SUPPLEMENT
TO THE
CYBELE BRITANNICA.

PART FIRST.

From the Author

PART FIRST

OF A

SUPPLEMENT

TO THE

CYBELE BRITANNICA.

TO BE CONTINUED OCCASIONALLY

AS A

RECORD OF PROGRESSIVE KNOWLEDGE

CONCERNING THE

DISTRIBUTION OF PLANTS IN BRITAIN.

BY

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NOTICE.

This First Part of the Supplement will be sent to all the provincial botanists of Britain whose present addresses are known to the Author. Any future Parts will be sent to those among them who intimate a desire to receive the continuations of it, if printed, in accordance with a notice to such effect given on pages 522—3 of the fourth volume of the Cybele Britannica. As the Author cannot bind himself certainly to proceed with the Supplement, or to make it other than a series of desultory papers if proceeded with, he feels that it cannot properly be made a published work; while he trusts that it may contain as much information, new or newly arranged, as most other books of its class. This one Part indeed includes 38 Local Floras, for counties and other tracts, condensed into the two general lists which occupy the larger portion of it; — not a small amount of information about the local botany of the island; and much of it now printed for the first time.

RECEPTION OF THE CYBELE BRITANNICA.

A Supplement to the Cybele Britannica, commenced before any considerable accumulation of new facts has been obtained, may appear at first thought to be rather a premature proceeding. The wish to continue the work by supplementary sheets, to be printed from time to time as occasion should arise, was stated and explained at the end of volume fourth, page 522. The chief reason for this early commencement, among other minor motives inducing thereto, may be found in that large section of this present part, which will bear the title of 'Sub-provincial Distribution' some pages onward. One of the objects sought by that section, is to draw attention to those local facts which it is desirable that botanical observers should especially look out for, whether around their own abodes or during their tours from home, as the opportunities may occur. And that section virtually involving numerous queries addressed to all persons observant of facts in local botany, I propose to send out copies of this Part very generally, as is intimated in the Notice on the opposite page. The remarks which will here precede that largest section, will perhaps sufficiently suggest the existence also of other minor motives for so soon commencing a Supplement.

Some curiosity was felt by myself about the reception which my fourth volume would meet with. Subjects were incidentally touched upon, without the possibility of thorough discussion there, which are little likely to be

understood clearly by persons of feeble ratiocinative powers, however excellent they may be as observers; and on that account my remarks were all the more likely to be disrelished and found fault with. Moreover, with wonted freedom and independence, I had expressed opinions on systematic classification and other matters, such as were ill-adapted to please certain botanists of influence; those who apparently dream that a ministration to their own personal vanity, or a promotion of their own pocket interests, is something of higher importance than the advancement of intellectual truth.

I cannot go so far as to add, that my acknowledged curiosity bordered at all closely upon that fidgetty anxiety about the sayings of the Grundys in the press, which is almost proverbially supposed to accompany authorship, and which doubtless usually does so with beginners. A long addiction to phrenological studies, and the facility thus acquired for estimating at their right value the mental characteristics of other men, have gradually led me to look upon the widest differences of individual appreciation, whether oral or printed, simply as peculiarities for psychological analysis and explanation; not as anything to be otherwise personally cared about.

Great offence seems occasionally to have been conceived against me, on account of the independence of thought and expression, which is engendered through that habit of testing the scientific doings and opinions of other persons, by a psychological analysis of the individual peculiarities from which they have probably emanated. Fully trained to see that talent is almost invariably very partial or special,—and not ignorant of the truism, that time specially devoted to one department of knowledge, must necessarily imply time not devoted equally to other and different departments,—I refuse to

accept dogmatic opinions or judgments from other persons, in matters outside of their own particular lines of thought and study.

Thus influenced, I may perchance be deemed too careless about the misappreciations, and even be supposed wilfully to provoke the wrathful manifestations, of certain blustering egotists, who take upon themselves to enunciate judgments in every other department of botanical science, solely because they have attained eminence in some widely dissimilar department. Self-sufficient men of this sort, blind to their own mental peculiarities and deficiences, are often the least scrupulous of writers, garbling and misrepresenting that which they dislike, yet find themselves unable to refute by truthful argument. Falsehood has many phases; and I confess a pleasure felt in exposing the false, while studying them also.

But my customary manner of looking at the criticisms of others, whether only commonplaces or curiosities in mental science, is still not incompatible with a free avowal that I do much prefer and desire the good opinion of one very limited class of persons; namely, of those whom I believe to be conscientious truth-seekers, whom I see to be clear-minded reasoners, and who take interest in the same pursuits and studies with myself. Men of this stamp can be pleasurably met even in counter-argument; because we never find reason to protest against intentional misrepresentation by them. Pity it is, that the class here alluded to is not more numerously represented in the periodical press.

I have not myself met with any notice of the lately published fourth volume of the C. B., in english journals, which appears to require remark from its author. Probably few reviews of it have been attempted. No effort

was made towards drawing attention to the book, further than making its publication known through very few advertisements. Not a copy was sent to the "Editor" of any periodical. That very usual mode of seeking notoriety was thus entirely abstained from, because no desire was felt for seeing the book reviewed by persons who had given much less attention to its subject than the author had himself given.

After this statement it is almost superfluous to add, that no copy was sent to the Editor of the Gardener's Chronicle, or to any other person (so far as known to me) in any way connected with that newspaper. And as most of the matters treated in C. B. seem so little suitable to gardeners, I was somewhat surprised to learn that the Editor of the Chronicle had gone out of his way to publish a vituperative notice of my work. I should hence infer that some strong personal feeling may have led to that step, without being openly avowed. If that feeling arose from finding cherished ideas about classification rather roughly treated in the Cybele, it was still no great manifestation of wisdom in the reviewer, to betray that my humble book had proved keen or forceful enough to wound the vanity, and to ruffle the temper, of a potentate of the 'vegetable kingdom.'

Not having read a single line in the Gardener's Chronicle during many years past, I have only casual information about it through friends. One gentleman holding a foremost rank in natural science, who had occasion to write to me on more important topics, added a brief postscript to his letter in these words:—"I was sincerely grieved at the spirit shown in the review, or, rather, diatribe against the Cybele, in the Gardener's Chronicle." In consequence of this remark, I inquired from my correspondent whether there was aught in the diatribe which

could render it incumbent on me, as an inquirer into natural truths, to read the article he had referred to. His reply came in the form of a recommendation not to be at the trouble of reading it.

This advice would have sufficed, as I could well rely on the judgment of my correspondent. But I had meantime written a similar question also to another friend, one more specially devoted to botanical pursuits, and who would thus look at it from a different point of view. His letter in reply to the query commenced thus: — "On receipt of your note I got the Gardener's Chronicle of November 12, and read the notice of Cybele,—it is, however, merely personal, and not at all a critical review." Such are the impressions made on the minds of two highly scientific and honorable men through reading the notice. If it were the reviewer's wish to make such impressions, so little favorable to himself, in minds of that quality, his efforts have been successful.

Decided by these reports, I have not gone out of my own way to see the "merely personal, not at all critical, diatribe" in the newspaper named. All sense of obligation to do so was of course quite removed. Although, as a general rule, I am disposed to say that any writer of a book, who has placed on record a large number of facts in science, for the use of his successors, ought to give respectful attention to the (*honest*) criticisms of the press. More especially should it be held incumbent on him to attend to any strictures which might profess to disprove his statements, or to show reasonable grounds for questioning the exactness or accuracy of his records. Evidently, by the reports of the two correspondents above referred to, there is nothing of that kind in the Chronicle to demand my attention. Newspaper abuse is soon forgotten; but those of my

readers, if any, who are curious in "diatribes, not at all critical," will now know where to find one about the C. B. Happily I can turn from the worthless and contemptible, to something else really worthy of attention.

M. Alphonse De Candolle has written the most comprehensive and elaborate treatise on phyto-geography, which has hitherto come before the public. On this account he must be eminently qualified to decide, whether or not such works as the C. B. ought to be accounted serviceable additions to the literature of that peculiar department of floral science? — whether they are adapted to supply something required by those who prosecute the study of botany in its connexions with geography and meteorology? Only those who have systematically and successfully devoted attention to the study of phyto-geography in its general bearings, having relation to the earth at large, can be properly qualified to give any reliable judgment on the questions asked above.

It is therefore believed that a review of the C. B., emanating avowedly from the pen of that truthful and assiduous botanist, will not prove unacceptable to those Englishmen who take an interest in the botany of their own island; and many of whom have contributed by their local knowledge and records, to render the work so much more complete than it could otherwise have been made. Under this belief, I offer here the translation of a review or critical notice of my fourth volume, which appeared in a foreign journal for July, 1859, authenticated by the affixed initials of M. De Candolle. No botanist of this island has qualified himself in the same indispensable manner for the task of criticism on the work, if regarded in the character of a local contribution to the *general* subject.

But in its *purely local* character, as an exposition of

the botany of Britain only, seen apart from that of the rest of the earth, our native botanists are of course the more suitable judges on the questions,—whether or not it is a fairly correct exposition of the botany of this island?—and whether it makes any decided advance or improvement on antecedent knowledge and records relating to the same subject? Doubtless, any critic who looks on the C B. in this more restricted and appropriate character, ought himself to be well acquainted with our insular flora, both as to the plants themselves and as to their localities and other topographical relations. But a good provincial botanist, familiar with the botany of a single county, is prepared to form some tolerably fair estimate of the work, though it may be a less complete estimate.

That the C. B. is sufficiently dissimilar from the Floras and other publications on local botany, sufficiently novel in its own kind and purpose, to justify novelty in its name, is testified by M. De Candolle at the outset of his notice. An explanation of the name adopted was given on the second page of the first volume, a dozen years ago, and its analogical appropriateness was then also explained. It has not fallen to my chance to meet with any objection made against the name. But I am told that it has been recently carped at on the far-fetched pretence, that the antient worshippers of the deity Cybele were an impure set of beings. As sensibly might we declaim against artists who represent Venus on canvass or in marble, or against poets and lovers who invoke the name of the same deity in their verses and love-letters; for the antient votaries of Venus were not exactly vestal virgins, any more than those of Cybele.

A man of impure imagination himself, anxious and

unable to discover more real objections against my book, might indeed be thus self-prompted to take up that far-fetched one against the name, rather than fail of finding something to be denounced. It is probable enough that the now familiar name of *Flora* was equally grumbled at, as an innovation, when first brought into botanical literature. Possibly it may have been censured by some pharisaical critic,—some "nice man of nasty ideas,"—on nearly the same grounds; since an existing account of Flora in a standard classical book, from the pen of a Doctor in Divinity, and habitually put into the hands of schoolboys, would afford a colourable pretence for still making an equal objection against the name of Flora. "Some suppose," wrote Dr. Lempriere, "that she was originally a common courtesan, who left to the Romans the immense riches which she had acquired by prostitution and lasciviousness, in remembrance of which a yearly festival was instituted in her honour." Those living botanists who have ever used the name of Flora, or attempted a 'Synopsis of the British Flora,' may congratulate themselves on not having been the first introducers of that equally suggestive name into botanical service;—that is, if such silly censure could be accepted in lieu of sensible criticism. For my own part, under the sanction of a De Candolle, I shall rest quite content to keep the responsibility of the second innovation, that of adding *Cybele* to *Flora*.

A REVIEW OF THE CYBELE BRITANNICA.

"*Tiré des Archives des Sciences de la Bibliotheque Universelle.*"

Mr. Watson has published the fourth and concluding volume of the work named *Cybele Britannica*. What is the meaning of this word *Cybele*, which he has introduced

into science? Is it a whim, a crotchet? Not so; the term is novel, but the thing designated is a novelty also. It is applied to a work in which are enumerated all the plants of a country, observed in their topographical and geographical distribution exclusively, and not in their characters or botanical distinctions. This is not a *Flora*, for there are neither descriptions nor synonyms; it is a work more specially devoted to the botanical geography of a country; and since the deity Flora has been invoked in the one case, we can in like manner place the other kind of work under an invocation of Cybele. Thus, the phenomena of vegetation which are observed on the land of Britain, the position of the species in all parts of the island, their grouping in each subdivision, at each altitude, their origin, if it can be determined, together constitute a *Cybele Britannica*. It is desirable to have works of this character for other countries, as complements of their Floras, and as means of comparison in botanical geography.

His concluding volume is devoted by Mr. Watson to summaries and general views, which result from the numerous details included in the three prior volumes. As these latter have appeared in the course of a dozen years, and some important works on the english flora and on botanical geography have been published during the period, the author completes or corrects some facts, and particularly he discusses the opinions of his predecessors. Several portions are commentaries, either eulogistic or critical, of the work published by myself under the title of *Géographie Botanique Raisonnée*. We notice this for those persons to whom the last-named work has proved interesting. I (*nous*) do not complain of the position that Mr. Watson has given me, seeing what a low estimate he professes for the intelligence of botanists in

general. According to him, "it is a peculiarity of the botanical mind not always to reason with strict accuracy and soundness." But, according to Mr. Watson, I escape this fault sometimes, even frequently, more especially in the matter of generalisations. Thus, I repeat, I do not myself make complaint.

If it be necessary to defend the generality, or at least the majority, of botanists against the imputations of the english author, we will make two reflexions. First, that in the sciences of observation like botany, there are always vast numbers of facts which are more or less doubtful, and on which we are obliged to rely, fully aware that they are not a solid support. We reason about the evolution of organs, and yet the human eye, assisted by the most powerful glasses, can never see and will not be able to see the origin of anything, since matter is infinitely divisible. We reason about the symmetry of organs, but this is never a mathematical and absolute symmetry. In botanical geography, an exact author says that a species grows in cultivated ground, but this does not intend that it has never been found at the side of cultivated ground, nor in places which had been formerly cultivated or which are scarcely cultivated; we say that a species rises to a thousand metres on a certain mountain, but this does not intend that the limit is precise and constant. The facts of natural history are vague, fluctuating, uncertain, if regarded with absolute strictness; it is impossible that reasonings based on these facts should not partake of the same defect. They are not worse than those made in history, for instance, where they are not exact, seeing that we guess the opinions of a statesman, that we suppose such opinions of a king or in the public, from known facts, and that we reason on them accordingly.

The second reflexion which the interesting work of Mr. Watson suggests to us, is, that he appears to us to abstain too entirely from the truly logical method of hypothesis. This method is quite logical and scientific, provided that we always know what is a hypothesis. Philosophers (*physiciens*) and astronomers often resort to it; we do not see why naturalists should refuse to employ it. Universal attraction, definite proportions, undulation or emission of light, are hypotheses that new facts may possibly overthrow, and yet these are grand and useful ideas, which advance various sciences. When we say in botanical geography:—species are distributed at the present time as if lands now separated by the sea had formerly been continuous, we make a hypothesis which is not to be despised. When we study the boreal limit of a species, and after having tried and re-tried the figures expressing the temperature, month by month, day by day, in detail and in total, we come to say:—the species is distributed upon such continent as if it could not support such an extreme of cold, nor pass beyond such a sum of heat, above such a degree; we make a hypothesis, and various such hypotheses are put forth in physiology equally as in botanical geography. If we abstain from considerations of this sort, if we distrust them, with the purpose of confining ourselves to strict reasonings, we deprive ourselves of a mode of advancing science, in the midst of the obscurities and uncertainties which accompany all the facts.

The extreme caution of Mr. Watson, in regard to ratiocination, has perhaps inconveniently limited the field of his researches and reflexions, but it has had the advantage of making him precise and philosophical in certain nice questions which he could not avoid. Among them is that of the distinction of species, genera, and orders. Every one who occupies himself with botanical

geography, ought at one time or other to scrutinize the value of these terms, the importance of these grades of association and the manner of defining them. Mr. Watson presents interesting reflexions on this topic. He developes particularly the idea that groups of the same designation in the works of botanists are not associations sufficiently equal and sufficiently uniform to render comparisons among them satisfactory in a statistical light. We concur in this generally so far as orders are concerned, but species likewise present the same inconvenience, for these also are associations which rest on characters of varied importance, whether in themselves, or according to the mode of view of each author, in each particular instance, and according to his manner of regarding species in natural history. Mr. Watson takes his examples from the modern Floras of Britain. After showing the successive subdivision and reconstruction of certain species, according to the knowledge of the day and to individual opinions, he proves that three categories may be recognized among species well studied : — 1, aggregate species, or *super-species*, as, for example, Rubus fruticosus ; — 2, simple species, or *ver-species*, as Rubus saxatilis ; — 3, *sub-species*, emanating from the subdivision of old species, as the Rubus discolor. If we concur practically with this fact, which results from the recent history of the science, we may perhaps escape much disputation. Each person will decide to make, according to the tendency of his own mind, either super-species, or ver-species, or sub-species. I will go even further than Mr. Watson, I will say that the authors of european Floras might distinguish by a sign each of these three categories of specific or quasi-specific associations. I hasten however to add that this would be unattainable in exotic botany, in the present

state of the science, since the greater portion of the exotic species have been made on few specimens, and often imperfect, or on cultivated plants more or less differing from native examples. Prospective judgment is in favour (*L'avenir est dans le sens*) of these multiplied subdivisions in the mechanism of classification, for the resemblances and differences of organic objects are infinite, and to represent them passably it would be needful to have terms and grades of association more numerous than those which we practically make use of; but the state of knowledge and the incomplete materials in our collections scarcely allow us to think of it at present; at best this mode could be attempted only in a monograph of species well known, or in the Flora of a country such as England.

Britain being an island the vegetation of which has been studied for two ages, and where the observers are numerous, I have devoted much time to tracing out how many species, and which of the species, have been introduced into its flora, either certainly or probably, during the historic era. For this purpose I have resorted to all the english works, particularly to the earlier volumes of the *Cybele Britannica*. I have brought into this investigation the idea of the continental distribution of the species and that of their ordinary celtic names, as completing that which actual observation of the species in Britain has been able to supply regarding their origin. In his fourth volume Mr. Watson returns to this interesting subject, and discusses anew the same facts. Since 1855, the date of my *Géographie Botanique*, it does not appear that the study of the original welsh, scottish, or irish names of the doubtfully native plants has made the least progress. Mr. Watson thinks that, in some instances, I have not been sufficiently aware of the degree

of value which ought to be placed on the statements of this or that english botanist. This may be so, I admit, considering my position as a foreigner. On the other side, I continue to believe that the distribution in neighbouring countries has not been sufficiently studied by the english, even by Mr. Watson, and that it suffices sometimes to show whether a species exists in England through antient natural agencies, or whether it has been accidentally cast upon that country, out of its limits, by some modern agency. However little, in such case, the local indications support the general indications, the species has probably been introduced. Notwithstanding the different methods followed by Mr. Watson and myself in this interesting investigation, we attain closely similar results. Not only do we agree in respect to many of the species, but also we arrive at a sum total of introduced species in the spontaneously british vegetation closely similar and always small. I reckon up 83 species as being certainly of foreign origin and become spontaneous, with 100 as probably of foreign origin; being a total of 183. Mr. Watson considers 180 as foreign or *alien*, and by this word he understands species more or less well established among the spontaneous english plants, but either probably or certainly of foreign origin. Moreover, I have seen nothing in the Cybele, which alters perhaps the most important result from my investigations, that in an island separated from a continent and from another island by arms of the sea of small extent, there does not exist a proved example, nor even a probable example, of a species introduced by natural causes, such as winds, currents, or birds; whilst for the great majority of species of foreign origin, we are able to determine historically or to suspect on good grounds a transport by man, by means of vessels, of imported corn, of cultivation, etc.

Consequently, the effect of natural causes of transport has been greatly exaggerated; consequently also, between the epoch of the last geological events, which have modified an island relatively to a neighbouring continent, and the advent of man, there should exist usually a period during which the vegetation remains free from all admixture. We know through geology, that this period has been long in some countries, and we are led thus to interesting reflexions on the history of the vegetable kingdom.

The last volume of the *Cybele Britannica* contains numerous tables and statistical summaries of the distribution of the species and of the orders in the larger and smaller geographical subdivisions adopted by the author. These latter, smaller than counties, are 112 in number. There is no country of equal extent with Britain, in which the presence or absence of each species has been recorded in districts so numerous. The boreal and austral limits of the species which find a limit in the island, appear in these tables; the upper and lower limits in altitude are also given for a large number of the species, which have been ascertained up to the present time and with more care; but in this respect Britain does not offer much of interest, by reason of the moderate altitude of its mountains. We find in the work of Mr. Watson much information and many interesting reflexions upon very local species (p. 443), upon the irish plants which are wanting in Britain proper (p. 227), upon the almost entire absence of species peculiar to this island (p. 389), and upon a mode of grouping the species of a country into certain *types of distribution* in accordance with actual analogies in their geographical conditions, notwithstanding their partial commingling at many points (p. 499). Some of these questions of botanical geography cannot

be studied thoroughly, nor even be entered into, by the study of some particular country. There is in general more to be learned by the study of some selected species or of some selected order over the surface of the earth, than by the examination of a district or of a more extended country. But the form and nature of a work such as the *Cybele Britannica* places us unavoidably under the latter conditions of view. It is not to be regretted, since Mr. Watson has accomplished a conscientious and profound work, the result of many years of investigation and reflexion, and since the precision of its details is found often enhanced in this work by the soundness or novelty of its views.

ALPH. DC.

A REPLY TO M. DE CANDOLLE.

(On the faculties which confer botanical eminence).

In the 'Introductory Explanations' to my fourth volume, page 11, I sincerely expressed a very high appreciation of the 'Géographie Botanique.' Yet holding intellectual truth to be paramount over all other considerations, I did not hesitate to maintain some differences of view; as also, to give criticizing reasons for a dissent from some of the views held and advocated by the illustrious botanist who now so well supports his family name. It will have been seen that M. De Candolle has taken the opportunity afforded by his notice of my book, to give in turn his own comments upon those made in C. B. *Audi alteram partem* is a golden rule for observance by writers as well as by readers; and I shall again in my own turn here seek to substantiate and more fully explain an opinion (though more psychological than

botanical) which was expressed only incidentally in my fourth volume, and which has been not quite correctly reported against me in the review translated on the preceding pages.

I feel well assured that M. De Candolle would never wish to misreport any opinion or statement of another writer. And having this confidence in his truth and justice, it was a source of considerable annoyance to me to find that he had fallen into a grave mistake (one calculated to injure me in the eyes of botanical friends, if left uncontradicted) in that part of his review where he alludes to the "intelligence" of botanists. The word being french equally as english, it is literal and untranslated. He there attributes to me "a low estimate for the intelligence of botanists in general." This imputation I must decidedly repel. Neither that word "intelligence" nor any corresponding word was used in my own text. I never expressed that low estimate of botanists in general; nor do I entertain any such opinion. On the contrary, I think it may safely be asserted, that no person can now gain and retain a scientific repute, botanical or otherwise, unless endowed with considerable ability of *some kind*. And I know well as a positive fact, through personal or epistolary intercourse with so many of them, that the botanists of this country are in general men of much intelligence; — I would prefer to say, men of much ability and knowledge.

Intelligence is of widely various kinds. The term itself has a signification so latitudinarian as to be applied even to dogs and monkeys. It would thus be simply absurd to assert, that any class of scientific Englishmen is composed of persons low in intelligence. While asserting that men who are gifted with an observing intellect considerably in excess over their endowment of

reasoning intellect, are those who now chiefly hold the lead in botanical reputation in this country, I do not at all deny their possession of good intelligence,—I indicate only the *kinds* of intelligence, by which they are respectively most characterized and least characterized. And I must continue to maintain the psychological opinion, quite as decidedly as it was ever expressed by me, that individuals whose scientific reputations arise from an excess in their faculties of observation simply, *if without any corresponding endowment of ratiocinative capacity*, are not those on whose judgment it is wise or safe to rely, in regard to matters of causal reasoning, philosophical inference, or logical definition. On the contrary, in such matters, I would myself far sooner trust to the judgment of provincial and amateur botanists, who might even correctly be looked upon by the metropolitan and academical leaders, as being much below themselves in scientific rank or reputation.

It is scarcely to be regretted (because a knowledge of the psychological distinction is often so important to correct judgment) that M. De Candolle has thus forced into prominence the incidental observation which was made only by way of explanatory caution, and was quite relevant where introduced, on pages 12, 30, 58. It is only a sort of truism in the eyes of the phrenological psychologist, to say, that a comparative excess in the faculties of observation is precisely the mental peculiarity which best adapts an individual for the study of botany, or of any other department of science, in which a good knowledge of numerous objects forms an essential element of success, and is the ground from which any advance towards higher investigations must needs be commenced. He who is deficient in that talent for observing and knowing individual objects, however clear or profound he may be

as a reasoner, cannot take a first rank among botanists in the present stage of the science; that is, while the art of describing and grouping plants is esteemed so important a part of the study. But where that observative talent is in excess, there must at any rate be some *comparative* deficiency in the reasoning talent. And very usually I find it to be a marked *absolute* deficiency; although not invariably so.

This view is abundantly borne out by facts, open to the eyes and understandings of all who seek to see and understand them. We have only to look to the published works and public acts of our leading botanists, and to analyze the intellectual characteristics shown in them, to become quite convinced as to the soundness of the view; that is, of course, on the supposition that we are prepared by the necessary knowledge and training, to make such a psychological analysis. Merely general assertions to this effect, however, cannot be expected to convince; because botanical readers are not usually also students in psychology, and hence can be only half prepared to understand their application. And to adduce individual instances by name and character, would be deemed an unwarrantable liberty taken with the personal dignity of our botanical chiefs; few of whom would probably consent to be told that their talent is partial *in* its kind, however good it might be allowed to be *of* its kind; or that its superiority in one direction almost necessarily implies a deficiency in the other direction.

Botanists in general seek to know plants by sight, as objects in nature,—to learn their names and synonyms,—to distinguish one from another by technical characters,—to describe them by those characters, singly or in groups,—to represent them by drawings, whether by outlines of form and colour, or by detailed dissection of

parts,—to unite them into genera and other groups, in accordance with resemblances in their technical characters. To attain excellence in this line of study, a considerable share of ability is requisite. But the required talent is almost solely a natural aptitude for observation, improved by training. It is not a ratiocinative, but a purely observative character of mind, seeking to know *what is*.

Some among the botanists evince a different taste or tendency of mind. They are not content only to know plants, whether singly or in groups; but they seek also to understand something further about them. They seek to know, not only *what* is, but *how* it is, and *why* it is. They endeavour to trace out connexions between plants and the rest of creation,—inquiring how plants stand related to places, to countries, to climates,—how they have originated in, or how they can have reached to, their present localities,—why they have spread so widely about the earth, or do not spread more widely,—whether they remain permanently distinct in their kinds, or evolve one kind from another, or can by any process pass into or produce other kinds than themselves, etc. etc. It is the ratiocinative character of mind, as distinguished from the observative character, which prompts to this different line of study. It prompts inquiry also into the nature of things, instead of resting content with simply knowing the things that exist. It prompts to define rather than to describe; to connect causally, rather than to observe individually; to trace out relations between objects, rather than to know many objects distinctively.

This is a rough division of botanists into two classes, not at all a complete or exhaustive one, but sufficient for the purpose immediately in view. No one is devoid of observative capacity; no one is devoid of ratiocinative

capacity. The real distinction lies only in the proportions which the two kinds of capacity bear to each other in different men. And all that I contend for is the obvious fact, that our leading botanists have become leaders in consequence of a high endowment of the observative capacity, usually combined with much less endowment of the ratiocinative capacity. This is proved by the best of their published works being exclusively or mainly descriptive; by their little tendency to take up the ratiocinative departments of botanical science; by the usual unsoundness of their reasoning, when they do attempt to reason.

Now, being obliged to avoid naming individual botanists, as above intimated, I will request my readers to answer two or three questions in their own way, and to their own satisfaction, if they can find the examples asked for. Who among our present botanical chiefs has written any botanical work which can fairly be considered as belonging to the same class and character with Lyell's Principles of Geology, Darwin's Origin of Species, or other truly original and ratiocinative publications?—Who among them has written any work on Fossil botany, in which we can discern any approach to that fine capacity for reasoning about the objects described, which is manifested so uniformly and so profoundly in Dr. Owen's writings on Fossil zoology?—Who among them has written any work on the connexions between botany and other branches of knowledge, at all resembling in its character the luminous writings of a Humboldt?

I do not here ask who has equalled Humboldt; for that would be indeed difficult. I refer to the kind of ability, not to its absolute amount. The turn or tendency of a mind is shown almost as well by the kind of work chosen, as by the degree of excellence achieved.

Thus, in descriptive botany, the writer of a County Flora is doing the same kind of work, although on a more humble scale, with the botanist who writes the Flora of a Kingdom, or a descriptive Systema Vegetabilium Orbis. A Synopsis of the British Flora, a Manual of British Botany, indicate the same turn of mind; though the former may be very poor, and the latter be very good.

Classification is sometimes erroneously supposed to require much ratiocinative capacity. It requires this in a very small degree only, as at present executed. Our greatest native worker in this line is only a describer, very feebly a reasoner. After labouring on it during many years, he has utterly failed *to reason out any system*, properly so designated; and he has latterly even abandoned this word 'system' as a book-title. Through many changes, during which *the* natural system has become *a* natural system, and *a* natural system has sunk into *no* natural system, the learned Lindley has at last only achieved a sort of mosaic classification of changeful pattern;—one much resembling Mrs. Fanny Ficklemind's patchwork counterpanes; each new one different in its pattern, but each in its turn formed by ingeniously joining together some hundreds of pieces of all sizes and shapes, colours and textures, samples from various shops and manufactories, and clipped or stretched into fitting tolerably well alongside of each other. Much industry and skill, much time and tact, doubtless are required for nicely performing this sort of patchwork in botany; but it is not ratiocination. It is simply descriptive juxtaposition; nothing more. There is no essential difference between describing the lesser groups called species and genera, and describing the larger groups called orders and alliances; although a wider experience is needed in the latter operation.

On the grounds here set forth, perhaps too curtly for persons unused to psychological investigations, I feel myself fully warranted in asserting, that the highest botanical eminence (in this country, at least) is no evidence of mental fitness for passing judgment on those botanical matters which involve logical definitions, causal reasoning, or other manifestations of the ratiocinative character of mind. On the contrary, it might be nearer truth to hold such eminence suggestive of probable unfitness, rather than indicative of certain fitness. And in either of these cases, the remarks in my fourth volume (if rightly understood in reference to the *kind* of intelligence, not to the *amount* of intelligence, required for botanical celebrity) remain logically unaffected by the strictures upon them in M. De Candolle's review.

I look upon the arguments adduced by M. De Candolle in the third paragraph of that review, as being scarcely relevant to the question really at issue between us. They only go to show that many of the data on which botanists reason are unavoidably imperfect. Has anybody disputed this truism? Repeatedly in the Cybele, especially in the fourth volume, I have stated that my own data are so; for instance, the altitudes, boreal limits, nativity, specific distinctions, etc. etc. The true point of my remarks was, that in this country at least, if not elsewhere, the road to botanical celebrity lies through the line of *descriptive* botany. Consequently, that botanical eminence is in itself no proof of *ratiocinative* capacity. Also, I maintain further, that some of our best or best-known technical describers are in fact almost incapable of reasoning; while exceptional instances might doubtless be cited.

ARE GENERA REAL, OR ONLY CONVENTIONAL.

In kindly sending to me by post a copy of the review which is translated on preceding pages, M. De Candolle added also a manuscript letter which conveyed some remarks in further explanation of his own views on topics treated in the fourth volume of my work. I venture to translate below one short passage from the letter, because involving a subject of high importance, namely, the reality of generic or other groups, as arrangements in nature. To myself indvidually, to reasoning botanists generally, this passage has also a claim on serious attention, by the support which its writer there gives to my representations about the uncertainty and inequality of book-species; in regard to which I might be supposed by less initiated readers to have gone too far; while I feel well assured that my expositions cannot be refuted. In the review, M. De Candolle intimates a general concurrence with my remarks on orders and species. The few comments on the intermediate grade of genera seem to have been held less satisfactory; and they shall therefore here presently receive the reinforcement of a very remarkable circumstance in their support.

M. De Candolle writes in his letter,—"Your chapter on the nature of species has greatly pleased me; and I could have wished to translate the whole of it. The uncertainty in defining species is immense both theoretically and practically. That of genera is perhaps less, since all people have recognized and named spontaneously some genera, such as Quercus, Populus, Salvia, Ranunculus, etc. etc. However it is not easy to make genera of analogous importance, and we fall now into a

very useless multiplication ; inconvenient also by reason of the changes in nomenclature which result from it."

It seems to my judgment that the uncertainty about genera is less, only because their definition is loose, comparatively with that of species. In making species, we combine on close resemblance, and show or suppose also a community of descent. In making genera, we combine on less close resemblance, and (Darwinians now excepted) without supposing also a community of descent. No doubt all people have recognized some genera, and have used many general names in application to plants. Strictly, this recognition and use only go to show that conventional groups exist, the individuals of which are so closely similar, or else so imperfectly distinguished by untrained men, as to have been usually comprehended under the same vernacular name. These groups do occasionally correspond with modern botanical genera, while they are still very far from exactly or invariably so corresponding. The argument from general names might be used to show that classes and alliances, or even sub-genera and sub-species, are more real and less uncertain than species themselves.

The evident truth is, that technical botanists have no real test for genera, or how could they continue to differ so widely in forming generic groups ? Neither can they impose a limit to the number of genera adopted in books, except a fluctuating limit which arises out of their reciprocal resistance to the generic changes proposed by each other. For example, the name of "Don" is added in lists to sundry generic names, as the botanical authority for the genera. But several of these genera and generic names are in turn authoritatively rejected in the writings of Dr. Lindley; being so rejected, not because Don was in error, but because the individual ideas or whims of the

two botanists have failed to harmonize. And Dr. Lindley himself, our great native expounder of so-called "natural" classification, has involuntarily given us a most curious and convincing illustration, bearing upon the wide uncertainty of any arithmetical limit to genera. I shall here assist in keeping that illustration from the oblivion sought for it by a speedy reprint in a corrected form; believing the mistake to be in itself so very instructive as to render its oblivion by no means desirable.

In Dr. J. D. Hooker's recent 'Introductory Essay to the Flora of Tasmania' it is remarked that the widely different estimates of the earth's flora, at 80,000 or at 150,000 species, is "the most conspicuous evidence" of the undefinability of the majority of species. But if the self-same botanist, after a life-long study of species, and repeated grouping and enumeration of those described, should be unable to say whether 80,000 species or 150,000 species were recorded by name in one of his own botanical works,—should we not, in such case, be warranted in holding his statistical ignorance on the point to be a far more strange and remarkable evidence of uncertainty or undefinability in species ?

Now, a still wider error than this actually came before the botanical public, in respect of the number of genera adopted and recorded by name in the first edition of Dr. Lindley's elaborate volume on the 'Vegetable Kingdom,'—the result apparently of many years of thought and labour. In the numerical tables of that work the genera of plants were incorrectly summed up to 20,806 instead of 8,935;—being thus much more than doubled. This was not a misprint, a merely typographical error, but a downright miscalculation to that extraordinary extent. (See Phytologist, 1846, pp. 526, 594). More extraordinary still, the enormous inaccuracy of the figures

was not detected by the Author himself. It remained uncorrected, until suggested to him by a notice of his learned book in the humble periodical referred to.

[I may here now acknowledge myself the writer of the first notice in the Phytologist, which called the Author's attention to the point; the vast increase in the stated number of genera having instantly caught my own attention, although not feeling it incumbent on myself to go through the reckonings, in order to detect precisely where the error lay.—Doubtless, the habit of inquiring into the accuracy of matters put forth by learned men, instead of humbly accepting on faith their statements and their mis-statements, is a very impertinent practice in their eyes. And I may well therefore be held a troublesome critic, to be put down by hook or by crook; anyhow, so that it can be done;—*if it can.*]

Dr. Lindley prudently sought to escape the personal credit of that gigantic blunder, by stating (Phytologist, 1846, p. 594) that he had entrusted the calculations or tabular summary of numbers to an assistant; that is, to an anonymous somebody else, whose remarkable incompetence or carelessness must be supposed to have brought out the strange results. This defence is plausible, and seems not improbable with respect to the details of casting up figures. But it is to my thinking barely credible, even on his own testimony, that Dr. Lindley could carelessly allow so important a publication to go before the botanical world, without taking the small trouble himself to look at the results or sums-total of the figures, for the accuracy of which his own name was made responsible on the title-page of the book. On his own showing, he must equally have neglected to look at them both in the manuscript copy and in the printed proofs of his volume. It is to be hoped that such neglect

is of rare occurrence among writers on science. I may be wrong in the idea; but this highly curious error leads me to suspect, that the Author of the 'Vegetable Kingdom,' the quixotic champion of "natural" classification, could believe indifferently either in (nearly) 21,000 genera or in (nearly) 9,000 genera only. If so, genera should be held even less certain than species, on faith of Dr. Hooker's mode of reasoning, and notwithstanding M. De Candolle's opinion, rather hesitatingly given in the translated extract from his letter.

Small mistakes in printed figures are no doubt too easily made, to cause surprise by their occurrence. And if I, humble author of a book with the denounced name of Cybele, had committed even so vast a mistake as that of substituting 21,000 instead of 9,000 genera, or thereabouts, it might have gone for nothing. A palliating excuse might have been found for my ignorance or blundering, in the fact that I regard all systematic groups as purely conventional, and their numbers consequently as being largely optional. But that our old and experienced labourer in systematic classification should have made that mistake in the number of genera actually admitted by himself at the same date, or failed to detect it when made, is surely stronger evidence of arbitrariness in genera, than the discordant estimates (not reckonings) by different botanists, between 80,000 and 150,000 species, is evidence of undefinability or arbitrariness in species.

The whole question of systematic classification has been re-opened by Mr. Darwin's publication "On the Origin of Species," — seemingly the most important volume on natural history ever published. If the views of that profound theorist shall turn out to be practically true, technical classification has hitherto been little

better than groping in the dark. And truly, the capricious changes, inconsistencies, even absurdities, mixed up in the learned labours of a Lindley, do go far towards showing that botanical classifiers only poke about in the dark or in the dimmest twilight. But whether some of the more ratiocinative systematists of the Continent ought to be held exceptions to this, I will not take upon myself to decide.

In its immediate reference to botanical classification, the theory of Mr. Darwin is, that all resemblances between existing plants (characters specific, generic, ordinal, etc.) have been inherited from some common ancestor, near or remote, from whose type the descendants have more or less widely diverged in the long lapse of time; and thus they have gradually become specifically, generically, ordinally distinct among themselves. On this view it is logically deduced, that a truly natural classification must really be one of ancestral affinity, and so far rudely analogous to that traced in the family pedigrees among mankind. Thus, all organic nature becomes a complex series of related groups,—closer and closer, as we trace backwards to their sources,—more widely diverging, and successively subordinate to each other, as we thence trace forwards to the present species; any of these in turn tending to produce, during a long future, an indefinite number of other species, genera, orders.

Grave difficulties come in the way to interfere with a full adoption and practical application of Mr. Darwin's views, as they have been explained in his precursor volume 'On the Origin of Species.' While quite thinking that Mr. Darwin has truly made a most important advance in natural science, and has fortified his position far better than any preceding author who has taken the ground of a gradual metamorphose of species, I cannot

avoid still entertaining some serious doubts regarding the completeness or sufficiency of his theory. In particular, it is very difficult to believe in the results to which we are led, by carrying out his ideas of a constant convergence of species as we trace backwards in the long course of time, to commence with (half a score, or) a single prototype, the remotely antient Adam of every existent species ;—and a constant divergence of species as we trace onwards in time, leading at length to the logical (but not avowed) result of a countless multitude of species, far beyond their present numbers. To my judgment, neither of these extremes seems to be sanctioned by existing facts in nature. Both are so dissimilar from the present, and so utterly beyond proof, as to appear inadmissible or incredible.

I have communicated to the thoughtful and candid Author of the theory a suspicion that he ought to have allowed far more influence and effect to a gradual convergence of characters, still in onward progress, acting jointly with and in some measure counter-acting the gradual divergence of characters; the two tending to keep up an approximate equilibrium in nature, in respect to the number of species and genera, their mutual affinities, etc. This would not interfere with the operation of his rule of 'natural selection,' — the grandly distinctive character of his theory. But he appears indisposed to believe this idea sound, or as being anywise necessary to save his own views from something very like a logical *reductio ad absurdum*,— one species to begin with, millions to end with.

Mr. Darwin also hypothetically explains the geographical distribution of animals and plants by an application of his own theory to the subject. It would lead me too

far to enter on this topic at present. In event of continuing this Supplement, I may perhaps try whether the views of Mr. Darwin will accord with the distribution of our native plants, or throw any new light upon it. In the work before cited, page 28, Dr. J. D. Hooker has sought to apply Mr. Darwin's views in explanation of australian botany;—it may be a little precipitately, but with great knowledge and generous sincerity. Mr. Darwin's volume ought to be read and thoughtfully studied by every true naturalist, whether zoologist or botanist. It is a fine combination of depth and clearness; singularly interesting and suggestive.

DIERVILLA CANADENSIS NOT NATIVE IN BRITAIN.

This american shrub has very properly been refused admittance into the Manual of British Botany. It has been recorded as british since publication of the third volume of Cybele Britannica; although there are no warrantable grounds for even a suspicion that it may be a native here. While, on the contrary, all sound inference, based upon known facts in botanical distribution, should have predisposed to a disbelief in its nativity. Nevertheless, it was hastily recorded as a Scottish species, and was endorsed as such by editorial authority, which ought to have been better prepared to draw the right conclusions from the geographical facts bearing on the question, even if insufficiently instructed about the local facts. In the fourth volume of C. B. it was remarked,—"Not only is there much difference in the fidelity and accuracy with which botanists record their facts, real or supposed, but there are perhaps still more important differences in their capacities for rightly understanding what they do see, and

of deducing correct conclusions therefrom." This passage is strikingly illustrated by the record of *Diervilla canadensis* as a pretended native of Scotland. The facts are first reported with an evident bias, which ought itself to have suggested a cautious acceptance of them. The receiver of the report for record introduces a verbal variation of his own, the effect of which is to increase the bias towards error; and he draws exactly the opposite inference from the circumstances, geographical and topographical, to that which should have been drawn from a ratiocinative consideration of them. It seems to my judgment, that no one moderately conversant with geographical botany, and capable of sound reasoning on its facts, would have thus hastily taken up a belief in the nativity of the *Diervilla* in Scotland; least of all in Forfarshire, a county so much explored by tourists and resident botanists. The subjoined paragraphs give the history of the shrub in Scotland.

"We have to announce the very unexpected discovery of *Diervilla canadensis*, in what appears to be a wild state, in the Highlands of Scotland. The circumstance is recorded in the following memorandum from Mr. Alexander Osmond Black, an active and very intelligent young botanist:—

'On the 15th of last September, in company with 'my friend Mr. Croall of Montrose, I started from the 'little village at the foot of Mount Catterthun, and 'proceeded up the banks of the North Esk river, 'which is in that glen called The Burn. About half 'a mile above Gannachy Bridge, on the Forfarshire 'side of the Esk, I observed *Pyrola secunda* and '*Hieracium prenanthoides*, and noticed that the beau-'tiful *Orthotrichum Drummondii* was very abundant

'upon the trees. Here my attention was first at-
'tracted to *Diervilla*, which I found to extend for
'about half a mile, growing in large, scattered clumps,
'often for as much as 40 feet, preventing, by the
'denseness of its foliage, the growth of all other plants
'except the *Pyrola secunda*, which luxuriated beneath
'it. There are no houses near; and the plant, if not
'truly wild, which its abundance would induce a per-
'son to consider it, is at least perfectly naturalised,
'although it has never before, that I am aware of,
'attracted the notice of British botanists?'

Although this *Diervilla*, perhaps better known to the public under the name of *Lonicera Diervilla*, has never before been found wild in Europe, we see no reason [!] why so common a Canadian plant should not have a really native habitation in a remote [why interpolate this word 'remote'?] Scotch glen. At all events it is a very remarkable circumstance that no earlier record should exist, that we are aware of, of the occurrence of the plant in Great Britain."— (*Gardener's Chronicle, as quoted in a Scottish periodical*).

"Did you see in the Gardener's Chronicle Mr. Black's discovery of Diervilla canadensis as a British plant, which Dr. Lindley [? the Editor] argues to be indigenous? The station is depicted as a 'remote' highland glen, but it so happens unfortunately that other parties have long known the station as the pleasure grounds of — Mc Inroy, Esq., of Burn, on the borders of Forfarshire, near Gannachy, where the honeysuckle has no doubt been planted, as well as the other shrubs. Mr. Watson ought to get a hint of this." — (*Extract from a manuscript letter, addressed by a Scottish botanist to a London botanist*).

"We have perused the above paragraph [namely, the quotation from Gardener's Chronicle] with some interest, and we do not wonder that Mr. Black, an entire stranger, and writing perhaps from memory, should have fallen into some little inaccuracies as to localities, etc.; but we do wonder why an acute observer — and such we understand Mr. Black to be — should have come to the conclusion that the pretty little plant *Diervilla canadensis* was really a native there." .... "We are equally assured that, when Mr. Black revisits the spot, he will be convinced, as well as ourselves, that the *Diervilla* has no more right to be considered a native there than himself. 'The clumps' occur at intervals along the margin of one of the principal walks that are formed along the river's bank, and have, we have no doubt, been planted for ornamental purposes, along with *Spiræa salicifolia*, *Ligustrum vulgare*, and its own near ally, *Lonicera Xylosteum*, when the grounds were laid out and the walks formed. The *Diervilla* has indeed, by means of its creeping roots, established itself more firmly than its neighbours, and has even extended its territory; but from the appearance of the capsules, we hardly think it will ever ripen its seeds, and is therefore not at all likely to become naturalised, although, if allowed to remain unmolested, it may extend itself over a still wider area." — (*A correspondent of Montrose Review, Nov.* 18, 1853).

Such are the facts about this Diervilla, as kindly communicated to me by botanists. They have been for the most part already printed; although only in the evanescent form of newspaper paragraphs. The Editor of the Gardener's Chronicle adduces no fact to justify belief in the nativity of the shrub, unless he intends his own ignorance or obtuseness in the matter to be accepted as such,

by informing his readers that *he* can "see no reason" why this plant should not be native in a so-called "remote" Scotch glen. It is very likely that he did "see no reason." His strong point will certainly not be found on the line of geographical botany, or in the way of appreciating reasons.

Facts are converted into *reasons*, by being rightly interpreted and rightly connected together. Now, it seems that the only pretence for recording the Diervilla among the native plants of Scotland, is found in the fact that it has thriven well where planted as an ornament on a gentleman's grounds. And certainly this one fact cannot be held a satisfactory "reason" in the eyes of british botanists; however suitable it might have been deemed as a newspaper record for the edification of gardeners, if correctly placed before them as an instance of semi-naturalisation.

On the other hand, though acquainted with a goodly number of facts about the distribution of british plants, and not quite uninformed in regard to the distribution of canadian plants, I cannot recollect one in the whole lot which is fairly convertible into a "reason" for believing the Diervilla anywise likely to have "a really native habitation in a Scotch glen," whether with or without the interpolation of "remote." So far as they bear on the matter at all, they tend only to suggest disbelief, warranted by an extreme improbability.

Such being the case, I will request M. De Candolle to refer to my previous remarks in reply to his own, on pages 18—25; and I will then ask him, — 'Whether a facility in the misinterpretation of facts, and an inability to see them in their true connexions, are to be included among the evidences which go to prove that our eminent botanists are usually sound reasoners?'

ARENARIA BALEARICA NOT NATIVE IN SCOTLAND.

So much mischief may be done by would-be-thought discoverers sending inaccurate reports to editors, — who are themselves not duly prepared by the geographico-botanical knowledge requisite for distinguishing between the probable and the improbable in local botany,—that I can feel no apology needful to my own readers for here troubling them with a second warning instance; one fortunately arrested in time to prevent another most improbable species becoming permanently incorporated in our lists of truly british plants. It is a fitting accompaniment to the preceding case of the Diervilla; resembling that one in the risk of a garden plant becoming thereby recorded for the future as if really a native production of Scotland. In May last, 1859, I received from the Editor of the Phytologist, new series, a note to this effect:—

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

Writing here from recollection, my reply was immediate; and to the effect, that if reported to me from the Mediterranean, instead of Scotland, I should unhesitatingly have named the plant *A. balearica*;—that I knew of no boreal species to which it could be referred or related;—and that the alleged locality of Scotland was geographically improbable, unless I was wrong as to the

name. In the next month's no. of the Phytologist, the following brief notice was given of this pseudo-discovery:—

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

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

> "On the wall of an old 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." (Phytologist, 55, 327).

The question now arises, — Where did the previously found specimen come from? — that which was sent to London in May, and recorded in the June no. of the Phytologist, as a plant new to Scotland? Very significantly, that first record is omitted from the Index to the

Phytologist for 1859, page 385, where Mr. Sim's confession of the fruithouse locality for the species is referred to only.

And considering how many localities for improbably-native plants have been already reported on the same authority, it may become matter of some importance to future botanical topographers, to ascertain whether this case of the *Arenaria balearica* is a fair sample of the rest? Also, how far it may be held an exhibition of editorial care and competence in announcing new british plants or new british localities?

While saying that I cannot place scientific reliance upon Mr. Sim's reports, or upon the phytological records of them, it would be most unfair not to disclaim any insinuation against Mr. Sim personally, on the score of moral truthfulness. I can well believe him writing with perfect sincerity of intention, while imperfect in his reports, and unsound in his conclusions from alleged facts; the records being made worse against him by want of editorial discernment.

SUBPROVINCIAL DISTRIBUTION.

The areas of plants have been exhibited in the C. B. by tracing each species through the 18 provinces, into which the counties were grouped; the range of latitude and that of elevation or temperature being also added. This mode is well enough adapted to show on what portion of the surface each species is distributed; also, whether it is scattered generally or partially within that portion. But it cannot suffice for some other objects sought through topographical details; the provinces being

too few in number, and most of them too extensive in size, to allow of sufficient local precision. At the date when the first volume of the Cybele was printed, it was found not possible to trace the species through smaller sections of Britain with any close approximation to completeness. Those 18 provinces were therefore adopted instead of counties in the three earlier volumes of the work.

By the time when the fourth volume was under the hands of the printer, a gradual accumulation of local facts had afforded some facility for tracing out the distribution of species through smaller sections, formed by subdividing the 18 provinces into 38 sub-provinces. Accordingly, the 'census of species' was there founded upon these more numerous sections of the surface; which were also used in the tabular list on pages 379—381, where varying proportions were shown between the size of 'areas' and the numerical value of their floras.

It is proposed now to re-state the areas of the species, traced through these 38 sub-provinces. This will be virtually a compilation of so many Local Floras, condensed into two general lists. Instead of printing 38 floral lists, that is, a separate one for each of these subordinate provinces, two general lists of the species can be made to suffice, through use of thirty-eight nos. to show the ascertained presence of the species; blanks indicating the absence of any of them from the corresponding subprovince. A double list of the species, one for South Britain, and one for Middle and North Britain, is rendered necessary by the impossibility of placing a series of thirty-eight arabic figures on the single line of an octavo page. In the map prefixed to volume third of C. B. the sub-provinces are numbered consecutively from 1 to 38. In the lists presently to be printed the same

numbers are adhered to. But the units are repeated without the prefixed tens, in order to avoid an excessive crowding of the figures; so that 12 22 32 stand simply 2 2 2, on page 48, etc.

The two lists are considerably shortened by omitting the names of those species which have been satisfactorily ascertained to occur in every sub-province; that is, from the first list are omitted the names of species reported on good authority for each of the southern sub-provinces 1 to 18; and from the second list are in like manner omitted the names of species so reported for each of the remaining sub-provinces 19 to 38. The species not reported on reliable authority from any of the sub-provinces 1 to 18, or 19 to 38, are likewise omitted (with some few exceptions) from the corresponding list. But it is conceived that no mistake can arise between these omissions, by confounding the species totally absent from 18 or 20 sub-provinces with those species which are known to occur in all of them.

Is it inquired, what is the use of these elaborate lists, to exhibit the subprovincial areas of the species? The uses are various; and two or three shall be mentioned in example. First, the distribution of the species is thus shown much more in detail, by tracing them through 38 instead of only 18 sections; and fulness of detail has its various advantages. Secondly, the distribution is shown more precisely, because the smaller the space to which any floral list relates, the more definite is the information conveyed by stating that any given species is known to occur within the space. Thirdly, attention is thus drawn to many local desiderata (that is, to vacancies in our records arising from incompleteness of knowledge) which would not have become obvious while the areas were

traced out by the 18 provinces only. This last is a matter of some considerable importance, in reference to the progress of our knowledge about local botany, as will here immediately be explained.

It has been intimated to me by some botanists, who feel sufficiently willing to contribute towards the progress of scientific knowledge, by supplying information about local botany, that they are deterred from doing so through the difficulty still experienced in selecting the facts which are worthy of printed record on the ground of novelty, or of being specially applicable to fill up some void in our accumulated stores of local facts already so largely placed on record in print. I can well understand this difficulty, being also occasionally perplexed in the same manner; that is, not finding myself prepared to say confidently whether certain facts are novel or known, still deserving of record or already sufficiently recorded. Though assisted by very ample notes and references, which have been gradually accumulated during the lapse of years, I often find it too tedious to search thoroughly for some given fact, among the many local lists and other more special records of localities, now so widely dispersed in scores or even hundreds of volumes. And it is easy to conceive that other botanists, who may have devoted less enduring attention to such matters, must experience the like inconvenience in a higher degree, if attempting to determine which of their local facts are yet novel, and which of them have been already placed on record.

One object sought by this Supplement will be that of gradually lessening the inconvenience or difficulty here alluded to. In the subjoined lists the series of figures opposite the name of any species will show in which of the 38 sub-provinces it has been reported on good authority. Where lines (-) are substituted for the figures, it will

be understood that I remain unaware of any locality for the species in that sub-province; the letter o meaning that the authority for the locality requires corroboration. Every blank in the series of figures may thus be construed into a query, addressed to all our provincial botanists, 'Do you know of any locality for this species in this sub-province?' If you do know of such, it is worth while (in a scientific view) to put that item of knowledge on printed record. The query may be varied also into the suggestive form of 'Can you find a locality for this species within this sub-province?' If so, put your discovery on permanent record in a printed form, for the information and service of other botanists interested in such matters.

I should myself be thankful to botanists who would take the trouble to send me any notes of localities in evidence that a species does occur in a sub-province for which it is at present left as a desideratum, a blank to be filled up. A simple memorandum about any of the commoner and easily distinguished species would suffice. For the doubtful and critical species, or recently segregrated sub-species or quasi-species, a confirmation by the sight of a specimen would much enhance the value of the memorandum. So likewise, if any botanist should believe a species to be erroneously entered as found in some of these sub-provinces, it would be highly desirable to suggest the grounds on which an error is supposed.

It must be quite impossible for any one botanist to draw up strictly accurate Local Floras for every part of Britain thus divided into 38 sections. Doubtless I may have overlooked some really reliable records; and may also have occasionally trusted other records which were not trustworthy. All botanists make mistakes in nomenclature at times; labels get transposed to wrong speci-

mens; inadvertencies will occur in copying out lists of names or a series of localities; and other less pardonable misreports are made, which it is not always possible to avoid being deceived by. Unquestionably many blanks remain to be filled up, and not unlikely several figures ought to be erased, in the lists subjoined. It is to be hoped that a progressive emendation in these respects will arise from thus printing them in illustration of existing knowledge either way. As was intimated in the prefixed 'Notice,' the opportunity of learning what is still required for supplementing and correcting the lists will be given by a wide circulation of them. Time will show whether any useful result is elicited thereby. If not, the cost and trouble of publishing them might have been more serviceably devoted.

There remains one other point affecting the accuracy of the areas stated for several of the species, which it may be well again to mention, although alluded to repeatedly in the Cybele itself. Through recent subdivisions of old species, many names have now a more special or restricted application than they formerly had. Hence it becomes needful for botanists who now report localities, to make it clear whether they mean the more restricted recent (segregate) species, or the less restricted old (aggregate) species, when using a name which may be applied in either manner. Examples will render this need more apparent.

Orchis bifolia was long held to be one single species, and by some botanists it is still so regarded. It is treated as a single species in various Floras, local lists, etc. But latterly it has been more usually subdivided into two reputed species, *Orchis* (Habenaria, or Gymnadenia) *biflora* and *chlorantha*, two quasi-species slightly different in technical character. When the name *bifolia*

is found in an old list, it may now be quite impossible to say with confidence which of the two modern semi-species was intended thereby. The like difficulty will still arise in new records, unless botanists make it clear that they do really intend that form, and only that form, to which the name *biflora* is now usually restricted.

The same sort of uncertainty arises between *Potamogeton natans* and *oblongus*; in this case the newer name applying to what is probably the commoner species in this country. As a rule, therefore, it might be well to report localities for both of them. In some instances the uncertainty is increased by a triple or quadruple, or even a larger number of sub-species. Thus, we have now *Filago germanica*, *apiculata*, *spathulata*, names for three several species formerly included as a single species under the same name of *F. germanica*. So likewise the *Epipactis latifolia*, *media*, *atrorubens*, are now held to be three distinct species, though long grouped under the name of *latifolia* as a single species only. The names of *Rubus fruticosus*, *Ranunculus aquatilis*, *Fumaria capreolata*, *Arctium Lappa*, *Hieracium alpinum*, *Hieracium murorum*, *Potamogeton pusillus*, *Potamogeton pectinatus*, *Callitriche verna*, and various others are now held by many good botanists to represent groups of species, not single species only; and their use thus gives rise to the question, whether the aggregate is intended thereby, or only some very restricted form left after severance of various other forms. In the subjoined lists, I have in various instances been compelled to guess that the old name did mean the modern remnant to which it is still applied, and not any of the sub-species carved from the old aggregate.

The sub-provinces here repeatedly mentioned, and represented by 38 figures in the subjoined lists, will not be understood by those botanists who remain unacquainted

with the C. B. To obviate any inconvenience which might thus be occasioned, the sub-provinces and their included counties will be found enumerated on the next page, with the figures by which they are represented. Their combination into 18 primary provinces will be also indicated by their corresponding numbers; for example, the secondary or sub-provinces of South Thames, North Thames, West Thames, when taken together, form the single primary province of the Thames. The Hebrides, Orkney, Shetland, are sub-provinces which together constitute a single province called North Isles. Thus, shortly stated, the nos. may be said to represent either single counties or else groups of counties; those of York, Lancaster, Argyle, Inverness, being subdivided, and portions of them assigned to different sub-provinces.

It is not expected that many botanists will take the trouble to learn the application and meaning of every figure or no. Nor is it necessary to do so, in carrying out some of the objects for which the lists are printed. The local botanist needs only to learn the one figure which corresponds with his own county or group of counties. By then running his eye down the column where that figure stands, he will easily and rapidly see which of the species are held to have been reported from his county on good authority,—which of them require to be corroborated by a more reliable record,—and which of them are supposed to remain still unrecorded. If he will do this, and place on permanent record any needful corrections or additions, which his own better local knowledge may enable him to make, he will so far be contributing to the actual progress of phyto-geographical science. Would not this be wiser than printing records at random, nine-tenths of them valueless because mere repetitions?

Counties arranged into Sub-provinces.

1. 1 South Peninsula. Cornwall. (W. Peninsula, on the
2 Mid Peninsula. Devon. map in Cybele, vol. 3).
3 North Peninsula. Somerset.
2. 4 West Channel. Wilts. Dorset.
5 Mid Channel. Isle of Wight. Hants.
6 East Channel. Sussex.
3. 7 South Thames. Kent. Surrey.
8 North Thames. Essex. Herts. Middlesex.
9 West Thames. Berks. Oxford. Bucks.
4. 0 South Ouse. Suffolk. (The single 0 stands for 10).
1 North Ouse. Norfolk. (The single 1 stands for 11).
2 West Ouse. Cambridge. Bedford. Hunts. Northampton.
5. 3 South Severn. Gloucester. Monmouth.
4 Mid Severn. Hereford. Worcester. Warwick.
5 North Severn. Stafford. Salop or Shropshire.
6. 6 South-East Wales. Glamorgan. Brecon. Radnor.
7 South-West Wales. Carmarthon. Pembroke. Cardigan.
7. 8 North Wales. Montgomery, and other five counties.
8. 9 East Trent. Lincoln. (The single 9 for 19).
20 West Trent. Leicester. Rutland. Notts. Derby.
9. 1 Mersey. Chester. Lancaster, except northern portion.
10. 2 East Humber. Eastern York. (The single 2 for 22).
23 West Humber. Western York. (The single 3 for 23).
11. 4 Tyne. Durham. Northumberland.
12. 5 Lakes. N. Lancaster. Westmoreland. Cumberland. Man.
13. 6 South-West Lowlands. Dumfries. Kirkcudbright. Wigton.
27 North-West Lowlands. Ayr. Renfrew. Lanark.
14. 8 E. Lowlands. Peeb. Selk. Roxb. Berw. Hadd. Edin. Lin.
15. 9 South-East Highlands. Fife. Kin. Clack. Stirling. Perth.
30 Mid-East Highlands. Forfar. Kincardine. Aberdeen.
31 North-East Highlands. Banff. Elgin. Nairn. East-Inverness.
16. 2 Inner-W. Highlands. W. Inverness. Argyle. Dumb. Isles.
33 Outer-W. Highlands. Ebudes; including Isla, Mull, Skye, etc.
17. 4 Lower-North Highlands. Ross. Cromarty. (4 for 34).
35 Upper-North Highlands. Sutherland. Caithness. (5 for 35).
18. 6, 7, 8 North Isles. 36 Hebrides. 37 Orkney. 38 Shetland.

1. *South Britain.*

1. *Ranunculaceæ.*	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Clematis Vitalba	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 o
Thalictrum alpinum	- - - - - - - - - - - - - - - - - 8
minus	1 2 3 - - - - 8 - 0 1 2 3 4 - 6 7 8
flexuosum	- - o o - - - - o - - - - - - - - o
saxatile	- - - - - - - - - - - - - - - - - o
flavum	- o 3 4 5 o 7 8 9 0 1 2 3 4 5 - 7 8
Anemone Pulsatilla	- - - - - - - 8 9 0 1 2 3 - - - - -
Adonis autumnalis	- - o 4 5 6 7 o 9 0 o - o - o - - -
Myosurus minimus	- o - 4 5 6 7 8 9 0 1 2 3 4 5 - - -
Ranunculus heterophyllus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—heterophyllus	- - - - 5 - 7 - - - - - - - - - - -
—peltatus	- - - - - - 7 - - - - - - - - - - -
—floribundus	- - - - 5 - 7 - - - - - - 4 - - - -
marinus	- - 3 - 5 - 7 8 - - - - 3 - - - 7 -
—confusus	- - 3 - 5 - - - - - - - 3 - - - 7 -
—Baudotii	- - - - 5 - - - - - - - - - - - - -
trichophyllus	- - - - 5 - 7 8 - - - 2 - 4 - - - -
—trichophyllus	- - - - 5 - - - - - - - - - - - - -
—Drouetii	- - - - 5 - 7 - - - - - - - - - - -
circinatus	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - -
fluitans	- 2 3 4 5 6 7 8 9 0 - 2 3 4 5 - o o
tripartitus	1 - - - - - 7 - - - - - - - - 7
cœnosus	1 2 3 4 5 6 7 o - 0 - - 3 - 5 - 7 8
Lingua	1 o 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7 8
auricomus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
parviflorus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
arvensis	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Trollius europæus	- - - - - - - - - - - - 3 4 5 6 - 8
Helleborus viridis	o o 3 4 5 6 7 8 9 0 1 2 3 o o - o o
fœtidus	o o o 4 5 6 7 o 9 0 1 2 3 4 5 o - o
Aquilegia vulgaris	1 2 3 4 5 o 7 8 9 o 1 2 3 4 5 6 7 8
Delphinium Ajacis?	o o - o o - o o o 0 1 2 - o o o - -
Aconitum Napellus	o o 3 o o - o o o - o - 3 4 5 6 - 8
Actæa spicata	- - - - - - - o - - - - - - - - -

1.**Berberaceæ.*	
Berberis vulgaris	o o o 4 o - 7 8 9 0 1 2 3 4 5 - - o
2. *Nymphæaceæ.*	
Nymphæa alba	1 o 3 4 5 6 7 8 9 0 1 2 o 4 5 6 7 8
Nuphar pumila	- - - o - - - - - - - o - - o - - -
3. *Papaveraceæ.*	
Papaver hybridum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - - 8
Lecoquii	- - - - 5
Meconopsis cambrica	1 2 3 - - - - - - - - - - - - - 6 - 8
Glaucium luteum	1 2 3 4 5 6 7 - - 0 1 - 3 - - 6 7 8
3.**Fumariaceæ.*	
Corydalis claviculata	1 2 3 4 5 6 7 8 - 0 1 - 3 4 5 6 7 8
Fumaria capreolata	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—pallidiflora	- 2 3 - - - - - - - - - - - 5 6 - 8
—Boræi	- - - - - - - - - - - - - - 5 - 7 -
—confusa	1 2 - - - - - - - - - - - - - - 7 8
—muralis	- - 3 - - - - - - - - - - - 5 - - 8
micrantha	- - - 4 - 6 7 8 - - 1 2 3 4 5 - - -
parviflora	- - - - 5 - 7 8 - 0 - 2 - - - - - -
—parviflora	- - - - - - 7 8 - 0 - 2 - - - - - -
—Vaillantii	- - - - 5 - 7 8 - 0 - 2 - - - - - -
4. *Cruciferæ.*	
Cakile maritima	1 2 3 4 5 6 7 - - 0 1 - - - - 6 7 8
Crambe maritima	1 2 3 4 5 6 7 8 - 0 1 - - - - 6 7 8
Coronopus didyma	1 2 3 4 5 6 o o - - - - o - o 6 7 8
Thlaspi arvense	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - -
perfoliatum	- - - - - - - - o - - - 3
alpestre, occ.	- o o - - - - - - - - - - - - o - 8
Hutchinsia petræa	- - 3 - - - o - - - - - 3 4 5 6 7 8
Teesdalia nudicaulis	1 2 - - 5 6 7 8 9 0 1 2 - 4 5 6 - 8
Iberis amara	- - o - - - - 8 9 - 1 2 - o o - - o
Lepidium latifolium	- - o - - o 7 8 - 0 1 o - o - 6 - 8
Smithii	1 2 3 4 5 6 7 o - 0 1 - 3 4 5 6 7 8
ruderale	1 2 3 4 5 - 7 8 - 0 1 o 3 4 - o o -
Cochlearia officinalis	1 2 3 4 5 o 7 - - 0 1 - 3 o - 6 7 8
—maritima	1 2 3 4 5 o 7 - - 0 1 - 3 o - 6 7 8
—alpina	- - - - - - - - - - - - - - - - - 8
danica	1 2 3 4 5 6 7 o - 0 1 - - - o 6 7 8
anglica	1 2 3 4 5 6 7 8 - 0 1 2 3 - - 6 7 8
Subularia aquatica	- - - - - - - - - - - - - - - o - - 8

Draba aizoides	- - - - - - - - - - - - - - - - 6
incana	- - - o - - - - - - - - - - - - - - 8
muralis	o - 3 - - - - - - - - o 3 - 5 - - 8
Dentaria bulbifera	- - - - - 6 7 8 9 - - - - - 5 - - -
Cardamine amara	o - - o 5 6 7 8 9 0 1 2 3 4 5 - - 8
hirsuta	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—hirsuta	1 2 3 4 5 6 7 8 9 - - 2 3 4 5 6 - -
—sylvatica	- 2 3 4 5 6 7 8 9 - 1 2 3 4 5 6 7 -
impatiens	o - o - - o 7 o - - - - 3 4 5 6 - 8
Arabis petræa	- o - - - - - - - - - - - - o - - 8
stricta	- - 3 - o - - - - - - 3
ciliata	- - - - - - - - - - - - - - - - 7
Turritis glabra	- - o 4 5 - 7 8 9 0 1 - o 4 5 - - -
Barbarea arcuata	- o - - - 6 - 8 - - - - - 4 - - - 8
stricta	- - - - o - - o - - - o - 4 - - - -
Nasturtium sylvestre	1 2 3 4 - 6 7 8 9 0 1 2 3 4 5 6 7 -
amphibium	- 2 3 4 - 6 7 8 9 0 1 2 3 4 5 - - -
Sisymbrium Irio	- o o o - - o 8 9 - - 2 - o - 6 - -
Sophia	1 2 3 4 - 6 7 8 o 0 1 2 3 4 5 6 7 8
Erysimum cheiranthoides	- 2 3 4 - o 7 8 9 0 1 2 3 4 5 - 7 8
Mathiola incana	- - - - 5 o - - - - - - - - - - o
sinuata	1 2 - - - o - - - - - - - - - 6 7 8
Brassica oleracea	1 2 3 4 5 - 7 - - - - - o - - 6 7 8
campestris	1 2 3 4 - 6 7 8 9 0 1 2 3 4 5 - 7 8
Sinapis alba	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
tenuifolia	1 2 3 4 5 6 7 8 9 0 1 - 3 4 5 6 7 8
muralis	o 2 3 4 - 6 7 8 9 0 - - 3 - - 6 7 -
monensis	- - - - - - - - - - - - - - - 6 - 8
Raphanus maritimus	1 2 3 - 5 6 - - - - - - - - - - 7 8
5. *Resedaceæ.*	
Reseda lutea	1 2 3 4 5 6 7 8 9 0 1 2 3 o 5 6 7 8
6. *Cistaceæ.*	
Helianthemum vulgare	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
polifolium	- 2 3 - - - - - - - - - - o
canum	o - - - - - - - - - - - o - o 6 - 8
Breweri	- - - - - - - - - - - - - - - - - 8
7. *Violaceæ.*	
Viola palustris	1 2 3 4 5 6 7 - 9 o o 2 3 4 5 6 7 8
odorata	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
flavicornis	- 2 3 - 5 6 7 8 9 0 1 2 - 4 5 6 7 8

Viola lactea	o 2 - o 5 6 7 - - - o 2 - - - - - o
—lusitanica	- 2 - - - 6 7
—stagnina	o 2 - - - - - - - - - - 2
tricolor	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—tricolor	- - - - - - - - - - - - - - - 5 - 7 8
—arvensis	1 2 3 4 5 6 7 8 9 - - 2 3 - 5 6 7 8
lutea	o o - - - - - - - - - - 3 4 5 6 7 8
Curtisii	o 2 - - - - - - - - - - - - - - 7 8
8. *Droseraceæ.*	
Drosera intermedia	1 2 3 4 5 6 7 8 9 0 1 2 - - 5 6 7 8
anglica	o o o o o - - - - 0 1 2 - - 5 6 - -
9. *Polygalaceæ.*	
Polygala calcarea	- - - 4 - 6 7 - - - - - 3 - - - o
10. *Frankeniaceæ.*	
Frankenia lævis	- - - - 5 6 7 8 - 0 1 2
11. *Elatinaceæ.*	
Elatine hexandra	1 - - - - 6 7 - 9 - - - - 4 5 - - 8
Hydropiper	- - - - - - 7 - - - - - - 4 - - - 8
12. *Caryophyllaceæ.*	
Dianthus prolifer	- - - - 5 6 - o 9 - 1 - - o
Armeria	- 2 - 4 5 6 7 8 9 0 1 - - 4 5 6 - 8
cæsius	- - 3 - - - - - - - - o o
deltoides	- 2 3 - o - 7 8 9 0 1 2 3 4 5 - - 8
Silene maritima	1 2 3 4 5 6 7 - - 0 1 - 3 - - 6 7 8
Otites	- - - - - - - - o - 0 1 2 - - - - o -
anglica	1 2 - 4 5 o 7 8 9 0 1 2 - 4 5 6 7 8
nutans	- 2 o - 5 - 7 o - - - o - - 5 - - 8
italica	- - - - - - 7 - - - - - 3
noctiflora	- - - - o o 7 8 9 0 1 2 - 4 o - - -
conica	- - - - - - 7 - - 0 1 - - o - - - -
annulata ?	- - - - - - - - - 0
acaulis	- o - - - - - - - - - - - - - - - 8
Lychnis Viscaria	- - - - - - - - - - - - - - - - 6 - 8
vespertina	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Githago	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Moenchia erecta	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Sagina "maritima"	1 2 3 4 5 6 - 8 - 0 1 - - - - 6 7 8
ciliata	- - 3 - 5 6 - - - - - 2 - - - - - -
subulata	1 2 - 4 5 6 7 - 9 - - - - - 5 - 7 8
nodosa	1 2 3 4 5 - 7 8 9 0 1 2 3 4 5 6 7 8

Honckeneja peploides	1 2 3 4 5 6 7 8 - 0 1 - - - - 6 7 8
Spergularia "marina"	1 2 3 4 5 6 7 8 - 0 1 2 3 4 5 6 7 8
media	- 2 3 4 5 6 - 8 - - - - - o - - 7 8
rupicola	- - - - 5
Arenaria leptoclados	- - - - 5
tenuifolia	1 2 3 4 5 6 7 8 9 0 1 2 3 4 o - - 8
verna	1 - 3 - - - - - - - - - - - 5 6 - 8
Holosteum umbellatum	- - - - - - - - - 0 1
Stellaria nemorum	o o - - - - - - - - - - - 3 4 5 6 - 8
glauca	o - 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
Cerastium aquaticum	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
pumilum	1 2 - - 5 - 7 - - - - o 3
tetrandrum	1 2 3 4 5 6 - - - 0 1 - 3 4 o 6 7 8
arvense	- o - 4 5 - 7 8 9 0 1 2 3 4 5 - - 8
alpinum	- - - - - - - - - - - - - - - - - 8
latifolium	- - - - - - - - - - - - - - - - - 8
13. *Linaceæ.*	
Linum perenne	- - o - o - o 8 - 0 1 2 - o - - - -
angustifolium	1 2 3 4 5 6 7 - - o o - 3 - o 6 7 8
Radiola millegrana	1 2 3 4 5 6 7 8 9 0 1 - - 4 5 6 7 8
14. *Malvaceæ.*	
Althæa officinalis	1 2 3 - 5 6 7 8 - 0 1 2 3 - o 6 7 -
Lavatera arborea	1 2 3 4 o o o o - - o - - - - 6 7 8
15. *Tiliaceæ.*	
Tilia parvifolia	- 2 3 - 5 6 - 8 o o - 2 3 4 5 6 - o
16. *Hypericaceæ.*	
Hypericum Androsæmum	1 2 3 4 5 6 7 8 9 - 1 2 3 4 5 6 7 8
dubium	1 2 3 4 5 6 - 8 9 o 1 2 3 4 5 6 7 8
linariifolium	1 2
hirsutum	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
montanum	1 2 3 4 5 - 7 - 9 - 1 - 3 4 5 - 7 8
Elodes	1 2 3 4 5 6 7 - - 0 1 2 3 4 5 6 7 8
17. *Aceraceæ.*	
Acer campestre	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
18. *Geraniaceæ.*	
Erodium maritimum	1 2 3 4 5 o 7 - - - o - 3 4 5 6 7 8
moschatum	1 2 3 4 o o o o o o o o 3 o o - 7 o
Geranium sylvaticum	o - - - - - - - - o o - - 4 5 - - -
pratense	1 o 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
pyrenaicum	- 2 3 4 o o 7 8 9 0 1 o 3 4 5 6 7 8

Geranium rotundifolium	- 2 3 4 5 - 7 8 9 0 - 2 3 4 o o - o
pusillum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
columbinum	1 2 3 4 5 6 7 8 9 - 1 2 3 4 5 6 7 8
lucidum	1 2 3 4 5 o 7 8 9 0 o 2 3 4 5 6 7 8
purpureum	1 2 - 4 - 6 7 - - - - - - - - - 7 8
sanguineum	1 2 3 - - - - 8 - o - 2 3 4 5 6 7 8
19. *Balsaminaceæ.*	
Impatiens Noli-tangere	- - 3 o - - o - - - - o - o o - - 8
22. *Rhamnaceæ.*	
Rhamnus catharticus	- o 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Frangula	1 2 3 4 5 6 7 8 - 0 1 2 3 4 5 6 7 8
23. *Leguminiferæ.*	
Ulex nanus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—nanus	- - - 4 - - 7 - - - 1 - - 4 - - 7 -
—Gallii	1 2 3 4 - - - - - - - - 3 4 5 6 7 8
Genista tinctoria	1 - 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
pilosa	1 - - - - 6 o - - o - - - o o - 7 o
Ononis spinosa	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Anthyllis Dillenii	1 - - - - - - - - - - - - - - 6 7 8
Medicago sylvestris	- - - - - - - - - 0 1 2
falcata	- o o o - o o o - 0 1 2
maculata	1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - 7 8
denticulata	o 2 - 4 5 6 7 8 - 0 1 - - o - - - -
minima	- - o - - - 7 - - 0 1 2 - - - o
Melilotus arvensis	- - - - 5 - 7 8 - 0 1 2 - - - o - -
vulgaris	- o - o 5 o 7 8 o o 1 - - 4 - o 7 -
Trigonella ornithopodioides	1 2 3 4 5 6 7 8 o 0 1 - 3 - - - - 8
Trifolium subterraneum	1 2 3 4 5 6 7 8 9 0 1 2 3 - - - 7 8
ochroleucum	- - - o o - o 8 - 0 1 2 - o - - - -
Molinerii?	1
maritimum	o - 3 4 o 6 7 8 - o o - 3 - - - - o
scabrum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
striatum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Bocconi	1
glomeratum	- 2 3 4 5 6 7 8 - 0 1 - - - - 6 - o
strictum	1 - - - - - - - - - - - - - - - - o
suffocatum	1 2 3 - 5 6 7 - - 0 1 - - - - - - 8
"filiforme"	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Lotus angustissimus	1 2 o - 5 6
hispidus	1 2 - 4

Astragalus glyciphyllos	o o 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
hypoglottis	- - - - - - - 8 9 0 1 2 3 4 - - - -
Ornithopus perpusillus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Arthrolobium ebracteatum	1
Hippocrepis comosa	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Onobrychis sativa	- o 3 4 5 o 7 8 9 0 1 2 3 4 5 - - o
Vicia Orobus	- - 3 - - - - - - - - - o o o 6 7 8
sylvatica	o 2 3 4 5 - 7 8 9 o - 2 3 4 5 - o 8
angustifolia	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
lathyroides	o o 3 4 5 6 7 o - 0 1 2 - 4 o 6 7 8
lutea	1 o 3 4 - 6 - - - o - - - - - - - -
bithynica	o 2 3 4 o 6 7 8 - - - - 3 4 - 6 - 8
gracilis	- 2 3 - 5 - 7 8 - - - 2
Lathyrus Aphaca	- 2 3 4 5 6 7 8 9 0 1 2 3 4 - - - -
Nissolia	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - o
hirsutus	- - o - o - - 8
palustris	- - 3 - 5 - o - o 0 1 2 - 4 - - - 8
maritimus	o .. - 4 o 6 7 - - 0 - - - - - - - -
Orobus tuberosus	1 2 3 4 5 6 7 8 9 0 o 2 3 4 5 6 7 8
24. *Rosaceæ.*	
Prunus spinosa	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
insititia	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Padus	o - - - o - o o - o o o 3 o 5 6 - 8
Cerasus	1 2 - 4 5 6 7 8 9 - - 2 - - 5 - 7 8
avium	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Spiræa Filipendula	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
Dryas octopetala	- - - - - - - - - - - - - 5 - - 8
Geum urbanum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
intermedium	- - - o 5 - - - - - 1 2 - - - - - 8
rivale	- 2 3 4 5 6 - 8 9 0 1 2 - 4 5 6 7 8
Agrimonia odorata	1 2 - - 5 6 7 - - - - - - 4 - 6 - -
Potentilla rupestris	- - - - - - - - - - - - - - - - - 8
argentea	- - 3 4 5 6 7 8 9 0 1 2 - 4 5 - - 8
verna	- o 3 - - - - - - 0 - 2 3 4 o 6 - 8
alpestris	- - - - - - - - - - - - - - - - o o -
"nemoralis"	- 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7 8
Comarum palustre	1 2 3 4 5 6 7 8 - 0 1 2 - 4 5 6 7 8
Rubus Chamæmorus	- - - - - - - - - - - - - - - - - 8
saxatilis	o - - - - - - - - - - - - 3 - 5 6 - 8
idæus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8

Rubus suberectus	- o - - 5 - - o - - - - - - 4 5 - - 8
fissus	- - - - - - - - - - - - - - - - 5
plicatus	- - - 4 5 - 7 8 - - - - 3 4 5 - 7 8
nitidus	- - - - 5 - 7 8 - - - 2 3 4 5 - 7 -
affinis	- - - - - 6 - 8 - - - - 3 4 5 - 7 8
latifolius	
imbricatus	- - - - - - - - - - - - 3
incurvatus	- - - - - 6 - - - - - - - - 5 - 7 8
rhamnifolius	- 2 - - 5 - - 8 - - 1 - 3 4 5 - 7 8
Grabowskii	
thyrsoideus	- - - - - - - - 8 - - - 2 3 4 5 - 7 -
discolor	- 2 3 - 5 6 7 8 - - 1 2 3 4 5 - 7 8
leucostachys	1 - 3 - 5 6 - 8 - - - - 3 4 5 - 7 8
carpinifolius	1 2 - - 5 - - 8 - - - 2 3 4 5 - 7 8
villicaulis	- - 3 - 5 - - 8 - - - - 3 4 5 - 7 8
pampinosus	- - - - - - - - - - - - - - - 4 - - - -
mucronatus	- - - - - - - - - - - - - - - 4 5 - - -
Salteri	- - - - 5 - - - - - - - - - - 5 - - 8
macrophyllus	1 2 - - 5 6 7 8 - - - - 3 4 5 - 7 8
Sprengelii	- - - - 5 - - 8 - - - - 3 4 5 - - 8
Bloxamii	- - - - - - - - - - - - - - - 4
Hystrix	- 2 - - - 6 - 8 - - - 2 3 4 5 - 7 -
Radula	- 2 - 4 5 - - 8 - - - 2 - 4 5 - 7 8
rudis	- 2 3 - 5 6 - 8 - - - - 3 4 5 - 7 8
pallidus	- - - - - - - - 8 - - - 2 3 4 - - 7 8
Koehleri	1 2 - 4 - - - 8 - - - - 3 4 5 - 7 -
fusco-ater	- - 3 - - 6 - 8 - - - - 3 4 5 - 7 8
pyrmidalis	- - 3 - - - - - - - - - 3 4 - - - 8
Guntheri	1 - - - - - - 8 - - - - 3 4
hirtus	- - - - - - - 7 8 - - - - - 4 5 - - -
glandulosus	- 2 - - 5 6 - 8 - - - - 3 4 5 - - 8
scaber	- - - - - - - - 8 - - - - - 4 - - - 8
Balfourianus	- - - - - - - - - - - - - - - - 4
corylifolius	- 2 3 - 5 6 - 8 - - 1 2 3 4 5 - 7 8
nemorosus	- - - - - 5 6 7 8 - - - 2 3 4 5 - 7 -
cæsius	- - 3 4 5 6 7 8 - - 1 2 3 4 5 - 7 8
Rosa spinosissima	1 2 3 4 5 6 7 8 - 0 1 2 - 4 5 6 7 8
Wilsoni	- - - - - - - - - - - - - - - - - - 8
"Sabini," etc.	- 2 - - - 6 7 8 - 0 1 - - 4 - - 7 8
"villosa"	o 2 - - o - 7 - o - - - 3 4 5 6 7 8

Rosa "tomentosa"	- 2 3 - 5 6 7 8 - 0 1 2 3 4 5 6 7 8
"inodora," etc.	- - 3 o 5 6 - 8 - - - - 3 4 o - - -
"micrantha"	- - 3 4 5 6 7 8 - 0 - 2 3 4 - - 7 8
"rubiginosa"	1 2 3 o 5 o 7 8 9 0 1 2 3 4 5 - - 8
"sepium"	- - o - o - - 8 - - - - - 4 - - - o
systyla	- o 3 o - 6 7 8 9 - - - 3 4 - 6 7 o
arvensis	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Sanguisorba officinalis	1 2 - 4 - - - 8 9 o - 2 3 4 5 6 7 8
Poterium muricatum	- - 3 - 5 6 7 8 9 o - 2 - 4
Alchemilla vulgaris	1 2 3 4 - 6 - 8 9 - - 2 3 4 5 6 - 8
Mespilus germanica	o o 3 - - 6 7 - - - o - - 4
Cotoneaster vulgaris	- - - - - - - - - - - - - - - - - 8
Pyrus communis	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - o
torminalis	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 o
Aria	- 2 3 4 5 6 7 8 9 o 1 2 3 4 5 6 - 8
—Aria	3 4
—scandica	- 2 3 - 5 - 7 - 9 - - - 3 4 - - - 8
—fennica	- - 3 - 5 o 7 - - - - - 3 - - - - -
Aucuparia	1 2 3 o 5 6 7 8 9 o o o 3 4 5 6 7 8
25. *Onagraceæ.*	
Epilobium angustifolium	- - 3 - 5 6 7 8 9 - 1 2 3 4 5 6 - 8
lanceolatum	- 2 - - - o 7 - - - - - 3
roseum	- 2 3 o 5 6 7 8 - - - - 3 4 5 6 - -
tetragonum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—tetragonum	7 4
—obscurum	5 7 4
alsinifolium	- - - - - - - - - - - - - - - - - 8
Isnardia palustris	- - - - 5 6
Circæa intermedia	- - - - - - - - - - - 3
alpina	- - o - - - - - - o - - o o o o o 8
26. *Fluviales.*	
Myriophyllum verticillatum	o - o o o 6 7 8 9 0 1 2 o o o - o o
"spicatum"	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
alterniflorum	1 - 3 - 5 6 7 8 9 - - 2 - 4 5 - 7 8
Callitriche pedunculata	1 2 - - 5 6 7 8 9 - - - - 4 5 - 7 8
platycarpa	1 2 3 4 5 6 7 8 9 - 1 2 - 4 5 - 7 8
autumnalis	- - - o o - o o - o - o - o o o o 8
Ceratophyllum demersum	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
submersum	o - 3 - - 6 7 8 - 0 1 - - o - - - -

27. *Lythraceæ.*	
Lythrum hyssopifolium	o 2 - - o - o 8 9 o - 2 - o o - o -
29. *Cucurbitaceæ.*	
Bryonia dioica	- o 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
31. *Illecebraceæ.*	
Illecebrum verticillatum	1 2
Corrigiola littoralis	1 2
Herniaria "glabra"	1 - o - o - - o - o 1 o - - - o - -
"ciliata"	1
Polycarpon tetraphyllum	1 2 - 4 - - - - - - - - - - - o
Scleranthus annuus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
perennis	- - o - - - o - - 0 1 - - - o 6 - o
33. *Grossulariaceæ.*	
Ribes Grossularia	o o o o o o o o o o o o o o o - o o
nigrum	- o 3 - 5 o 7 8 o - 1 2 o 4 5 - 7 8
rubrum	1 2 3 4 5 6 o 8 9 o o 2 3 4 o - 7 o
alpinum	- - - - - - - - - - - - - o 4 5 o o 8
34. *Crassulaceæ.*	
Tillæa muscosa	- - - 4 5 - - - - 0 1
Sedum Rhodiola	- - - - - - - - - - - - - - - - - 6 - 8
dasyphyllum	- - o - o o o o o o - o o o o - - o
anglicum	1 2 3 4 5 6 7 - - o 1 - - - 5 6 7 8
"album"	- o 3 4 o o o o - - o o 3 4 o - o o
reflexum	o o o o o o o o o o o o o o o o o o
glaucum	- - - - - - - - - - o - o - - - - - o
rupestre	- 2 3 - - - - - - - - o - 3 - 5 6 7 8
Forsterianum	- - o - - - - - - - - - o o 4 o 6 7 8
Cotyledon Umbilicus	1 2 3 4 5 6 7 - 9 - - 2 3 4 5 6 7 8
35. *Saxifragaceæ.*	
Saxifraga stellaris	o - - - - - - - - - - - - - - - - - 8
nivalis	- - - - - - - - - - - - - - - - - - 8
oppositifolia	- - - - - - - - - - - - - - - - - 6 - 8
granulata	- - - 4 5 - 7 8 9 0 1 2 3 4 5 - - 8
cæspitosa	- - - - - - - - - - - - - - - - - - o
hypnoides	- - 3 o - - - - - - - - - - 4 5 6 - 8
Chrysosplenium alternifolium	- o 3 4 5 - 7 8 - 0 1 - 3 4 5 6 - 8
Parnassia palustris	- - o 4 5 - o 8 9 0 1 2 3 4 5 - - 8
38. *Umbelliferæ.*	
Sanicula europæa	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Eryngium maritimum	1 2 3 4 5 - 7 - - 0 1 - - - - 6 7 8

Eryngium campestre	o 2 3 - - - - - - 0 - 2 o - - 6 - -
Physosperum cornubiense	1 2
Smyrnium Olusatrum	1 2 3 4 5 6 7 o o 0 1 o o o o - 7 8
Cicuta virosa	- - 3 o - 6 7 8 - 0 1 2 o 4 5 - - -
Apium graveolens	1 2 3 4 5 6 7 8 o 0 1 2 3 4 5 6 7 8
Petroselinum segetum	1 2 3 4 5 6 7 8 9 - 1 2 3 4 5 - 7 -
Trinia vulgaris	- 2 3 - - - - - - - - - 3 - - - - o
Helosciadium inundatum	1 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
" repens"	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Ægopodium Podagraria	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Carum Carui	o - - o - - - - - o o o - o o - - o
verticillatum	- o - - - - - - - - - - - - - 6 7 8
Bulbocastanum	- - - - - - o 8 - - - 2
Pimpinella magna	- 2 - 4 - 6 7 8 9 0 1 2 3 4 5 - - -
Sium latifolium	1 o 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
angustifolium	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Bupleurum tenuissimum	- - 3 4 5 6 7 8 o 0 1 2 3 4 - - - -
aristatum	- 2
rotundifolium	- - 3 4 5 6 7 8 9 0 1 2 3 4 - - - -
Œnanthe fistulosa	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
pimpinelloides	- 2 3 4 5 6 - 8 - - - - 3 4
Lachenalii	1 2 3 4 5 6 7 8 - 0 1 2 3 4 - 6 7 8
silaifolia	- - o o o 6 7 - 9 o o 2 3 4 - - - o
crocata	1 2 3 4 5 6 7 8 9 0 - - 3 4 5 6 7 8
Phellandrium	- 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - - 8
fluviatilis	- - 3 4 5 - 7 8 9 0 - 2 3 4 - - - -
Fœniculum vulgare	1 2 3 o o o 7 o - 0 1 o 3 o o - 7 8
Seseli Libanotis	- - - - - 6 - 8 - - - 2
Silaus pratensis	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Meum athamanticum	- - - - - - - - - - - - - - - - - 8
Crithmum maritimum	1 2 3 4 5 6 7 - - - o - - - - 6 7 8
Peucedanum officinale	- - - - - o 7 8 - - o
palustre	- - 3 - - - - o - 0 1 2 - o - - - -
Pastinaca sativa	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 o 7 -
Tordylium maximum	- - - - - - - 8 9 - - - o
Daucus gummifer	1 2 3 4 5 6 7 - - - - - - - - 6 - 8
Caucalis daucoides	- - 3 4 - - 7 8 9 0 1 2 - 4 - - - -
Torilis infesta	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Anthriscus vulgaris	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Myrrhis odorata	- - o - - - o o o - - - o o 5 o o 8

39. *Loranthaceæ.*	
Viscum album	- 2 3 4 o 6 7 8 9 0 1 2 3 4 5 - - 8
40. *Caprifoliaceæ.*	
Sambucus Ebulus	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Virburnum Opulus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Lantana	o 2 3 4 5 6 7 8 9 0 1 2 3 4 - - 7 -
Lonicera Periclymenum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
41. *Rubiaceæ.*	
Rubia peregrina	1 2 3 4 5 6 7 - - - - o 3 4 - 6 7 8
Galium elongatum	- - - - - - 7 - - - - - - - - - - -
uliginosum	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
erectum	o o o 4 5 6 7 8 o - 1 2 - o o - - -
Mollugo	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 -
sylvestre	o - 3 - - - - - - - - o 3 o 5 - - o
anglicum	- - o - - - 7 o - 0 1 2 o o o - o -
tricorne	- - 3 4 5 6 7 8 9 0 1 2 3 4 - 6 - -
Vaillaintii	- - - - - - - 8 - - - o
boreale	- - - - - - - - - - - - - - - - 6 - 8
Asperula cynanchica	o 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 -
42. *Valerianaceæ.*	
Valeriana dioica	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
"officinalis"	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—officinalis	- - - - - 6 - 8 9 - - 2 - - - 6 7
—sambucifolia	- 2 3 4 5 6 7 8 9 - - 2 3 4 - - 7 8
Fedia olitoria	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Auricula	1 2 3 4 5 6 7 8 - - - - 3 4 - 6 7 -
43. *Dipsaceæ.*	
Dipsacus pilosus	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
44. *Compositæ.*	
Hypochœris glabra	- 2 3 - 5 6 7 8 - 0 1 2 - 4 5 - o -
maculata	1 - - o - - - 8 - 0 - 2 o - - - - 8
Lactuca virosa	o - o o 5 6 7 8 9 0 1 2 o 4 5 6 - o
Scariola	- - - - - o 7 8 - o - 2 - 4
saligna	- - - o - 6 7 8 - - - 2 - 4
Sonchus palustris	- o - o - - 7 o o 0 1 2 - - o - - -
asper	1 2 3 4 5 6 7 8 9 0 - 2 3 4 5 6 7 8
Crepis biennis	- - o o - - 7 8 - o - 2 - - - - o o
paludosa	- o - - - - - - - - o - - - 5 6 - 8
Hieracium pallidum	- - - - - - - - - - - - - - o - - 7 8
lasiophyllum	- - - - - - - - - - - - - - - - - - 8

Hieracium argenteum	- - - - - - - - - - - - - - - - - 8
murorum	- - - - - - 7 - - - - - 3 4 - - - -
cæsium	
vulgatum	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
gothicum	- - - - - - - - - - - - - - - - - 8
tridentatum	- 2 - - 5 6 7 8 - - - 2 3 4 - - - -
boreale	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Borkhausia fœtida	- - - - - 6 7 o o 0 o o
taraxacifolia	- - - - - o 7 8 - 0 - - - - - - - 8
Taraxacum palustre	1 2 - 4 5 6 o 8 o 0 1 2 - 4 5 - 7 8
Arnoseris pusilla	o - o o 5 - 7 8 - 0 1 2 o o - - - -
Arctium majus	5
intermedium	4
minus	
tomentosum	
pubens	2 4 8
Saussurea alpina	- - - - - - - - - - - - - - - - - 8
Serratula tinctoria	1 2 3 4 5 6 7 8 9 - - 2 3 4 5 6 7 8
Carduus tenuiflorus	1 2 3 4 5 6 7 8 9 0 1 o 3 - 5 6 7 8
eriophorus	o 2 3 4 5 o 7 8 9 0 1 2 3 4 5 6 7 -
Forsteri	- - - - - 6 7
pratensis	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 -
tuberosus	- - - 4
acaulis	- 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 - -
heterophyllus	- - - - - - o o o - o - - - 5 6 - 8
Onopordum Acanthium	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 o
Carlina vulgaris	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Centaurea nigrescens?	1 2 3 4 5 6 7 8 9 - - - 3 4 5 6 7 -
Cyanus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Calcitrapa	1 2 3 - 5 6 7 8 - 0 1 2 - - - 6
Chrysocoma Linosyris	- 2 3 - - - - - - - - - - - - - - 8
Diotis maritima	1 - - o - - o - - 0 - - - - - - - 8
Tanacetum vulgare	1 2 3 4 5 o 7 8 9 0 1 2 3 4 5 6 7 8
Artemisia campestris	- o - - - - - - - 0 1
maritima	1 2 3 - 5 6 7 8 - 0 1 2 3 - - 6 7 8
Antennaria dioica	1 - - - - - - 8 9 0 1 2 - - 5 6 7 8
Gnaphalium sylvaticum	- 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Filago gallica	- - - - - - 7 8
minima	1 2 - 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
germanica	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8

Filago apiculata	- - - - 5 - 7 8 - 0 1 2 - 4 - - - -
spathulata	- - - 4 5 6 7 8 9 - - 2
Petasites vulgaris	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Erigeron acris	1 - 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Aster Tripolium	1 2 3 4 5 6 7 8 - 0 1 2 3 - o 6 7 8
Senecio sylvaticus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
viscosus	- - - o - - 7 8 9 0 o 2 - o o 6 - 8
paludosus	- - - - - - - - - - o - 2 - - - - - -
saracenicus?	- - 3 4 - - 7 - o - - - - - 5 - - 8
Cineraria palustris	o - - - - - - - - 0 1 2 - - o o - o
campestris	- - - 4 5 6 7 8 9 - - 2 3 - - - - 8
Inula Helenium	1 2 3 4 5 o o 8 9 0 1 2 3 4 5 6 7 8
crithmoides	1 2 3 4 5 6 7 8 - o o - 3 - - 6 7 8
Pulicaria vulgaris	- - - 4 5 6 7 8 9 - 1 2 - 4
Pyrethrum maritimum	1 2 - 4 5 6 - - - - - - - - - - 6 7 8
Matricaria Chamomilla	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Anthemis nobilis	1 2 3 4 5 6 7 8 9 0 1 - 3 4 5 - 7 8
arvensis	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Cotula	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
45. *Campanulaceæ.*	
Campanula patula	- - 3 4 5 6 7 . 9 - o - 3 4 5 6 - -
Rapunculus	- - o - o o 7 8 - o o o - 4 5 - - 8
latifolia	o - - - o - 7 8 o 0 1 2 3 4 5 6 - 8
rapunculoides	- - - - - - - - - o - - 2 - o
Trachelium	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
glomerata	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - -
Wahlenbergia hederacea	1 2 3 4 5 6 7 8 9 - - - 3 4 5 6 7 8
Specularia hybrida	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - -
Phyteuma spicatum	- - - - - 6
orbiculare	- - - 4 5 6 7
45.**Lobeliaceæ.*	
Lobelia urens	- 2 - - - - o
Dortmanna	- - - - - - - - - - - - - - - 5 6 7 8
46. *Ericaceæ.*	
Erica ciliaris	1 - - 4 o - o
vagans	1 o
Andromeda polifolia	- - 3 - - - - - o - o 2 - - 5 6 7 8
Vaccinium Myrtillus	1 2 3 4 5 6 7 8 9 - o 2 3 4 5 - 7 8
Vitis-idæa	- - o - - - o - - - - - - 4 5 6 7 8
Oxycoccos	- - 3 - 5 6 7 - - 0 1 2 - 4 5 6 7 8

Pyrola rotundifolia	- o - o - o 7 - o. o 1 - o o 5 - - -
media	- - - - - 6 - - o - - - - 4 o - - -
minor	- - - - 5 - 7 8 9 - - 2 3 4 5 6 - 8
Monotropa Hypopitys	o o 3 4 5 6 7 8 9 - 1 2 3 4 5 o - -
47. *Ilicaceæ.*	
Ilex Aquifolium	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
48. *Jasminaceæ.*	
Fraxinus excelsior	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
49. *Apocynaceæ.*	
Vinca minor	o o o o 5 6 7 8 o o 1 o o 4 5 - o 8
50. *Gentianaceæ.*	
Gentiana Pneumonanthe	- - - 4 5 6 7 o 9 o 1 - - - - - 7 8
Amarella	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
campestris	1 2 3 4 o 6 o 8 9 - 1 2 3 4 5 - 7 8
Cicendia filiformis	1 o - 4 5 6 - - - - - - - - - - - 7
Erythræa littoralis	1 2 3 - 5 6 - - - o - - - - - 6 7 8
pulchella	1 2 3 4 5 6 7 8 - 0 1 2 - - o 6 7 8
latifolia	
Chlora perfoliata	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Villarsia nymphæoides	- - - - - o 7 8 9 - 1 2 3 o o
50.**Polemoniaceæ.*	
Polemonium cæruleum	- o o o - - o o o - - - o o 5 - - o
51. *Convolvulaceæ.*	
Convolvulus Soldanella	1 2 3 4 5 6 7 8 - 0 1 - - - - 6 7 8
51.**Cuscutaceæ.*	
Cuscuta europæa	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 - - -
Epithymum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - - 8
Trifolii	- - - 4 5 6 7 8 - 0 1 2 - 4 - - - -
52. *Solanaceæ.*	
Solanum nigrum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Atropa Belladonna	- o 3 4 5 o 7 8 9 0 1 2 3 4 5 6 - 8
53. *Scrophulariaceæ.*	
Verbascus Thapsus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Lychnitis	o o 3 o o 6 7 8 o o o o o o 5 - - 8
floccosum	- o - - o - o - - 0 1
nigrum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - -
Blattaria	1 2 - o 5 6 o o 9 o o o o o o 6 7 -
virgatum	1 2 3 - - - o o - - o - - o o o - o
Veronica spicata	o - o - - - - o - 0 - 2 3 - - 6 - 8
verna	- - - - - o - - - 0 1

Veronica triphyllos	- - - - - - - - - 0 1 - - o - - - -
humifusa	- - - - - - - - - - - - - - - - - - 8
Buxbaumii	1 2 3 o 5 o 7 8 9 0 1 o 3 4 5 6 7 -
Bartsia viscosa	1 2 - 4 5 6 - - - - - - - - - - 6 - -
Rhinanthus major	o - - - - 6 - - - - - - 3 - 5 - - -
Melampyrum cristatum	- - - - 5 - - 8 - o 1 2 o o
arvense	- - - o 5 - - 8 o o 1 - o o
Scrophularia Ehrharti	o - - - - 6 - 8 - - - - - 4 5 - - 8
Scorodonia	1 2
Antirrhinum Orontium	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Linaria spuria	1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 -
repens	1 2 3 - 5 o o 8 9 - - 2 3 - - 6 7 -
minor	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Limosella aquatica	o o 3 o - 6 7 8 9 0 1 2 o 4 5 - - 8
Sibthorpia europæa	1 2 3 - - 6 - - - - - - - - - - 6 - -
54. *Orobanchaceæ.*	
Orobanche "major"	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 o 7 8
caryophyllacea	- o - - - - 7
"elatior"	o o 3 4 5 6 7 8 9 0 1 2 o 4 o o - o
minor	o 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 o o
amethystea	1
picridis	- - - - 5 - 7 - - - - 2 - - - - 7
hederæ	1 2 3 - 5 - - - - - - - 3 - - 6 7 8
rubra	1 - - - - - - - - - - - - - - - o - -
cærulea	- - - - 5 - - 8 o - 1 - 3 - - o
Lathræa squamaria	- 2 3 4 5 6 7 8 9 - - 2 3 4 5 - - 8
55. *Lamiaceæ.*	
Salvia pratensis	- - - - o o 7 - 9 - o o o o o o - o
verbenaca	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Mentha rotundifolia	1 2 3 4 5 o 7 8 o 0 1 2 3 4 5 6 o 8
sylvestris	1 2 3 4 5 6 7 8 - 0 1 2 3 4 5 6 7 8
piperita	1 2 3 o o o o 8 - 0 1 2 3 4 5 o 7 8
sativa	1 2 3 4 5 6 7 8 9 0 - 2 - 4 5 - - 8
rubra	o 2 o - - o 7 8 9 - 1 - 3 4 5 - - 8
gentilis	1 2 o o o - o 8 - - o o o 4 5 - 7 8
Pulegium	1 - o 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Thymus Serpyllum	
Chamædrys	6 7 4
Calamintha "Nepeta"	o o o 4 - 6 7 8 9 0 1 2 3 o - 6 7 o
sylvatica	- - - - 5

Melittis Melissophyllum	1 2 3 - 5 6 o - - - - - o o - o 7
Teucrium Scordium	- 2 - - - - - - 9 - 1 2 - - - - - -
Botrys	- - - - - - 7
Ajuga Chamæpitys	- - - 4 5 o 7 8 - - - 2 - - - - o o
Ballota ruderalis	- - 3 - 5 6 7 8 - - 1 2 - 4 5 - - -
Lamium incisum	1 2 3 - 5 6 7 8 9 0 1 2 - 4 5 6 7 8
Galeopsis Ladanum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 -
ochroleuca	- - - - - - - - 8 o - - - - 4 - - - 8
versicolor	- - - - - 6 o 8 9 0 1 2 - 4 5 - - 8
Stachys Betonica	1 2 3 4 5 6 7 8 9 0 - 2 3 4 5 - 7 8
ambigua	1 - o - - o 7 8 o - o 2 o - o o o o
germanica	o - - - o - o o 9 - - 2
Nepeta cataria	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Marrubium vulgare	1 2 3 4 5 o 7 8 9 0 1 2 3 4 5 6 7 8
Scutellaria minor	1 2 3 4 5 6 7 8 o 0 - - 3 4 5 6 7 8
56. *Boraginaceæ.*	
Myosotis repens	- 2 3 - 5 6 7 8 - 0 - - - - 5 6 7 -
cæspitosa	1 2 3 4 5 6 7 8 9 0 1 - 3 4 5 6 7 8
sylvatica	- o o - 5 o 7 8 - 0 1 2 3 4 5 - - 8
collina	1 2 3 4 5 6 7 8 - 0 1 2 3 4 5 6 7 8
versicolor	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Lithospermum arvense	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
p. cæruleum	- 2 3 - - - 7 - - - - o - o - 6 - 8
Mertensia maritima	o o - - o - - - - - - - - - - - - o 8
Symphytum tuberosum	- - - - - o o o - o o ? o - o - - 8
Anchusa sempervirens	1 2 3 4 o o 7 8 9 0 1 2 3 4 5 6 - 8
Asperugo procumbens	- - o o - o o o - o - o - o 5 - - o
Cynoglossum sylvaticum	- - - - - o 7 8 o - o 2 3 o o
Pulmonaria angustifolia	- - - - 5
57. *Pinguiculaceæ.*	
Pinguicula vulgaris	- 2 3 4 5 - - 8 9 0 1 2 3 4 5 - 7 8
lusitanica	1 2 3 4 5 - - - - - o - - - - - - -
Utricularia vulgaris	1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 - 8
intermedia	- 2 - 4 5 - - - - - - - - - - - - -
minor	1 - 3 4 5 6 7 8 - 0 1 2 o - 5 6 7 8
58. *Primulaceæ.*	
Primula elatior	- - - - - - - - 8 - 0 - - - - - - -
veris	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Hottonia palustris	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
Lysimachia nummularia	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8

Anagallis cærulea	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - -
Centunculus minimus	1 2 - 4 5 6 7 8 9 0 1 2 - 4 - 6 7 8
Glaux maritima	1 2 3 4 5 6 7 8 - 0 1 2 3 4 5 6 7 8
59. *Plumbaginaceæ.*	
Armeria maritima	1 2 3 4 5 6 7 8 - 0 1 2 3 - - 6 7 8
Statice Limonium	o 2 3 4 5 6 7 8 - 0 1 2 3 - - 6 7 8
bahusiensis	- 2 - - 5 6 7 8 - 0 - - - - - - 7 -
spathulata	1 2 3 4 o 6 7 8 - - 1 - - - - 6 7 8
—occidentalis	1 - - - - - 7 - - - 1 - - - - - o o -
—Dodartii	o 2 o - - - - - - - - 1 - - - - 6 7 o
caspia	- - o - - - o - - - 1 2
60. *Plantaginaceæ.*	
Plantago media	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
maritima	1 2 3 4 5 6 7 8 - 0 1 2 3 4 - 6 7 8
Littorella lacustris	1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 - 8
62. *Chenopodiaceæ.*	
Chenopodium olidum	1 2 3 4 5 6 7 8 9 0 1 2 - - - - - -
polyspermum	1 2 3 4 5 6 7 8 9 0 - 2 3 4 5 - 7 8
urbicum	- - o o - - 7 o o o o o o o - - - o
intermedium	- 2 - o 5 6 7 8 - - - - - 4 5
rubrum	1 2 3 o 5 6 7 8 9 0 1 2 3 4 - 6 7 8
botryoides	o - - - - o o o - 0 1 - - - - - - o
murale	1 2 3 4 5 6 7 8 9 0 1 2 3 4 o - 7 o
hybridum	- - 3 4 - - 7 8 o o 1 2 3 4 - - - -
ficifolium	- - - 4 o 6 7 8 9 - 1 2 - - o - - -
glaucum	- - - o 5 o 7 8 - - - - - - - o - -
Atriplex portulacoides	o 2 3 4 5 6 7 8 - 0 1 2 - - - 6 7 8
pedunculata	- - - - - - - 7 - - 0 1 2 - - - - o -
arenaria	o o o o o o 7 8 - o o - - - - - - - o
Babingtonii	1 2 3 o 5 6 7 8 - o o - 3 4 - 6 7 o
"erecta"	1 2 3 4 - - 7 8 - - - - - 4 - - 7 -
"deltoidea"	1 - 3 - 5 6 7 8 - - - - 3 4 5 - 7 -
littoralis	- - - 4 5 6 7 8 - 0 1 2 - - - 6 7 8
marina	- - - - 5 - 7 8 - - - - - - - - - -
Beta maritima	1 2 3 4 5 6 7 8 - 0 1 2 3 - - 6 7 8
Salsola Kali	1 2 3 4 5 6 7 - - 0 1 - - - - 6 7 8
Schoberia maritima	1 2 3 4 5 6 7 8 - 0 1 2 3 - - 6 7 8
fruticosa	o o o 4 - - - 8 - 0 1 - - - - o - -
Salicornia herbacea	1 2 3 4 5 6 7 - - 0 1 2 3 - - 6 7 8
procumbens	1 - - 4 5 6 7 - - 0 - - - - - 6 - -
radicans	o 4 5 6 7 - - - 1 - - - - o - -

63. *Polygonaceæ.*	
Polygonum Bistorta	o 2 3 4 5 o 7 8 9 0 1 2 3 4 5 6 7 8
viviparum	- - - - - - - - - - - - - - - o - - - 8
laxum	- - - - - 6 o 8 - - - - 3 4 - - - -
mite	o - - - o - 7 8 - - - 2 - - - o - -
minus	- - 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7 8
maritimum	- - - - 5
Raii	1 2 3 4 5 6 - - - - 1 - - - - 6 7 8
dumetorum	- - 3 - 5 6 7 8 - - - - 3
Rumex pratensis	1 - - - 5 6 7 8 - - - 2 3 4 5 6 - 8
pulcher	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 -
maritimus	- 2 3 4 - 6 7 8 9 0 1 2 - 4 5 - - o
palustris	1 2 3 4 - 6 7 8 - 0 1 2 - 4 5 6 - -
Oxyria reniformis	- - - - - - - - - - - - o - - - - 8
64. *Eleagnaceæ.*	
Hippophae rhamnoides	- - - - - - 7 o - 0 1 - - - - - - -
65. *Thymeleaceæ.*	
Daphne Laureola	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - o
Mezereum	- - o 4 5 6 o 8 9 o o - - o o - - -
66. *Santalaceæ.*	
Thesium humifusum	1 o 3 4 5 6 7 8 9 0 1 2 3
67. *Asaraceæ.*	
Asarum europæum	- - - 4 - - - o 9 - - - - - - - - -
68. *Empetraceæ.*	
Empetrum nigrum	- - 3 - - o - - - - - - 3 4 5 6 7 8
69. *Euphorbiaceæ.*	
Euphorbia Peplis	1 2 3 4 5 - - - - - - - - - - 6 7
platyphylla	1 - 3 4 5 6 7 8 - - - 2 3 4 - - - -
stricta	- - - - o - - - - - - - 3
hiberna	- 2
pilosa	- - 3
Paralias	1 2 3 4 5 6 7 8 - 0 - - - - - 6 7 8
portlandica	1 2 - 4 5 o o - - - - - - - - 6 7 8
Buxus sempervirens	- o o o o - 7 o 9 o o 2 o - o
Mercurialis annua	o 2 3 4 5 6 7 8 9 0 1 2 3 - o 6 7 8
70. *Urticaceæ.*	
Parietaria erecta	- - - - - - - 8 - - - - - - - - 7 -
Humulus Lupulus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Ulmus "montana"	1 2 3 4 5 6 - 8 9 0 - 2 3 4 5 - 7 8
"suberosa"	o 2 3 4 5 6 7 8 - - - o 3 4 5 - 7 o

Ulmus "campestris"	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - o o
71. *Amentiferæ.*	
Quercus intermedia	- - - - - - - - - - - - 3 4 5
sessiliflora	- 2 3 4 5 6 7 8 9 o 1 2 o 4 5 6 7 8
Fagus sylvatica	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 o
Carpinus Betulus	- 2 3 4 o 6 7 8 o 0 1 2 3 4 5 - - o
Betula verrucosa	- - - - - - 7 - - - - - - - - - -
glutinosa	- - - - - - 7 - - - - - - 4 - - 7 -
Populus "alba"	1 2 3 4 o o o 8 9 0 1 2 3 4 5 - - 8
"canescens"	- 2 3 o 5 - 7 8 - 0 1 2 3 4 5 - 7 8
tremula	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Salix pentandra	o o - - - o o o o o - - - 4 5 - 7 8
"decipiens	1 - - 4 5 6 7 8 9 0 1 2 - 4 5 - - -
fragilis	1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7 8
"Russeliana	- 2 - o - o 7 8 - - 1 2 3 4 5 6 - 8
alba	- 2 3 4 5 o 7 8 9 0 1 2 3 4 5 - 7 8
"vitellina	1 - 3 4 5 - - 8 9 0 1 2 3 4 5 6 7 8
triandra	- 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
purpurea	- 2 - 4 - 6 7 8 9 0 1 2 - 4 5 - - -
"Helix	- - o 4 - o 7 8 9 - 1 2 3 4 5 - - 8
"rubra, etc.	- 2 - 4 5 - 7 8 o 0 o 2 - 4 o - - 8
viminalis	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
"stipularis	- 2 - - - 6 - 8 o 0 1 - - 4 5 - - 8
"Smithiana	1 2 3 - 5 6 7 8 9 0 1 - 3 4 5 6 - 8
"acuminata	- 2 - 4 5 o - 8 o - 1 2 3 4 5 - o 8
"aquatica	- 2 3 4 5 6 - 8 9 0 1 2 3 4 5 6 7 8
"oleifolia	- 2 - - 5 6 7 8 - - 1 2 - 4 5 - 7 8
aurita	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
"ambigua	- - - - - 6 - 8 - 0 - - - - - - - -
herbacea	- - - - - - - - - - - - - - - - 6 - 8
Myrica Gale	1 2 3 4 5 6 7 o - 0 1 2 - - 5 6 7 8
72. *Coniferæ.*	
Juniperus communis	- - 3 4 5 6 7 8 9 - - 2 3 4 o 6 - 8
nana	- - - - - - - - - - - - - - - - - 8
Taxus baccata	o 2 3 4 o 6 7 o 9 o o o 3 4 5 6 - 8
73. *Orchidaceæ.*	
Neottia Nidus-avis	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Spiranthes æstivalis	- - - - 5 - - - - - - - - o
Listera cordata	- 2 3 - 5 - - - - - - - - - 5 - - 8
ovata	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8

Epipactis latifolia	1 2 3 4 5 6 7 8 9 0 - 2 3 4 5 6 7 8
—latifolia	- - - - - - 7 - - - - 2 3 4 - 6 - 8
—media	- 2 - - - 6 7 8 9 - - 2 - 4 5 - - -
atrorubens	- - - - o - - - - - 1 - - 4 - - - 8
palustris	- 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7 8
Cephalanthera grandifolia	- - 3 4 5 6 7 8 9 - - 2 3 4 - - - -
ensifolia	- - - o 5 6 7 8 - - - - 3 4 5 - - 8
rubra	- - 3 - - - - - - - - o o - - - - o
Epipogium aphyllum	- - - - - - - - - - - - - - - 4
Orchis Morio	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
mascula	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
ustulata	- 2 3 4 5 6 7 8 9 0 1 2 3 4 o - - -
militaris	- - - - - - - o 8 9
tephrosanthos	- - - - - - 7 - 9 o
fusca	- - - - - o 7 o
hircina	- - - - - - 7 - - 0
pyramidalis	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
maculata	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Gymnadenia conopsea	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
bifolia	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
—bifolia	- - - 4 5 6 7 8 - 0 1 2 - 4 - - 7 8
—chlorantha	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Habenaria viridis	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
albida	- - - - o 6 - - - - - o - o o - 7 8
Aceras anthropophora	- - - o - 6 7 8 9 0 1 2 - - - - - -
Herminium Monorchis	- - o o o 6 7 8 9 0 1 2 3
Ophrys apifera	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
arachnites	- - o o - - 7 - - - - - o
aranifera	- - o o 5 6 7 o o 0 - 2 - - o
fucifera	- - - - 5 6 7
muscifera	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
Malaxis paludosa	- 2 - - 5 6 7 o - 0 1 2 - - o - - o
Liparis Loeselii	- - - - - - - o - - 0 1 2
74. *Iridaceæ.*	
Crocus nudiflorus	- - - - - - - - - - - - - - - 4 5 - - -
Gladiolus imbricatus	- - - - 5
Trichonema Columnæ	- 2
75. *Amaryllidaceæ.*	
Narcissus p. narcissus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Leucojum æstivum	- o - 4 - - 7 o 9 0

76. *Liliaceæ.*	
Fritillaria Meleagris	o - 3 4 5 o 7 8 9 0 1 o 3 o 5
Allium oleraceum	- - 3 - 5 6 7 8 - 0 1 2 3 4 o - o -
sphærocephalum	- - - - - - - - - - - - 3
Schœnoprasum	1 - - - - - - - - - - - - - - - - -
Gagea lutea	- - 3 o - - o - 9 0 - - 3 4 - - - -
Ornithogalum pyrenaicum	- 2 3 4 - 6 o o - - - 2 o - o
Scilla verna	1 2 - - o - - - - - - - - - - 6 7 8
autumnalis	1 2 o - 5 - 7 o - - - - 3 - o - - o
Hyacinthus nonscriptus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Muscari racemosum	- - - o - - o o o 0 o o
Lloydia serotina	- - - - - - - - - - - - - - - - - 8
Simethis bicolor	- - - 4
Asparagus officinalis	1 o 3 4 o - o o - o o - o - - 6 7 8
Ruscus aculeatus	1 2 - 4 5 6 7 8 9 0 o o - - - 6 - -
Convallaria majalis	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
multiflora	- o o 4 5 6 7 8 9 0 - 2 3 - o - - -
Polygonatum	- - 3 o o - o - - o - - 3 o - - 7 -
76**Trilliaceæ.*	
Paris quadrifolia	- - 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
78. *Melanthiaceæ.*	
Colchicum autumnale	- o 3 4 5 - 7 - 9 0 - 2 3 4 5 - 7 8
Tofieldia palustris	?
Narthecium ossifragum	1 2 3 4 5 6 7 - 9 - 1 2 3 4 5 6 7 8
79. *Hydrocharidaceæ.*	
Hydrocharis Morsus-ranæ	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Stratiotes aloides	- - - - o - o - o 0 1 2 - - - - - -
80. *Alismaceæ.*	
Alisma ranunculoides	1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7 8
natans	- - - - - - - - - - - - - o 5 6 - 8
Actinocarpus Damasonium	o - - - 5 6 7 8 9 0 - - - - 5
Sagittaria sagittifolia	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Butomus umbellatus	o 2 3 4 o 6 7 8 9 0 1 2 3 4 5 6 7 8
Triglochin maritimum	1 2 3 4 5 6 7 8 - 0 1 2 3 - 5 6 7 8
Scheuchzeria palustris	- - - - - - - - - - - - - - - 5 - - -
81. *Fluviales.*	
Potamogeton densus	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
pectinatus	1 o 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
—flabellatus	- - 3 - 5 - 7 8 - - 1 - 3 4 5 - - -
—pectinatus	- - - - - - 7 - - - 1 - - 4 - - - -

Potamogeton —filiformis	- - - - - 6 - - - - 1 - - - - - - 8
pusillus	1 - 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
trichoides	- - - - - - - - - - - 1 - - - - o
compressus	- 2 3 - o 6 o 8 - - 1 2 - 4 5 - - -
gramineus	- o o o - 6 7 8 o 0 1 2 3 4 5 - - o
acutifolius	- - - - - 6 - 8 - - 1
zosteræfolius	- - - o - o - 8 - - - 2 - 4 5 - - -
crispus	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
perfoliatus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
lucens	- 2 3 4 o 6 7 8 9 0 1 2 3 4 5 - - 8
prælongus	- - - - - - - - 8 9 0 1 2 - - 5 - - -
heterophyllus	- - - 4 5 - 7 8 9 - 1 2 - - 5 6 7 8
rufescens	- - 3 - - 6 7 8 - - - 2 o 4 5 - 7 8
natans	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—natans	
—oblongus	- 2 3 - 5 6 7 8 - 0 - 2 3 4 5 - 7 8
—plantagineus	- - - - 5 - 7 8 - - 1 2 - - - - 7 8
Ruppia "maritima"	1 2 3 4 5 6 7 8 - 0 1 2 - - - 6 7 8
rostellata	- - 3 - 5 - - - - - - - - - - - 7 -
Zannichellia palustris	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Zostera marina	1 2 3 4 5 6 7 8 - 0 1 - - - - - 7 8
nana	- - - 4 5 6 - - - - - - - - - - - -
82. *Araceæ, etc.*	
Lemna minor	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
gibba	- 2 3 - 5 6 7 8 9 0 1 2 3 4 5 - 7 -
polyrhiza	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 o
trisulca	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Arum italicum	- - - - 5
Acorus Calamus	- 2 3 4 5 o 7 8 9 0 1 o - 4 5 o - -
Sparganium natans	- - 3 4 5 - 7 8 - 0 1 2 - 4 5 6 - 8
—natans	- - - - - - 7 - - - - - - - - - 8
—minimum	- - - - 5 - - - - 0 1 2 - 4 - 6 - -
Typha angustifolia	o - 3 4 5 6 7 8 9 0 1 2 - 4 5 6 - 8
84. *Juncaceæ.*	
Juncus diffusus	- - - - 5 6 7 8 - 0 o 2 - 4 - - - -
maritimus	1 2 3 4 5 6 7 8 - 0 1 - - - - 6 7 8
acutus	o 2 3 4 - 6 7 8 - o o - o - - 6 7 8
acutiflorus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
obtusiflorus	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
supinus	1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7 8

Juncus compressus	1 2 3 4 - 6 7 - 9 o o o o 4 5 6 - o
cœnosus	1 2 3 4 5 6 7 8 - 0 1 - o - - 6 7 8
squarrosus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
triglumis	- - - - - - - - - - - - - - - - - 8
Luzula sylvatica	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
pilosa	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Forsteri	- 2 3 - 5 6 7 8 9 - - - 3 4 o 6 7
multiflora	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
spicata	- - - - - - - - - - - - - - - - - 8
85. *Cyperaceæ.*	
Cyperus longus	1 - 3 4 5 - 7 - - - o - - - o - 7
fuscus	- - - - - - - 7 8 - - - - - - - - -
Cladium Mariscus	1 - o o 5 - 7 - - 0 1 2 - o 5 6 o 8
Schœnus nigricans	1 2 3 4 5 - - 8 9 0 1 2 - 4 5 6 7 8
Rhyncospora alba	1 2 3 4 5 6 7 - 9 0 1 2 - 4 5 6 7 8
fusca	1 - 3 4 5 - - - - - - - - - o 6
Blysmus compressus	o 2 3 4 5 6 7 - 9 0 1 2 3 4 5 - - 8
rufus	- - - - - - - - - - - - - - - - - 8
Scirpus glaucus	1 2 3 4 5 6 - 8 - 0 1 2 - - o - 7 8
carinatus	- - - - - 6 7 o - - - - - - o
triqueter	- - - - - 6 7 8 - - o
Savii	1 2 3 4 5 - - - - 0 - - - - - 6 7 8
Holoschœnus	- 2 o o o - - - - - - - - o
maritimus	1 2 3 4 5 6 7 8 - 0 1 2 3 4 5 6 7 8
sylvaticus	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
uniglumis	- - - 4 - 6 - - - - - - - - - - o -
multicaulis	1 2 3 4 5 6 7 8 - 0 1 2 - - 5 6 7 8
pauciflorus	1 - 3 - 5 6 o 8 o 0 1 2 - 4 5 6 7 8
cæspitosus	o 2 3 4 5 6 7 - - 0 1 2 3 4 5 6 7 8
acicularis	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
fluitans	1 2 - 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
Eriophorum vaginatum	1 2 3 4 5 6 7 - o - 1 - 3 4 5 6 7 8
latifolium	- 2 - - 5 - 7 8 9 - - o - 4 5 6 - 8
gracile	- - - - - - o 7 - - - - - - o - - - o
Carex dioica	o - o o - 6 o 8 9 0 1 2 3 4 5 6 - 8
pulicaris	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
ovalis	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
curta	- o o - 5 6 7 - 9 0 1 2 3 4 5 6 7 8
Persoonii	- - - - - - - - - - - - - - - - - 8
elongata	- - - - - - 7 8 - - - - - - 5 - - -

Carex remota	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
axillaris	- 2 3 4 5 6 7 8 - 0 1 2 - 4 - - - -
Boenninghauseniana	- - - - 5 6 7 8 - - - - - - - - - -
intermedia	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
arenaria	1 2 3 4 5 6 7 8 - 0 1 - - - - 6 7 8
divisa	o 2 3 4 5 6 7 8 - 0 1 - - - - - 7 8
muricata	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
divulsa	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
teretiuscula	- 2 3 4 - 6 7 8 - 0 1 2 - 4 5 - 7 8
paniculata	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
atrata	- - - - - - - - - - - - - - - - - 8
rigida	- o - - - - - - - - - - - - - - - 8
stricta	- - o o - 6 7 8 - - 1 2 - 4 5 o - 8
acuta	o 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7 8
"flava"	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
"Oederi"	1 2 3 4 5 6 7 8 - 0 1 2 3 4 5 - 7 8
extensa	1 2 3 4 5 6 - 8 - 0 1 - - - o 6 7 8
pallescens	- 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7 8
"fulva," etc.	- o 3 4 5 6 7 8 9 0 1 2 o 4 5 - 7 8
distans	1 2 3 o 5 6 7 8 - 0 1 2 3 o o 6 7 8
punctata?	1 - - - - - - - - - - - - - - - - 8
binervis	1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7 8
lævigata	1 2 3 - 5 6 7 8 9 - - - - - 5 6 7 8
panicea	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
depauperata	- o - - - - 7
limosa	- - o - 5 - - - - 0 1 - - o 5 6 - 8
irrigua	- - - - - - - - - o - - - - - - - o
strigosa	- - 3 4 5 6 7 8 9 o o 2 3 4 5 6 - 8
sylvatica	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Pseudo-cyperus	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
præcox	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
montana	- - - - - 6 o - - - - o 3 4
pilulifera	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
tomentosa	- - - 4 - - - - - - - - o
clandestina	- - 3 4 - - - - - - - - 3 4
digitata	- - 3 4 - - - - - - - - 3 4 - - - -
filiformis	- o 3 - 5 - - - - 0 1 2 o - 5 - - 8
hirta	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
vesicaria	o 2 3 4 - 6 7 8 9 0 1 2 3 4 5 - 7 8
paludosa	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - o 8

Carex riparia	o 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
86. *Gramina.*	
Leersia oryzoides	- - - - 5 6 7
Spartina stricta	- 2 - - 5 6 7 8 - 0 1 - - - - - - -
alterniflora	- - - - 5
Cynodon Dactylon	1 o - 4 - - o
Digitaria humifusa	- - - - 5 - 7 - - 0 1
Setaria viridis	- - - - 5 - 7 o - - 1 o
Phleum arenarium	1 2 3 4 5 6 7 8 - 0 1 2 - - - 6 7 8
asperum	- - o - - - o - o - - o o
Boehmeri	- - - - - - - - 8 - 0 1 2 o
Alopecurus pratensis	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
pronus	- - - - - 6 o
fulvus	- - - 4 - 6 7 8 - - 1 2 - 4 o - - 8
bulbosus	- 2 3 4 5 6 o - - 0 1 - 3 - - o
agrestis	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 o
Knappia agrostidea	- - - - - - - o - - - - - - - - 8
Gastridium lendigerum	1 2 3 4 5 6 7 8 - o 1 - 3 4 - 6 - o
Polypogon littoralis	- - - 4 5 - 7 8 - - 1
monspeliensis	- o o - 5 - 7 8 - - 1
Milium effusum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - o 8
Apera Spica-venti	- - - - 5 - 7 8 9 0 1 2 - o o o - o
interrupta	- - - - - - - - - 0 1
Agrostis setacea	1 2 3 4 5 6 o - o - - - - - - 6
canina	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Ammophila arundinacea	1 2 3 4 5 6 7 8 - 0 1 - - o - 6 7 8
Arundo Calamagrostis	- o o o 5 6 7 8 - 0 1 2 o o 5 o - -
Epigejos	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Sesleria cærulea	- - - - - - - - - - - - - - - o - - -
Aira alpina ?	- - - - - - - - - - - - - - - - - 8
flexuosa	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
canescens	- - o o - - 7 - - 0 1
Avena fatua	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
pratensis	- 2 3 4 5 6 7 8 9 0 - 2 3 4 5 - - 8
pubescens	1 2 3 4 5 6 7 8 9 - 1 2 3 4 5 - 7 8
Triodia decumbens	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Koeleria cristata	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Melica uniflora	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
nutans	- o o - - - o o - o - - 3 4 5 - - o
Molinia cærulea	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8

Catabrosa aquatica	- o 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Glyceria aquatica	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
plicata	- - 3 - 5 6 7 8 - - - 2 3 4 5 - - 8
maritima	- 2 3 4 5 6 7 8 - 0 1 2 3 - - 6 7 8
distans	- 2 3 4 5 6 7 8 - 0 1 2 3 4 - 6 - 8
Borreri	- - - - 5 6 7 8
procumbens	1 2 3 4 5 6 7 8 - 0 1 - 3 - - - o -
loliacea	1 2 3 4 5 6 7 8 - 0 1 2 - - - 6 7 8
Poa bulbosa	- 2 o - 5 6 o - - 0 1
alpina	- - - - - - o - - - - - - - - - 8
compressa	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
nemoralis	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Balfourii	- - - - - - - - - - - - - - - - - 8
cæsia, glauca	- - - - - - - - - - - - - - - - - 8
Briza media	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
minor	1 2 o 4 5 - - - - - - - o o
Festuca uniglumis	- 2 3 4 5 6 7 8 - 0 - - - - - 6 7 8
P. myurus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
duriuscula	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
rubra	1 2 3 4 5 6 7 - - 0 1 o 3 o - - 7 8
sylvatica	- - - o - 6 - - - o - - 3 4 5 - o -
arundinacea	- 2 - - 5
"elatior"	1 2 3 4 5 6 7 8 9 0 - 2 3 4 5 - - 8
"pratensis"	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
"loliacea"	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
Bromus madritensis	- 2 3 - 5 - 7 o - - - - 3 o - 6 7
erectus	- o 3 4 5 6 7 8 9 - 1 2 3 4 5 - o o
secalinus	o 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
commutatus	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Brachypodium pinnatum	- o 3 4 5 6 7 8 9 o o 2 3 4 5 - - -
Triticum caninum	o 2 3 4 5 6 7 - 9 0 1 2 3 4 5 6 7 8
"laxum"	- - - - 5 6 7 8 - - - - - - - - 7 -
"junceum"	1 2 3 4 5 6 7 8 - 0 1 - 3 4 - 6 7 8
Lolium temulentum	1 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Elymus arenarius	- o 3 4 - - - - - 0 1 - - - - - o 8
Hordeum sylvaticum	- - - o 5 - 7 8 9 - - 2 3 4 - - - o
pratense	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
maritimum	o 2 3 4 5 6 7 8 - 0 1 2 3 - - 6 - -
Lepturus filiformis	1 2 3 4 5 6 7 8 - 0 1 2 3 - - 6 7 8

87. *Filices.*	
Ceterach officinarum	1 2 3 4 5 6 7 8 9 - 1 2 3 4 5 6 7 8
Woodsia ilvensis	- - - - - - - - - - - - - - - - - 8
hyperborea	- - - - - - - - - - - - - - - - - 8
Polypodium Phegopteris	1 2 - - - 6 o o - - - - 3 4 5 6 7 8
Dryopteris	- - o o o o - o o - - - 3 4 5 6 7 8
calcareum	- - 3 4 - - - - 9 - - - 3 4 o 6 o 8
Allosorus crispus	- o 3 - - - - - - - - - - 4 5 6 7 8
Cistopteris fragilis	- o 3 4 - 6 7 - - o 1 o 3 4 5 6 7 8
Polystichum Lonchitis	- - - - - - - - - - - o - - - o - 8
" lobatum "	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
angulare	- 2 3 4 5 6 7 8 - 0 1 2 3 4 5 6 7 8
Lastrea Thelypteris	- o 3 - 5 6 7 8 o 0 1 2 - 4 5 6 7 8
cristata	- o - - - - - o o o 1 o - o o - - -
uliginosa	- - - - - - - - o - - 1 - - o o - - -
spinulosa	o 2 o o 5 6 7 8 - o 1 2 3 4 5 o o o
glandulosa	- - - - - - - - - - - - 3 - 5
fœnisecii	1 2 3 - - 6 7 - - - - - - o 5 6 - 8
Asplenium viride	- - - - - o o - - - - - - 4 o 6 - 8
marinum	1 2 3 4 5 6 - - - - - - - - - 6 7 8
lanceolatum	1 2 3 - o 6 7 - o - - - 3 - o 6 7 8
germanicum	- - - - - - - - - - - - - - - - - 8
septentrionale	- 2 o - - - o - - - - - - - - - - 8
Adiantum Capillus	1 2 o - - - - - - - - - - - - o 6 - -
Hymenophyllum tunbrigense	1 2 3 - - 6 7 - - - - - - - o 6 - 8
Wilsoni	1 2 - - - - - - - - - - - - 5 6 7 8
Osmunda regalis	1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7 8
Botrychium Lunaria	1 2 3 4 5 6 7 - 9 0 1 2 3 4 5 6 7 8
Ophioglossum vulgatum	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
88. *Lycopodiaceæ.*	
Lycopodium clavatum	- 2 3 4 5 6 7 8 9 - 1 2 - 4 5 6 7 8
annotinum	- - - - - - - - - - - - - - - - - 8
inundatum	1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - - -
alpinum	- - 3 - o - - - - - - - - - o 6 7 8
Selago	1 2 3 4 5 6 7 - 9 - 1 - o 4 5 6 7 8
selaginoides	- o - - - - - - - - - - - - - - 8
89. *Marsileaceæ.*	
Isoetes lacustris	- - - - - - - - - - - - - - - o 6 - 8
Pilularia globulifera	1 2 3 4 5 6 7 8 - 0 1 2 - 4 5 6 7 8

90. *Equisetaceæ.*

Equisetum sylvaticum	- 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
hyemale	- o o - - - 7 - - 0 1 2 - o 5 6 - 8
variegatum	- 2 3 - - - - - - - - - - - - - - -

2, 3. *Mid and North Britain.*

1. *Ranunculaceæ.*

Clematis Vitalba	- o - 2 o o - - - o o
Thalictrum alpinum	- - - - 3 4 5 6 - - 9 0 1 2 3 4 5 6 7 8
"minus"	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
"majus"	- - - 2 3 4 5 6 - 8 9
—flexuosum	- - - - o - 5 - - - o
—saxatile	- - - - - - - o - - - 9
flavum	9 0 1 2 3 4 5 - 7 8 9 - - 2 - - o
Anemone nemorosa	- 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5
Pulsatilla	9 0 - - 3
Myosurus minimus	- 0 1 2 3 4
Ranunculus heterophyl.	9 0 1 2 - 4 5 6 7 8 9 0 1 2 3 4 - 6 7
—heterophyl.	0 2
—peltatus	2
—floribundus	2
marinus	o 4 8
—confusus	o 4 8
—Baudotii	4 8
trichophyllus	2 3 5 8
—trichophyl.	
—Drouetii	
circinatus	9 0 o 2 3 4 - - - 8
fluitans	- 0 1 2 3 4 - - - 8 - - - - 3
cœnosus	- 0 1 - 3 - 5 6 7
hederaceus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
Ficaria	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 - - 7 8
Lingua	9 0 1 2 3 4 5 6 7 8 9 0 1 - - - - - o
auricomus	9 0 1 2 3 4 5 6 7 8 9 0 1
bulbosus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - - - o
hirsutus	9 0 1 2 3 4 5 - 7 8 9 0 - 2
sceleratus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6
parviflorus	9 0 1 2 3 4

Ranunculus arvensis	9 0 1 2 3 4 5 - 7 8
Caltha radicans	- - - - - - - - - - - 0
Trollius europæus	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
Helleborus viridis	- 0 0 2 3 4 5 - 0 0 0 0
fœtidus	- 0 - 0 3 4 0 - 0 0 0 0
Aquilegia vulgaris	- 0 0 2 3 4 5 6 7 0 0 0 0 0 0
Actæa spicata	- - - 2 3 - 5 - - - 0
1.*Berberaceæ.	
Berberis vulgaris	0 0 0 2 3 4 0 0 0 0 0 0 0 0 0
2. *Nymphæaceæ.*	
Nymphæa alba	- 0 1 2 3 4 5 6 7 8 9 0 1 - 3 4 5 6 - 8
Nuphar lutea	9 0 1 2 3 4 5 6 7 8 9 0 0 - 3
pumila	- - - - - 0 - - 0 - 9 0 1 2
3. *Papaveraceæ.*	
Papaver hybridum	- - 1 0 - 4
Argemone	9 0 1 2 3 4 5 - - 8 9 0 1 2 3 4 - 6
Rhœas	9 0 1 2 3 4 5 - 7 8 9 0 0 - - - - - 0 0
Meconopsis cambrica	- - 0 0 3 - 5 0 - 0 0 0 0
Chelidonium majus	9 0 1 2 3 4 5 6 7 8 - 0 0 0
Glaucium luteum	- - 1 2 - 4 5 6 7 8 9 - 0 2 - - - - - 0
3.*Fumariaceæ.	
Corydalis claviculata	- 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4
Fumaria capreolata	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 7
—pallidiflora	
—Boræi	5
—confusa	5
—muralis	3
officinalis	9 0 1 2 3 4 5 6 7 8 9 0 1 0 - 4 5 - 7 8
micrantha	- 0 - - - 4 - - - 8 9 0 1
parviflora	- - - 2 - - - - - 8 - 0 0 - - - - - - 0
—parviflora	- - - 2
—Vaillantii	- - - 2
4. *Cruciferæ.*	
Cakile maritima	9 - 1 2 - 4 5 6 7 8 9 0 1 2 3 - 5 6 7 8
Crambe maritima	9 - - 2 - - 5 6 - 8 - - - 2 3
Coronopus Ruellii	9 0 1 2 3 4 5 6 - 8 9 0 1
Thlaspi arvense	9 0 1 2 3 4 5 - 7 8 9 0 1 2 - 4 5 - 7
alpestre	- 0 - - 3 4 5 - - - - 0
—alpestre	4 0
—occitanum	3

Thlaspi —virens	0
Hutchinsia petræa	- 0 - - 3
Teesdalia nudicaulis	- 0 1 2 3 4 5 - 7 8 9 0 1
Lepidium latifolium	- - 1 2 o o - - o o o - - - - - o
Smithii	- 0 1 2 3 4 5 6 7 8 9 0 1 2
campestre	- 0 1 2 3 4 5 6 7 8 9 0 1
Cochlearia officinalis	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 7 8
—maritima	- - 1 2 - 4 5 6 7 8 9 0 1 2 3 - o o o o
—alpina	- - - - 3 4 5 - - - 9 0 1 2
danica	- - 1 - - 4 5 - - 8 9 0 1 2 - - - - 7 8
anglica	- o 1 o - - 5 6 o o - - o o o
Subularia aquatica	- - - - - - 5 6 - - 9 0 - 2 - 4 5
Draba rupestris	- - - - - - - - - - 9 0 1 - - - 5
incana	- 0 - o 3 4 5 - - - 9 0 1 - 3 4 5 - 7 8
muralis	- 0 - o 3 - o - - o - o
verna	- 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7
inflata	- - - - - - - - - - 9
Dentaria bulbifera	- - - - - - - - 7
Cardamine amara	- 0 1 2 3 4 5 6 7 8 9 0 1 2
hirsuta	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
—hirsuta	- 0 1 2 3 4 5 - - - 9 0 - 2 3 - - 6
—sylvatica	- 0 1 2 3 4 5 - 7 8 9 0 1 2 3 - - 6
impatiens	- 0 o 2 3 - o - o - - - - o
Arabis thaliana	- 0 1 2 3 4 5 - 7 8 9 0 1 2 - 4 - - 7
petræa	- o - o - - o - - - 9 0 1 - 3 - 5 6 - 8
hirsuta	- 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 o
Turritis glabra	- 0 - 2 3 4 5 - 7 - 9 o - 2
Barbarea vulgaris	9 0 1 2 3 4 5 6 7 8 9 0 1
arcuata	- - o 2 - o - - - - - o
stricta	- - - 2 3 - - o
intermedia	
Nasturtium officinale	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
sylvestre	- 0 1 2 3 4 o 6 - 8 9
terrestre	- 0 1 2 3 4 5 6 7 8 9 0 - 2
amphibium	9 0 1 2 3 o - o o o - - o
Sisymbrium officinale	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Irio	- o - - - - - - - 8
Sophia	9 0 1 2 3 4 - - 7 8 - 0 1 - - 4
Erysimum cheiranthoides	9 o o o o o o - - o - - o - o
Alliaria	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4

Brassica oleracea	- - - o - o o - - o o
campestris	- 0 1 2 3 o 5 6 - o o o - o o
Sinapis alba	- 0 1 2 3 4 - - 7 8 9 0 - 2 3 o - o
nigra	o 0 1 2 3 4 - 6 - 8 o - o
tenuifolia	- - 1 2 - 4 5 - - 8 9
muralis	- - o o - o - - - - o
monensis	- - 1 - - - 5 6 7 o - o - 2 3
Raphanus maritimus	- - 1 o - - 5 6 7 - - - - 2 - - - - - o
5. *Resedaceæ.*	
Reseda Luteola	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4
lutea	9 0 - 2 3 4 - - - 8 9 0 o
6. *Cistaceæ.*	
Helianthemum vulgare	9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4
canum	- - - - 3 - 5
7. *Violaceæ.*	
Viola palustris	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
odorata	9 0 1 2 3 4 5 - o o o o
hirta	- 0 1 2 3 4 5 6 - 8 9 0
flavicornis	9 0 1 2 3 4 5 - - 8 9 0 1
stagnina ?	9
tricolor	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
—tricolor	0 1 5 9 7 8
—arvensis	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 - - 6 - 8
lutea	- 0 1 o 3 4 5 6 7 8 9 0 1 2 3 4 - 6
8. *Droseraceæ.*	
Drosera intermedia	9 0 1,2 3 - 5 6 o - o - - 2 3 - - - o o
anglica	- - 1 2 3 4 5 6 7 - - 0 1 2 3 4 5 6 7 o
9. *Polygalaceæ.*	
Polygala vulgaris	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
uliginosa	- - - - 3
11. *Elatinaceæ.*	
Elatine hexandra	- 0 1 - - - - - - - 9 0 - 2
12. *Silenaceæ.*	
Dianthus Armeria	- - 1 - 3 4 5 - - - 9 0
deltoides	- 0 1 2 3 4 5 - - 8 9 0 1
Saponaria officinalis	9 0 1 2 3 4 5 - 7 8 9 o o
Silene inflata	9 0 1 2 3 4 5 6 7 8 9 0 1 - 3 4 - - o
maritima	- - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
anglica	- 0 1 2 3 - 5 - 7 8 9 0 1
nutans	- 0 - - 3 - o - - - 9 0 - - - - - - o

Silene noctiflora	- 0 - 2 3 4 - - - 8 9 0
conica	- - - - - - - - - 8 - 0
acaulis	- - - - - - 5 - - - 9 0 1 2 3 4 5 6 7 8
Lychnis alpina	- - - - - - 5 - - - - 0
Viscaria	- - - - - - - - 6 - 8 9 0
vespertina	9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4 o
Githago	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - o o
12.**Alsinaceæ.*	
Mœnchia erecta	- 0 1 - 3 4
Sagina "maritima"	- - 1 2 - 4 5 - 7 8 9 0 1 2 3 4 5 6 7 8
apetala	9 0 1 2 3 4 - - 7 8 9 0 - - - - - - o
ciliata	- - - 2 3 4
saxatilis	- - - - - - - - - o - 9 0 1 - - - 5 - - o
subulata	- - o o o 4 5 - 7 8 9 0 1 2 3 - 5 6 - 8
nodosa	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7
Honckeneja peploides	9 - 1 2 - 4 5 6 - 8 9 0 1 2 3 4 5 6 7 8
Spergularia "marina"	9 - 1 2 - 4 5 6 7 8 9 0 1 2 3 4 - - 7 8
media	9 - 1 2 - 4 5
rubra	- 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 - - o
Arenaria norvegica	- - - - - - - - - - - - - - - - - - - o 8
serpyllifolia	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
leptoclados	
tenuifolia	- - - o 3 - - - - o o
verna	- 0 1 - 3 4 5 6 7 8 9 0
rubella	- - - - - - - - - - 9 - - - - - 5
uliginosa	- - - - - 4
trinervis	9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4
Stellaria nemorum	- 0 1 2 3 4 5 6 7 8 9 0 1 2
holostea	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7
glauca	9 0 1 2 3 4 o 6 7 8 o
graminea	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7 8
cerastoides	- - - - - - - - - - 9 0 1 2
Cerastium aquaticum	9 0 1 2 3 - - - o o - o - - - - - - o
semidecand.	9 0 1 2 3 4 5 6 7 8 9 0 1 - - - - - - o
tetrandrum	- 0 1 2 - 4 5 - 7 8 9 0 1 2 3 - - 6 7 8
arvense	9 0 1 2 3 4 5 6 - 8 9 0 1 - - - - - o
alpinum	o - - - - - 5 - - - 9 0 - 2 - - 5
latifolium	- - - - - - - - - - 9 0 1 2 - - 5 - o o
nigrescens	- - - - - - - - - - - - - - - - - - - 8
Cherleria sedoides	- - - - - - - - - - 9 0 - 2 3 4 5 - - o

13. *Linaceæ.*

Linum perenne 9 0 - 2 3 4 o
angustifolium - - 1 o - o 5
Radiola millegrana - 0 1 2 3 4 5 6 7 - 9 0 1 2 3 4 - - 7

14. *Malvaceæ.*

Malva moschata 9 0 1 2 3 4 5 6 7 8 9 0 o o o
sylvestris 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
rotundifolia 9 0 1 2 3 4 - - 7 8 9 0 o
Althæa officinalis 9 - - - o o o o - - - - - o
Lavatera arborea - - - - - o 5 - o o o

15. *Tiliaceæ.*

Tilia parvifolia o 0 o o o o 5

16. *Hypericaceæ.*

Hypericum Androsæm. - o 1 2 3 4 5 6 7 o 9 - - 2 3 4
perforatum 9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4 - - o 8
dubium - 0 1 2 3 4 5 6 7 8 9 - - 2
quadrangul. 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
humifusum 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
hirsutum 9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4
montanum - 0 1 2 3 4 5 - o
Elodes - 0 1 2 3 - 5 6 7 - - - - 2 3 - - - 7

17. *Aceraceæ.*

Acer campestre 9 0 1 2 3 4 5 - o o o o - o

18. *Geraniaceæ.*

Erodium cicutarium 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
maritimum - 0 1 - - - 5 6
Geranium sylvaticum - 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 - - o
pratense - 0 1 2 3 4 5 6 7 8 9 0 1 2 3
pyrenaicum - o - 2 3 o o - - o o - o o
pusillum 9 0 1 2 3 4 5 - 7 8 - 0 1
dissectum 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
columbinum 9 0 1 2 3 4 5 - 7 8 9 0 - 2
lucidum - 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 - - o
Robertianum 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
sanguineum 9 0 1 2 3 4 5 6 7 8 9 0 1 - 3 4
lancastriense - - - - - - 5

19. *Balsaminaceæ.*

Impatiens Noli-tangere - o 1 o o o 5 - o - - o

20. *Oxalidaceæ.*

Oxalis Acetosella 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 o

21. *Celastraceæ.*	
Euonymus europæus	9 0 o 2 3 4 5 6 7 8 - - o
22. *Rhamnaceæ.*	
Rhamnus catharticus	9 0 - 2 3 4 5 o - - - - - o
Frangula	9 0 1 2 3 - 5 - o - - - o
23. *Leguminiferæ.*	
Spartium scoparium	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - o
Ulex europæus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 o o
nanus	- 0 1 - 3 4 5 6 - o o o o
—nanus	- - - - o - - o
—Gallii	- - 1 - 3 4 5 6 7
Genista tinctoria	9 0 1 2 3 4 5 6 - 8
anglica	9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4
Ononis arvensis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
spinosa	9 0 1 2 3 4 5 6 7 8 9 0 - 2
Anthyllis Dillenii	- o
Medicago lupulina	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 - - o
maculata	- 0 - 2 - 4 - - - - o o
denticulata	- - 1 2 - o - - - - o o
Melilotus officinalis	9 0 1 2 3 4 5 - 7 8 o o o
arvensis	- - 1 - - - - - - - o
vulgaris	- - 1 o - o 5 - - 8 9 o o
Trigonella ornithopod.	- - 1 o o - 5 - 7 8 9 o
Trifolium subterraneum	- 0 1 2
medium	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - 7 8
arvense	9 0 1 2 3 4 5 6 7 8 9 0 1 - 3 4
scabrum	- o 1 2 3 4 - - - 8 9 0
striatum	- 0 o 2 3 4 5 - - 8 9 0
fragiferum	9 0 1 2 3 4 o - - 8 9
procumbens	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - 7
minus	9 0 1 2 3 4 5 - 7 8 9 0 - o o
filiforme?	o 0 1 2 3 4 5 - 7 8 9 0 1 - - 4
Lotus corniculatus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
major	9 0 1 2 3 4 5 6 7 8 9 0 o 2 3
Astragalus glycyphyllos	9 0 - 2 3 4 5 6 o 8 9 0 1 - - 4
hypoglottis	9 - - 2 3 4 - - - 8 9 0 1 - - 4 5
alpinus	- - - - - - - - - - - - 0
Oxytropis uralensis	- - - - - - - 6 - - 9 0 - 2 - 4 5
campestris	- - - - - - - - - - - - 0
Ornithopus perpusillus	9 0 1 2 3 4 5 6 7 8 9 0 1 2

Hippocrepis comosa	9 0 - 2 3 - 5 - o - - 0
Onobrychis sativa	9 - - 2 3 4 o
Vicia Orobus	- - - - o 4 5 6 7 8 9 0 - - 3
sylvatica	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4
angustifolia	- 0 1 2 3 4 5 - - 8 - 0 1
lathyroides	- 0 1 2 3 4 5 - 7 8 9 0 1 2 - 4
lutea	- o - o - - o - 7 - 9 0
sepium	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
bithynica	- - - 2 o
hirsuta	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 - o
tetrasperma	9 0 1 2 3 4 - 6 7 - o 0
Lathyrus Aphaca	9 o o o o - - - - o
Nissolia	9 0 - o - - o - - o - o
palustris	9 o o 2 o - - o
sylvestris	- 0 - 2 - - 5 6 7 8 - 0 - o 3
maritimus	9 - - - - - - o - - - - - - - - - - - o 8
Orobus tuberosus	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
niger	- - - - - - 4 - - - - 9 0 1

24. *Rosaceæ.*

Prunus spinosa	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
insititia	9 0 1 2 3 4 5 6 7 8 o o - - - o
Padus	- 0 1 2 3 4 5 6 7 8 9 0 1 - 3 4 5
Cerasus	- 0 1 - - - 5
avium	9 0 1 2 3 4 5 6 7 8 9 0 o - 3
Spiræa Filipendula	9 0 1 2 3 4 5 - o 8 9 0 - - - o
Dryas octopetala	- - - - 3 - - - - - 9 0 - 2 3 4 5 - 7
Geum urbanum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4
intermedium	- 0 - 2 3 4 5 - 7 8 9 0
rivale	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
Agrimonia Eupatoria	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
odorata	- 0 - - - - 5
Sibbaldia procumbens	- - - - - - - - o - 8 9 0 1 2 - 4 5 - - 8
Potentilla fruticosa	- - - - 3 4 5 - o
argentea	- 0 - - 3 4 5 - - 8 9 0 1
verna	- 0 o o 3 4 5 - - 8 9 0
alpestris	- - o - 3 4 5 - - - 9 0
reptans	9 0 1 2 3 4 5 6 7 8 9 0 - 2
"nemoralis"	- 0 1 2 3 4 5 6 7 8 9 0 o - - 4 - - - 8
Fragariastrum	9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4 - - o
Fragaria vesca	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8

Rubus Chamæmorus	- 0 1 - 3 4 5 - 7 8 9 0 1 2 - 4 5
saxatilis	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
idæus	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
suberectus	- 0 1 o 3 o 5 6 o - 9 0 1 2 3 4 - - o
fissus	
plicatus	- 0 1 - - - 5 6 - 8 9 0
nitidus	- 0 - - - - 5 - 7
affinis	- 0 - - - - 5 6 - - 9 - - 2
latifolius	- - - - - - - - - 8 9
imbricatus	
incurvatus	- - - - - - 5
rhamnifolius	- 0 1 - - - - - - - - - - 2
Grabowskii	- 0
thyrsoideus	- 0
discolor	- 0
leucostachys	- 0 - - - - 5
carpinifolius	- 0 - - - - 5 - 7 8 - - 1 2
villicaulis	- 0 - - - - 5 - - - - 0
pampinosus	
mucronatus	- 0 - - - - - - - - - - - 2
Salteri	- 0 - - - 4 - - - - - o
macrophyllus	- 0 - - - - 5 6 - 8
Sprengelii	- 0 1 - - - 5
Bloxamii	- 0
Hystrix	- 0
Radula	- 0 - - - - - 6 - 8
rudis	- 0 - - 3 - - - 7 8
pallidus	- 0 - - - 4 5 - 7 - 9
Koehleri	- 0 - - - - 5 - 7
fusco-ater	- 0 1
pyrmidalis	
Guntheri	
hirtus	- - - - - - - 6
glandulosus	- 0 - 2 - - 5
scaber	- 0
Balfourianus	
corylifolius	- 0 1 - - - - - 7
nemorosus	- 0 - - - - 5 6
cæsius	o 0 o o o 4 o 6 o o o o o
"fruticosus"	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7

Rosa spinosissima	- 0 1 2 3 4 5 6 - 8 9 0 1 2 3 4 5 - o
rubella	- - - - - 4 - - - - - o
hibernica	- - - 2 - 4 5
involuta	- - - - - - - - - - - - - - 2 o
"Sabini," etc.	- 0 - 2 3 4 5 - - 8 9 0 1
"villosa"	- 0 1 2 3 4 5 - 7 8 9 0 1 2 3 - 5 - o
"tomentosa"	- 0 1 2 3 4 5 - 7 8 9 0 1 2 - - 5 6 7 8
"inodora," etc.	- 0 - - 3 4 - - - 8 - - 1 2
"micrantha"	- 0 - 2 3
"rubiginosa"	- 0 1 2 3 o o 6 7 8 9 0 o o
canina	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7 8
systyla	- - - o - - o - - o o - o o
arvensis	9 0 1 2 3 4 5 - 7 8 - o
Sanguisorba officinalis	9 0 1 2 3 4 5 6 - 8 - o
Poterium Sanguisorba	9 0 1 2 3 4 5 6 7 8 9 o
Alchemilla vulgaris	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
alpina	- - - - 3 - 5 - - - 9 0 1 2 3 4 5 6
conjuncta	- - - - - - o - - - - o - o
arvensis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
Cratægus Oxyacantha	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 o - o
Pyrus communis	- 0 - 2 3 o o - o · - o
Malus	9 0 1 2 3 4 5 6 7 8 o o o o
torminalis	- o o - - o o
Aria	9 0 o 2 3 4 5 - o o - o o 2 - - o
—Aria	
—scandica	- - - - 3 4 - - - o - - - - - - o
—fennica	- o - - - - - - - - - - - 2
Aucuparia	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8

25. *Onagraceæ.*

Epilobium angustifolium	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 - 7 8
rosmarinifol.	- - - - - - - - - - 9
hirsutum	9 0 1 2 3 4 5 6 7 8 9 0 o - - - - - o
parviflorum	9 0 1 2 3 4 5 - 7 8 9 0 1 2 - - - 6
roseum	- 0 - 2 3 - - - - - o o o
tetragonum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - - 6 7
—tetragonum	
—obscurum	
alpinum	- o - - o o o - - - 9 0 1 2 - 4 5
anagallidifol.	
alsinifolium	- - - - 3 4 5 6 - - 9 0 1 2 - - 5

Circæa lutetiana	9 0 1 2 3 4 5 6 7 8 9 o 0 2 - - 5
intermedia	- 0 - - 3 - 5 - 7 8 9 o - 2 3
alpina	- o o - 3 o 5 - o o 9 0 1 2 o 4 5 - 7
26. *Haloragiaceæ, etc.*	
Hippuris vulgaris	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - - 6 7 8
Myriophyllum verticil.	9 0 1 2 3 4 o - - - - - o - - - - - o
spicatum	9 0 1 2 3 4 5 6 7 8 9 0 1 - o o o 6 7
alternifl.	- 0 1 2 3 4 5 - 7 8 - 0 1 - 3 - 5 6
Callitriche "verna"	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 7 8
pedunculata	- 0 1 2 3 4 5 6 - 8 9 0 - 2 3 - 5 6
platycarpa	- 0 1 2 3 4 5 - 7 8 9 0 1 2 3 - - 6 - 8
autumnalis	- o o o o 4 o - o o 9 0 1 - 3 o o - o o
Ceratophyllum demersum	- 0 1 2 - 4 - - - 8 9 0
submers.	- - - o - - - - - o
27. *Lythraceæ.*	
Lythrum hyssopifolium	- 0 o - o - o
Salicaria	9 0 1 2 3 4 5 6 7 8 9 - - 2 3
Peplis Portula	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
29. *Cucurbitaceæ.*	
Bryonia dioica	9 0 1 2 3 4
30. *Portulacaceæ.*	
Montia fontana	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
31. *Illecebraceæ.*	
Herniaria "glabra"	9 - - - - - - - - o o
32. *Scleranthaceæ.*	
Scleranthus annuus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
33. *Grossulariaceæ.*	
Ribes Grossularia	- o 1 o 3 4 5 o o o o o o - - o - o
nigrum	- o - 2 3 4 5 o o o o o - - o
rubrum	- 0 1 o 3 4 5 o o o o o - - 3
petræum	- - - - 3 4 5 - - - 9 0 1 - 3
alpinum	- 0 1 2 3 4 5 - o o
34. *Crassulaceæ.*	
Sedum Rhodiola	- - - - 3 4 5 - 7 8 9 0 1 2 3 4 5 6 7 8
Telephium	- 0 1 2 3 4 5 6 7 8 o o o o o - - - o o
villosum	- - o - 3 4 5 6 7 8 9 0 1 2
anglicum	- - o 2 - 4 5 6 7 - 9 0 1 2 3 - - 6 - 8
acre	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
reflexum	- o o o o o - - o o o o o
rupestre?	- o - o - - o 6

Cotyledon Umbilicus	- 0 1 - 3 - 5 6 7 - - - - 2 3
35. *Saxifragaceæ.*	
Saxifraga stellaris	- - - - 3 4 5 6 - 8 9 0 1 2 3 4 5 6
nivalis	- - - - - - 5 - - - 9 0 - 2 o
Hirculus	- - 1 - 3 4 5 - 7 8 9 0
aizoides	- o o - 3 4 5 - 7 - 9 0 1 2 3 4 5 - 7
oppositifolia	- - - - 3 - 5 6 o - 9 0 1 2 3 4 5 - 7 8
granulata	- 0 1 2 3 4 5 6 7 8 9 0 1
cernua	- - - - - - - - - - 9
rivularis	- - - - - - - - - - 9 0 - 2
tridactylites	- 0 1 2 3 4 5 - - 8 9 0 1 - - 4 5
hypnoides	- 0 - - 3 4 5 6 7 8 9 0 1 2 3 - 5 - 7
cæspitosa	- o - - - - o - - - - 0 o o
Chrysosplenium opposit.	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
altern.	- 0 1 2 3 4 5 6 7 8 9 0 1 2
Parnassia palustris	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
36. *Araliaceæ.*	
Adoxa Moschatellina	9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4
Hedera Helix	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 o
37. *Cornaceæ.*	
Cornus sanguinea	9 0 1 2 3 4 5 - o o o - o - o
suecica	- - - 2 - 4 - - - o 9 0 1 2 - 4 5
38. *Umbelliferæ.*	
Hydrocotyle vulgaris	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
Sanicula europæa	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5
Eryngium maritimum	9 - 1 2 - 4 5 6 7 8 9 0 - 2 3 - - - - o
campestre	- - o - - 4
Conium maculatum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 7
Smyrnium Olusatrum	- o 1 o - 4 - - o o o - - o
Cicuta virosa	9 o o 2 3 o o 6 7 o 9 0 - 2
Apium graveolens	9 o 1 2 o 4 5 6 - 8 - o o 2
Petroselinum segetum	9 - - 2 - - - - - - - - - - o
Helosciadium nodiflor.	9 0 1 2 3 4 5 6 - 8 - - - 2 3
" repens "	- 0 1 2 - - 5 6 - 8
inundat.	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - o
Sison Amomum	9 0 1 2 3 o - - - o
Ægopodium Podagraria	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - - - - o
Carum Carui	9 o o 2 o o 5 - o o o o o - o o - - - o
verticillatum	- - - - - - 5 6 7 - - - - 2
Bunium flexuosum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7

Pimpinella Saxifraga	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5
magna	9 0 1 2 3 4 - - - o 9
Sium latifolium	9 0 - 2 - 4 o - - o o
angustifolium	9 0 1 2 3 4 5 6 - 8 9 0 1 - - - - o
Bupleurum tenuissimum	9 - 1 - - 4
rotundifol.	9 0 - 2 3 4
Œnanthe fistulosa	9 0 1 2 3 4 - 6 7 8 o o 1 2
Lachenalii	9 0 1 2 3 4 5 6 7 8 - - - 2 3
silaifolia	- 0
crocata	9 - 1 2 3 4 5 6 7 8 9 0 1 2 3
Phellandrium	9 0 1 2 3 4 5 - - 8 - - - o
fluviatilis	- 0
Æthusa Cynapium	9 0 1 2 3 4 5 6 7 8 9 0 1 - - - - - o
Fœniculum vulgare	- o o o - o o - - - - - o
Ligusticum scoticum	- - - - - 4 - - 7 8 9 0 1 2 3 - 5 6 7 8
Silaus pratensis	9 0 1 2 3 4 5 - - 8
Meum athamanticum	- - - - 3 4 5 6 7 o 9 0 1 2
Crithmum maritimum	- - - - - - 5 6 7 o
Peucedanum palustre	9 0 o - 3 - o - o o
Pastinaca sativa	o 0 1 o 3 4 - - o - - - - o
Daucus Carota	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
Caucalis daucoides	9 - - 2 3 4
Torilis Anthriscus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
infesta	9 0 1 2 3 - - - - o - - - o
nodosa	9 0 1 2 3 4 5 - - 8 - 0
Scandix Pecten	9 0 1 2 3 4 5 - 7 8 9 0 1 - - 4 - - o
Anthriscus sylvestris	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 - 5 6 7 8
vulgaris	- 0 1 2 3 4 5 o o 8 9 0 1 - - - 5 - - 8
Chærophyllum temulent.	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4
Myrrhis odorata	- 1 2 3 4 5 6 7 8 9 0 1 2 - 4 - 6
39. *Loranthaceæ.*	
Viscum album	- 0 1 2 3 o - - - - o o
40. *Caprifoliaceæ.*	
Sambucus nigra	9 0 1 2 3 4 5 6 7 8 9 o o 2 3 o o - o
Ebulus	- 0 1 2 3 4 5 6 7 8 o o o - - o
Viburnum Opulus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
Lantana	- 0 - 2 3 o - - o o - o
Linnæa borealis	- - - - - 4 - - - 8 9 0 1 - - 4
41. *Rubiaceæ.*	
Galium cruciatum	9 0 1 2 3 4 5 6 7 8 9 0 1 - - - - 6

Galium elongatum	- - - 2
uliginosum	- 0 1 2 3 4 5 - 7 8 9 0 1 - - - - - o o
erectum	- o - 2 3 - - - - o - 0
Mollugo	9 0 - 2 3 4 5 - 7 8 9 0 o
sylvestre	- 0 o - 3 4 5 - - 8 9 0 - - - - - - 7
commutatum	- - - - 3
montanum	- - - - 3
tricorne	9 0 - 2 3 4 o - - o
Aparine	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
boreale	- - - o 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Sherardia arvensis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
Asperula odorata	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - - 8
cynanchica	- - I o 3 - 5
42. *Valerianaceæ.*	
Valeriana dioica	9 0 1 2 3 4 5 - - 8 9 - - 2
officinalis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
—officinalis	
—sambucif.	5 9 0
Fedia olitoria	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7
Auricula	- - - 2 3 - - - - - 9
dentata	9 0 1 2 3 4 5 6 7 8 9 0 1
43. *Dipsaceæ.*	
Dipsacus sylvestris	9 0 1 2 3 4 o - - o o o o o
pilosus	- 0 o - 3 - - - - - o
Scabiosa columbaria	9 0 1 2 3 4 5 - - 8 - 0
Knautia arvensis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - o
44. *Compositæ.*	
Tragopogon minor, etc.	9 0 1 2 3 4 5 - 7 8 9 0 1 - - - 5
Helminthia echioides	9 0 1 2 3 4 - - - o
Picris hieracioides	9 0 - 2 3 4 - - o
Thrincia hirta	9 0 1 2 3 4 5 - 7 8 9 o
Apargia hispida	9 0 1 2 3 4 5 - 7 8 - 0 - - - - - - o
Taraxaci	- - - - - - - - - 9 0 1 2 3 4 5 6
Hypochœris glabra	- o 1 2 3 o - - 7 - 9 o 1
maculata	- - - - o - o - - - - o
radicata	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Lactuca virosa	- 0 - 2 3 4 - - - 8 9 - - - - - - - o
muralis	- 0 1 2 3 4 5 - - - - - o
Mulgedium alpinum	- - - - - o - - - - - 0
Sonchus arvensis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
asper	9 0 - 2 3 4 5 - 7 8 9 0 - 2 3 - - 6 - 8

Sonchus oleraceus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Crepis virens	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 - 6 o
biennis	- 0 - 2 3 o o
succisæfolia	- - - - 3 4 - - - 8 9 0 - 2
paludosa	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
Hieracium Pilosella	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
alpinum	- - - - - - o - - - o o o o o o o
holosericeum	- - - - - - 5 - - - 9 0 1 2
eximium	- - - - - - - - - - - 0 - 2
calenduliflo.	- - - - - - - - - - - 0
gracilentum	- - - - - - - - - - - 0
globosum	- - - - - - - - - - - 0
nigrescens	- - - - - - - - - - - 0 1 2
lingulatum	- - - - - - - - - - 9 0 - 2
senescens	- - - - - - - - - - 9 0
chrysanthum	- - - - - - 5 - - - - 0 1 2 - - 5
anglicum	- - - - 3 4 5 - - o 9 0 o o - o o o 7
iricum	- - - - 3 4 - 6 - - 9 0 - - - - 5
pallidum	- - - - 3 4 5 6 - 8 9 0 1 2 - 4 5 - 7
lasiophyllum	- - - - - - - - - - - 0
argenteum	- - - - - 4 5 - - - 9 0 - - - - - 6
nitidum	- - - - - - - - - - - 0
aggregatum	- - - - - - - - - - - 0
murorum	- 0 o 2 o 4 5 - o o o 0 o o - o o o 7 o
cæsium	- - - 2 3 - - - - - - 0 - - - - 5
flocculosum	- - - - - - - - - - - 0
vulgatum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
gothicum	- - - 2 3 4 - - - - 9 0
tridentatum	- 0 1 2 3 4 5 o - - o o - o - o
prenanthoides	- - - - 3 4 o - o o 9 0 o o o
denticulatum	- - - - - - - - - 8 - - - 2
strictum	- - - - 3 - 5 - - - 9 0 1 2 3 - 5
umbellatum	9 0 1 2 3 4 5 6 - 8 9 0 - 2 3 - o
crocatum	- - - - 3 4 o - - - 9 0 1 o o
rigidum	- - - - 3 4 5 - 7 8 9 0 - - - - 5
corymbosum	- - - - - 4 - - - - - 0
boreale	9 0 1 2 3 4 5 6 7 8 9 0 o 2 3
Taraxacum palustre	- 0 1 2 3 4 5 - 7 8 9 0 1 2 - 4 - - - 8
Arnoseris pusilla	- o - - - - - - - - - o o
Lapsana communis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7

Cichorium Intybus	9 0 1 2 3 4 5 - 7 8 9 0 o 2
Arctium majus	
intermedium	
minus	
tomentosum	
pubescens	
Saussurea alpina	- - o - - - 5 6 - - 9 0 - 2 3 4 5 6 7 8
Serratula tinctoria	9 0 1 2 3 4 5 6 7
Carduus nutans	9 0 1 2 3 4 5 - 7 8 - o o - - - - - o
acanthoides	9 0 1 2 3 4 5 - 7 8 9 0 o 2 - - - - o
tenuiflorus	- 0 1 2 3 4 5 - 7 8 9 0 o
eriophorus	9 0 o 2 3 4 o - - o o - - o
pratensis	- 0 - 2 3 o - - - - - - - o o
acaulis	9 0 - - - o o
heterophyllus	- 0 1 o 3 4 5 6 7 8 9 0 1 2 3 4 5
Onopordum Acanthium	9 0 1 o 3 4 o - o 8 9
Carlina vulgaris.	9 0 1 2 3 4 5 6 - 8 - 0 1 2
Centaurea nigrescens	- 0 - 2 - 4 5 6 - - - 0 1
Cyanus	9 0 1 2 3 4 5 - 7 8 9 0 1 2 - 4 5 - 7 8
Scabiosa	9 0 1 2 3 4 5 - 7 8 9 0 o - - - o
Bidens cernua	- 0 1 2 3 4 5 6 7 8 - 0 1 2
tripartita	9 0 1 2 3 4 5 6 7 - 9 - - 2 3
Eupatorium cannabinum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 o
Tanacetum vulgare	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 o o
Artemisia maritima	9 - 1 2 - 4 5 6 - 8 - 0
Absinthium	o 0 1 2 3 4 5 - - 8 9 o - - - - - - - o o
Gnaphalium sylvaticum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
norvegicum	- - - - - - - - - - - 0
supinum	- - - - - - - - - - - 9 0 1 2 - 4 5
uliginosum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - - - 7 8
Filago minima	9 0 1 2 3 4 5 - 7 8 9 0 1 2 - 4 5
germanica	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4
apiculata	- - - - 3
spathulata	
Petasites vulgaris	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - - o o o
Tussilago Farfara	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Erigeron alpinus	- - - - - - - - - - 9 0
acris	9 0 1 2 3 4 5 - - - - 0
Aster Tripolium	9 - 1 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6
Solidago Virgaurea	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8

Senecio sylvaticus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
viscosus	- 0 o o o 4 5 6 o 8 9 0 - 2
erucifolius	9 0 1 2 3 4 5 - o 8 o
paludosus	9 - o
saracenicus ?	- 0 1 o 3 o o 6 7 8 9 o o o
Cineraria palustris	o - o - - - o
Inula Helenium	o - o 2 3 4 5 - o - - o - o o o
Conyza	- 0 1 2 3 o 5 - - - o
crithmoides	- - - - - - - 6
Pulicaria dysenterica	9 0 1 2 3 4 5 6 - 8 - - - 2 3
Chrysanthemum Leucan.	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Pyrethrum Parthenium	9 0 1 2 3 4 5 - 7 8 9 0 1 2 - o
" maritimum"	- - 1 2 - 4 5 6 7 8 - 0 1 2 3 4 - 6 7
Matricaria Chamomilla	9 0 1 2 3 4 5 - 7 8 o - - o - - - o o
Anthemis nobilis	- 0 1 2 - 4 - - - o - - - 2 3 - - - o
arvensis	- 0 1 2 3 4 o - 7 8 9 0 1
Cotula	9 0 1 2 3 4 - - 7 8 9 o - o - - o - o o
45. *Campanulaceæ.*	
Campanula rotundifol.	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
patula	- 0 - o o - o
latifolia	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
rapunculoid.	- 0 - o 3 - - - - 8 9 o
Trachelium	- 0 - 2 - - 5 - 7 8 9 - - o
glomerata	9 0 - 2 3 4 5 - - 8 9 0
Wahlenbergia hederacea	- - 1 - 3 - 5 - 7
Specularia hybrida	- 0 - 2 3 4 - - - o o
Jasione montana	- 0 1 2 3 4 5 6 7 - - - 1 2 3 - - - 7 8
Lobelia Dortmanna	- - - - - - - 5 6 7 - 9 0 1 2 3 4 5 6 7
46. *Ericaceæ.*	
Menziesia cærulea	- - - - - - - - - - 9
Azalea procumbens	- - - - - - - - - - - 9 0 1 2 3 4 5 - 7 8
Andromeda polifolia	- 0 1 - 3 4 5 6 7 - 9
Arbutus alpina	o - - - - 0 1 2 3 4 5 - 7 8
Uva-ursi	- o o - 3 4 5 - - 8 9 0 1 2 3 4 5 - 7 8
Vaccinium Myrtillus	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
uliginosum	o 4 5 - - - 9 0 1 2 - 4 5 - 7 8
Vitis-idæa	- 0 1 2 3 4 5 - 7 8 9 0 1 2 - 4 5 6
Oxycoccos	9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4
Pyrola rotundifolia	- - 1 2 3 4 o o o 8 9 0 o - - - - - o o
media	- - o o 3 4 5 6 7 8 9 0 1 2 3 4 - - - 8

Pyrola minor	- 0 - 2 3 4 5 6 7 8 9 0 1 2 3 4
secunda	- - - - 3 o 5 o - - 9 0 1 2 - 4
uniflora	- - - - - - o - - - 9 o 1 - - 4 5 6
Monotropa Hypopitys	9 0 1 2 3 - 5 - - - - - 1
47. Ilicaceæ.	
Ilex Aquifolium	9 0 1 2 3 4 5 6 7 8 o 0 1 2 3 4 5 o
48. Jasminaceæ.	
Ligustrum vulgare	9 0 o 2 3 4 o o o o o o o o o
Fraxinus excelsior	9 0 1 2 3 4 5 6 7 8 9 0 1 2 o 4 o o
49. Apocynaceæ.	
Vinca minor	- o o o o o o o o o o o o
50. Gentianaceæ.	
Gentiana verna	- - - - 3 4 5
Pneumonan.	9 0 1 2 3 - 5
nivalis	- - - - - - - - - - 9 0 - o
Amarella	9 0 1 2 3 4 5 - - 8 - 0 1 2 3 4 5 - 7 8
Erythræa Centaurium	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 - 8
"littoralis"	- - 1 - - 4 5 6 - 8 - 0 1 2 3 - - 6 - 8
pulchella	9 - 1 o - - - 6 - o
latifolia	- - 1 - - o o - - - - - - - o o
Chlora perfoliata	9 0 1 2 3 - o
Villarsia nymphæoides	- o o o - o o - o o o
Polemonium cæruleum	- 0 - o 3 4 5 o o o o o o o o
51. Convolvulaceæ.	
Convolvulus arvensis	9 0 1 2 3 4 5 - 7 8 9 0 o - - - - - o
sepium	9 0 1 2 3 4 5 6 7 o o o o 2 3
Soldanella	9 - 1 o - 4 5 6 7 - - 0 - 2 3
Cuscuta europæa	- 0 o o o - - o o o - o
Epithymum	- 0 1 2 - o - 6
Trifolii	- - 1 2 - 4
52. Solanaceæ.	
Hyoscyamus niger	9 0 1 2 3 4 5 - 7 8 9 0 o 2 - o
Solanum nigrum	- 0 1 2 3 4 - 6 - o o
Dulcamara	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 o
Atropa Belladonna	- 0 1 2 3 4 5 o o o o o o o o o
53. Scrophulariaceæ.	
Verbascum Thapsus	- 0 1 2 3 4 5 6 7 8 9 0 o 2
nigrum	- 0 - o o o - - - o
Veronica spicata	- - - - - - 5
triphyllos	- - - - 3

Veronica humifusa	- - - - - 4 5 - - - 9 0 1 2 - - 5
alpina	- - - - - - - - - - - 9 0 1 2
saxatilis	- - - - - - - - - - - 9 0 - o - - o
scutellata	- 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - o
montana	- 0 1 2 3 4 5 6 7 8 9 0 1 o
Chamædrys	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
hederifolia	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 - - 7 8
agrestis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
polita	9 0 1 2 3 4 5 6 7 8 9 0 - 2
Buxbaumii	- 0 1 2 3 4 - 6 7 8 9 - o
Bartsia alpina	- - - - 3 4 o - - - 9 - - o - o
viscosa	- - 1 - - - - 6 7 - - - - 2
Odontites	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Rhinanthus major	- 0 - 2 3 4 5 - - 8 - 0 1 - - - - - - 8
Melampyrum pratense	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
sylvaticum	- o o o 3 4 5 6 7 8 9 0 1 - - 4 - - o
Scrophularia nodosa	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6
Ehrharti	- - 1 - 3 - - - - 8
Balbisii	9 0 1 2 3 4 o - o o o - - - - - - - - o
Digitalis purpurea	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Linaria spuria	9 0 - 2 - o
Elatine	- 0 o 2 3 o
repens	- o - 2 3 o 5 - o o - o o
vulgaris	9 0 1 2 3 4 5 6 7 8 9 0 1 2
minor	9 0 - 2 3 4 - - 7 8 o
Limosella aquatica	- 0 1 2 3 4 - - - 8 - o
54. *Orobanchaceæ.*	
Orobanche "major"	- 0 1 2 3 4 - 6 - - o - - o o
"elatior"	o o - 2 - o - - - - - - - o
minor	- - - 2 3
rubra	- - - - 3 - - - - - o - - 2 3 4
Lathræa squamaria	9 0 1 2 3 4 5 6 7 8 9 - - o
54.**Verbenaceæ.*	
Verbena officinalis	9 0 1 2 3 4 5 - - - o
55. *Lamiaceæ.*	
Salvia verbenaca	9 0 1 2 3 4 - - - 8 9 o o - - o
Lycopus europæus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
Mentha rotundifolia	- 0 - o 3 o 5 - - 8 - o - o
sylvestris	o 0 - o 3 - o - - o o o o 2
piperita	- 0 1 2 3 4 5 - - 8 9 0 - 2

Mentha aquatica	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 o - - 7
sativa	9 - 1 2 3 4 5 6 - 8 9 0 o 2 3
rubra	- 0 1 - 3 4 - o o o o - o - o
gentilis	- 0 1 - 3 4 5 6 - 8 - - - 2
arvensis	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 - - 7
Pulegium	- 0 1 2 o 4 5 - - o - - o
Thymus Serpyllum !	
Chamædrys	2
Origanum vulgare	9 0 1 2 3 4 5 6 7 8 9 0 1 - 3
Calamintha Acinos	9 0 1 2 3 4 5 6 7 8 9 0 1
officinalis	9 0 1 2 3 4 5
Clinopod.	9 0 1 2 3 4 5 - 7 8 9 0 1
Teucrium Scorodonia	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Scordium	9 - - - 3
Ajuga reptans	9 0 1 2 3 4 5 6 7 8 9 0 1 - 3 4 - - 7 8
pyramidalis	- - - - - - - - - - - - - 2 - 4 5 6 7
Ballota fœtida	9 0 1 2 3 4 5 - 7 8 - - o
ruderalis	- - - - 3 4
Lamium Galeobdolon	9 0 1 2 3 - o - - o - - - o
album	9 0 1 2 3 4 5 6 7 8 9 0 o - - - - - o
amplexicaule	- 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7
intermedium	- - - - - o - 6 7 8 9 0 o 2 3 - - 6 7 8
incisum	- 0 1 2 3 4 5 - 7 8 9 0 1 2 - - - 6 - 8
Galeopsis Ladanum	9 0 1 2 3 4 5 - 7 8 9 0 1 - - - - - o
ochroleuca	- 0 o o 3 4
versicolor	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
Stachys Betonica	9 0 1 2 3 4 5 6 7 8 9
ambigua	- o o o o 4 5 o o o 9 - o o o o - - 7 o
arvensis	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
Glechoma hederacea	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - o
Nepeta cataria	o 0 - 2 3 4 - - o o o - - - - - - o - - o
Marrubium vulgare	9 0 1 - 3 4 o - - 8 9 - o
Scutellaria galericulata	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6
minor	- 0 1 2 3 4 5 6 7 - - - - 2
56. *Boraginaceæ.*	
Myosotis palustris	9 0 1 2 3 4 5 6 7 8 9 o o - - o o - o o
repens	- o 1 2 3 4 5 6 7 8 9 0 - 2 - - 5 6
cæspitosa	9 0 1 2 3 4 5 6 - 8 9 0 1 2 3 4 5 6 7 8
alpestris	- - - - 3 - 5 - - - 9
sylvatica	- 0 1 2 3 4 5 6 7 8 - o o

Myosotis collina	- 0 1 2 3 4 5 - o 8 9 0 1 - - - - - - 8
versicolor	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - 7 8
Lithospermum officinale	- 0 1 2 3 4 5 6 7 8 9 0 o 2 - 4
arvense	9 0 1 2 3 4 5 - 7 8 9 0 1 - - 4 - 6
Mertensia maritima	- - - - - - 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Symphytum officinale	9 0 1 2 3 4 5 6 7 8 9 0
tuberosum	o o - 2 3 o o - 7 8 9 0 o - 3
Anchusa sempervirens	- 0 o 2 3 o 5 o o o o o o o - o
Asperugo procumbens	- - - - - 4 - - - 8 9 0 - - - - 5
Cynoglossum officinale	9 0 1 2 3 4 5 - - 8 9 0 o - - o - - o
Echium vulgare	9 0 1 2 3 4 5 - 7 8 9 0 1 2 - 4 5 6
57. Pinguiculaceæ.	
Pinguicula alpina	- - - - - - - - - - - - - 3 4 - - o
lusitanica	- - - - 5 o o - - - 1 2 3 4 5 6 o
Utricularia vulgaris	9 0 1 2 3 4 5 6 o 8 - 0 1 - - 4 - 6 7 8
intermedia	- - - - - 4 5 - - - - 0 o o - 4 5
minor	9 o 1 2 3 4 5 6 7 8 - 0 1 2 3 - 5 6
58. Primulaceæ.	
Primula veris	9 0 1 2 3 4 5 6 7 8 9 0 o - - - 5 - 7
farinosa	- - 1 2 3 4 5 - - 8
scotica	- - - - - - - - - - - - - o - - - 5 - 7
Trientalis europæa	- - - 2 3 4 5 o o 8 9 0 1 2 - 4 - - - 8
Hottonia palustris	9 0 1 2 3 4 5 - - - - o
Lysimachia vulgaris	9 0 1 2 3 4 5 6 7 8 9 0 - 2 3
thyrsiflora	- 0 o 2 3 - o - 7 o 9 0 - 2
nummul.	9 0 1 2 3 o 5 o o o - o
nemorum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
Anagallis arvensis	9 0 1 2 3 4 5 6 7 8 9 0 1 2
"cærulea"	9 0 1 2 3 o 5 6 - o o
tenella	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - - 6 7 8
Centunculus minimus	- - 1 2 3 - 5 6 7 8 - 0 1
Samolus Valerandi	9 0 1 2 3 4 5 6 - 8 9 - 1 2 3
Glaux maritima	9 - 1 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
59. Plumbaginaceæ.	
Armeria maritima	9 - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Statice Limonium	9 - 1 2 - 4 5 o - - - - - - - - - - - o
bahusiensis	- - 1 - - 4 5 6
spathulata	9 - 1 - - - 5 6
—occidentalis	- - - - - - 5 6
—Dodartii	- - o

60. *Plantaginaceæ.*

Plantago media	9 0 1 2 3 4 5 6 - 8 9 0 - - - - - - o o
maritima	9 - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Littorella lacustris	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8

62. *Chenopodiaceæ.*

Chenopodium olidum	9 0 1 2 - 4 - - - 8
polysper.	- 0 1 o o - - - - - - o
urbicum	- - o o - o - - - o - o
intermed.	
rubrum	9 0 1 2 3 4 - - 7 8 9 0
murale	- 0 1 2 o 4 o - o - - o
ficifolium	- o - 2 - 4
glaucum	- - - o o 4 - - - - o
B. Hen.	9 0 1 2 3 4 5 6 7 8 o 0 o o - o
Atriplex portulacoides	9 - 1 2 - 4 5 6 - o - - - o
pedunculata	9 - - - - o
arenaria	o - 1 2 - o o - 7 o - o o o o o 5 - o
Babingtonii	9 - 1 2 - 4 o 6 7 8 9 0 1 2 3 4 - 6 7 8
hastata	9 0 1 2 3 4 5 6 7 8 9 0 1 - 3 - 5 - 7 8
"deltoidea"	- 0 - 2 3 - - 6 - 8 - - - - - - - - - 8
angustifolia	9 0 1 2 3 4 5 6 7 8 9 0 - 2 3 - - 6 7 8
"erecta"	- 0 - 2 - 4 - 6 - 8 - 0 - 2 3 - - 6
littoralis	9 - 1 2 - 4 5 - - 8 9 0 - - - o o
marina	9 - - 2 - 4
Beta maritima	- o - 2 - 4 5 - - 8 9 o - - 3 - - - 7 8
Salsola Kali	9 - 1 2 - 4 5 6 7 8 9 0 1 2 3
Schoberia maritima	9 - 1 2 - 4 5 - - 8 9 0 1 2 3 4 - - 7 8
Salicornia herbacea	9 - 1 2 - 4 5 6 - 8 9 0 1 2 3 4 - 6 7 8
procumbens	9 - - 2 - - 5 - - - - 0 - 2 3
radicans	- - - 2 - - - - - - - o

63. *Polygonaceæ.*

Polygonum Bistorta	9 0 1 2 3 4 5 6 7 8 9 0 o o 3 o - - o
viviparum	o - - - 3 4 5 - - - 9 0 1 2 3 4 5 - 7 8
lapathifol.	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 o
laxum	2
Persicaria	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
mite	- - 1 2 3 - o
Hydropiper	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - - - o 8
minus	- 0 1 2 3 4 - 6 - - - o
Raii	9 - 1 - - - 5 6 7 8 9 0 - 2 - - - - - 8

Polygonum Convolvulus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Rumex Hydrolapathum	9 0 1 2 3 4 5 - 7 - o o - - 3
aquaticus	- - - 2 3 4 5 - 7 8 9 0 1 o 3 - - 6 7 8
pratensis	- o - 2 3
obtusifolius	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
sanguineus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
conglomeratus	9 0 1 2 3 4 5 - 7 8 9 0 - - - - - - - o 8
pulcher	9 0 - - - o - - o
maritimus	9 0 o o o o - o - o o o o - - - - - o
palustris	- o 1 2 3 o - - - - - o
Oxyria reniformis	- - - - o - 5 - - - 9 0 1 2 3 4 - 6 7
64. *Eleagnaceæ.*	
Hippophae rhamnoides	9 - - 2 - - - - - o - - - o o
65. *Thymeleaceæ.*	
Daphne Laureola	9 0 o 2 3 4 o - 7 8 9 o
Mezereum	- 0 - - 3 4 5
67. *Asaraceæ.*	
Asarum europæum	- - 1 - 3 o 5 - - o
68. *Empetraceæ.*	
Empetrum nigrum	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
69. *Euphorbiaceæ.*	
Euphorbia platyphylla	- - - 2 3 o
Paralias	- - 1 - - - 5
portlandica	- - 1 - - - 5 6
exigua	9 0 1 2 3 4 5 6 - 8 9 0
Peplus	9 0 1 2 3 4 5 - 7 8 9 0 1 2 - - 5
amygdaloid.	- 0 - - 3 4
Mercurialis perennis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - 7
annua	- 0 1 o - o o - - - 9
70. *Urticaceæ.*	
Parietaria diffusa	9 0 1 2 3 4 5 - 7 8 9 0 o - - o
erecta	8 9
Humulus Lupulus	9 0 1 2 3 4 5 o o o o o o o
Ulmus montana	- 0 o 2 3 4 5 o 7 8 9 0 1 o o 4 5 6
" suberosa "	9 0 o 2 3 4 - o - - o o
" campestris "	- o o o o o - - o o - o
71. *Amentiferæ.*	
Quercus pedunculata	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
intermedia	0
sessiliflora	- 0 1 2 3 4 5 - 7 8 9 - - 2 - - 5

Fagus sylvatica	9 0 1 2 3 o - o o o o o o o o o
Carpinus Betulus	- 0 o - o o o o o o o o o
Corylus Avellana	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Alnus glutinosa	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 o
Betula alba	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
—verrucosa	0
—glutinosa	2 4 8 0 2 3 4 7
nana	- - - - - o - - o 8 9 0 1 2 - 4 5
Populus "alba"	9 0 o 2 3 4 - - o o o o o o
"canescens"	- 0 - 2 - 4 o - - o
tremula	- 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 5 6 7
Salix pentandra	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - - o
"decipiens	- 0 - 2 3 4 - - - 8
fragilis, etc.	- 0 1 2 3 4 - - 7 8 9 o o 2 3
"Russeliana	- 0 - 2 3 4 - - 7 8 9 o o - - o - o
alba, etc.	9 0 1 2 3 4 5 - 7 8 9 0 o 2 3 - - o
"vitellina	- 0 - 2 3 4 - 6 7 - - 0 - 2 - - 5
triandra, etc.	- 0 1 2 3 4 - - - 8 9 0
acutifolia	- - - 2
purpurea, etc.	- 0 - 2 3 - - 6 7 8 9 o - 2 3
"Helix	- 0 1 2 3 4 - - 7 8 9 0 - 2 3
"rubra	- 0 - 2 3 4 5 - - 8 9
viminalis, etc.	9 0 1 2 3 4 5 6 7 8 9 0 o 2 3 - - o
"stipularis	- - - - o - - - o - o - - o
Smithiana, etc.	o 0 1 2 3 4 5 - - 8 9 o - 2 3
"acuminata	- 0 - 2 3 4 5 - 7 8 - - - - 3 - - - 7
"cinerea	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 - - 6 7 8
"aquatica	- 0 1 2 3 4 o - 7 8 9 0 1 - - - - 6 7 8
"oleifolia	- 0 - 2 3 - - - - 8 9 0
aurita	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 7 8
caprea	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3
nigricans	- o - o 3 4 5 o - 8 9 0 1 - 3
"laurina	- - - - 3 4 5 - - - 9
phylicifolia	- - 1 - 3 4 5 6 o - 9 0 1 2 - - - - 7
"ambigua	- - - - - o - - - - 9 0 - - 3 - 5 - 7
repens, etc.	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 7 8
"angustifolia	- - - - - - - 6 - - - 0
"Doniana	- - - - - - - - - - - 0
arbuscula	- - - - - - - - o - - 9 0 - 2 - - - - 7
Lapponum	- o - - - 4 - - - 8 9 0 1 2 - 4 5 - 7

Salix lanata	- - - - - - - - - - o 0
" procumbens	- - - - o - - - - - 9 0 1 2
Myrsinites	- - - - o - - - - - 9 0 1 2
reticulata	- - - - o - o - - - 9 0 - - - - 5
herbacea	- - - - 3 - 5 6 - - 9 0 1 2 3 4 5 6 7 o
Myrica Gale	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
72. Coniferæ.	
Pinus sylvestris	o o o o o o o o o o 9 0 1 2 3 4 5 - o
Juniperus communis	- 0 o 2 3 4 5 6 7 8 9 0 1 2 - 4 5 - 7 8
nana	- - - - 3 4 5 - - - - 0 - 2 3 - 5 6 7 8
Taxus baccata	- 0 o 2 3 4 5 - o o o 0 o 2
73. Orchidaceæ.	
Goodyera repens	- - - - - o o - - - 9 0 1 2 - 4
Neottia Nidus-avis	9 0 1 2 3 4 5 6 7 8 9 0 1 2
Spiranthes autumnalis	- 0 1 2 3 - 5
Listera cordata	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7
ovata	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 5
Epipactis latifolia	9 0 1 2 3 4 5 6 7 8 9 0 1 - - o o
—latifolia	0 2 3 4 7 8
—media	0 2 3 5 8
—atrorubens	3 5 5
palustris	- 0 1 2 3 4 5 - - 8 9 - - - 3
Cephalanthera grandif.	- 0 - - - - 5 - - - o - - o
ensifolia	- 0 - o 3 4 5 - - 8 9 - - o
Corallorhiza innata	- - - - - - - - 7 8 9 0 1 - - 4
Orchis Morio	9 0 1 2 3 4 5 - - o - - - - - - - - o
mascula	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 - - 7 8
ustulata	o 0 1 2 3 4 o
pyramidalis	9 0 - 2 3 4 o 6 - - o - - - o
latifolia	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
Gymnadenia conopsea	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
bifolia	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5
—bifolia	0 1 2 5 6 2
—chloran.	9 0 1 2 3 4 5 6 - 8 9 - - 2
Habenaria viridis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
albida	- - 1 o 3 4 5 6 7 - 9 0 1 2 3 4 - - 7 8
Aceras anthropophora	9 - - - o
Ophrys apifera	9 0 - 2 3 4
muscifera	9 0 - 2 3 4 5
Malaxis paludosa	- - 1 - o 4 5 6 - - 9 0 1 2 - 4 5

Cypripedium Calceolus	- - - 2 3 4 o
74. Iridaceæ.	
Iris fœtidissima	- 0 - 2 3 4 - - - o o
Crocus nudiflorus	- 0 1 - o
75. Amaryllidaceæ.	
Narcissus p. narcissus	9 0 1 o 3 4 5 - o o o o o o
76. Liliaceæ.	
Allium Scorodoprasum	- - 1 2 3 4 5 6 - 8 9 o o
oleraceum	- 0 - 2 3 4 5 - - - 9 0
vineale	- 0 o 2 3 4 5 6 7 8 9 0
Schœnoprasum	- o - - o 4 5 - o o - - - o
ursinum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
Gagea lutea	- 0 o 2 3 4 5 6 - 8 9 0 1
Scilla verna	- - - - - - 4 5 6 7 8 - 0 1 2 3 - 5 - 7 8
Hyacinthus nonscriptus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 - o
Asparagus officinalis	o - 1 - - - - - - o
Ruscus aculeatus	- 0 - o o o - - o - o - o - o
Convallaria majalis	9 0 1 2 3 4 5 o o o 9 0 1
verticillata	- - - - - - 4 - o - - 9 o
Polygonat.	- - - - 3 4 o
multiflora	- 0 1 o 3 4 o o o o o o o o o
*76*Trilliaceæ.*	
Paris quadrifolia	9 0 1 2 3 4 5 6 7 8 9 0 1
77. Tamaceæ.	
Tamus communis	9 0 1 2 3 4 5
78. Melanthiaceæ.	
Colchicum autumnale	- 0 1 2 3 4 5 - - - o
Tofieldia palustris	- - - - 3 4 - - - - 9 0 1 2 3 4 5
79. Hydrocharidaceæ.	
Hydrocharis M.-ranæ	9 0 1 2 3 4 - - - o
Stratiotes aloides	9 0 1 2 3 o o - - o o o
80. Alismaceæ.	
Alisma Plantago	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - o
ranunculoides	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4
natans	- - - 2 - - o o
Sagittaria sagittifolia	9 0 1 2 3 4 5 - o
Butomus umbellatus	9 0 1 2 3 4 o - - o o
Triglochin maritimum	9 - 1 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Scheuchzeria palustris	- 0 1 - 3 - - - - - 9

81. *Fluviales.*																				
Potamogeton densus	9	0	-	2	3	4	5	-	7	8										
pectinatus	9	0	1	2	3	4	-	6	-	8	-	0	1	-	-	-	-	-	7	8
—pectin.!																				
—filiform.	-	0	o	o	-	o	-	-	-	8	-	0	-	-	-	4	-	-	7	
—flabellat.	-	0	-	2																
pusillus	9	0	1	2	3	4	5	6	-	8	o	0	1	2	3	-	-	-	7	
gracilis?	-	-	-	-	-	4														
compressus	-	0	1	2	3	4	-	o	o	o	-	o	-	o	-	-	-	-	o	
gramineus	9	0	1	2	3	4	o	6	7	8	-	0	-	-	-	-	-	-	o	
zosteræfol.	-	0	-	o	-	-	-	-	-	-	9	0								
crispus	9	0	1	2	3	4	5	6	7	8	o	0	1	2	3	-	-	-	-	o
perfoliatus	9	0	1	2	3	4	5	6	7	8	-	0	1	-	3	-	5	6	7	
lucens	9	0	1	2	3	4	5	6	7	8	9	0	o	-	-	-	-	-	o	o
prælongus	9	-	-	2	3	-	5	-	-	8	9	0	1							
heterophyl.	-	0	1	2	3	4	5	6	7	8	9	0	1	-	3	-	-	-	7	8
rufescens	9	0	1	2	3	4	o	6	-	8	-	0	1	-	3	-	5			
natans	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	o	8
—natans																				
—oblong.	-	0	1	2	3	4	5	-	7	8	9	0	1	2	3	4	-	6	7	
—plantag.	-	0	-	2	3	4	5	-	-	8	-	-	-	2						
Ruppia "maritima"	-	-	1	2	-	4	5	6	7	8	-	0	1	2	3	-	-	6	7	8
rostellata						4		6						2	3				7	
Zannichellia palustris	9	0	1	2	3	4	5	-	7	8	-	-	-	-	-	4	-	-	7	
Zostera marina	-	-	1	2	-	4	5	6	7	8	9	0	1	2	3	-	5	6	7	8
nana	-	-	-	-	-	4	-	-	7											
82. *Araceæ, etc.*																				
Lemna minor	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	-	-	7	
gibba	9	0	1	2	-	-	-	-	-	8										
polyrhiza	9	0	1	2	3	-	-	-	7	8										
trisulca	9	0	1	2	3	4	o	-	7	8	-	0								
Arum maculatum	9	0	1	2	3	4	5	6	7	8	o	o	o							
Acorus Calamus	-	0	1	2	3	-	-	-	o											
Sparganium natans	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8
—natans						4			7		9	0		2						8
—minim.				2				6	7		9						5			
simplex	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	o	-	-	o	
ramosum	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	-	-	7	
Typha latifolia	9	0	1	2	3	4	5	6	7	8	9	0	1	-	-	-	-	-	o	
angustifolia	9	0	1	2	3	4	-	6	-	-	9									

83. *Restiaceæ.*

Eriocaulon septangulare - - - - - - - - - - - - - - - 3

84. *Juncaceæ.*

Juncus filiformis - - o - - - 5 - - - o 0 - - - - - - - o
conglomeratus 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
effusus 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
diffusus 9 0 - 2 3 4 5 - - - o o
glaucus 9 0 1 2 3 4 5 6 7 8 9 0 - - - - - - - o
balticus - - - - - - - - - - - - 0 1 - - 4 5 6
maritimus 9 - 1 2 - 4 5 6 7 - 9 0 1 2 3
acutiflorus 9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 5 6 7 8
obtusiflorus 9 0 1 2 3 4 - 6 - 8 - o
nigritellus
supinus 9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 5 6 7 8
compressus o 0 - o 3 o 5 - o o - o o o o - - - 7 8
cœnosus 9 - 1 2 - 4 5 6 7 8 9 0 - 2 - - - 6 7 8
castaneus - - - - - o - - - - 9 0 - 2
trifidus - - - - - - - o - - - 9 0 1 2 3 4 5
biglumis - - - - - - - - - - - 9 0 1 o
triglumis - - - - 3 4 5 - - - 9 0 1 2 - 4 5 - - 8
Luzula pilosa 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
multiflora 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 7 8
arcuata - - - - - - - - - - o 0 - - - - 5
spicata - - - - - - 5 - - - 9 0 1 2 3 4 5 6

85. *Cyperaceæ.*

Cyperus fuscus - - - 2
Cladium Mariscus 9 - 1 2 3 4 o 6 - - - o - - - - 5
Schœnus nigricans - 0 1 2 3 4 5 6 - 8 9 0 1 2 3 4 5 6 7 8
Rhyncospora alba - o 1 2 3 4 5 6 7 o - 0 1 2 3 4 5 6 - 8
Blysmus compressus 9 0 1 2 3 4 5 - 7 8 - - - o o
rufus - - 1 - - 4 - 6 - 8 9 0 1 2 3 4 5 6 7 8
Scirpus lacustris 9 0 1 2 3 4 5 6 7 8 - 0 1 2 - 4 5 6 7 8
glaucus 9 - - 2 - - - 6 7 8 9 0 - 2 3 - - - o
setaceus - 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Savii - - 1 - - - 5 6 7 - - - - 2 3
maritimus 9 - 1 2 - 4 5 6 - 8 9 0 - 2 - 4
sylvaticus - 0 1 2 3 4 5 6 7 8 9 0 1 2
"palustris" 9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 - 6 7 8
uniglumis - - 1 - - 4 - - - 8 - 0 - - 3 - - 6 7
multicaulis - 0 1 2 3 4 5 6 - 8 9 0 1 2 3 4 5 - 7

Scirpus Watsoni	- - - - - - - - - - - - o 2
pauciflorus	- 0 1 2 3 4 5 6 - 8 9 0 1 2 3 4 5 - o
cæspitosus	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
acicularis	9 0 1 2 3 o 5 6 7 8 9 o - - - - - - - o
fluitans	- 0 1 2 3 4 5 6 7 8 9 0 1 - 3 - 5 6 7
Eriophorum vaginatum	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
alpinum	- - - - - - - - - - - o o - - - - o
latifolium	o 0 1 2 3 4 5 6 7 8 - 0 1 - - 4 5
gracile	- - - - 3 - - - - - o o
Elyna caricina	- - - - 3 4 5 - - - 9
Carex dioica	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
pulicaris	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
pauciflora	- - - o - 4 - 6 o - 9 0 1 2 3 4 5
rupestris	- - - - - - - - - - - o 0 - - - - 5
incurva	- - - - - - - - - 8 9 0 1 - - 4 5 o - 8
stellulata	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
leporina	- - - - - - - - - - - 0
ovalis	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 - 8
curta	- o 1 2 3 4 5 6 7 8 9 0 1 - 3
Persoonii	- - - 2 - 4 - - - - 9 0 - - - 4
elongata	- - 1 2 3
remota	- 0 1 2 3 4 5 6 7 8 9 o 1 2 3 4
axillaris	- 0 1 2 3 - - - - o o
Boenninghausen.	- - o - - - - - - - 8 9 - 1
intermedia	9 0 1 2 3 4 - 6 7 8 9 0 - - 3
arenaria	9 - 1 2 - 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
divisa	9 - - 2 o 4 - - - o - o
muricata	9 0 1 2 3 4 5 6 7 8 9 0 1 2
divulsa	- 0 - 2 3 o - - o o
vulpina	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 - - 6
teretiuscula	- 0 1 2 3 - - 6 7 8 9 0 1
paradoxa	- - - 2 3
paniculata	- 0 1 2 3 4 - - 7 8 9 0 1 2 - 4 5 - 7
Vahlii	- - - - - - - - - - - - 0
atrata	- - o - - - - 6 - - 9 0
rigida	- - - - 3 4 5 6 - o 9 0 1 2 3 4 5 6 - 8
aquatilis	- - - - - - - - - o - - 0
aquatilis?	- - - - - - - - 7
stricta	- o 1 2 3 o 5 o o o o o o o - - - - o
acuta	- 0 1 2 3 4 - 6 7 8 - 0 1 2 3 - - - o

o

Carex pulla	- - - - - - - - - - 9 0 1 2 3 - 5
"flava"	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
"Oederi"	- o 1 2 3 4 5 6 7 8 - 0 - - 3 - - - 7 8
extensa	- - 1 2 - 4 5 6 - 8 9 0 1 2 3 - - 6 7
pallescens	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
"fulva," etc.	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
distans	- o 1 2 o 4 o 6 7 8 9 0 1 2 3 - 5 - 7 o
lævigata	- - 1 - 3 4 5 6 7 8 o o o 2 3
panicea	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
vaginata	- - - - - - - - - - 9 0 1 2 - - 5
capillaris	- - - - 3 4 - 6 - - 9 0 - - - 4 5 - - o
"limosa"	- - 1 - 3 4 5 6 7 8 9 0 - 2 3 - o
irrigua	- - - - - 4 5 o o - 9 - - 2
rariflora	- - - - - - - - - - - 0 1 - - - o
strigosa	- 0 1 - 3 - - - - o - - - - - o
sylvatica	- 0 1 2 3 4 5 6 7 8 9 0 1
pendula	- 0 1 2 3 4 5 - 7 8 9 0 1
P. cyperus	- 0 1 2 3 - - - - - - - - o - o
glauca	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 4 - 6 7 8
præcox	9 0 1 2 3 4 5 6 7 8 9 0 1 - o - - - 7 8
pilulifera	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - - 5 6
digitata	- 0 - 2 3
filiformis	- 0 1 2 3 4 5 6 o 8 - 0 1 - 3 - 5
hirta	9 0 1 2 3 4 5 6 7 8 9 0 1 2
ampullacea	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
vesicaria	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
paludosa	9 0 1 2 3 4 - - 7 8 9 0 o 2 3 4
riparia	9 0 1 2 3 4 5 6 7 8 - 0 1
86. *Gramina.*	
Spartina stricta	9
Phalaris arundinacea	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Hierochloe borealis	- - - - - - - - - - - o - - - - 5
Phleum alpinum	9 0 o o
pratense	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - o o o o
arenarium	9 - 1 2 - 4 5 - - 8 9 0
Alopecurus alpinus	- - - - - - - - - - o 0 1 - - 4
pratensis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
geniculatus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
agrestis	9 0 1 2 3 4 5 - o o o o
Milium effusum	- 0 1 2 3 4 5 6 7 8 - 0 1 2 3 - - - o

Apera Spica-venti	- o o 2 3 o o - - o
Agrostis canina	- 0 1 2 3 4 5 - 7 8 9 0 o o o o o - o o
Ammophila arundinacea	9 - 1 2 - 4 5 6 7 8 9 0 1 2 3 - 5 6 7 8
Arundo Phragmites	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 7 8
Calamagrostis	o 0 1 2 3 4 o
Epigejos	9 0 1 2 3 4 5 - 7 o o 0 - - 3
stricta	- - 1 - - - - - - - - o
Sesleria cærulea	- - - - 3 4 5 - - - 9 - - - - 4
Aira alpina	- - - - - - o - - - - 9 0 1 2 - - 5 6 o
caryophyllea	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 8
Avena fatua	9 0 1 2 3 4 - - - 8 - 0 1 - - - - - 7 8
pratensis	- 0 o 2 3 4 5 6 - 8 9 0 1 2 - 4
pubescens	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - 7
flavescens	9 0 1 2 3 4 5 - - 8 9 0 o - - - - - - o
Holcus mollis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 - 8
Koeleria cristata	- 0 2 2 3 4 5 6 7 8 9 0 1 2 3 4 5
Melica uniflora	- 0 1 2 3 4 5 6 7 8 9 0 1 - - - - - - o
nutans	- 0 o 2 3 4 5 6 7 8 9 0 1 o - 4
Catabrosa aquatica	9 0 1 2 3 4 5 6 o 8 9 0 1 2 3 - - 6 o 8
Glyceria aquatica	9 0 1 2 3 4 - 6 7 8 9 0
plicata	9 0 1 2 - 4 - - - o o - - - - - - - - o
maritima	- - 1 2 - 4 - 6 7 8 9 0 1 2 3 4 - 6 7 8
distans	9 0 1 2 3 4 5 - - 8 9 0
procumbens	- - 1 2 - 4 - - - o - o
rigida	9 0 1 2 3 4 - - - 8 9 0 - - - 4
loliacea	- - o 2 - 4 5 6 - 8 9 o - - - - - - - o
Poa alpina	- - - - 3 - 5 - - - 9 0 1 2 - - 5
laxa	- - - - - - - - - - - 0 - 2
minor	- - - - - - - - - - - 0 - 2
compressa	9 0 - 2 3 - 5 - 7 8 - 0 - - - 4 - - - o
nemoralis	- 0 1 - 3 4 5 - 7 8 9 0 1 2
Parnellii	- - - - 3 4
Balfourii	- - - - 3 4 - - - - 9 0 - 2
cæsia, glauca	- - - - 3 - - - - - 9 0 - 2
Briza media	9 0 1 2 3 4 5 6 7 8 9 0 1 - - 4 - - o
Festuca uniglumis	- - 1 o
bromoides	9 0 1 2 3 4 5 6 o 8 9 0 1 2 3 4 - - o
P. myurus	- 0 1 o 3 o - - o - o o
duriuscula	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - 6 7 8
rubra	9 - 1 2 o 4 o 6 - 8 9 0 1 - 3 4 o 6 o

Festuca sylvatica	- - - - 3 4 5 - o 8 9 - 1 o
arundinacea	o - - - - o - - - - o
"elatior"	9 0 1 2 3 4 5 - 7 8 9 0 1 2 3 - - 6 7 8
pratensis	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 - - 7
loliacea	- 0 1 2 3 4 5 - 7 8 9 0 - - - - - - 7
Bromus giganteus	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
asper	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
sterilis	9 0 1 2 3 4 5 - 7 8 9 0 1 o
erectus	9 0 - 2 3 - - o - 8 9
secalinus	o 0 1 2 3 4 5 6 - 8 9 0 1 2 3 4
commutatus	9 0 1 2 3 4 5 o 7 8 9 0 1 2 3 - - - o o
Brachypodium sylvatic.	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 - - 7
pinnatum	9 0 - 2 3 o o - - - o
Triticum caninum	- 0 1 2 3 4 5 - 7 8 9 0 1 - - 4 - - o
junceum	9 - 1 2 - 4 5 - 7 8 9 0 1 2 3 4 5 6 7 8
—junceum	8
—laxum	o 2 4 8 2
Lolium temulentum	9 0 1 2 3 4 5 - 7 8 - 0 1 2 3 - - - - 8
Elymus arenarius	9 - o 2 - 4 o - 7 - - 0 1 2 - - 5 - 7 8
Hordeum sylvaticum	- 0 1 2 3 4
pratense	9 0 1 2 3 4 - - o 8 o
murinum	9 0 1 2 3 4 5 - - 8 9 0 o - - - - - - o
maritim.	9 - 1 2 - 4 o - - - o o
Nardus stricta	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
Lepturus filiformis	9 - 1 2 - 4 5 6 - 8 o
87. *Filices.*	
Ceterach officinarum	- 0 1 - 3 4 5 6 7 - 9 - - 2
Woodsia ilvensis	- - - - o 4 5 6 - - o 0
hyperborea	- - - - - - - - - - 9 o
Polypodium Phegopteris	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 o 7 8
Dryopteris	o 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
calcareum	- 0 1 - 3 4 5
Allosorus crispus	- 0 1 - 3 4 5 6 7 8 9 0 1 2 3 4 5 6
Cistopteris fragilis	- 0 1 2 3 4 5 6 7 8 9 0 1 - - 4 5 6 7
montana	- - - - - - - - - - 9 0
Polystichum Lonchitis	- - - - 3 4 o - o - 9 0 1 2 o 4 5 - o
aculeatum	9 0 1 2 3 4 5 6 7 8 9 - - 2 o
lobatum	9 0 1 o 3 4 5 6 7 8 9 0 1 2 3 4
angulare	- 0 1 2 3 - 5 - - 8
Lastrea Thelypteris	- 0 1 2 3 4 5 - - - - 0 - - - - - - - - o

Lastrea Oreopteris	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 - 8
rigida	- - 1 - 3 - 5
cristata	- 0 1 - o - - - - - - o
uliginosa	- 0 1 - - - - - - - - o
spinulosa	- 0 1 2 3 4 5 - - o 9 o o o - o - o
dilatata	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
fœnisecii	- - - 2 3 o 5 - - - - o - 2 3 - - o 7
Pseudathyrium alpestre	- - - - - - - - - - - 9 0 1 2 - - 5
flexile	- - - - - - - - - - - - 0 1
Asplenium Trichomanes	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
viride	- 0 o o 3 4 5 6 7 - 9 0 1 2 o 4 5
marinum	- - 1 2 - 4 5 6 7 8 9 0 1 2 3 4 o 6 7
Ad. nigrum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
Ruta-mura.	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - 5 6 o
germanicum	- - - - - 4 5 - - 8 9
septentrion.	- - - - o 4 5 - - 8 9 o - - - - - - o
Scolopendrium vulgare	9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 - o - 7 8
Adiantum Capillus V.	- o - - - - 5 - - - - o - o
Hymenophyllum tunb.	- - o o 3 - 5 o o o o - - 2 3 o
Wils.	- - 1 - 3 o 5 6 7 8 9 0 - 2 3 - 5 6 7 8
Osmunda regalis	- 0 1 2 3 4 5 6 7 - 9 0 - 2 3 4 5 6 - 8
Botrychium Lunaria	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7 8
Ophioglossum vulgatum	9 0 1 2 3 4 5 6 7 8 9 0 1 2 - - - - 7 8
88. *Lycopodiaceæ.*	
Lycopodium clavatum	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 - 7 o
annotinum	- 0 o - - o 5 - - - 9 0 1 2 3 4 - - 7
inundatum	- 0 1 2 3 - 5 - - - o o 1 2 - 4
alpinum	- 0 1 2 3 4 5 6 7 8 9 0 1 2 - 4 5 6 7 8
Selago	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
selaginoid.	- 0 1 2 3 4 5 6 - 8 9 0 1 2 3 4 5 6 7 8
89. *Marsileaceæ.*	
Isoetes lacustris	- - - o - o 5 - - - 9 0 - 2 3 - 5
Pilularia globulifera	- 0 1 2 3 4 5 6 7 8 9 0 1 2 - - 5
90. *Equisetaceæ.*	
Equisetum Telmateia	- 0 1 2 3 4 5 - 7 8 - 0 - 2 3
umbrosum	- - - - 3 4 5 - 7 8 9 0 1 2 3
sylvaticum	- 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8
hyemale	- 0 1 2 3 4 5 6 7 8 9 0 1 - - 4
Mackaii	0
variegatum	- - 1 - 3 4 5 - 7 8 - 0 - 2 - 4

These two Lists may be said to exhibit a condensed summary of present knowledge concerning the local distribution of our usually recognized species. Independently of errors or oversights by the compiler, it is also to be recollected that "present knowledge" really signifies reports and records of widely unequal reliability. In too many instances it was found quite impossible to decide, with any satisfactory degree of confidence, whether some given species should be entered as sufficiently or as insufficiently recorded for some given province. And the grounds for deeming records insufficient are too various in themselves to allow of their being explained by brief general rules applicable in all cases. The details about distribution already given in the Cybele Britannica will serve to suggest such grounds in many individual cases. But a good deal must still be left to the knowledge and reason of those botanists who may find occasion to consult the lists.

It will readily be guessed that in many instances the letter o is substituted in place of an arabic figure simply because the *wildness* of the plant is insufficiently authenticated for the particular province, and not because its existence there is doubted; less strictness in this respect being observed with denizens and colonists, than with the undisputed natives of Britain. In other instances, the letter is so substituted because the *species itself* is supposed unlikely to occur there; and though some single authority for it may be quite good, yet an additional testimony is held to be needful or desirable for sureness. In numerous other instances, the *personal authority* is deemed not sufficient, while there may be little cause for distrust in other respects; the species being more or less likely to occur. A good deal of allowance should always be made for the degree of facility with which the individual species

may be distinguished from all others. Obscure and confused species will of course require a more trained experience in the botanists whose testimony is to be accepted as sufficient evidence. In all cases, it may be said, a sort of balancing estimate is needed; personal authority and geographical probability counterpoising each other inversely. The less likely is any given species to be found at all, or found truly wild, in the sub-province under consideration,—the weightier should be the authority to certify its actual existence there, and wild. Conversely, the more likely is the species to grow there, the slighter may be the personal authority to testify the fact. While a single Borrer, Babington, Balfour, Bloxam, Bowman, Baker, Coleman, Gordon, Hort, More, Newbould, Oliver, Purchas, Syme, or Wilson may usually be relied upon, as a sufficient witness, and would be questioned only under some special circumstances,—a score of Aikens, Palmers, Huttons, Wrights, Grindons, Sidebothams, Shipleys, (R) Reynoldses, and such like, might properly be held insufficient in the case of doubtful plants; and singly they could only be accepted in witness of the most easily known and most expected species.

It is necessary also to explain one particular circumstance here, which affects the completeness of the figures for some few plants in the two lists above printed. As originally prepared these lists were kept in strict conformity with those given in the fourth volume of Cybele Britannica; all further subdivisions of the species, which were not adopted there, being at first left out here also. On after thought, while the pages of this Supplement were actually going through the press, it was rather suddenly decided to make some changes in that respect. The lists being printed chiefly with the hope thereby to elicit additional records, in extension and emendation of

existing knowledge, it has appeared on the whole more advisable to include in them also various recent segregates or sub-species; although very debateable species might better have been omitted, if a supply of data suitable for statistical comparisons had been the leading purpose of the lists. The suddenness of this change in plan has left the recorded distribution of some of the introduced sub-species too imperfectly shown, more especially in the earlier pages of the lists. For example,—instead of *Ranunculus aquatilis* and *Arctium Lappa*, entered as two species only, the names of a dozen segregates or sub-species were hastily substituted; and not having at hand Mr. Babington's papers on these sub-species, his records of their localities have not been indicated by the corresponding subprovincial nos. Practically, the effect of the omission may be good rather than bad, if it lead to additional records by other observers of localities.

Still, opinions may differ about the propriety of this inclusion of several more of the least satisfactory species, among others with which they cannot be held equals or equivalents. Some botanists will hold it an unwise course thus far to go along with the species-splitting fancies; while other botanists may deem it better to take that course which seems most likely to draw forth notices about the local distribution of those plants, whether designated species or varieties. Mr. Darwin's recently published views may be said to have given an importance to varieties (the "incipient species," as he holds them to be) which previously they were not supposed to possess. This should induce us all the more carefully to observe varieties, and to trace out their local distribution. And yet the placing of very doubtful sub-species in the same scientific category with the most generally recognized species, is a practice liable to grave

objections, and is attended with much inconvenience. But if M. De Candolle's useful suggestion (page 14) were adopted, that of recognizing and distinguishing in our printed Floras three grades of species, we might thus gain nearly all the advantages, while still escaping most of the disadvantages, which now result from the splitting up of old species.

If the old familiar term 'species' has not really different meanings among botanists of the present day, it has at any rate widely different applications; and this difference between those who aggregate and those who segregate becomes a wider gulf every succeeding year. Dr. Hooker thinks that "the time is happily past when it was considered an honour to be the namer of a plant." Doubtless he has himself risen above that petty ambition; but the current practice of many cotemporaries is utterly contradictory of the opinion expressed by him. No antecedent generation of botanists has laboured so much at species-splitting and name-changing. And those who indulge in the practice very extravagantly bepraise each other on account of their achievements in this line of notoriety-seeking; thus clearly showing that they believe such achievements to be great and honour-worthy operations. Although we may sometimes smile at the disproportion between the small feats accomplished and the large eulogies bestowed, it should be fairly admitted that undiscriminating compliments, heaped upon those who only combine because they lack the time and patience to distinguish clearly, are earned as easily and deserved as little.

It may be quite true, as the same high authority above quoted also remarks, that "any superficial observer can separate by words and a name" those partially dissimilar

forms which our leading botanists still treat as specifically identical. But it is equally true that some of our local species-splitters are by no means superficial observers, whatever may be thought of their judiciousness. Really, they are men who observe more closely, not more superficially, than the general botanists whose wider gaze is doubtless at times found to have been too wide for strict accuracy in small matters. The man who concentrates his attention on 5,000 european species, taking all the assistance to be derived from the writings of numerous competitors and antagonists, is less likely to observe "superficially," than is the man who diffuses his attention over 50,000 exotic species, with comparatively few other describers to assist him, and extremely few to oppose or correct him if going wrong. While the most judicious mean cannot be agreed upon, excessive combination is perhaps a worse evil than excessive subdivision. A confusion together of things too widely dissimilar, however convenient it may often be found in saving time and trouble, leads to worse consequences than the occasional severance of things too closely similar is likely to do. A remark lately made by Mr. Babington has much point and pertinence; namely, that "there seems to be no surer mode of diverting attention from a plant than that of placing it as a variety of some species supposed to be well known." I would remind the writer of that sentence, however, that it is one thing to join "a plant" to some well-known species,—another thing to split varieties from such a species. While I should myself be much slower than Dr. Hooker, in joining a dissimilar and little-observed australian or antarctic plant with an english species, — I should likewise hesitate longer than Mr. Babington usually does, and require more experimental evidence of distinctness, before chipping off "new species"

from those long-observed in this country, and hitherto regarded as single species. While there is some useful truth in the following passage, attributed to the pen of the able physiologist Dr. Carpenter,—no great authority, by the bye, in questions about botanical species,—there is to my judgment quite as much of falseness and fallacy in it:—

"The error of the ordinary species-maker consists in basing his idea of a plant upon the form and aspect which it presents in a small number of specimens collected within a limited area; he makes no allowance for the effects of local peculiarities in temperature, humidity, soil, or exposure, unless he can absolutely trace the cause to the effect; and hence he attaches great importance to habit, stature, colour, hairiness, outline of leaves, period of flowering, &c., all of which characters are recognized by the more experienced botanist as pre-eminently liable to be affected by external conditions. A truly philosophical systematist like Dr. Hooker, on the other hand, bases his conclusions on the most extensive comparison he can make, not only of dried specimens in herbaria, but of living plants in all latitudes; and thus he comes to acquire a knowledge of the influence of external agencies, not only upon the general phenomena of vegetation, but also upon individual forms. It has been after this fashion that Mr. Bentham has studied the British Flora; with the result of annihilating about a fourth of its reputed species. And the more thoroughly and extensively this method is carried out, the more, it is now obvious, will it tend to simplify botanical science, by reducing the number of really distinct specific types, and clearing out from our systematic treatises the vast mass of rubbish with which they have been crowded by the unscrupulous

creativeness of species-mongers." (Medico-Chirurgical Review, April, 1860, page 385).

I am unaware upon what authority this Reviewer impliedly asserts that Mr. Bentham has studied the british flora upon "living plants in all latitudes"; nor should I be disposed to admit, if the assertion were really true, that a more correct special knowledge of the british flora could be attained by the study of foreign specimens chiefly, whether living or dried. I presume that Mr. Babington will demur to the alleged annihilation of one-fourth of the species described in his Manual, through the process supposed by the Reviewer to have proved so successful. Since publication of Mr. Bentham's serviceable Handbook, our Master in the opposed school of british botany has nevertheless seceded somewhat farther still from the views of the annihilators. In recently adopting four subordinate species, in the place of one british *Fumaria capreolata*, Mr. Babington thus writes:—

"Some excellent botanists will doubtless say that these plants are all forms of one variable species, and I suppose that no person is in a position to contradict them; for who knows what really constitutes a species amongst plants? It seems to me to be just as impossible to prove that the 'aggregate species,' as Mr. Watson terms them, are quite distinct from each other, as it is to show that the 'segregate species' are so." (Journal of the Linnean Society, Feb. 1860, p. 162.)

The argument of Mr. Babington is here more sound than the assertions of Dr. Carpenter; probably because the former was writing from actual knowledge, while the latter was reproducing only borrowed ideas not fully understood. The Physiologist fallaciously assumes that re-unions are necessarily more "really distinct specific types" than are severances. The Botanist rightly argues

that they are not proveably so. And if such "really distinct types" do exist, is it not as possible to err by confusing two of them together, as to err by unwarrantably severing one into two?

The name of *Darwin* and the term *species* are now so closely associated that it seems hardly a digression here, to express a hope that the impossibility admitted by Mr. Babington will fall under the notice of Mr. Darwin. It may be useful to him to know that so good an observer of plants holds it "impossible" to prove distinctness between botanical species of any grade, segregate or aggregate, eliminated or consolidated species.

A step farther in digression. It might be advantageous also for Professor Owen to ponder the same admission. In a hostile review of Mr. Darwin's lately published volume, which bears upon the 'Origin of Species' with unmistakeable indications of the Professor's heavy ordnance, we find quoted and enforced, by way of finishing salvo, the Linnean aphorism "*Classis et ordo* sapientiæ, *species* naturæ opus." But it is difficult to believe that the logical fallacy of that aphorism could escape the highly reasoning mind of an Owen. He translates the aphorism into this english form, "Classification is the task of science, but species the work of nature"; thus himself half-showing that the distinction is mainly verbal, resting on the double meaning attachable to the word 'opus.'

We expunge the verbal fallacy by writing, "Classes and orders are *figments* of science, species are *existences* in nature." But in this corrected form it is a mere assertion without proof. If we cannot prove distinctness of botanical species in nature, as Mr. Babington is not alone in believing, but can only group the individuals variously and conventionally in books and herbaria, it

would seem that our named species are as truly the task-work of science, as are any of the higher groups designated genera, orders, etc. Thus, it might be said, while we do know our species to be the task of science, we simply suppose them to be also and equally a work of nature. And what if hereafter, on better knowledge, we should find them to be a 'work of nature' only in the like sense that genera and orders are so?

Mr. Darwin might make a brief definition of systematic groups, which would be equally applicable in turn to each successive grade of classification; namely, 'Resembling individuals, ancestrally related.' By those who adopt his views on the origin of species and larger groups, it might be justly contended that each one of the successive grades or groups of science ought to be composed of individuals 'next of kin in equal degree,' as the lawyers might express it. This would necessitate a change from the Linnean contrast between species and the larger groups, into a true uniformity adapted to the degrees of consanguinity at each grade in the series; for example, '*Classis, ordo, genus, species, — sapientiæ congeries, naturæ congeneres.*'

Whether the theoretic views of Mr. Darwin will ever materially assist in changing present conventional *heaps* into natural *kindredships*, in making each technical group really consist of objects equally akin by descent, is a problem to be left for solution by another generation of botanists, trained under lights that have not assisted the present race of classifiers, so great in technicalities, so small in rationalities.

To revert more nearly to the objects sought by this Supplement. It has long been a wish on my part, to put on record in a printed form the *personal* authorities for

the individual facts of distribution, such as are indicated by the arabic figures and signs in the preceding lists, and elsewhere in the Cybele Britannica. The vast number and variety of those facts render it difficult to carry that wish into effect. Yet would the record be found highly useful to future botanical topographers, and would be a permanent acknowledgment of the valuable aid given to me by manuscript notes from many cotemporary botanists. It is supposed that such a record, made in a sufficiently ample and complete manner, would require 1500 pages of small print. It would consequently entail a large pecuniary loss, besides the sacrifice of much time. This is no novelty with me. Though far from rich, the peculiar line I have chosen will acquit me of writing from mercenary motives, and sufficiently show that the pursuit of science is a hobby, not a trade, in my practice of it. The botanical public is at best a small one; and my writings are suited only to a small section of that small public. Consequently, they are always printed at a considerable loss. The paying public, to trading or professional botanists, are medical students and gardeners. Shrewd men of the world will accordingly write down to these numerous classes; and they have every right to do so, if they wish to combine science and money-making. My own predilections are of a different kind; and in gratifying a special hobby I must accept the unprofitable consequences of my own preference.

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