to be credited, its loss is not very material. Our knowledge of plants would not have been much increased by its preservation. Pliny has probably recorded all the botanical facts to be gleaned from this ancient philosopher.

* A mystic (? mythic) personage of the early Grecian mythology, under whose name many spurious works were circulated. See Pliny, *loc. cit.*

If the most eminent philosopher of Greece, who embraced in his works both the great domains of science,—that of matter, or physics, and that of mind, metaphysics,—had condescended to write on plants, we should have had something important and definite on the subject.

The little information to be gleaned from Aristotle on botany has been collected by Athenæus, *q. v.*

There is a treatise on plants by a pseudo-Aristotle, a work now universally ignored; both the learned and the unlearned condemn it as a spurious production.

Although the genuine Aristotle performed little in this department of natural science, he laid the foundation for all the subsequent investigations into the vegetable kingdom, by which Greece and Grecian writers were distinguished. His disciples were stirred up by his example and encouraged by his success in the classification and description of the animal kingdom. The zeal of the Peripatetics in this branch of learning is sarcastically described by Lucian, who amused himself with the amiable weaknesses of the fraternity, just as the conductors of a celebrated periodical laugh at the labours of modern naturalists.

The first prose author of Greece still extant, after Herodotus, is Hippocrates, a native of Coos (Cos, an island in the Grecian Archipelago). A great many books or treatises have been collected under his name, or attributed to him. From the time of Miltiades to that of Ptolemy Philadelphus, or during a period of 250 years, medical books in the Greek language were composed and compiled, all of which are comprehended under the term, 'Works of Hippocrates, the Son of Heraclides.' See Sprengel, Hist. Med. i. p. 366.

In this ancient collection of medicinal remedies, most of which are procured from the vegetable kingdom, there are no botanical descriptions like those that abound in our times.

The names are sometimes omitted, and the plants are merely noticed or designated as having certain parts resembling parts of other plants. Hence we have the terms, "myrtle-leaved," and other usual botanical characteristics.

In Hippocrates, Galen, and other medical authors, the medicinal qualities only are given. To these we are indebted for most of our knowledge of ancient botany. The ancients were utili-

tarians. The economical sciences are not exclusively the inventions of modern times.

In the following catalogue of plants common both to Greece and to England, the usual Latin names stand first, and they are ranged alphabetically; the Greek name, when there is one, follows within parentheses. The list will be followed by some general observations on the plants enumerated therein.

FLORA HIPPOCRATICA, *the Medicinal Plants of the early Physicians.*

Note.—Hip. and H. are abbreviations for Hippocrates. The quotations are from Sprengel, 'Historia Rei Herbariæ.'

Acorus Calamus, var. *indica* (καλαμος μυρεψικος). This variety was brought into Greece after the expedition of Alexander the Great to the East. The plant is a native both of England and Greece. Named but not described by Theophrastus. A Grecian panacea. Hip. ii. 651.

Adiantum Capillus-veneris (αδιαντον), the genuine Maidenhair, a rare native of the western coasts of the British Isles. Employed in fistulous disorders. H. 888.

Anagallis arvensis (αναγαλλις), the Poor Man's Weatherglass, was employed by the ancient Greek physicians in ulcerous complaints.

Anchusa officinalis (αγχουσα), Common Alkanet, a doubtful native of Britain; used in ulcerous cases. H. 879.

Anethum Fœniculum (μαραθρον), Fennel; used in various complaints. H. i. 597.

Anthemis Cotula (παρθενιον το μικροφυλλον), Stinking Mayweed, was employed in ulcerous cases. H. 877. The earliest authority for the name *Parthenium?*

Apium graveolens (σελινον ελειον), Celery; H. 529. This plant and the following appear to have been observed from the earliest times. First mention of *Selinum?*

Apium Petroselinum (σελινον), Common Parsley. A doubtful native of Britain, but often found spontaneous on old walls and in waste places about ruins.

Artemisia Absinthium (αψυνθιον), Common Wormwood. A plant well-known throughout Europe. The first written authority for *Absinthium?*

Arum maculatum (αρον μεγα), Spotted Arum; H. 493. Eight species of *Arum* were known to the ancients, and they are de-

scribed or named by Pliny, Dioscorides, Apuleius, and Theophrastus.

Bupleurum rotundifolium (*βουπρηστις*), Hare's-ear or Thorowwax, is one of a numerous genus of European plants. Some of them are enumerated or commended or described by Hippocrates, Theophrastus, Galen, and Pliny.

Cheiranthus Cheiri (*λευκοιον*), the Wallflower, is said to be a genuine native of Greece; it grows spontaneously on walls, roofs, and occasionally on rocks, in most parts of Europe.

Conium maculatum (*κονειον*), Hemlock, so celebrated among the ancients, is a native of most parts of Europe. In rich soils and shaded places it often exceeds two yards in height.

Corylus Avellana, Hazel; Hip. 490. Our common Hazel is recorded by Theophrastus, Virgil, and Ovid. A generally distributed European shrub.

Crithmum maritimum (*κρηθμον*), Samphire, had formerly the reputation of an almost universal remedy; H. i. 591. It is a seaside plant, not uncommon on the rocky south coasts of England. Its name is from *κριθη*, Barley, to which the fruit bears some resemblance.

Cyclamen europæum (*κυκλαμινος*), Sow-bread, *Panno di porco*, as this plant is still called in Sicily, was highly esteemed in Greece; H. i. 612. There are several plants of the same name described or noticed by Grecian authors.

Cyperus longus (*κυπειρον*), Galingale. This, with some other waterplants, is mentioned by Homer as fodder; also by Varro and Columella. The sweet-smelling roots were officinal and esculents. Probably several species were united under this name, as *Gramen* was a general term, comprehending many distinct plants.

Erysimum officinale (*ερυσιμον*). Is this *Sisymbrium officinale*, Lin.?

Euphorbia Characias (*τιθυμαλος*). This is an alien to the British Flora. It grows rather plentifully in Greece. See Sibthorp.

Hippophaë rhamnoides (*ἱπποφαες*). The name *Hippophaë* at least, if not the plant, was emplyed in these primitive ages. Its name implies something which makes a horse sleek. The root of White Bryony is used for this purpose. Is Bryony the Hippophaë of the ancient Greeks?

Hordeum vulgare (κριθη), Barley, was better known to the ancients than the Oat was. Hip. iii. 496.

Inula Helenium (ἑλενιον), H. 572; Spr. i. 47. The bitter, spicy root of this species was celebrated by Pliny and the early botanists.

Isatis tinctoria, the Woad, is described by Hippocrates, but without a name. See Sprengel, i. 45, "folia epithematibus inserviebant."

Lepidium latifolium (καρδαμον). Galen considers this the same as σκυριδιον. Some of these Cress plants have a smell somewhat like that of Garlic (σκυριδιον).

Malva rotundifolia (μαλαχη), Round-leaved Mallow, an esculent used with Mercury and Blite. Comp. Hesiod. Opera et Dies, 40.

Matricaria Chamomilla (ενανθεμον), Wild or Corn Chamomile. Available for many diseases. See Hip. i. 625.

Matricaria Parthenium (παρθενιον), Feverfew or Febrifuge, Fever-wort, a plant which still has a great reputation in rustic pharmacy, and is highly esteemed by the cow-leech. It is called a doubtful native of England.

Mentha Pulegium (γληχων), Pennyroyal. A universal remedy; Hip. i. 606. It is still highly esteemed in the removal of menstrual obstructions. It is ignored by the Faculty. A more effective medicine has been long known.

Mentha sativa (μινθος), Mint. There are many species or varieties described by the ancients; all celebrated aphrodisiacs, Hip. 570.

Mercurialis annua (λινοζωστις), Annual Mercury. A potherb; Spr. i. 48.

Narcissus poeticus (ναρκισσος). The bulbs of Narcissus were officinal; Spr. i. 41; Dios. iv. 162. One of our doubtful natives.

Pæonia officinalis (γλυκυσιδη χηραμις), Peony; Hip. i. 611. A remedy for many diseases. Very doubtfully indigenous in the British Isles.

Peucedanum officinale (πευκεδανον), Officinal or Sea-Sulphurwort, the common Haarstrang of the Germans. In England almost confined to the south-east coast.

Polygonum Persicaria (πολυκαρπον), Persicary. Anciently used as a styptic.

Potentilla argentea (πενταφυλλον). This is not our plant,

which is not enumerated by Professor Sibthorp as a member of the Grecian Flora.

Rosa canina (κυνοβατος), the Dog Rose, is a native of almost all parts of Europe, Greece included. We have in this example both the plant and its ancient name, *Dog-brier*, κυνοβατος.

Rubia tinctorum (ερυθροδανος), Madder. Spr. i. 38.

Ruscus aculeatus (μυρρινη αγρια), Butcher's-broom; a vulnerary. Hip. 880.

Sambucus Ebulus (ακτη), Dwarf Elder, Dane-wort. This strong-smelling plant is a fleabane; it has the reputation of driving away fleas. Hip. ii. 468.

Sedum album (επιπετρον), White Sedum; a vulnerary. Hip. 875. Said to be a doubtful native of the British Isles; it is however found in many places on old walls and on roofs.

Sempervivum tectorum (κριναν θεμον), Houseleek. Hip. 570.

Sinapis nigra (ναπυ), Mustard (Lat. *Napus*). Nep, Nip, and Turnip are derived from the ancient Greek name. Spr. i. 45.

Smyrnium Olusatrum (ἱπποσελινον), Horse Parsley. An almost universal remedy; Hip. i. 603. A doubtful native, and rather uncommon plant.

Solanum nigrum (στρυχνον), Nightshade (garden). This almost universally distributed European plant might be the plant indicated by ancient authors. It is called στρυχνος μανικος, or *Solanum furiosum;* in German, *Toll-kraut.*

Sorbus domestica, the genuine Sorb or Whitty Pear of Wyre Forest. Spr. i. 43; Hip. 405.

Tamarix gallica (μυρικη), Tamarisk; a remedy for hæmorrhoidal complaints. Hip. 894.

Tamus communis (αμπελος αγρια), Our Lady's Seal, a comparatively modern name. It is classed by Hippocrates among remedies for fistular complaints; 889.

Teucrum Scordium (σκορδιον). This kind of Sage has an aromatic Garlic odour; hence its name, from σκορδιον, a kind of Garlic.

Tormentilla erecta (πενταφυλλον μελαν). The Tormentil root has been celebrated in all ages in all parts of Europe. It was employed in pulmonary cases.

Tordylium officinale (σεσελι), Hartwort, a doubtful native of the British Isles. It is doubtful what plant the Greeks meant by this name; probably more than one plant.

Trifolium arvense (forte λαγωπυρος), Haresfoot Trefoil. Billerbek agrees with Sprengel that this is the species recommended by Hippocrates as a remedy against the flux (*ruhr*).

Tussilago Farfara (βηχιον), Coltsfoot or Tussilago; a remedy for cough and pulmonary diseases. It has been smoked from time immemorial. See Diosc. iii. 17.

Urtica dioica (ακαλη φη et κνιδη), the great Nettle, was named by the ingenious Greeks ακαλη φη (ακαλυφη), Spr., because it is not agreeable to touch it. Spr. i. 47.

Viola odorata (λευκοιον το μελαν), the Violet, called by the modern Greeks βιολετα, still grows in Greece. See Sibthorp.

Zostera marina (βρυον θαλασσιον). Hip. 570. Grass-wrack.

In the preceding list of plants assumed to be common both to Greece and the British Isles, there occur the following, which have names recognized in the present day either as representatives of the same genera and species, or of allied species or kindred genera. It is very probable that the plants known by the early Grecian botanists are the very same as those now so called by modern botanical authors. Some are generic and others are specific names; but all have descended to us from the early teachers of Western Europe. The names of the authors or original inventors of the vegetable terminology of those days are irrecoverably lost. The following names were employed by Hippocrates, the first prose author in whose works they are to be found.

Adiantum, the name of a Fern; *Anagallis*, Shepherd's Weather-glass or Shepherd's Clock; *Anchusa*, Alkanet, an Arabic name, a plant with a colorific root; *Absinthium*, Wormwood; *Arum*, Wake-Robin; *Conium*, Hemlock; *Crithmum*, Samphire (St. Pierre's Herb); *Cyclamen*, Sowbread, should be a climbing plant; *Cyperus*, Galingale; *Erysimum* (Sisymbrium?), Treacle Mustard; *Hippophaë*, Sea Buckthorn (Bryonia?); *Helenium*, Elecampane, now the specific name of an English plant; *Mentha*, Mint; *Narcissus*, Peucedanum; *Rosa canina* (κυνοβατος), Dog Rose; *Scordium*, a specific name.

The following are assumed to be both Grecian and English plants, though they are not now called by their Greek names. We have adopted in modern times the Latin names under which they appear or are described or noticed in Pliny, the great botanical authority in the Middle Ages.

Fœniculum, Fennel; *Anethum,* Anise; *Anthemis Cotula,* Stinking Mayweed; *Apium graveolens,* Celery; *A. Petroselinum,* Parsley; *Bupleurum rotundifolium,* Hare's-ear or Thorow-wax; *Cheiranthus Cheiri,* Wallflower; *Corylus Avellana,* Hazel; *Euphorbia Characias,* Great Spurge; *Hordeum vulgare,* common Barley; *Isatis tinctoria,* Dyer's-wort, Glastum, or Woad; *Mentha Pulegium,* Pennyroyal, an estimable plant, as both its English names imply value and dignity; *Mercurialis annua,* Annual Mercury; *Rubia peregrina,* Madder; *Ruscus aculeatus,* Butcher's-broom; *Sambucus Ebulus,* Dwarf Elder; *Sinapis nigra,* Black Mustard; *Sorbus domestica,* Service-tree; *Tamarix gallica,* Tamarisk; *Tamus communis,* Lady's-seal; *Teucrium Scordium,* Garlic Sage; *Tormentilla erecta* (T. officinalis) common Tormentil; *Trifolium arvense,* Haresfoot Trefoil; *Tussilago Farfara,* Coltsfoot; *Urtica dioica,* Stinging Nettle; *Viola odorata,* Sweet Violet; *Zostera marina,* Grass-wrack.

It is probable, though not absolutely certain, that the above-named plants are the same as those described or mentioned by Hippocrates, the first prose author who introduced plants by name to his countrymen, and whose names have been handed down to us.

It might be worth while to ask, why modern botanists (those who have lived since the time of Linnæus) have almost invariably assigned the authority of this great naturalist, as voucher for these anciently established species or genera. It is said or assumed, that the first discoverer of a new species, genus, or order, has a right to name his discovery. The great reformer of natural science in the eighteenth century is credited with many names which he neither invented nor applied.

CHAPTERS ON FUNGI.

By Archibald Jerdon.

CHAPTER III.

Since the end of last century, great advances have been made in the science of Mycology, and this has been chiefly owing to the labours of Continental writers, who have devoted much at-

tention to Cryptogamic Botany. *Persoon* was the father of modern Mycology, and the founder of a new and better system, which has since been greatly amended and improved by the famous botanist *Fries*, whose works are now the standard authorities on the subject. *Corda*, *Tode*, *Montagne*, and other Continental writers, have also greatly enlarged our knowledge of the science.

Mycology was, for a long time, much neglected in this country, and even now there are very few who pay much attention to it. Withering appears to have been the first who published any detailed and systematic account of the Fungi of Great Britain, but his work, though of value at the time, is now almost useless, from the great improvements which have taken place in the mode of classification, and from the great number of species that have been added to our Flora. Sowerby's 'British Fungi,' published in the end of last century, and containing coloured figures of most of the species then known, is a valuable work, and is still useful as a book of reference. Purton's 'Midland Flora' contains descriptions of a considerable number of Fungi, and is a useful book also, though of a local character. Dr. Greville's 'Scottish Cryptogamic Flora,' a valuable illustrated work, contains a number of most beautiful plates of Fungi, and affords great assistance to the student of Mycology. Indeed without the aid of some illustrations it is difficult for a beginner to make much progress in the study.

The fifth volume of Smith's 'English Flora,' by Hooker, is the last systematic work on British Fungi that has been published in this country, and must therefore be considered as the "text-book" of the English student. The part of that volume which contains the Fungi (part ii.) is written by the Rev. M. J. Berkeley, one of the best mycologists of the age, and who has lately published a very excellent work, entitled an 'Introduction to Cryptogamic Botany,' which should be in the hands of every cryptogamist.

In giving the following sketch of the modern system of classification of Fungi, I cannot have a better guide than the last-named author, and shall therefore take the liberty of borrowing somewhat from his pages.

Fungi are classified by Mr. Berkeley as part of the great class of Thallogens (Lindley), and are considered as forming a portion of an *alliance*, termed *Mycetales*, which also includes the Lichens. They therefore stand thus:—

Class THALLOGENS.

Alliance Mycetales.

A. *Fungales.*

They are defined to be, "Hysterophytal or Epiphytal Mycetals, deriving nourishment by means of a mycelium, from the matrix, and never producing green bodies resembling chlorophyl."

In Lindley's 'Vegetable Kingdom' the following definition of Fungi is given:—"Cellular flowerless plants; nourished through their thallus (mycelium or spawn); living in air; propagated by spores, colourless or brown, and sometimes enclosed in asci; destitute of green gonidia."

These two definitions, taken together, may probably give the student some idea of the nature of Fungi; but it is almost impossible to convey even a general conception of so extensive and varied a class of plants by *any* definition.

Fungi are distinguished from Algæ, on the one hand, by living in air and not in water (though one two species do occur in water or its vicinity); and from Lichens, on the other hand, by being nourished by the matrix (or substance on which they grow), and by not producing the little green globular bodies, called *gonidia*, which are found in Lichens.

In proceeding to divide the Fungi into Orders, etc., Mr. Berkeley takes, as the basis of his arrangement (which he states to be essentially the same as that of Fries), the different modes of fructification I have already alluded to, viz. the production of naked spores, and of spores enclosed in asci. The former are denominated "spores," the latter "sporidia;" and two principal divisions are formed termed "*Sporiferi*" and "*Sporidiiferi.*" These two great sections are again divided into groups, analogous to the Natural Orders of phænogamous plants, as follows:—

I. *Sporiferi* (naked spores).

Order 1. Hymenomycetes. Spores naked, hymenium free, mostly naked, or, if enclosed at first, soon exposed.

2. Gasteromycetes. Spores naked, hymenium enclosed in a peridium, seldom ruptured before maturity.

3. Coniomycetes. Spores naked, mostly terminal, seated on inconspicuous threads, free, or enclosed in a perithecium.

4. *Hyphomycetes.* Spores naked, variously seated on conspicuous threads, which are rarely compacted; mostly small in proportion to the threads.

II. *Sporidiiferi* (Sporidia in sacs).

5. Physomycetes. Fertile cells seated on threads, not compacted into an hymenium.

6. Ascomycetes. Asci formed from the fertile cells of an hymenium.

These Orders are again divided into the following Suborders:—

I. Hymenomycetes.

A. *Hymenium inferior, except in resupinate forms.*

Suborder 1. *Agaricini.* Fructifying surface lamellose.

2. *Polyporei.* Fructifying surface porose or tubulose.

3. *Hydnei.* Fructifying surface clothed with prickles.

4. *Auricularini.* Fructifying surface even, without folds, tubes, prickles, etc.

B. *Hymenium superior or circumambient.*

5. *Clavariei.* Clavate, or variously branched, rarely lobed or gelatinous.

6. *Tremellini.* Lobed, convolute, or disciform, gelatinous; fertile threads not compacted into an hymenium.

II. Gasteromycetes.

A. *Hymenomycetous.*

Suborder 1. *Podaxinei.* Stipitate, subclavæform; hymenium convolute, enclosed in a volva-like peridium, withering or entirely drying up.

2. *Hypogæi.* Subterraneous; naked or invested with a confluent, or very rarely a distinct peridium.

3. *Phalloidei.* Hymenium passing into a diffluent mass.

4. *Nidulariacei.* Peridium enclosing one or more distinct, free or stipitate sporangia, which contain a mass of cells, of which the central ones produce spores, or sporophores.

B. *Coniospermous.*

5. *Trichogastres.* Plant at first cellular; hymenium drying up, and leaving a dusty mass of threads and spores.

6. *Myxogastres.* Whole plant at first gelatinous. Peridium containing at length a dusty mass of threads and spores.

III. Coniomycetes.

A. *Growing on dead or dying plants.*

* *Subcutaneous.*

Suborder 1. *Sphæronemei.* Perithecium present or rudimentary.

2. *Melanconiei.* Perithecium manifestly none.

3. *Phragmotrichiacei.* Spores arranged in threads.

* * *Superficial.*

4. *Torulacei.* Spores more or less moniliform, formed by the rupture of the fertile threads.

B. *Parasitic on living plants.*

5. *Pucciniæi.* Spores mostly oblong, septate.

6. *Cæomacei.* Spores subglobose, rarely vesicular; simple, or if formed from the articulations of the fertile threads, deciduous.

IV. Hyphomycetes.

A. *Fertile threads compacted, sometimes replaced by cells.*

Suborder 1. *Isariacei.* Stem or stroma compound. Spores dry, volatile.

2. *Stilbacei.* Stem or stroma compound. Mass of spores moist, diffluent.

B. *Fertile cells perfectly free, or slightly anastomosing.*

3. *Dematiei.* Fertile threads dark, carbonized. Spores often compound and cellular.

4. *Mucedines.* Fertile threads very distinct, mostly white or coloured. Spores mostly simple, scattered or collected in heads.

5. *Sepedoniei.* Fertile threads scarcely distinct from the mycelium. Spores very abundant.

V. Physomycetes.

Suborder 1. *Mucorini.* Fertile cells bladder-shaped, scattered on the threads, which are not compacted so as to form a distinct hymenium. Sporidia indefinite.

VI. Ascomycetes.

A. *Asci persistent.*

Suborder 1. *Elvellacei.* Carnose, waxy, or tremelloid. Hymenium exposed, very rarely nearly closed.

2. *Tuberacei.* Hypogeous. Hymenium mostly complicated.

3. *Phacidiacei.* Hard or coriaceous. Hymenium at length exposed. Disc orbicular, or very narrow and linear, surrounded by the obtuse or inflected margin.

4. *Sphæriacei.* Perithecia opening by a distinct punctiform, or short linear ostiolum. Asci mostly springing from the walls.

B. *Asci often evanescent.*

5. *Perisporiacei.* Perithecia free, often surrounded by variously shaped threads. Asci springing from the base.

6. *Onygenei.* Receptacle clavæform. Asci springing from threads, which traverse its cavity. Sporidia at length pulverulent.

In the above classification, the order given to the different divisions and subdivisions by Mr. Berkeley is reversed, and the higher tribes are placed first in order, descending in the scale, instead of ascending as he does.

In my next Chapter I propose to illustrate the Suborders, by giving descriptions of some of the common and more interesting species belonging to each.

Mossburnford, Nov. 11, 1859.

THORNS *v.* THISTLES.

I think the following extract from Hasselquist's 'Travels in the Holy Land' (p. 289) may be interesting to your correspondents Mr. Hind and S. B.

"*Of Thorns mentioned in the Holy Scriptures.*—We know very few of the Thorns mentioned in the Scriptures. The Rest-harrow (*Ononis spinosa*), that most pernicious and prickly plant, covers entire fields and plains in *Egypt* and *Palestine*. I make no doubt but this is referred to in some parts of the Holy Scripture; I shall leave philologists to determine which of the Thorns

there mentioned is. The Arabians at present in Egypt call it *Akol*. This is perhaps that which Moses means when he curses the earth; it grows in great plenty *promiscuously with the large Thistles* in the uncultivated parts of Egypt."

Hasselquist also notices the *Rhamnus Spina-Christi*, the Egyptian Buckthorn, and says,—"In all probability this is the tree which afforded the Crown of Thorns put on the head of Christ. It grows very common in the East. This plant was very fit for the purpose, for it has many small and sharp spines, which are well adapted to give pain. The crown might be easily made of these soft, round, and pliant branches; and what in my opinion seems to be the greatest proof is, that the leaves very much resemble those of Ivy, as they are of a very deep green. Perhaps the enemies of Christ would love a plant somewhat resembling that with which emperors and generals were used to be crowned, that there might be a calumny even in the punishment."

Hasselquist notices *Cardui* and *Cnici*, six species; Thistles, on the road between Rome and Jerusalem; but I do not find he includes the *Prunus spinosa* in his list of Palestine plants.

Mr. Hind says in his article in the 'Phytologist' for last September, that our good friend, the Editor, has been *caught napping;* but I hope he will soon "*wake up,*" and set at rest the question between him and S. B. A READER OF THE WORD.

REPORT OF THE BIRMINGHAM NATURAL HISTORY ASSOCIATION.

By W. HINDS, M.D.

Reports have lately been made to this Association upon the Natural History of Bewdley Forest, and also upon the locality—renowned amongst naturalists—of Coleshill Bog, near Birmingham. The forest of Bewdley is divided nearly into two parts by the Severn, and in appearance is almost sub-alpine. The surface soil is poor, and composed partly of a yellow clay. The Flora of this forest is not quite so comprehensive as has been supposed. There is a brook called Dowle's brook, the banks of which are, however, somewhat prolific. The forest itself is merely a copse of Oaks of rather recent growth, the trees being cut down once

in twenty years. There is thus much undergrowth, and little leaf-mould by means of which the soil might be enriched; and hence there is a paucity of species. The principal rare species of plants found upon this occasion were the following, namely:—*Geranium sylvaticum* (Wood Crane's-bill), *G. sanguineum* (Bloody Crane's-bill), *Campanula patula* (Spreading Harebell), *Vicia sylvatica* (Wood Vetch), *Melica nutans* (Mountain Melic-grass), *Pyrus domestica* (true Service-tree), *P. torminalis* (wild Service-tree). Here also grows that pensive but chaste little plant, a favourite with lovers, *Convallaria majalis* (the sweet-scented Lily-of-the-valley), *Carlina vulgaris* (the Carline Thistle), *Gymnadenia conopsea* (the sweet-scented Orchis), *Saponaria officinalis* (the Soapwort), the remarkable plant called Stone-seed (*Lithospermum arvense*), and also the well known Buckwheat (*Polygonum Fagopyrum*), together with *Aquilegia vulgaris* (Columbine), *Jasione montana* (Sheep's-bit), *Luzula sylvatica* (Great Hairy Wood-rush), *Nepeta Cataria* (Catmint, or Nep), *Corydalis lutea* (Yellow Fumitory), *Campanula Trachelium* (Nettle-leaved Bell-flower), *Campanula hederacea* (Ivy-leaved Bellflower), *Tilia parvifolia* (Small-leaved Lime), *Carex pendula* (the great Pendulous Carex), *Allium oleraceum* (Field Garlic), *Calamintha Clinopodium* (Wild Basil), *Hypericum Androsæmum* (Tutsan), *Verbascum Thapsus* (Mullein), *Lactuca virosa* (Strong-scented Lettuce), *Origanum vulgare* (Marjoram), and others of interest, amounting in all to thirty-seven species, of more or less rarity, found on the occasion.

The bog near Coleshill, until lately freely open to the public, is a locality of considerable interest to the naturalist, and a list of its more rare vegetable productions is given by Purton. To this place the members of the Association lately paid a visit, by the special permission of the Rev. Mr. Digby, of Coleshill. The bog near the pool is covered with rank Grass and Rush, and the surface is so irregular, from the growth of the Mat-grass and other plants, in tufts and hillocks, as to make locomotion a matter of considerable difficulty. As might be expected, this place forms an excellent cover for the snake and the adder, or viper. Hardly a step had been taken before two of the latter species—the viper—were met with. A little excitement and activity, and these most beautiful but dangerous animals were pinned down to the ground, by means of forked sticks, and their poison-fangs

were then cut out with a pen-knife, and the animals brought away alive and harmless. This creature, the only poisonous snake indigenous to Britain, is viviparous, and in one of the specimens obtained on this occasion, some ten or twelve young and active vipers were found, measuring about four inches in length, and evidently suited for an independent existence.

One of the most surprising of the vegetable productions flourishing in this place, is the usually scarce plant known as Pillwort (*Pilularia globulifera*). This little plant actually lines the shores around the pool. Here also flourish *Calamagrostis lanceolata* (the Small Reed), and that elegant bog-rush, now unfortunately banished entirely from Moseley Bog, the *Narthecium ossifragum* (the Bog Asphodel), the All-seed (*Radiola Millegrana*), the Club-rush (*Typha latifolia*), the Roman Nettle (*Urtica urens*), and a scarce Hypericum (*Hypericum Elodes*), grow here also.

The locality of Cannock Chase has also been visited, and several heath-plants of great interest gathered. Of these, the Dwarf Furze (*Ulex nanus*), the Crowberry (*Empetrum nigrum*), so much prized as food by the grouse, the beautiful Reindeer Lichen (*Cladonia rangiferina*), may be mentioned as examples.

During this season, an unusual number of that striking production, the Syrian Oak-gall, has been observed. This Oak-gall appears to have been introduced into Great Britain about fifteen years ago, and bids fair to do something serious to the growth of the English Oak. It would be a curious speculation to try to fathom the influence which this little *Cynips*, the insect to which these excrescences are owing, might have in undermining what great nations have yet attempted in vain, namely the "wooden walls of Old England." Fortunately, however, science and Providence and British skill have anticipated the misfortune, if so it should prove, in forming our ships of another material, and one which *moth* cannot corrupt, at any rate, whatever be the effect of *rust*.

I must not forget to mention the capture, in Birmingham, of several handsome and full-grown species of the migratory locust. The same thing has occurred lately in other parts of England, and also that some of the usually scarce caterpillars known to entomologists, namely, *Sphinx Ligustri*, have been lately found feeding upon a plant, in a court in Great Charles Street. An unusual number of the scarcer insects, such as the Goat-moth, the

Clouded Yellow, the *Sphinx Convolvuli,* the latter found in Suffolk Street, and the Elpenor, have this year been taken by members of the Association. The Purple Emperor has been several times met with.

Several papers of great interest in ornithology have been lately read, and one on the *Ornithorhyncus paradoxus* of the Australian continent.

THIRSK NATURAL HISTORY SOCIETY.

Botanical Exchange Club.

The monthly meeting of the Thirsk Natural History Society was held on the evening of Tuesday, the 5th of October. A parcel has been received from Miss Warren, of Flushing.

Mr. J. G. Baker exhibited specimens of *Fumaria confusa* of Jordan, collected by Mr. J. H. Davis in cultivated ground in the neighbourhood of Glenmore, near Lisburn, county Antrim. From *F. capreolata* (as that species is understood by British botanists) this may be known by its blunt leaves, subentire or sparingly-toothed oblong sepals, and by the much smaller size of all its parts, as before explained.

At the monthly meeting for November (held on Tuesday, the 1st), Mr. J. G. Baker announced the receipt of a packet of specimens, wild and cultivated, from Mr. Hebblethwaite, of Camphill, and communicated the following notice:—

"*Juncus pelocarpus,* E. Meyer. A Rush with which I have been acquainted for the last ten years as growing amongst the salt-water marshes between Coatham and Middlesbrough, north-east Yorkshire, I am led to believe to be identical with this plant, which inhabits the northern portion of the United States. Though formerly considered by Professor Asa Gray to be a distinct species, it is now ('Manual of the Botany of the Northern United States,' second edition) placed by him as a variety of *J. lamprocarpus.* From the ordinary form of that species, the Rush of which I am now speaking differs as follows:—The heads are fewer in number in each cluster, sometimes two only, usually three or four; the nuts are larger in size, broader and blunter in shape, and paler in colour; and the segments of the perianth are only about two-thirds the length of the fully matured nut, blunter

than in *lamprocarpus*, and like the bracts, as pale in colour as those of *J. obtusiflorus*. My American specimens were gathered by Mr. Sartwell on the shores of Lake Ontario, and that gentleman has also met with the ordinary form of *lamprocarpus* in the States, as duly noted by Professor Gray."

PLANTS OF LLANGOLLEN.

Flora of Castell Dinas Bran, with a Notice of a few Plants in the Vale of Llangollen.

(*In a Letter to the Editor.*)

Sir,—Being detained a few hours in the fashionable town of Llangollen, I took a walk up the steep hill on which there are the remains of the ancient fortress of Dinas Bran. The following is a list of the plants observed growing on its weather-beaten walls, or on the adjoining vallum or fosse-bank (June 21, 1859).

Filices.—Polypodium vulgare, Asplenium Trichomanes, A. Ruta-muraria: on the walls.

Veronica officinalis and V. Chamædrys: on the walls.

Hieracium vulgatum: the variety with the spotted leaves.

Linum catharticum.

Campanula rotundifolia: one flower expanded (June 21, 1859).

Myosotis collina.

Teesdalia nudicaulis: very nearly decayed.

Draba verna, var. turgida.

Arabis hirsuta: minute and dwarf examples, none of them above six inches high.

Sedum anglicum: the leaves are ovate, very fleshy, with scarcely any spur.

Oxalis Acetosella: on the wall.

Scabiosa Columbaria.

Saxifraga tridactylites.

Cerastium viscosum.

After crossing the bridge of Llangollen, and before reaching the canal-bridge, there is an old brick or stone wall on the left, and on its top there is a stunted form of *Pyrethrum Parthenium*, without the ray-florets.

Geranium columbinum grows sparingly on the edge of the path leading to the first pair of cottages on the way to Dinas Bran.

Also, on the left, in a waste place, at a corner nearly opposite the last cottage on the same path, going upwards there are a few plants of *Lavatera arborea*. Near the same there are some examples of the glaucous large form of *Linaria vulgaris* noticed by Dr. Bromfield, and named by him *speciosa*.

Not far from the same there are a few plants of *Galium cruciatum*.

Reviews.

The Natural History Review, etc. London: Williams and Norgate.

The only botanical article in this number of the Review is a paper by Mr. Robert Plunkett, on the Manufacture of Hemp and Paper from the *Lavatera arborea*. "The *Lavatera arborea*," the author writes, "is a plant indigenous to the western coasts of Ireland. It grows freely on rocky or gravelly soils, and, assisted by the application of sea manure, will thrive on the deepest bog lands."

It appears from the article that hemp is prepared from the fibrous bark of the stem and branches; and cards or boards from the fibre and fibrous wood of the plant. It is stated that one ton of fibre and one ton of fibrous wood may be produced on an Irish acre.

The bark of the chicory plant, *Cichorium Intybus*, is very tenacious; and as the root only is employed, while the stems are thrown away or not employed economically, it might be worth the cultivator's trouble to submit the fibrous bark of this plant to the manipulation of hemp- and flax-dressers.

Cordage is also obtained, and also coarse cloth, from the fibre of hops. Immense stacks of this hop-bind lie in some parts of Kent,—a dangerous combustible.

Recreative Science; a Monthly Record and Remembrancer of Intellectual Observation. Groombridge and Sons.

Another monthly candidate for popular favour, and one, if we may judge from its first number, which deserves and is likely to

secure a fair share of public support. The notice in the public prints of a new and popular scientific periodical, led us to invest in the purchase of the first number; and we rejoice to say that our money was not thrown away. In the wide range of subjects which the periodical embraces, botanical science, as we might expect, occupies a prominent position. Of ten capital papers on particular subjects, two have been devoted to different departments of botanical lore. In addition to these, a list has been given of the wild plants of the month; also in Baron Humboldt, of whose life a short sketch is given, botanists may surely claim a part. Mr. Tuffen West's paper, "How to gather Diatoms," furnishes useful practical hints to those who are about to engage in the study of that very remarkable tribe of microscopic plants. "Wayside Weeds and their Teachings" is a good lesson for beginners in the study of flowering plants, and well illustrated by good bold outline sketches of the various parts of the plants of which the author treats. Good elementary papers on the various departments of science we consider to be of vast importance, both in developing a taste for scientific subjects in the minds of the reading public, and also in enabling beginners to master with ease the difficulties which beset his way on his first outset in quest of knowledge. There is one feature of this new periodical of which we much approve: its scientific papers have (with one exception) the authors' names appended: we regard this as a guarantee to the public of the general good quality of the intellectual fare to be provided for them month after month. Men who pledge their names for the credibility of their statements, are not likely to write at hazard, or make random assertions. Mr. Editor of course always reserves the right to maintain his *incognito*, though it seldom happens that the veil of secrecy which he wears does not become so thin and rent as to prove no protection to him whatever; and were it not that custom rules otherwise, he might as well set down his name in good black capitals. We may appear fastidious in objecting to the heading of the last column of 'Recreative Science:' "Mr. Noteworthy's Corner," smacks of the nursery, and we conceive that a good manly heading, such as "Things Worthy of Note," would be more in keeping with the general tone and character of the work. On the whole we regard 'Recreative Science' as a valuable work, and worthy of that large success which we most

heartily wish it. Our only fear is that eightpence a month will prove a hindrance to its wide circulation amongst the reading poor and a large portion of the less wealthy middle class. If reduced to half the price we think it likely that it would reach a circulation at least eight or ten times that which it is likely to secure at its present cost, and become a more remunerating speculation to its publishers.

BOTANICAL NOTES, NOTICES, AND QUERIES.

Botany for Schools.

(*From a Correspondent.*)

The Trustees of the Madras College, St. Andrew's, Fife, have resolved to establish a botanical lectureship in addition to the other educational means for which this training Institution is celebrated. The scheme embraces the formation of a botanic garden, in which the British and other hardy herbaceous plants will be cultivated, and in a natural systematic arrangement. An herbarium is to be collected by the pupils and placed under the custody of a curator, who is to have charge of the garden.

This is a step in the right direction, and the only feasible, practical way of introducing botany into schools. The teachers must be taught; and such of them as happily imbibe a taste for this recreative science, will inspire their pupils with somewhat of their own enthusiasm for the study. It is very much to be desired that the directors of the scholastic training establishments in the southern part of our kingdom would imitate the example of their Scottish brethren. To initiate the future teachers in the art of communicating knowledge is the primary object of all normal schools, and natural science is as well adapted to draw out and discipline the intellectual and perceptive faculties as the sciences of grammar, number, and quantity.

Gladiolus of the New Forest.

(See 'Phytologist' for 1857, p. 193.)

It is hereby requested that some Hants reader or correspondent of the 'Phytologist' would be so obliging as to send to 45, Frith Street, a bulb of the above-named plant for comparison. The characters of the two allied species, *G. communis* and *G. imbricatus*, as given below, are drawn up from Reichenbach's figures of the two presumed distinct plants.

Gladiolus communis, Rch. Ic. 349, has the flowers fewer, larger, and paler than *imbricatus*, the roots are also larger.

G. communis. Root reticulated with fibres above the middle; divisions of the perianth rhomboid; filaments exceeding the anthers; stigma spathulate.

G. imbricatus. Tunic covered with dense, parallel, not netted, fibres; divisions of the perianth rhomboid-ovate; anthers shorter than the filaments; stigmas ciliated from the base. They also differ in their seeds.

Hyssōpus *v.* Hyssŏpus.

(*To the Editor of the 'Phytologist.'*)

Sir,—Allow me to point out a decided error (though not a botanical one) into which the able author of the papers on British Botany has fallen.

In his remarks on Hyssop, in the 'Phytologist' for June (which, I regret to say, I had no opportunity of reading for a considerable time after its publication), your contributor blames one medieval poet for writing *hyssōpus*, while he compliments another for his superior knowledge of prosody, as indicated by his making the word *hyssŏpus*.

Happily the matter is one that can be decided without any great research. Your contributor has only to consult his Greek Testament, St. John xix. 29, and he will find that the word is ὕσσωπος, or if he wants a poetico-botanical authority, here is one from Nicander :—

Ἄλλοτε δ' ὕσσωπός, τε καὶ ἡ πολύγωνος ὄνωνις.

We hear quite enough false quantities in popular botanical language, without an *ex cathedrâ* promulgation of a new one, by such an authority as the 'Phytologist.' I remain, yours faithfully,

Henry Lascelles Jenner.

Preston Vicarage, Wingham, September 17th, 1859.

Poa bulbosa.

(From Dr. Bromfield's 'Flora Vectensis.')

This humble but interesting species is not easily detected by such as are unacquainted with its habits and appearances in a living state, for which reason it has probably been overlooked in many a spot productive of it. I cannot find any figure of this Grass conveying a just idea of its aspect, excepting that old one of Vaillant (Fl. Par. t. 17, fig. 8). . . . . Before the panicle opens, the appearance of this part is that of a dwarf specimen of *Koeleria cristata*, or even somewhat resembling *Aria præcox*, but when in flower the similarity is no longer obvious, and the plant might pass at a hasty glance for a contracted form of *P. annua*, or still more of *P. compressa*.

Tamus communis (*Black Bryony*).

This plant, in Wales, is called Serpent's-meat. An idea prevails there that these reptiles are always lurking near the spots where the plant grows. "Assal Adda" is one of its Welsh names.—*From Bromfield's Flora Vectensis.*

Habenaria viridis.

Every one knows how little gregarious are the greater number of the terrestrial *Orchidaceæ*. This is especially true of the above-mentioned species, which, seldom plentiful at any time on a given station, in this is so reduced in frequency, that I have seen but three, and those collected by others in more than thrice as many years, during which time I have not once fallen in with a specimen in any of my herborizing walks within the limits of this Flora.—*Ibid. Introd. p.* xxiii.

Long Purples of Shakespeare.

('Phytologist,' October, 1857, p. 248.) In Warwickshire I never heard the Purple Orchis called by any other name than "Kingfingers." "Long Purples" I never heard in any part of England. In the passage in Shakespeare I think there is some connection between Long Purples and a river's banks. May not *Lythrum Salicaria* be the true plant?—it is very common in Warwickshire, and answers the name much better than any sort of Orchis. E. M. A.

Fœniculum vulgare.

This plant is common on the coast of Kent. At Hythe I was told by an intelligent blacksmith that they said up the country it was grown in gardens, but that at Hythe, when required, they always used the wild plant.
E. M. A.

Distinction between Hypericum perforatum and H. dubium.

A certain mark of distinction however between *H. perforatum* and *H. dubium* is to be found in the pellucid reticulations on the under side of the leaves of the latter when held against the light, and which are far less numerous and conspicuous in the former, or nearly obsolete.—*Bromfield.*

Having a large quantity of duplicates of the following plants, all in excellent condition, having been very carefully dried, I am wishful to exchange for *good fruited* specimens of the British Mosses or Hepatics. Many of the commoner species are amongst my desiderata, a list of which I shall be glad to forward on application.

Actæa spicata, Saponaria officinalis, Stellaria nemorum, Saxifraga umbrosa, Lonicera Xylosteum, Asperula cynanchica, Doronicum Pardalianches, Gentiana verna, Amaranthus Blitum ?, A. retroflexus, Taxus baccata, Paris quadrifolia, Acorus Calamus, Carex paradoxa, C. digitata, Brachypodium pinnatum, Carpinus Betulus, Chrysosplenium alternifolium, etc.

F. W. B. Ingle.

4, *Commercial St., Huddersfield.*

Note.—Galanthus nivalis grows in hedgerows near Woodthorpe, Wilts. *Geum rivale* abounds in a coppice on the south side of Martinsell-hill.
T. F. R.

Communications have been received from

Sidney Beisly; John Sim; T. W. B. Ingle; Dr. Hinds; W. P.; H. B.; John Sim; J. G. Baker; Charles Howie; Archibald Jerdon; A. B., etc.

BOOKS RECEIVED FOR REVIEW.

Useful Plants of India.
Critic; four numbers.
Friend, Weekly Herald.
Scottish Banner.
The Young Ladies' Book, etc. etc.

INDEX.

END OF VOL. III.

JOHN EDWARD TAYLOR, PRINTER,
LITTLE QUEEN STREET, LINCOLN'S INN FIELDS.