

PROCEEDINGS
OF THE
Liverpool Botanical Society.

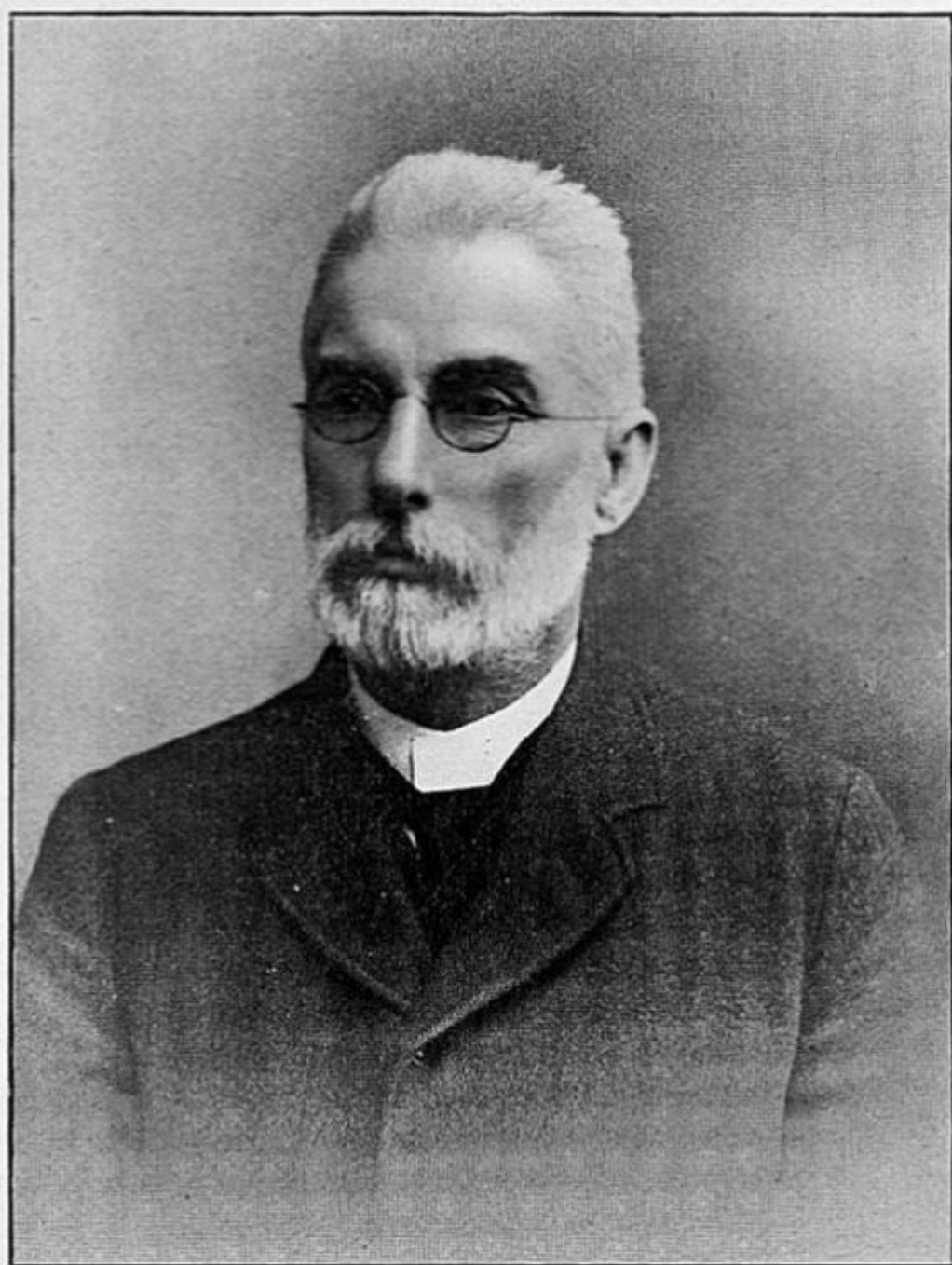


Fifth and Sixth Sessions.

FOR THE YEARS 1910 AND 1911.

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—
September, 1912.



W. T. HAYDON, F.L.S.

President, 1911-1912.

LIVERPOOL BOTANICAL SOCIETY.

LIST OF OFFICERS.

Fifth Session, 1910.

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W. G. TRAVIS.

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A. A. DALLMAN, F.C.S.

Hon. Assistant Secretary :

Miss E. McMILLAN, LL.A.

Sixth Session, 1911.

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Vice-Presidents :

Dr. J. W. ELLIS.

F. J. ROUTLEDGE.

Hon. Treasurer :

G. LOFTUS.

Hon. Librarians :

Miss F. MULCAHY.

H. J. WHELDON.

Hon. Curator :

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Miss E. M. COATES, LL.A.

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A. A. DALLMAN, F.C.S.

Hon. Assistant Secretary :

Miss E. McMILLAN, LL.A.

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PROCEEDINGS

OF THE

Liverpool Botanical Society

(Fifth Session, 1910).

REPORT FOR THE YEAR 1910.

In reviewing the progress of the Society during the past session, it is evident that there are several matters in which improvement or reform is desirable, but with this qualification, it may be said that the close of 1910 again finds the Society in a fairly satisfactory condition.

The number of members shows an apparent decrease on the assumed membership of the previous session. It was found, early in the year, that the Society's list included the names of a number of persons who had contributed no subscription for the preceding session. A very exhaustive enquiry was instituted by your Council, and in some cases such arrears were recovered. Certain members appeared to have removed without notifying their change of address and could not be traced, and consequently their names have been struck off the roll. Several persons stated that they had severed their connection with the Society, although no written notice of resignation had been received in accordance with the Rule, and in other cases no notices could be traced. In a few instances no information has been received, despite repeated applications. After individual consideration of each case, your Council ordered all such names to be removed from the roll. It has been thought advisable to give all these cases the benefit of certain slight doubt, and so, while removing these from the list, your Council have refrained from publishing the names and addresses of such defaulters. There has been an accession of twelve new members during the year, and the number on the roll at the close of the session is 138.

We record with regret the death of Dr. James Campbell Brown, who passed away suddenly on March 14th. Although widely known on account of his chemical attainments, and from the eminent position of Professor of Chemistry which he occupied in Liverpool University, there is little doubt that Dr. Campbell Brown would have attained equal fame as a botanist had he devoted

himself to this branch of science. He was awarded a gold medal for botany at Aberdeen University at an early age, and retained a life-long interest in the subject. This was reflected to some extent in the large and varied collection of botanical works which occupied an honoured place in his library. His leisure he delighted to spend at his Scottish retreat, Wedderhill, Fedderesso, where he had one of the most beautiful rockeries in Great Britain. This was a source of great pride to the Professor, and contained many rare and interesting floral treasures. Here, too, spare time was largely occupied with microscopical research work.

Intimation was received early in the year that the Society had been *affiliated* to the British Association for the Advancement of Science, under the scheme of corresponding societies connected with that body. It may be regarded as some testimony to the work of this young society that we should be placed in the highest grade of the two sections into which such corresponding societies are divided. A Conference of Corresponding Societies was held at Sheffield in September on the occasion of the meeting of the British Association in that city. Professor R. H. Yapp, M.A., F.L.S., was appointed to represent this Society, and kindly acted as delegate.

Eleven indoor meetings were held during the session as follows:—

- January 10th— Annual Meeting.
- February 19th— Annual Soirée and Conversazione. Reception by the PRESIDENT and Mrs. WHELDON. Concert. Exhibitions of open-air "February Flowers," coloured drawings of Fungi, and specimens of plants of economic interest.
- March 14th— Lantern Lecture, "Nature Among the Sand Dunes" (illustrated by about 100 slides by the Lecturer), by A. A. DALLMAN, F.C.S.
- April 11th— Held at the Picton Library, by kind permission of the Library, Museum, and Arts Committee of the Corporation of Liverpool. Exhibition of Botanical Books. Paper, "Notes on Botanical Bibliography," by A. A. DALLMAN, F.C.S.
- May 9th— Paper, "A Few Notes on Radnorshire Plants," by Miss F. M. THOMAS.
- June 13th— Papers, "A Whitsuntide Mycological Holiday," by Dr. J. W. ELLIS. "Methods of Study of Mosses and Hepaticæ," by W. G. TRAVIS. "A Study for Town Botanists," by H. J. WHELDON.
- July 11th— Exhibition and Discussion of Specimens.
- September 12th—Papers, "A Glance at the June Flora of the Alps," by Miss E. M. PORTER.
"An Experimental Investigation of Reciprocal Cross Pollination of *Primula veris* and *P. vulgaris*," by A. A. DALLMAN, F.C.S.
- October 10th— Mycological Exhibition.
- November 14th—Paper, "A Note on the Basis of Classification," by Dr. W. A. LEE, M.A.
- December 12th—Lantern Lecture, "A Résumé of the Field Meetings of 1910," by A. A. DALLMAN, F.C.S.

A consideration of the foregoing programme shows that, with few exceptions, the meetings of the past session have been almost entirely concerned with systematic botany and plant collecting.

Although it is perhaps inevitable that such subjects should be accorded a prominent place, and while in no way decrying the value of much of this work, your Council would wish to see a development and better representation of other aspects of the science. The remedy largely rests with the members themselves. If those who are workers or interested in such other subjects as physiology, histology, ecology, palaeontology, &c., would take a more active part in the Society's work, this undesirable disproportion would soon cease to exist.

Eight Field Meetings were held during the year, as follows:—

	LOCALITY.	ATTENDANCE.
May 7th	Rossett and Marford	32
May 28th	Whalley	4
June 11th	Overton-on-Dee and Erbistock	23
June 27th	Freshfield and Formby	9
July 9th	Leasowe	41
August 20th	Stanney Wood and Backford	11
September 3rd	Llanddulas	15
October 8th	Eastham Woods	23
Average Attendance ...		19.9

Seven Council Meetings were held during the year.

In a Society such as our own, in which the trifling subscription barely covers working expenses, there is always a risk of progress being retarded by this reason. Your Council would wish to carry out in the near future three undertakings which are intimately correlated with the progress of the Society. The Library calls for development and increased support, while the further publication of *Transactions* is necessary, having regard to the material which has now accumulated. It must also be remembered that the standing of any society such as our own is largely determined by the nature and originality of its scientific publications. Our *Proceedings* are necessarily chiefly concerned with the domestic aspect of the Society's operations, hence the issue of *Transactions*—which are essentially for the publication of original scientific contributions—is of paramount importance. The inauguration by this Society of some scheme of prizes and certificates in connection with Botany and Nature Study in schools, has been proposed, and is in contemplation. Your Council consider that these proposed undertakings call for the sympathy and active support of all members, and with this co-operation it is hoped that such schemes may be carried into practice at an early date.

The Council again wish to place on record their appreciation of the continued hospitality and material assistance of Professor R. J. Harvey Gibson and the University authorities in regard to the use of the Hartley Botanical Laboratories and accompanying facilities. A further acknowledgment is also due to the Library, Museum and Arts Committee of the Liverpool Corporation for kind permission to hold the April meeting at the Picton Library. We are also indebted to Mr. G. T. Shaw (the Chief Librarian) and his staff for the excellent exhibition of botanical books which was specially

arranged for this occasion. It is to be regretted that this meeting was so poorly attended.

Three hundred and one specimens—exclusive of material dealt with by the Flora Committee—have been forwarded for examination and identification, and a considerable number of queries have been answered. Others in addition were also dealt with by Messrs. J. A. and H. J. Wheldon, who kindly attended to such during August and September, in the absence of the Hon. Secretary.

SOUTH LANCASHIRE FLORA.

In presenting their Fourth Annual Report, the South Lancashire Flora Committee has pleasure in stating that substantial progress has been made during 1910, and the work accomplished during the year forms an important step towards the completion of the flora.

Phanerogamia.—The outstanding feature of the work in connection with the flowering plants is that considerable attention has been devoted to the critical genera, and your Committee here gratefully acknowledge their indebtedness to Mr. A. Bennett, F.L.S., Major A. H. Wolley-Dod, Mr. G. C. Druce, F.L.S., Mr. J. Groves, Rev. E. F. Linton, and Rev. W. Moyle-Rogers, for their kind aid in examining and determining specimens submitted to them. The most interesting addition to the list of flowering-plants recorded during the year is *Cornus suecica*. Apart from this, and several species of Rubi and Roses hitherto unrecorded for South Lancashire, nothing of particular importance has been discovered.

The fact is that the phanerogamic flora of the Vice-County has been so long under investigation that few novelties can now be expected. Whilst the additions to the list of native flowering-plants naturally continue to be few, our records of the alien plants which form the waifs and strays of our vegetation steadily increase in number. Very few, however, of these alien species gain a permanent foothold in our area.

Cryptogamia.—Additions to the moss flora have been scanty, *Ceratodon conicus* being, perhaps, the most noteworthy. The discovery of *Amblyodon dealbatus* on Boulsworth Hill is also worth mentioning, as extending the range in our Vice-County of one of our rare mosses hitherto only known in South Lancashire as a littoral plant. Three additional species of hepatics have been found during the year, and some promising material yet remains to be worked out. The number of lichens known has been increased by no less than 24 species, this result being largely due to a close investigation of the limestone area in the Ribble valley.

All sections of the Fungi have been under investigation, and we have to record the addition of 85 species to our lists. It is this section of the flora which now calls for most attention. Owing to the sporadic occurrence of many species of fungi, numerous keen

collectors in various districts are really necessary to enable the fungus flora to be effectively investigated, and your Committee will be glad to hear from any local botanists interested in mycology who would care to assist in the work.

Your Committee desire to take this opportunity of expressing their cordial thanks to the following ladies and gentlemen for the records, specimens, or information contributed by them:—Miss M. B. Barr, Rev. C. E. Fynes-Clinton, Mr. G. H. Hopley, Mr. J. C. Healey, Mr. J. E. McDonald, Mr. H. Murray, Miss E. Reid, LL.A., Mr. C. R. Ritchings, Mr. H. Robinson, Mr. W. H. Stansfield, Rev. M. Toohey, S.J., Mr. W. Watson, Mr. W. H. Western, and Mr. A. Wilson, F.L.S.

In conclusion, it may be recalled that four years have now elapsed since the preparation of a Flora of South Lancashire was undertaken by your Committee, and during that period the work has been steadily carried on, as recorded in the Annual Reports. Considering the amount of botanical work previously accomplished in the Vice-County, four years may appear to be an inordinate length of time to have been engaged on the work without any indication of its conclusion having yet been given. It has, however, from the outset, been the wish of your Committee not to be satisfied with the production of a hastily prepared flora, based merely on the materials left by former workers, but to produce a flora which shall be worthy of the Liverpool Botanical Society. Recently, a careful survey has been made of the results achieved, and it is satisfactory to find that the work has now reached a stage at which your Committee are warranted in considering the second portion of their work, namely, the publication.

LIVERPOOL BOTANICAL SOCIETY.

Dr. *Balance Sheet for the Year ended December 31st, 1910.* **Cr.**

RECEIPTS.		EXPENDITURE.	
	£ s. d.		£ s. d.
To Balance in hand from 1909	1 6 3	By Honoraria (University)	1 2 6
" 9 Subscriptions for 1909, at 5/-	2 5 0	" Printing, Stationery, &c.	8 7 1
" 107 " 1910, at 5/-	26 15 0	" Cost of "Proceedings," 1908-9	16 3 6
" 3 " 1910, at 2/6	0 7 6	" Postage on "	1 7 2
" 4 " 1911, at 5/-	1 0 0	" Cost of Soirée	8 2 6
" Soirée Ticket (1909)	0 1 6	" Expenses of Hon. Secretary	2 12 4
" Sale of "Proceedings"	0 1 8	" Hon. Assistant Secretary	3 4 4
" Donation—Mrs. Harlin	0 5 0	" Hon. Treasurer	0 18 7
" Receipts from Soirée—		" Secretary, South Lincs.	
78 Tickets at 1/6 each	5 17 0	" Flora Committee	1 3 0
Postage	0 0 1	" Mr. H. J. Wheldon	
Donation—Mr. W. G. Travis	0 2 0	" (Fungus Flora)	0 2 9
" Debit Balance	5 2 9		
	<u>£43 3 9</u>		<u>£43 3 9</u>

LIBRARY ACCOUNT.

	£ s. d.		£ s. d.
Balance brought forward from 1909	1 6 10	Balance carried forward to 1911	1 8 10
Donations received during 1910	0 2 0		
	<u>£1 8 10</u>		<u>£1 8 10</u>

Audited and found correct,

T. APPLEY,
MANAGER.

GEORGE LUTHER, Hon. Treasurer,
Auditors.

GENERAL MEETINGS.

MONDAY, JANUARY 10th, 1910.

ANNUAL MEETING.

The Annual Meeting was held at the Hartley Botanical Laboratories, Liverpool University, on Monday, January 10th, 1910, at 7.30 p.m., Mr. J. A. Wheldon, F.L.S., President, in the Chair.

The President briefly referred to the loss the Society had sustained by the death of Mr. John J. Ogle.

The Honorary Secretary submitted the Council's Annual Report for the past year. On the proposition of the Rev. S. Gasking, seconded by Mr. G. Loftus, the Report was unanimously adopted.

The Honorary Treasurer then communicated his Financial Statement for the past year. After some discussion, the motion of Mr. W. W. Wilson, seconded by Mr. G. S. Turner, "That the Honorary Treasurer's Financial Statement be adopted," was then carried.

The Hon. Librarian then presented her Report, which was adopted on the proposition of the Rev. S. Gasking, seconded by Mr. F. J. Routledge.

On the proposition of Mr. G. Pryce, seconded by Mr. G. Loftus, a cordial vote of thanks was passed to the retiring Officers and Council, in appreciation of their services during the past year.

Mr. W. G. Travis moved, and Mr. H. J. Wheldon seconded, "That the attendances of Officers and Members of Council at the Council Meetings of the past session be read." In the ensuing discussion several members expressed strong disapproval of the proposition, which was carried by a small majority, many members refraining from voting.

Miss E. Howlett and Mr. W. W. Wilson having been appointed Scrutators, the ballot was then taken, with the following result:—

President: J. A. Wheldon, F.L.S.

Vice-Presidents: Dr. J. W. Ellis, F.E.S.; W. G. Travis.

Hon. Treasurer: G. Loftus.

Hon. Secretary: A. A. Dallman, F.C.S.

Council: Miss M. B. Barr, W. Chesher, M.A., Miss E. M. Coates, LL.A., W. O. Delaney, Prof. R. J. Harvey Gibson, M.A., F.L.S., Rev. S. Gasking, B.A., F.L.S., Dr. W. A. Lee, M.A., F. J. Routledge, Miss S. J. Shoobridge, C. B. Travis, H. J. Wheldon, Miss M. H. Wood.

The proposal of Mrs. Wheldon "To consider the desirability of amending Rule X" was next considered. In accordance with this

Rule, the Ordinary Meetings are always held on the second Monday of each month. It was suggested that it might be advantageous to amend the Rule so that the Ordinary Meetings should not be confined to that night, but might be held, say, on the various days of that week, in rotation, from month to month. After some discussion, the following amendment of the Rule was agreed to, upon the proposition of Dr. W. A. Lee, seconded by Mr. A. A. Dallman:—"The Meetings shall be held on the second Monday in each month, or on such other day of that week as may be determined by the Council, and also on such other occasions as may be arranged."

The Honorary Secretary suggested an additional rule whereby "A Committee shall be responsible for the publications of the Society. Such Publications Committee shall consist of the President, Honorary Treasurer, Honorary Secretary, and Honorary Librarian." After some considerable discussion, and a series of amendments, it was finally resolved:—"That a Publications Committee shall be elected annually by the Council, under whose direction it shall work and to whom it shall be responsible. Such Committee shall consist of four Members of the Society, and the President, Honorary Treasurer, and Honorary Secretary, *ex-officio*."

SATURDAY, FEBRUARY 19th, 1910.

ANNUAL SOIREE.

The Annual Soirée was held at the Palatine Café, Liverpool, on Saturday, February 19th, 1910. Amongst the exhibits was a series of water-colour drawings of British Fungi by Dr. J. W. Ellis and Mr. H. J. Wheldon; herbarium examples of British Phanerogamia, shown by the President; and living examples of various plants of economic interest from the Liverpool Botanical Gardens, and contributed by Mr. W. Hackett.

A feature which attracted much attention was a large and unique exhibit of "February Flowers." This included fresh flowering examples of open-air plants only, British and cultivated, greenhouse productions being excluded. Altogether eighty-two different species were on view and in flower, this representing an increase of eighteen on the total of the corresponding exhibition of the previous year's soirée. These were contributed by Miss E. Bray, Miss Agnes Fry, Miss E. G. G. Hill, Miss N. L. Peacock, Mr. R. H. Day, Mr. Hillman, Mr. J. A. Wheldon, and the Hon. Secretary.

The following is a complete list of the species represented:—*Helleborus viridis*, *H. niger*, *H. odoratus*, *Ranunculus Ficaria*, *Eranthis hyemalis*, *Anemone Hepatica*, *A. hortensis*, *Berberis japonica*, *B. nervosa*, *B. aquifolia*, *B. Darwini*, *Chimonanthus fragrans*, *Bursa Bursa-pastoris*, *Cardamine hirsuta*, *Cheiranthus Cheiri*, *Iberis* sp., *Ionopsidium acaule*, *Arabis albida*, *Alyssum saxatile*, *Erophila verna*, *Acer platanoides*, *Stellaria media*,

Ulex europæus, *Pyrus japonica*, *Prunus Amygdalus*, *P. Lauro-Cerasus*, *Potentilla Fragariastrum*, *Viburnum Tinus*, *Cornus mascula*, *Ancuba japonica*, *Garrya elliptica*, *Skimmia oblata*, *Lonicera fragrantissima*, *Saxifraga Elizabethae*, *Chrysosplenium alternifolium*, *Nuttalia cerasiformis*, *Ribes sanguineum*, *Viola odorata*, *V. altaica*, *Daphne pontica*, *D. Mezereum*, *Jasminum nudiflorum*, *Olearia stellulata*, *Diplopappus chrysophyllus*, *Bellis perennis*, *Calendula officinale*, *Petasites albus*, *P. fragrans*, *Tussilago Farfara*, *Senecio vulgaris*, *Taraxacum officinale*, *Erica carnea*, *E. codonodes*, *Rhododendron praecox*, *R. sp.*, *Vinca minor*, *Myosotis cæspitosa*, *Primula veris*, *P. vulgaris*, *Cyclamen Coum*, *Veronica agrestis*, *V. Traversii*, *V. hederæfolia*, *Lamium album*, *L. purpureum*, *Ulmus campestris*, *Mercurialis perennis*, *Euphorbia Peplus*, *Hedera Helix*, *Corylus Avellana*, *Salix purpurea*, *S. cinerea*, *S. Caprea*, *Taxus baccata*, *Crocus aureus*, *C. vernus*, *C. sp.*, *Narcissus jonquilla*, *Galanthus nivalis*, *Scilla bifolia*, *Muscari botryoides*, *Poa annua*.

After a reception by the President and Mrs. Wheldon, and a short address by Mr. Wheldon, a concert was contributed by various members and friends. The various items of this programme were rendered by Mrs. J. S. Davies, Miss Annie Hall, Miss M. Kennison, Miss Westcott, Miss Ada Whitehead, Mr. J. A. Kennison (Accompanist), Mr. E. W. Davenport, Mr. F. Evans and Mr. F. J. Routledge, to whom the thanks of the Society are due.

As in the previous years' Soirées, the scientific aspect of the Society's operations was unobtrusive, the only suggestion thereof being in the aforementioned attractive exhibits, and in certain "botanical" competitions. The best thanks of the Society are due to the members of the Soirée Committee—The President and Mrs. Wheldon, Miss E. M. Coates, Miss D. Delaney, Miss E. McMillan, Miss F. Mulcahy, Mr. and Mrs. Routledge, Miss S. J. Shoobridge, Miss E. Warhurst, and Miss M. H. Wood—who were responsible for the arrangements, and who contributed largely to the success of the evening.

MONDAY, MARCH 14th, 1910.

Mr. J. A. Wheldon, F.L.S., President, in the Chair.

Miss L. Donald, Miss M. A. Nugent, Miss K. Williams, Mr. H. Leaton Edwards, Dr. E. Harries, and Mr. H. S. Marsh were elected Members.

The PRESIDENT announced that Members would be pleased to hear that intimation had been received from the British Association for the Advancement of Science, that the Liverpool Botanical Society had been affiliated to that body.

Miss E. G. G. HILL and Miss N. L. PEACOCK contributed some flowering examples of *Helleborus viridis* from Somerset.

Mr. W. G. TRAVIS shewed some examples of the fungus *Lycoperdon pyriforme* from the Formby sandhills.

The PRESIDENT shewed specimens of a lichen which he had kept under observation for some time on the sandhills at Freshfield. Examples had been submitted to Miss Annie Lorrain Smith, of the British Museum, who reported that the plant was new to science and was a member of the genus *Arthopyrenia*. This new plant had received the name of *Arthopyrenia areniseda*.

Mr. A. A. DALLMAN shewed a lantern slide of a plant which had been found on the roadside between Gateacre and Childwall by a pupil (Miss Doris Mullineaux) at the Holt School, Liverpool, and submitted to him for identification. This proved to be the White Butterbur (*Petasites albus*). On enquiry and examination, a large patch was found naturalised in this locality, where it appears to have grown for a considerable time. There is no previous notice of the occurrence of this species hereabouts in any of the various Liverpool floras, and this record appears to be an addition to the flora of South Lancashire. The White Butterbur is not truly indigenous, having been originally introduced into Britain from Southern Europe, but it is now more or less naturalised in certain localities. How it became introduced in the present station is difficult of explanation, as the plant does not appear to be grown in any garden in the vicinity, whence it might have escaped. This same species is also found in a very similar situation on the roadside near Mostyn in Flintshire, where it flowers profusely in early March. This is probably the only other station for *Petasites albus* in this part of the country, and its origin here is also involved in mystery.

The lecture originally fixed for this meeting by Mr. W. H. White, and entitled "Some Members of the Order Liliaceae with special reference to their Anatomy," being unavoidably postponed, the Hon. Secretary delivered a lecture on "Nature among the Sand Dunes," which was illustrated by about one hundred lantern slides from photographs by the lecturer.

MONDAY, APRIL 11th, 1910.

By kind permission of the Library, Museum and Arts Committee of the Corporation of Liverpool, the April meeting was held at the Picton Library, William Brown Street, Liverpool. Dr. J. W. Ellis, Vice-President, was in the Chair.

Miss N. L. PEACOCK contributed some flowering examples of *Arabis stricta*, the British Rock Cress, one of the rarest of British plants. This species is of peculiarly restricted range, being in this country hitherto confined to two or three stations within a limited area, including St. Vincent's Rocks on the Avon near Bristol. This is the classic station for the Bristol Rock Cress, which has so far only been observed in two British counties, Somerset and Gloucester, which are separated by the Avon at this point. As a

result of wholesale uprooting and vandalism, *Arabis stricta* has become all but extinct in the historical situation. Miss Peacock reported that Miss E. G. G. Hill and herself had recently had the pleasure and good fortune of discovering this rarity in quite a new station in one of the western counties, where it was growing and flowering and fruiting in tolerable profusion.

The Chief Librarian (Mr. G. T. Shaw) having welcomed the Members on behalf of the Library Committee, the Hon. Secretary offered a few remarks on some of the more noteworthy botanical works which are included in the Picton Library. On the proposition of Dr. J. W. Ellis, seconded by Mr. G. S. Turner, a vote of thanks was passed to Mr. Shaw and the Library authorities for their kindness. The remainder of the evening was devoted to an inspection of the many rare and interesting botanical books, of which a large and representative collection were on view by courtesy of the Chief Librarian.

MONDAY, MAY 9th, 1910.

Mr. J. A. Wheldon, F.L.S., President, in the Chair.

Miss B. O'Loughlin was elected a Member.

Miss E. BRAY sent some examples of *Puccinia lapsanae*, Schultz, on the foliage of the Nipplewort (*Lapsana communis*), and also some fungus-infested leaves of *Allium ursinum*.

Miss E. G. G. HILL contributed some living plants of Mousetail (*Myosurus minimus*) from Portbury, Somerset.

Miss N. L. PEACOCK forwarded some photographs of the Bristol Rock Cress (*Arabis Stricta*), which was shewn growing in crevices of limestone rock in a new station, where it had recently been discovered by Miss E. G. G. Hill and herself.

Dr. J. W. ELLIS offered some remarks on certain fungi which had been observed at the recent field meeting at Rossett and Marford. The more noteworthy species were *Cæoma mercurialis* (on Dog's Mercury), *Puccinia malvacearum*, *Uromyces poae* (Aecidia on *Ranunculus Ficaria* and *R. repens*), *Morchella asculenta*, *Tricholoma gambosum*, and *Psilocybe spadicea*.

Mr. W. R. SIBBALD exhibited a gall-infected branch of Silver Fir (*Abies pectinata*, D. C.) from Kirkcudbrightshire.

Mr. W. G. TRAVIS announced that a lichen which he had observed on rocks on the coast at Dingle Point near Liverpool had been submitted to a competent authority and identified as *Lecanora atrynea*, Ach., a species apparently hitherto unobserved in this portion of the county.

The PRESIDENT shewed some fruiting examples of the elegant moss *Splachnum sphæricum* which he had succeeded in cultivating in a greenhouse.

Mr. W. G. TRAVIS exhibited some living specimens of two hepaticae, *Anthoceros laevis* and *Riccia Crozalsii*, Levier, the latter from the only known British station near Barmouth, where it was found in 1908.

Mr. H. J. WHELDON exhibited some drawings of fungi.

The feature of the evening was a paper by Miss F. M. Thomas, entitled "A Few Notes on Radnorshire Plants," which was of special value from the fact that the area in question has received all too little attention from the systematic botanist.

MONDAY, JUNE 13th, 1910.

Mr. J. A. Wheldon, F.L.S., President, in the Chair.

Miss E. Shatwell, B.Sc., was elected a Member.

Miss E. BRAY forwarded a collection of fresh flowering plants from the Sussex Downs and Shingles near Eastbourne. Among the more noteworthy species were the Bee Orchis (*Ophrys apifera*), Scorched Orchis (*Orchis ustulata*), Frog Orchis and Butterfly Orchis (*Habenaria viridis* and *H. bifolia*), *Echium vulgare*, *Spiraea Filipendula*, *Vicia tetrasperma*, *Ranunculus hirsutus*, *Trifolium scabrum* and *T. striatum*, *Medicago denticulata*, and *Hippocrepis comosa*.

Miss N. L. PEACOCK contributed some flowering examples of Chives (*Allium Schœnoprasum*) from the south-west of England.

Miss E. M. PORTER sent an interesting selection of fresh Swiss Alpine plants from Vermala, Valais. Among the many species represented were *Biscutella laevigata*, *Globularia nudicaulis*, *Gnaphalium Leontopodium* (Edelweiss), *Gentiana acaulis* and *G. verna*, *Hippocrepis comosa*, *Homogyne alpina*, *Pinguicula alpina*, *Primula farinosa*, *Linaria alpina*, *Polygala Chamæbuxus*, *Trollius europæa* (Globe Flower), and *Soldanella alpina*.

Dr. J. W. ELLIS shewed some examples of the moss *Tetraplodon mnioides* from Delamere, Cheshire, and also gave some account of various fungi which had been observed at the recent field meeting at Overton and Erbistock. Dr. Ellis and Mr. H. J. Wheldon also exhibited some coloured illustrations of fungi.

The PRESIDENT called attention to a peculiar form of the Ribwort Plantain (*Plantago lanceolata*), which was observed at the field meeting at Cwm the previous July. This plant was growing in quantity amongst the turf on the summit of Moel Hiraddug. In appearance it was very different from the common plant, being of dwarf habit and having small globular few flowered spikes. The leaves were also smaller and narrower than in the ordinary plant. It was thought at the time that this distinct type might probably be the variety *sphaerostachya*, Rœhl. Specimens had been submitted to the Botanical Exchange Club, and the identification had proved correct. Mr. Wheldon thought that this variety must be regarded as a xerophytic modification which might prove to be extensively distributed on the limestone hills in North Wales.

The following papers were read:—

1. "A Whitsuntide Mycological Holiday," by Dr. J. W. Ellis.
2. "Methods of Study of Mosses and Hepatics," by W. G. Travis.
3. "A Study for Town Botanists," by Harold J. Wheldon.

MONDAY, JULY 11th, 1910.

In the absence of the President and Vice-Presidents, Mr. W. R. Sibbald was elected to the Chair.

This meeting was devoted to the exhibition and discussion of specimens.

Miss E. BRAY sent an interesting collection of fresh flowering examples of aquatic vegetation from Horse Eye Marsh, near Hailsham, Sussex, and from the marshland near Eastbourne.

Miss L. R. COOKE showed some examples of *Peziza repanda*, Wahl., which was found growing on a wall at Rock Ferry, Cheshire.

Miss L. DONALD exhibited some plants which she had collected between Maryport and Silloth, Cumberland. These included *Echium vulgare* (Viper's Bugloos), *Drosera rotundifolia*, and the Wintergreen (*Pyrola rotundifolia*).

Miss E. G. G. HILL sent a flowering example of the Purple Gromwell (*Lithospermum purpuro-cæruleum*), from Somerset.

Miss N. L. PEACOCK contributed a large collection of Phanerogamia from the neighbourhood of Portbury, Somerset. Among the many rare and interesting species represented were *Anchusa officinalis*, *Thlaspi arvense*, *Raphanus maritimus*, *Caucalis latifolia* and *C. daucoides*, *Bupleurum rotundifolium*, Sainfoin (*Onobrychis sativa*), Milk Thistle (*Silybum Marianum*), *Centaurea Calcitrapa*, *Coronilla varia*, Blue Pimpernel (*Anagallis cærulea*), and *Diplotaxis muralis*. Miss Peacock also sent specimens of the following from St. Vincent's Rocks, Bristol:—Fiddle Dock (*Rumex pulcher*), *Bromus madritensis*, *Orobanche Hederæ*, *Calamintha Acinos*, *Allium oleraceum*, and Wild Madder (*Rubia peregrina*).

Miss E. PORTER showed an extensive and interesting collection of dried specimens illustrative of the flora of Valais, Switzerland.

Dr. W. A. LEE, M.A., exhibited an example of *Hippuris vulgaris* (Mare's Tail) from Bidston Marsh, Cheshire.

Mr. HAROLD J. WHELDON remarked on the occurrence of the Dwarf Cornel (*Cornus suecica*) on the moorland in the neighbourhood of Darwen, South Lancashire. This local species, hitherto unrecorded for the county, appears to have grown in the present station for many years. It was suggested that the stocking of the moorland with Scotch grouse at some time or another may have resulted in the introduction of the plant here and consequent extension of its range.

Mr. A. A. DALLMAN, F.C.S., showed a photograph of a peculiar teratological fruit of the tomato.

MONDAY, SEPTEMBER 12th, 1910.

Mr. J. A. Wheldon, F.L.S., President, in the Chair.

Miss Goff was elected a Member.

Dr. J. W. ELLIS exhibited specimens of various British Phanerogamia.

Mr. G. H. HOPLEY forwarded examples of *Eriophorum latifolium* and *E. angustifolium*.

Mr. H. J. WHELDON exhibited a photograph of *Nyctalis parasitica*. This interesting parasitic fungus had been found on *Russula fætens* at Leck, West Lancashire, by Mr. J. A. Wheldon.

Mr. H. J. WHELDON announced the receipt of the following fungi from various Members of the Society:—

(a) From Leyland, from the Rev. C. E. Fynes Clinton:—*Paxillus involutus*, infected with the mould *Sepedonium chrysospermum*; *Lactarius quietus*, *Humaria granulata*, and *Ascobolus furfuraceus*.

(b) From Chatburn, collected by Mr. W. G. Travis:—*Mycena alcalina*, *Lactarius rufus*, *Hygrophorus calyptraeformis*, *H. coccineus*, *H. pratensis*, *Leptonia lazulina*, *L. incana*, and *L. chalybea*.

(c) Collected at The Rough, near Ormskirk, by Mr. H. J. Wheldon:—*Boletus scaber*, *B. versicolor*, *Russula nigricans*, *R. ochroleuca*, *R. fragilis*, *Collybia maculata* (and the variety *immaculata*), *Fomes ulmarius*, *F. applanatus*, *Bulgaria inquinans*, *Lachnea scutellata*, and *Scleroderma vulgare*.

Miss E. M. PORTER contributed a paper entitled "A Glance at the June Flora of the Alps."

MONDAY, OCTOBER 10th, 1910.

Mr. J. A. Wheldon, F.L.S., President, in the Chair.

This meeting was chiefly devoted to the exhibition, discussion and identification of the various fungi collected at the Society's field meeting at Eastham on the previous Saturday.

Miss E. BRAY forwarded a number of living specimens of various species of Labiatae.

Dr. C. T. GREEN, F.L.S., contributed a living specimen of the entomogenous fungus *Cordyceps militaris*, which commonly infests certain larvae and pupae.

The Rev. C. E. FYNES CLINTON exhibited sketches and specimens of fungi from the Leyland district.

Dr. J. W. ELLIS and Mr. H. J. WHELDON exhibited a number of water-colour sketches of fungi.

Mr. G. PRICE contributed a number of hepaticae from Derbyshire, and also some flowering examples of Barberry (*Arctostaphylos Uva-Ursi*) from the Hayfield district.

Mr. A. WILSON, F.L.S., sent a specimen of *Urceolaria gypsacea*, a rare lichen, new to Lancashire, from Ease Fell, West Lancashire.

Mr. A. A. DALLMAN, F.C.S., forwarded examples of *Trametes suaveolens* from Cheshire.

MONDAY, NOVEMBER 14th, 1910.

Mr. J. A. Wheldon, F.L.S., President, in the Chair.

Mr. D. K. McBeath was elected a Member of the Society, subject to subsequent confirmation by the Council.

Miss E. BRAY contributed some flowering examples of Winter Heliotrope (*Petasites fragrans*), from Sussex.

Miss F. M. THOMAS sent an example of *Plantago arenaria*. This Hungarian species was found on the Dee Cop below Chester. The plant finds no mention in Lord de Tabley's Cheshire Flora, and is probably an addition to the alien vegetation of the county.

Dr. J. W. ELLIS exhibited some water-colour drawings of British fungi.

The PRESIDENT showed an example of *Plantago macrorhiza*, from the vicinity of Blackpool.

Mr. G. LOFTUS exhibited a small collection of photographic studies of British flowering plants.

Mr. A. A. DALLMAN, F.C.S., exhibited some microscopical preparations showing trypanosomes of malaria and sleeping sickness.

Miss E. McMILLAN, LL.A., called attention to some recent investigations, from which it appears that trypanosomes may occur in plants. The work of independent observers appears to show that these organisms may be present in at least one species of *Euphorbia*.

Mr. W. G. TRAVIS announced the discovery of a lichen found growing on damp sand at Freshfield, which proved to be *Lecidea squamulosa*, an addition to the county list.

Mr. H. J. WHELDON offered some remarks on two new British Pyrenomycetes.

The HON. SECRETARY gave some account of the recent work and observations of Prof. Adrian Brown on the selective permeability of the seed coat of a variety of *Hordeum vulgare*.

The feature of the evening was a very able paper by Dr. W. A. Lee, entitled "A Note on the Basis of Classification." This was followed by an interesting discussion, in which the President, Dr. J. W. Ellis, and Messrs. Dallman and Travis joined, and to which Dr. Lee replied.

MONDAY, DECEMBER 12th, 1910.

Mr. J. A. Wheldon, F.L.S., President, in the Chair.

Mr. C. H. Smith and Mr. Charles Waterfall were elected Members.

Miss M. A. Nugent and Mr. T. Appleby were appointed Auditors.

Dr. J. W. ELLIS brought some specimens of the fungus *Claudopus variabilis*, Pers., from West Kirby, for distribution. This is a member of the Rhodosporeae section of Agaricinae, and occurs on dead stems. The pileus is at first resupinate, but gradually bends over until the lamellae are freely exposed to the air. Dr. Ellis also exhibited some water-colour drawings illustrative of somewhat aberrant forms—due to excessive moisture—of the fungi *Armillaria ramantacea*, *Hygrophorus hypothejus*, and *Psathyra corrugis*.

The HON. SECRETARY contributed "A Résumé of the Field Meetings of 1910," which was illustrated by specimens and original slides.

A RÉSUMÉ OF THE FIELD MEETINGS OF 1910.

BY THE HONORARY SECRETARY.

Somehow, I often fancy that naturalists—and perhaps botanists more especially—derive an added interest and happiness from life, to which an outside observer is quite immune and unable to appreciate; and I think it has ever been so. Even in the writings of ancient scribes and philosophers one may find occasional more or less vague references to this fact, which is perhaps more aptly and subtly expressed through the medium of the delicate instinct of the poet. The true nature lover is to some extent independent of weather and time, and so at this season one is wont to indulge in happy recollections of experiences, results, and rambles of the past, mingled with pleasant anticipations of experiment, investigation, and excursions in the future.

The first field meeting of the year was held at Rossett and Marford, on May 7th, under the leadership of Dr. J. W. Ellis. The district in question has long been a favourite resort with naturalists, and is one of the few localities within easy reach of Liverpool which possesses an early flora. Although situated just over the Cheshire border, for most of the district—with the exception of an anomalous isolated fragment of Flint—is a portion of Denbighshire, there are few indications that this is a part of Wales. Here the English accent can be distinctly recognised, and the place wears quite an English aspect. The Cambrian element is not entirely lacking, however, as the name itself bears testimony. Anyone accustomed to the study of English place-names might be

at a loss to account for the etymology of Rossett. The name is said to be derived from the Welsh *rhos*, a moor, and is a corrupt form of the plural *rhosydd*, literally, the moors. It is interesting to note that the district is frequently referred to locally as "the Rossett," and that these two significant place-names are practically all that now linger to testify to the former character of the country hereabouts.

Leaving Rossett Station, the field path towards "The Roft" was followed, with the picturesque Alyn for company. The usual spring flora was well represented, and in places the pungent-leaved garlic afforded a welcome show of bloom. To many of us our vernal flowers have a special charm of their own. And as the years roll on, one spring succeeding another with seeming ever-increasing rapidity, and with the passing of each winter, one experiences an increasing pleasure at every advent of these familiar flower faces. The leaves of the sweet violet were seen here and there, but the flowers were already over. We also observed the narrower and more triangular foliage of its relative *Viola hirta*, and both these species, along with various other plants encountered in the neighbourhood, reminded one of certain geological differences between this area and the adjoining English county. *Viola hirta* is unknown in Cheshire, while the sweet violet is distinctly uncommon, and a plant of very dubious nativity in that county.

The giant foliage of the butterbur clothed the banks of the Alyn in many places, but the flowers had almost disappeared, and only an occasional tall fruiting stem remained. There is a little point in connection with the distribution of this species which calls for notice and investigation. The plant is usually sub-dioecious, i.e., the capitula of a given individual consist almost exclusively of either staminate or pistillate florets. Although one may generally detect a few staminate florets in a pistillate inflorescence, and *vice versa*, the plant is practically dioecious. In several parts of Flint and Denbigh, where the butterbur abounds, the pistillate plant appears to be excessively rare, the predominant individuals being staminate. This seems to apply especially to the coast district. Dr. Russell, of Colwyn Bay, informs me that the butterbur rarely appears to produce perfect seed in that area, and only staminate plants have been seen. It was only after a long continued search that the pistillate plant was eventually found in an inland station, some seven miles from Colwyn Bay. I have also met with a similar condition at Mostyn on the Flintshire coast. The pistillate plant is of a distinctive habit, and is taller and finer in every way than the staminate plant.

Many of the characteristic plants of the district have already been noted on the occasion of a previous excursion which we held here two years ago, and so it is hardly necessary to say much concerning these. The present meeting was held some six weeks earlier than that of 1908, and so the flora presented rather a different aspect on this occasion. Several noteworthy plants were seen which we had not found previously. An immature example

of the peculiar adder's tongue (*Ophioglossum vulgatum*) was discovered by Miss E. M. Porter in a meadow between "The Roft" and the Alyn. In a ditch or streamlet not far away, quite a quantity of *Cardamine amara* was found by Miss Hilda M. Williams and Miss F. M. Thomas. This is a decidedly rare plant in North Wales.

In the woods at Marford we found a form of the lesser celandine, which agreed with the variety to which the name *incumbens* has been given. This was growing amongst a patch of the ordinary plant (*divergens*), and tempted one to regard it as merely an unstable variety, as all kinds of connecting forms were present. In many places the leaves of the lesser celandine were found to have orange patches on the under-surface, and to be more or less thickened at these parts. Sometimes the petiole was found to be swollen and distorted, and in both cases this was due to the common microfungus *Uromyces poæ*. Another familiar representative of the Uredineae, or Rusts, was *Puccinea adoxae*, which was not uncommon on the foliage of the little moschatel. Dr. Ellis found a single example of a microfungus on the dog's mercury, which he identified as *Cæoma mercurialis*. The list of fungi* observed on this occasion is due to Dr. Ellis, who kindly acted as mycological recorder.

May 28th was noteworthy as the occasion of the smallest field meeting on record, when three members travelled to Whalley, and were there met by Mr. G. H. Hopley, who, with his usual kindness, had undertaken to act as leader. One can only speculate as to the explanation of the fact that the attendance at this meeting was exactly one-eighth of that at the previous excursion in North Wales. It is perhaps only fair to add that the climatic conditions in the Liverpool area were not particularly favourable at the time of starting, although the weather in the Ribble Valley was all that could be desired throughout the day. Still, it seems rather strange, having regard to the number of theoretically staunch Lancastrians in our ranks!

Martholme Hall, Great Harwood, which is close to Whalley, is of interest as being the birthplace of Thomas Hesketh (1561-1613), one of our earliest Lancashire botanists. At that period there were very few persons who could be regarded as botanists in the present sense of the term. A botanist was then a person who collected plants, or studied them, merely in regard to their curative or pseudo-medicinal properties. Old superstitions die hard, and so even in this more enlightened twentieth century one may still occasionally encounter instances which show that these mediæval ideas yet linger here and there. Regarding Hesketh's botanical attainments we know little, but he is described as being "a painefull Chirugion and simplist." He appears to have had some acquaintance with British plants, and was a correspondent of Gerard and Parkinson, and contributed a number of Lancashire

* *Morchella esculenta*, *Tricholoma gambosum*, *Psilocybe spadicea*, *Puccinia malvacearum* (or *malva rotundifolia*), *Uromyces poæ* (*Aecidia* on *Ranunculus Ficaria* and *R. repens*).

records, chiefly from this neighbourhood, to their herbals. Some of these early notices are of interest as throwing a little light on the nature of the Lancashire flora at that period, and two are worthy of special note.

"Monophyllon, or One Blade, groweth in Lancashire in Dingley [Dinkley] Wood, six miles from Preston in Amounderness, and in Harwood neare to Blackburne likewise." This represents a very interesting record of a plant (*Smilacina bifolia*) having a curiously restricted area in Britain. The only station for it in the British Isles, which botanists regard as aboriginal, is in Forge Valley, near Scarborough. Although Hooker includes Lancashire in its British distribution, the statement appears to rest only on what Gerard has written. The patch in Caen Wood, Middlesex, is regarded as either a garden escape or intentionally planted. The other record refers to the mealy primrose (*Primula farinosa*), a plant now apparently all but extinct in South Lancashire:—"Red Bird Eyne (*Primula veris* flore rubro), and White Bird Eyne (albo), grow very plentifully in moist and squally grounds in the North parts of England, as in Harwood neere to Blackburne in Lancashire." Neither of these plants were seen on the occasion of the present excursion. It is gratifying to know that the Mealy Primrose yet occurs in the neighbourhood however. This particular station—which shall be nameless—probably represents the southern limit of this species in Britain.

The Rev. W. W. Mason acted as recorder at this meeting, and went to some trouble to favour us with a complete list of Phanerogamia observed. From this it appears that no less than 172 species and varieties of flowering plants were noted, a very satisfactory total, all things considered.

North Wales was again visited on June 11th, when 23 members journeyed to Overton-on-Dee under the leadership of Mr. G. Loftus. This neighbourhood lies close to the junction of three counties—Flint (an isolated portion of), Denbigh, and Shropshire. The handsome Bay-leaved Willow was encountered in several places by the roadside between the station and the village, and was new to some of us. This is very unlike most of its relatives in some respects, and might almost be mistaken for some cultivated evergreen on account of its foliage, did not bark, twigs, buds and catkins identify it beyond doubt as belonging to the Willow fraternity.

On several of the ancient yews in Overton Churchyard—one of "the seven wonders of Wales"—we observed a parasitic fungus growing out of reach. We were unable to obtain examples of this Polypore, which it was thought might be *Polyporus sulphureus*. Descending from the village, we followed a field-path with the Dee for company. The country hereabouts is extremely pretty, and the rich meadows and intersecting ditches afforded an attractive flora. Elsewhere additional variety was yielded by the woodland and river bank vegetation. Amongst the pleasant things which draw us back, year by year, to certain familiar places in the woods, is the

scent of growing things, each of which is the essence of some one or other of the seasons, and from each of which the spirit of association is distilled. Amid the many scarcely definable things which contribute to the fascination of the woodland at this season is the subtle perfume of the young beech leaves, which one can hardly dissociate from the freshness of the bluebells growing beneath them. Then, later on, the flavour of autumn haunts one with the gentle melancholy that belongs to dying leaves and the rain-sodden earth.

The marshy woods fringing the Dee between Overton and Erbistock were teeming with plant life. In places there were miniature forests of giant horsetail, with masses of the tall, pendulous sedge, whose elegant drooping spikes could hardly fail to attract the attention. Some of us were somewhat puzzled over some seedling plants which occurred in profusion in the wood close to Erbistock. The leaves were of a peculiar tint of green, and so extremely thin and delicate was the foliage that it seemed only natural to find these plants confined to the shaded wood, as one could hardly imagine such frail beings as capable of existence in an open situation, or exposed to the direct rays of the sun. We finally solved the identity of this umbrophilous species, which was the yellow balsam, or touch-me-not (*Impatiens Noli tangere*). Some true albino examples of the common bugle, in which the flowers were entirely white, were also noticed hereabouts.

Several interesting aquatic plants were noticed in the ditches below Overton before reaching the woods. Amongst some sedges found here was a plant which the Rev. W. W. Mason subsequently identified as being "undoubtedly *Carex paradoxa*, a splendid find." Mr. Mason then forwarded specimens to an authority on these plants, who reported that he was uncertain whether to regard it as being *Carex paniculata* or *C. paradoxa*, although it seemed to agree best with the latter. According to some, *C. paradoxa* is merely a sub-species or form of the much commoner *C. paniculata*, while others consider it specifically distinct. The two plants are very similar in some respects, and by no means easy of differentiation. *Carex paradoxa* is an extremely rare British sedge, and is* so far only known from three localities:—Norfolk, near York, and near Mullingar, in Ireland. In view of these facts, it will perhaps be best and safest to consider the identity of the Overton plant as an open question for the present.

So far, the walk had been through that detached portion of the County of Flint which is known as Maelor, or amongst the Welsh as Maelor Saesneg. Reaching the Ferry, we crossed the Dee in a manner reminiscent of a bygone age, and landed in the County of Denbigh. About the Ferry House and Erbistock Church there was a fine show of the Spur Valerian (*Kentranthus ruber*), and here also was a quantity of yellow Corydalis, which already afforded a display of ornamental lyre-shaped blossoms. In continuing our

* I believe recent observations and discoveries tend to shew that this sedge is not quite so rare and local as the above remarks—based on our standard manual of the British Flora—would indicate.

walk up the river on the Denbigh side, we encountered some bushes of sweet briar, a very rare rose in this part of the country, and which was readily identified at a distance by the pleasant fragrance of the aromatic foliage. Near by were a few examples of the soapwort. This is essentially a hawk moth flower, and the blossoms develop a distinct scent with the advent of dusk. The nectar is secreted at the base of the slender calyx tube, and is at such a depth as to effectively baffle most British insects. Occasionally one may observe a flower being visited by a deluded Cabbage White butterfly, but without avail, as the proboscis is all too short to reach the forbidden draught. In its floral biology the soapwort closely resembles its relative the Nottingham Catchfly. As in the latter, self pollination is almost entirely excluded by reason of the marked protandry which prevails. The outer whorl of the andræcium ripens first, and as a result of the elongation of the filaments, these five anthers are projected beyond the flower and the anthers then dehisce. After the pollen has been liberated, this whorl diverges and leaves the entrance of the flower open. The inner whorl now repeat this process, and lastly, the styles elongate and expand their stigmas at the same level previously occupied by the anthers.

For the very full list of Phanerogamia observed at this excursion we have again to thank the Rev. W. W. Mason, who went to considerable trouble to prepare a complete census. This shows the very creditable total of 237 species. Dr. Ellis acted as mycological recorder, and is responsible for the list of fungi* which were found. To Mr. G. Loftus we are also much indebted for this very pleasant and prolific meeting, the marked success of which is entirely owing to his efforts.

An evening excursion to the sand dunes between Freshfield and Formby was announced for June 27th. Owing to the inclement weather there was only a very small attendance. Soon after leaving Freshfield Station, and shortly after arriving upon the sand-hills, it began to rain heavily, and this continued for most of the night. Under these circumstances it is hardly remarkable that there should be little to chronicle in connection with this meeting. Certain members, accidentally or otherwise, succeeded in getting lost, and so it is quite possible that interesting but unreported observations are lacking in this account!

In the lane leading to the shore we noticed some plants of shepherd's purse, which appeared as if they had been liberally sprinkled with whitewash. On closer inspection our suspicions were confirmed, and the "whitewash" proved to be a parasite, *Cystopus candidus*, one of the "white rusts" which usually selects

* *Mycæna vitilis*, *M. stylobatis*, *Marasmius rotula*, *Psathyra conopileæ*, *Polyporus squamatus*, *P. sulphureus*, *Radulum orbiculare*, *Peniophora cinerea*, *Ulocolla saccharina*, *Uromyces dactylidis* (uredospores), *U. poæ* (aecidiospores = *Aecidium tus-silaginis*), *Puccinia suaveolens*, *P. malvacearum*, *Trichia varia*, *Lycogola miniatum*, *Trichoderma lignosum*, *Myrothecium roridum*, *Hypoxyton fuscum*, *Eutypa lata*, *Eutypella quercina*, *Mollisia cinerea*, *Ramularia rumicis*, *R. roridus*.

some member of Cruciferae as a host. This selective parasitism of so many micro-fungi is rather a curious fact. A very large number of these tiny parasites are known, each of which always confines itself to one particular host plant; or sometimes it may be that the fungus shares its patronage between several allied species of host, or in some cases takes a wider outlook but confines itself to some particular natural order or group of plants. It seems very probable that this specific affinity between so many micro-fungi and certain hosts is due to chemotaxis. Almost every plant contains some chemical substance or substances which may be regarded as being more or less peculiar to itself. It may be, and probably is often the case, that such substance or substances are only present in such small amount as to be difficult or impossible of estimation by chemical methods. And it is also true that some of these organic compounds are of a nature which renders their recognition a matter of great difficulty.

But neither of these facts in any way weakens my suggestion, as it is well known that extremely small quantities of some substances may be in such minute amount as to be difficult of detection or estimation by chemical methods, and yet this may be quite sufficient to exert a marked physiological effect. So it is permissible to suggest that before the spores of many (all) micro-fungi are capable of germination and development, a certain chemical stimulus due to some particular substance is necessary. If the spores of a parasitic micro-fungus come into contact with a plant containing the requisite substance, then such plant may be regarded as positively chemotactic and adapted as a host for that particular fungus. On the other hand, if the spores of the same fungus alight on a plant which does not possess this essential stimulant, then germination would not occur, and such plant would be negatively chemotactic and therefore incapable of serving as a host for the fungus in question. If this hypothesis is accepted, we have a simple explanation of this peculiar selective parasitism which is characteristic of so many fungi. Many species of Cruciferae are noteworthy for containing various allyl compounds, the ferment "myrosin," and other substances. Hence we would suggest that possibly some one of these is essential to the germination and development of *Cystopus candidus*. If this is correct, then the apparent predilection of this Phycomycete for Cruciferous hosts is hardly remarkable.

Not far from where we observed the *Cystopus*, the American plant *Claytonia perfoliata* was thriving in quantity, and appeared to be thoroughly at home. The locally uncommon bird's foot (*Ornithopus perpusillus*) was growing along the sandy margin of the lane near by, and a little further on we saw some small slender cottony-looking plants, which proved to be the lesser cudweed (*Filago minima*), a species observed in this same station at a previous meeting of the Society some years ago. At first sight it seems strange that any plant could survive in so arid a situation, but a little examination of the anatomy and morphology of *Filago*

minima will show that this species has effectively solved the problem of ways and means by various ingenious expedients. Near Formby Station there was a large patch of *Ambrosia artemisiaefolia*, one of the American Ragweeds, and a Composite which finds no mention in the Liverpool district floras. Many other interesting plants were observed, but as these are familiar to most of us, and have found mention in accounts of previous meetings in this neighbourhood, it is hardly necessary to mention such.

The fifth field meeting was held in Cheshire on July 9th, a charming day, when we travelled to Leasowe. This was, or at least supposed to be, a joint meeting in conjunction with the Chester Society of Natural Science and the Warrington Naturalists' Field Club. We joined at the invitation of the latter, who had undertaken to make all necessary arrangements, and a prominent member had promised to act as leader and meet the party at the station. On arrival at Leasowe, where the Chester party were awaiting us, there was no sign of either the Warrington Society or the person who had undertaken to meet us and act as guide and make all arrangements. No one seemed to have any definite information as to the whereabouts of the missing Warringtonians, so we proceeded towards the coast under the joint leadership of the President and Mr. T. E. Miln, of Chester. On reaching the Common, we observed a small party, including the delinquent leader, who were armed with butterfly nets and apparently busily engaged in the chase of various unfortunate dragon flies and Lepidoptera. Attempts at reminding the theoretical "leader" of his duties were futile, as he and most of his small party succeeded in keeping a convenient distance away, so we were finally not sorry to leave them behind, with the exception of one or two Warrington naturalists who fell in with the Chester Society and ourselves. Such experiences as this are fortunately unique. We were informed some time later, on very credible authority, that the "leader" became panic-stricken at the idea of meeting so many botanists and naturalists, and apparently having a more or less exaggerated opinion of their enthusiasm and attainments, took refuge in flight!

We have already noted various facts concerning the flora of this neighbourhood on the occasion of a previous meeting here, and so it is scarcely necessary to repeat many observations. The yellow button (*Cotula*) was extremely luxuriant, and in the height of flowering, and no one could recollect having ever seen it in such fine condition before. A little white-flowered crowfoot (*Ranunculus Bandottii*) was seen at its best in the long brackish ditches close to the embankment. Here, too, were two species of Stonewort, *Chara hispida* and *C. fragilis*. A long slender aquatic plant also observed here was *Zannichellia palustris*, the horned pond weed, a species new to some of us. At one point we found a quantity of bog pimpernel, which afforded a pretty picture with its neat trailing stems and delicate flesh-coloured blossoms.

Quite a number of examples of the natterjack were noticed in damp situations behind the embankment. This is a distinctly local

amphibian, although not uncommon in several stations in the Liverpool area. It is smaller than the common toad, and is easily recognised by the yellowish line running down the back. The toes are only slightly webbed, while the common toad has more or less conspicuously webbed feet. There are other differences, but these simple characters will readily enable one to identify this interesting little amphibian. Amongst several plants found about the embankment were *Sagina maritima*, a scurvy grass (*Cochlearia danica*), and the curious strawberry-headed trefoil.

Continuing along the coast for most of the way, Hoylake was finally reached, and here tea was obtained. On the way, Mr. J. A. Wheldon found specimens of a lichen which was recently new to science, and was first obtained by him on the Lancashire sand-dunes. This diminutive plant, to which the name of *Arthopyrenia areniseda* has been given by Miss A. Lorrain Smith, appears to have only been found in the counties of Lancashire and Cheshire so far. For the list* of Cryptogamia observed at this meeting we are indebted to Mr. Wheldon.

The next excursion was again held in Cheshire on August 20th, when Stanney Wood and Blackford were visited. On arrival at Ellesmere Port a small party* of members proceeded to Stanney Wood, under the guidance of the Rev. J. M. New and Mr. G. Loftus. We have to thank Mr. C. N. Watson, of Rake Hall, for courteous permission to investigate this wood, and for kindly placing the services of his keeper at the disposal of the party on this occasion. The flora of this little-known wood scarcely came up to expectations, and Dr. Ellis informs me that perhaps the two most noteworthy Phanerogamia seen here were the gipsywort (*Lycopus europaeus*) and a form of helleborine, which he considers to be *Epipactis media*. A number of fungi were found, and for this list† our thanks are due to Dr. Ellis.

Leaving the wood, the little hamlet of Backford ("the ford by the ridge") was reached. Backford Church possesses some interesting associations, and as the Vicar (the Rev. J. M. New) is an ardent archæologist and naturalist, the party were fortunate in being under his guidance on this occasion. A feature of this old church is the ancient black-letter Bible, bearing the date 1617, and chained to the desk according to the old custom. It is curious to recollect that in the valley below Backford, according to some old historians, there formerly flowed an ancient river, which is said to

* *Barbula cylindrica*, *Bryum caespitium* (i. frt.), *B. pendulum* (i. frt.), *Pottia Heimii* (i. frt.), *Tortula arenicola*, *Brachythecium albicans*, *Camptothecium lutescens*, *Hypnum polygamum*, *Lecanora campestris*, *Physcia parietina*, *Cetraria aculeata*, *Marasmius oreades*.

† *Tricholoma rutilans*, *Mycena galericulata*, *M. galopoda*, *Clitocybe infundibuliformis*, *Lactarius quietus*, *Russula nigricans*, *R. ochroleuca*, *R. citrina*, *R. emetica*, *Marasmius androsaceus*, *Hygrophorus obrusseus*, *H. psittacinus*, *Nolanea pascua*, *Inocybe scabellata*, *Galera lateritia*, *Paxillus involutus*, *Stropharia stercoraria*, *S. semiglobata*, *S. æruginosa*, *Psathyra spadicea*, *Psilocybe areolata*, *P. semilanceata*, *Panæolus sphinctrinus*, *Boletus chrysenteron*, *B. badius*, *Phallus impudicus*, *Scleroderma vulgare*, *Dasyscypha calcina* (on Larch), *Arcyria punicea*.

have united the Mersey and the Dee. Our best thanks are due to the Rev. J. M. New for his kindness to us on this occasion, and his hospitality in inviting the party to tea at Backford Vicarage requires a special acknowledgment.

Each year there is usually some field meeting which stands out pre-eminent amongst the rest, and 1910 was no exception. All things taken into account, there can be little question that either Erbistock or Llanddulas must rank first amongst the excursions of the past year. The comparison between the two is perhaps rather invidious and hardly fair, but I think most of those members who were present on both occasions would place Llanddulas first. The seventh field meeting was a day excursion on September 3rd, and the interest and success of this Welsh expedition conclusively showed the advantage and desirability of occasional longer excursions of this kind.

Llanddulas, or "the church on the Ddulas," is a small village prettily situated on the Denbigh coast by the mouth of the little River Ddulas. The locality is an ideal one for the botanist or naturalist. Within a comparatively small area one finds shingly shore, clay banks, moorland, limestone cliffs and common, and wooded river banks, each of these possessing a flora of their own. The shingle on the shore between Llanddulas and Pensarn yielded some acceptable plants. The horned poppy was plentiful in places, and the curious and conspicuous long siliqua-like fruits were new to some of the party. The sticky relative of the common groundsel (*Senecio viscosus*) was quite at home and equally abundant in similar situations. The Sea Bindweed was also seen, but no flowers were in evidence. The vegetation of this dry shingle afforded an interesting study in adaptation, and as one would expect, was of a distinctly xerophilous type. Amongst other constituents seen here were the sea spurge (*Euphorbia Paralias*), two species of stonecrop (*Sedum acre* and *S. album*), the spiny rest harrow, and the sea purslane (*Honkenya peploides*). Here, too, creeping amongst the pebbles, a most unusual situation for it, was the dainty ivy-leaved toadflax. By the mouth of the Ddulas we came across the peppermint and true forget-me-not (*Myosotis palustris*). At one part of the shore were a few plants of black nightshade (*Solanum nigrum*), but we must confess in suspicious company, for close to was a garden Canterbury bell (*Campanula medium*), and some examples of motherwort (*Leonurus*).

Leaving the coast, we struck inland, following the valley of the Ddulas for about a mile and a half, and with Llysfaen hill on our right. This rocky eminence is a portion of the carboniferous limestone range which terminates in the headland of the Great Orme, some nine miles to the north-west. There is a marked similarity in the flora of the two places, which is, of course, of a decidedly calciphilous character. We were very pleased to come across a profusion of that quaint little orchid *Spiranthes autumnalis*, the Lady's Tresses. The flowers are remarkable for their peculiar spiral arrangement, which give the inflorescence a very characteristic

appearance. The blossoms, though rather small, are very beautiful, and have a fragrance simulating that of hyacinths. Amongst many interesting species which haunt this limestone hill are the wild lettuce (*Lactuca virosa*), which was growing in almost inaccessible situations on the cliffs, *Marrubium vulgare* (Horehound), the Carline thistle, and the spindle tree. The latter was covered with an abundant crop of immature fruit which would doubtless afford a pretty picture later on. Here, too, we observed the field gentian (*Gentiana campestris*), the deep-blue blossoms of which served to remind one of the advent of autumn.

At one place there was a large patch of the slender and tiny-flowered vervain, the sole British representative of its order. This appears to have been a favourite plant with the Druids, by whom it was regarded as being more or less sacred. Anointing with vervain was considered by them the readiest way of obtaining all that the heart could desire, to keep off fevers, to procure friendship, and the like. Some of the Welsh names for this plant are distinctly suggestive—*Câs gan Gythraul* (the Fiend's aversion), *Y Dderwen Vendigaid* (the blessed oak), and *Llysiau'r Hudd* (the Enchanter's plant).

In that ancient Welsh work known as *Meddygon Myddfai*, a quaint production which abounds with interesting plant lore, the following curious recipe is given:—

“To Avoid Enemies.”

“If one goes to battle, let him seek the vervain, and keep it in his clothes, and he will escape from his enemies.”

The aspen, which was also found at this meeting, possesses a very distinctive local name in some parts of Denbighshire. According to one old Welsh countryman, we were informed—and this has been independently confirmed on further inquiry—that the vernacular name is “*Tafod y Gwragedd*”; in English this would be translated as “Woman's tongue.”

The last excursion of the session was held at Eastham Woods on October 8th, and took the form of a fungus foray. Dr. J. W. Ellis and Mr. H. J. Wheldon, to whom we are indebted for the list of fungi noted at this meeting, acted as mycological recorders. Ninety-four species were observed, which is a very fair number, having regard to the locality and the dry weather which preceded this meeting.

List of Fungi observed at Eastham, October 8th, 1910:—
Armillaria mellea, *Lepiota ameanthina*, *Collybia radicata*,
C. maculata, *C. dryophila*, *Tricholoma lascivum*, *Mycena galericulata*, *M. rugosa*, *M. sanguinolenta*, *Pleurotus ostreatus*,
Hygrophorus pratensis, *H. psittacinus*, *H. virgineus*, *H. miniatus*,
H. unguinosus, *Russula ochracea*, *R. ochroleuca*, *R. nigricans*,
R. emetica, *R. fragilis*, *R. rosea*, *R. azurea*, *R. cyanoxantha*,
R. fellea, *Lactarius quietus*, *L. subdulcis*, *Clitocybe cenusta*,
Laccaria laccata and var. *amythestina*, *Nolanea pascua*, *Claudopus*

variabilis, *Tubaria farfaracea*, *Galera tenera*, *G. hypnorum*, *G. ovalis*, *Inocybe asterospora*, *Paxillus involutus*, *Bolbitius* (*Boltoni*?), *Stropharia stercoraria*, *S. semiglobata*, *S. aeruginosa*, *S. coronilla*, *Hypholoma fasciculare*, *H. sublateritium*, *H. hydrophilum*, *Psilocybe semilanceata*, *Psathyrella disseminata*, *Anellaria separata*, *A. fimiputris*, *Panaeolus fimicola*, *P. papilionaceus*, *P. campanulatus*, *Coprinus stercorarius*, *C. fimitarius*, *C. plicatilis*, *C. comatus*, *Phalus impudicus*, *Dacromyces stillatus*, *Clavaria vermicularis*, *C. muscoides*, *C. fastigiata*, *Calocera viscosa*, *Scleroderma vulgare*, *Poria vaporaria*, *P. quercina*, *Polystictus versicolor*, *Polyporus squamosus*, *P. betulinus*, *Fomes annosus*, *F. applanatus*, *Fistulina hepatica*, *Irpex obliquus*, *Grandinia granulosa*, *Soppitiella sebacina*, *Stereum rugosum*, *S. hirsutum*, *Corticium lacteum*, *Peniophora cinerea*, *Coniophora puteana*, *Trichoderma lignosum*, *Coleosporium sonchi* (= *tussilaginis*), *Spumaria alba*, *Fuligo septica*, *Craterium pedunculatum*, *Stemonitis fusca*, *Helotium virgultorum*, *Humaria granulata*, *Ascobolus furfuraceus*, *Lachnea hæmispherica*, *Bulgaria inquinans*, *Sphæria acuta*, *Rhytisma acerinum*, *Nectria cinnabarina*, *Tubercularia vulgaris*.

LIVERPOOL BOTANICAL SOCIETY.

FOUNDED 21st MAY, 1906.

RULES.

Adopted at the General Meeting of the Society on Monday, 21st May, 1906.

Subsequent additions are shewn in italics.

I.—AIMS AND OBJECTS.

The object and aims of the Liverpool Botanical Society shall be :—To stimulate and promote the study of the various branches of Botany.

To bring local workers, students, and those interested in the subject into contact and for mutual assistance.

To encourage original work and research, especially in connection with local Botany. These objects are cultivated :—

- (1) By holding meetings for mutual assistance and for the interchange of botanical information; for the exhibition, study and identification of specimens; for the reading of original papers or translations, abstracts or reviews of botanical works, regarding any branch of botanical knowledge—practical, physiological, histological, geographical, systematic and palæontological.
- (2) By making excursions to places of botanical interest.
- (3) By publishing annually Proceedings, including a List of Members and Donations.
- (4) By appointing Committees of Research for the more effective investigation of definite branches of work.

II.—MEMBERSHIP.

(1) **ORDINARY**—Every applicant for membership must be proposed and seconded by two Members of the Society. The names and addresses of all such applicants, together with their proposers and seconders, shall be submitted to the Members on the Circular calling the next Meeting. Applications shall be first submitted to the Council and balloted for; no application shall be brought before the General Meeting except by the unanimous consent of the Members at the preceding Council Meeting. The election shall be determined by show of hands unless a request be made to the Chairman of the Meeting for the vote to be taken by ballot; if the nomination be supported by a majority of the Members present, the applicant shall be declared elected, and on payment of the subscription shall be entitled to all the privileges of membership. All persons accepting membership must be prepared to comply with the Rules of the Society.

(2) **LIFE**—Donors of five guineas and upwards to the Society shall be entitled to Life membership and shall have all the privileges of ordinary Members.

(3) **HONORARY**—Persons distinguished by their attainments in the study of Botany, or who have rendered valuable service to the Society, shall be eligible for Honorary Membership. Such Honorary Members, who shall not exceed ten in number, shall be nominated by the Council and elected by a majority of votes at a General Meeting, and have all the privileges of ordinary Members.

III.—SUBSCRIPTION.

Every ordinary Member shall pay an annual subscription of five shillings, payable in advance on the first day of January. The subscription in the case of a new Member shall be paid within one month of his or her election, otherwise such election shall be void. If, however, a candidate be elected during the months of October, November or December, he or she shall not be called upon to pay any annual subscription for the current year, and shall not be entitled to receive the publications of the Society for that year. The annual subscription for persons under twenty-one years of age shall be half-a-crown. Such Members shall not have the right to vote in the proceedings of the Society.

IV.—ARREARS.

No member shall be entitled to take part in the proceedings of the Society whose subscription is unpaid. Any member whose subscription is not paid by the thirty-first day of October in any year is liable to be excluded from the membership of the Society by the vote of the Council.

V.—RESIGNATION.

A Member desirous of resigning shall give written notice to the Honorary Secretary prior to the first day of December. If such notice of resignation of membership shall not have been received prior to the first day of December in any year, such Member shall be liable for the payment of the subscription for the following year.

VI.—MANAGEMENT.

The government of the Society shall be vested in a Council elected annually from amongst its Members. The Council shall consist of a President, two Vice-Presidents, Honorary Treasurer, Honorary Secretary, *Honorary Librarian*, *Honorary Curator*, and twelve other Members. Five to form a quorum. The President, or in his absence, one of the Vice-Presidents, shall take the Chair at all Meetings, but if both should be absent, the Members present shall elect a Chairman from among themselves. The Honorary Treasurer shall be responsible for the disbursements, receipts, and funds of the Society. The Honorary Secretary shall keep Minutes of all Meetings and send all notices and publications of the Society to the Members, and conduct the general correspondence of the Society under the direction of the Council. The Honorary Secretary may after consultation with a Vice-President, call Meetings of Council for the transaction of business; but he shall call a Meeting of Council at the desire of the President, or of two Vice-Presidents, or of any three Members of Council. *The appointments of Honorary Librarian and Honorary Curator shall be determined by the Council.* The Council is empowered to fill up all vacancies which may occur in its number during the year. The Council has the power of appointing Committees and defining the scope of their investigations, and of including in them such Members as are most capable of organising and carrying on such investigations.

VII.—NOMINATION AND ELECTION OF COUNCIL.

Nomination forms shall be sent by the Honorary Secretary to each Member of the Society whose subscription is not in arrear (as provided by Rule IV.) not later than the first week in December in each year. Each Member proposed for election to the Council must be nominated by two duly qualified Members. Retiring officers shall be eligible for re-election. All nominations must be sent in to the Honorary Secretary by the twenty-fourth day of December. A list of such nominations shall be sent to each duly qualified Member not later than the first week in January. The election of the Council shall be by ballot. In the event of a sufficient number not having been nominated, any duly qualified Member present at the Annual Meeting may propose or second any other duly qualified Member for the vacant office or offices.

VIII.—ANNUAL MEETING.

The Annual Meeting of the Society shall be held in the second week of January. At this Meeting the Annual Report and the Honorary Treasurer's Financial Statement for the past year shall be presented; the election of the Council for the year shall then take place, together with the consideration of such other business as may be contained in the notice summoning the Meeting.

IX.—ACCOUNTS.

The Accounts of the Society shall be made up from the first day of January to the last day of December of each year, and, before presentation to the Annual Meeting shall have been duly audited by two auditors nominated for the purpose by the Members from amongst their number at the last Meeting of the Session.]

X.—MEETINGS.

The Meetings shall be held on the second Monday in each month, *or on such other day of that week as may be determined by the Council*, and also on such other occasions as may be arranged.

XI.—SPECIAL MEETINGS.

A special Meetings of the Members may be called at any time by the Council; and they shall be bound to call such a Meeting upon receipt of a requisition specifying the business to be submitted to such Meeting, and signed by not less than twelve Members of the Society. The Meeting shall be held within twenty-one days of the receipt of the requisition by the Honorary Secretary, and seven days' notice shall be given to each Member of the time and place of Meeting, and of the business to be considered. No business shall be transacted at a Special Meeting except that for which it has been called.

XII.—VISITORS.

Any Member whose subscription is not in arrear may have the privilege of introducing not more than two friends at any Meeting of the Society.

XIII.—RE PAPERS.

The Manuscript or copy of every paper read or a clear and legible duplicate thereof on foolscap, shall become the property of the Society.

XIV.—ALTERATION OF RULES.

No alteration in, or addition to, any of these Rules shall be made except by a majority of votes of the Members qualified at an Annual Meeting. Notice and full particulars regarding all such proposed alterations shall be sent to the Honorary Secretary prior to the second week of October, and to each Member not later than the last week of December.

XV.—COPY OF RULES.

A copy of these Rules shall be furnished by the Honorary Secretary to each Member, together with the intimation of election to Membership.

XVI.—PUBLICATIONS.

A Publications Committee shall be elected annually by the Council, under whose direction it shall work, and to whom it shall be responsible. Such Committee shall consist of four Members of the Society, and the President, Honorary Treasurer, and Honorary Secretary, ex-officio.

XVII.—UNDETERMINED MATTERS.

The Council shall have power to decide any matters or difficulties that may arise, not specifically provided for in these Rules.