

PROCEEDINGS
OF THE
Liverpool Botanical Society.



Seventh—Tenth Sessions.

FOR THE YEARS 1912—1915 (inclusive).

LIVERPOOL :
PRINTED BY C. TINLING & Co., LTD., 53, VICTORIA STREET.
November, 1917.



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

President, 1914-1915.

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Liverpool Botanical Society.

Headquarters :
COMMON HALL, HACKINS HEY.



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SUMMARY OF COUNCIL'S REPORTS.

The period has been marked by a fluctuation of interest, which is indicated by the fact that in 1912 the average attendance at field meetings was the highest since 1908, whilst in 1913 it touched the lowest level in the Society's history. In the latter year, although there were fewer indoor meetings, the attendance was poor. In 1915, however, there was reason for congratulation that the activity of members had revived.

Papers of much interest and scientific importance were read, and evoked excellent discussions. The field meetings were well attended, and valuable records taken. In 1915 a scheme of research was instituted, in which members were invited to participate. A number of problems were tabulated for solution and each of these was entrusted to a convener and recorder, whose function was to assist and direct the efforts of workers. The value of the scheme has not yet been fully appreciated, but several of the subjects attracted groups of co-operators, whose efforts have produced useful material.

The number of specimens submitted for exhibition and identification has been well maintained, and the facilities offered to country members are largely availed of.

In the year 1913 the Society changed its headquarters from the Liverpool University to the Common Hall. The President, Mr. W. T. Haydon, F.L.S., generously provided a handsome bookcase in which to accommodate the Society's library of botanical works, and a suitable inscription was authorised. A subscription was organised for the purchase of an arc-lantern of 1,100 candle-power, which has saved the Society much expense.

SOUTH LANCASHIRE FLORA.

Phanerogamia.—New records included a hybrid between *Chenopodium opulifolium* and *C. album*, collected at Aintree in 1906, by Mr. J. A. Wheldon, F.L.S., and described by Dr. Murr as a new species, under the name *Chenopodium Wheldoni*. The species occurring on the local sandhills, hitherto recorded as *Helleborine*

viridiflora (Reichb.) is correctly named *H. latifolia*. In the same area, Mr. R. S. Adamson, M.Sc., found *Juncus balticus*, Willd.; new to the flora of England.

Considerable attention has been given to critical species, especially in *Orchidaceae*, *Gramineae*, *Batrachian Ranunculi*, and the orders *Fumaria*, *Salix*, *Rosa*, *Hieracium*, *Viola*, *Epilobium*, *Arctium*, *Polygala*, *Cerastium* and *Hypericum*. Several additional forms and varieties have been detected, viz.:—*Polygala dunense*, Dum., *Cerastium vulgatum*, var. *holosteoides*, Fr.; *Hypericum dubium*, var. *erosum*, Duby.; *H. perforatum*, var. *angustifolium*, Gaud.; *Rosa Blondaeana*, Rip.; *Solidago Virga-aurea*, var. *angustifolia*, Gaudin; *Bidens cernua*, f. *minima*, Huds.; *Veronica Anagallis* var. *montioides*, Boiss; and a proposed new variety *Parnassia palustris*, var. *condensata*.

The local littoral *Erythraeae* have been comprehensively studied by Mr. J. A. Wheldon, F.L.S., for publication in the "Cambridge British Flora."

Noteworthy alien plants include *Brassica Schkuhriana* (Reichb.); *Erigeron annuus*, Pers.; *Rumex altissimus*, Woods; and *Setaria verticillata*, Beauv.; the Liverpool, Ashton-under-Lyne and Stalybridge districts affording new records.

Cryptogamia.—The most noteworthy additions are *Octodieras julianum* (discovered near Manchester by Mr. J. C. Wilson, F.L.S.) and *Marsupella aquatica*. Lichens have received attention at the hands of Messrs. J. A. Wheldon, F.L.S., and W. G. Travis (who published a paper on "The Lichens of South Lancashire") Jnl. Linn. Soc. (Botany), vol. xliii, October, 1915. The total number of species is 174, with 27 varieties. Four species and two varieties, all new to science, have been described, and two varieties, not previously recorded for the United Kingdom, have been reported. One additional species, new to South Lancashire, has since been found.

Fungi.—Mr. W. H. Western sent *Clavaria acuta* and *Psathyra gyroflexa*, Mr. H. Robinson, *Onygena equina* (hitherto recorded in the county only for West Lancashire). *Phoma rhodora* and *Fumago vagans* were noted by Dr. J. W. Ellis, F.E.S., at Lathom Park. Further additional species received included *Pholiota mutabilis*, *Parvulus lepista*, *Otidea aurantiaca*, *Neottiella nivea*, *Ascophanus equinus* and *Neottiella polytrichi*.

The Sub-Committee is indebted for specimens and information to the following contributors:—Messrs. R. S. Adamson, M.Sc., H. C. Broome, F. C. Collier, Rev. C. E. Fynes-Clinton, E. B. Gasking, J. Hartley, A. T. Harris, J. C. Healey, J. Helsby, G. H. Holt, G. H. Hopley, J. E. McDonald, C. R. Ritchings, H. Robinson, Sutcliffe, Rev. M. Toohey, S.J., W. H. Western, W. Wheldon, F. Williamson, A. Wilson, F.L.S., and J. C. Wilson, F.L.S., and, for assistance in the identification of critical species, to Messrs. W. Barclay, A. Bennett, A.L.S., J. Cryer, G. C. Druce, M.A., F.L.S., Mrs. E. S. Gregory, A. B. Jackson, Rev. E. F. Linton, S. M. Macvicar, Rev. E. S. Marshall, H. W. Pugsley, B.A., Rev. W. Moyle Rogers, A. R. Rolfe, and C. E. Salmon, F.L.S.

NATURE STUDY SCHEME.

A much-needed re-organization of the scheme has taken place, and a reversal of the former tendency towards stagnation has ensued. In this revival the Hon. Secretary, Miss A. B. Gleave, B.Sc., has been particularly active, both in collecting subscriptions and in stimulating interest. Considering that there is absolutely no restriction or expense attached to entry, it has been a disappointment to the Sub-Committee that so few schools have responded. On the other hand, it is a pleasure to record the fact that some schools, notably Upper Park Street Council School, Oulton Secondary School, Queen Mary High School, St. Margaret's H. G. School, Holt Secondary School, and the Girls' Secondary School, Birkenhead, have adhered to the scheme and submitted high-class work. The purpose is to encourage amongst the young people of the neighbourhood a love of nature, and in this design it was expected that some assistance would be given by leading citizens. With rare exceptions this anticipation has not been realised, and the cost of maintaining the work has fallen almost solely upon a few members of the Society. It is gratifying to record that there are now a larger number of members co-operating in the preparation of questions and adjudication of replies.

BALANCE SHEET, 1912-1915

Dr.

Ct.

	1912.	1913.	1914.	1915.		1912.	1913.	1914.	1915.
To Subscriptions	£ s. d. 24 17 6	£ s. d. 18 17 6	£ s. d. 18 10 0	£ s. d. 14 12 6	By Debit Balance	£ s. d. 5 2 10	£ s. d. —	£ s. d. 0 16 1	£ s. d. —
„ Credit Balance	—	0 6 9	—	13 10 7	„ Cost Proceedings (balance) 1910-11	—	9 2 6	—	—
„ Proceedings sold ...	0 13 6	—	—	—	„ Cost of Room	1 15 0	1 10 0	3 8 0	—
„ Balance from Soirée	0 13 3	0 17 9	3 11 9	0 1 2	„ Printing & Stationery	10 1 0	4 13 9	7 1 6	7 19 10
„ Balance from Field Meetings	—	0 8 2	—	—	„ Postages—	—	—	—	—
„ Balance in hand ...	—	0 16 1	—	—	„ Hon. Secretary ...	5 3 9	3 12 4	4 1 1	2 17 10
„ Donation	—	—	—	—	„ Hon. Treasurer ...	0 19 11	0 18 6	0 6 6	0 7 4
„ (anonymous)	—	—	7 10 0	—	„ Sth. Lancs. Flora ...	—	—	—	—
					„ Committee	1 3 2	0 13 2	0 8 0	0 8 9
					„ On Proceedings	1 11 10	—	—	—
					„ Tablet for Bookcase	—	—	—	—
					„ Lantern Expenses ...	—	0 16 0	—	0 14 0
					„ Wreath	—	—	—	0 15 6
					„ Credit Balance	0 6 9	—	13 10 7	15 1 0
	£26 4 3	£21 6 3	£29 11 9	£28 4 3		£26 4 3	£21 6 3	£29 11 9	£28 4 3

LIBRARY ACCOUNT.

To Balance brought forward	£ s. d. 1 1 5	£ s. d. 0 8 0	£ s. d. 0 12 0	£ s. d. 0 13 0
„ Donations	0 4 6	0 4 0	0 1 0	0 1 0
	£1 5 11	£0 12 0	£0 13 0	£0 14 0
By Annals of Botany	£ s. d. 0 15 0	£ s. d. —	£ s. d. —	£ s. d. —
„ Postage re Librarian	0 2 11	—	—	—
„ Credit Balance	0 8 0	0 12 0	0 13 0	0 14 0
	£1 5 11	£0 12 0	£0 13 0	£0 14 0

Audited and found correct,
Jan., 1913 { JAS. HARRISON.
F. MULCAHY.

Jan., 1914 { J. W. ELLIS.
F. COLLINS.

Jan., 1915 { A. C. GRIFFITHS.
T. BRITTEN.

G. LOFTUS, Hon. Treasurer.
Jan., 1916 { F. M. DALLMAN.
F. J. ROUTLEDGE.

NATURE STUDY SCHEME, 1912-1915.

Dr.

Balance Sheet.

Cr.

AGGREGATE DONATIONS.					AGGREGATE EXPENSES.				
To	Mrs. Bangham ...	...	...	£ s. d.	By	Postage ...	...	...	£ s. d.
"	Miss M. B. Barr	...	...	0 2 6	"	Prizes ...	...	...	0 8 0
"	Miss E. Bray	...	...	0 12 6	"	Certificates	...	...	11 6 6
"	Miss H. Cooke	...	...	0 2 0	"	Printing Circulars	...	...	1 2 0
"	Miss L. R. Cooke	...	...	0 5 0	"	Assistance at Common Hall	...	...	0 5 0
"	Mr. A. A. Dallman, F.C.S.	...	...	1 1 0	"	Brown Paper	...	...	0 1 0
"	Miss A. B. Gleave, B.Sc.	...	...	1 0 0					
"	Mr. C. E. F. Hall	...	...	1 1 0					
"	Mr. W. T. Haydon, F.L.S.	...	...	3 0 0					
"	Mrs. Herdman	...	...	1 0 0					
"	Miss S. Howlett	...	...	0 2 6					
"	Miss E. F. Jones	...	...	0 2 6					
"	Miss A. Lee, I.L.A.	...	...	0 2 6					
"	Dr. W. A. Lee, M.A.	...	...	0 17 6					
"	Mr. G. Loftus	...	...	0 10 0					
"	Mr. H. S. Marsh	...	...	0 2 6					
"	Mr. W. R. Sibbald	...	...	0 2 6					
"	Miss F. M. Thomas	...	...	0 5 0					
"	Miss E. Warhurst, I.L.A.	...	...	0 2 6					
"	Mr. A. C. Wilson	...	...	0 5 0					
"	Miss M. H. Wood	...	...	0 10 0					
"	A Friend	...	...	1 0 0					
"	Debit balance	...	...	1 14 6					
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G. LOFTUS,
Hon. Treasurer.

GENERAL MEETINGS.

SATURDAY, JANUARY 13th, 1912.

ANNUAL MEETING.

The Annual Meeting was held at the University of Liverpool, Mr. W. T. Haydon, F.L.S., in the chair.

The Hon. Secretary submitted the report for the year 1911, which was unanimously accepted. The Hon. Treasurer's Financial Statement for the same year was approved.

A vote of thanks to the retiring officers and Council was cordially passed. The election of Officers and Council for 1912 resulted as follows:—

President:—W. T. Haydon, F.L.S.

Vice-Presidents—A. A. Dallman, F.C.S.; W. G. Travis.

Hon. Treasurer:—G. Loftus.

Council:—W. Chesher, M.A., Miss L. R. Cooke, W. H. Halfpenny, Professor R. J. Harvey Gibson, M.A., F.L.S., Dr. W. A. Lee, M.A., H. S. Marsh, Rev. W. Wright Mason, B.A., W. R. Sibbald, C. B. Travis, J. A. Wheldon, F.L.S., Mrs. Wheldon, Miss M. H. Wood.

The retiring Hon. Secretary having intimated his intention of resigning, and the two persons nominated having expressed their inability to stand, the Chairman suggested that the Council should appoint a new Honorary Secretary, and this proposal was agreed to, Mr. Dallman expressing his willingness to act until the position was filled.

MONDAY, 10th FEBRUARY, 1912.

The Sixth Annual Soirée was held at Hope Street Church Hall. Members and friends were received by the President and Mrs. Haydon. A number of interesting microscopical and other exhibits were on view.

The President addressed the meeting, and a number of musical and amusing items were rendered by members and friends. Refreshments were partaken of, and a pleasant evening spent in competitions, more or less Botanical in nature, and the friendly intercourse which seasons the more serious work of the Society.

THURSDAY, 14th MARCH, 1912.

At the Liverpool University, Mr. W. T. Haydon, F.L.S., in the chair.

Professor R. J. Harvey-Gibson exhibited a specimen of *Trapa Bicostrata*, a species new to science, and recently discovered by Professor Newstead in Western Nyassaland.

The President remarked that he had lately observed the allied European species, *Trapa natans*, in some quantity on the Concord River, in the United States. The plant, on being introduced, spread widely, and was now completely naturalised.

Mr. A. A. DALLMAN exhibited a peculiar teratological form of *Cotyledon Umbilicus*, which had been found by Mr. R. H. Day in the Snowdon district, and was remarkable for having a rosette of leaves terminating the inflorescence.

A communication was received from the British Mycological Society drawing attention to the disease known as "Silver Leaf" on fruit trees. As this is now thought to be a fungus, *Stereum hirsutum*, it was suggested that members should ascertain its distribution in the district, and obtain information as to the habitat and identification of the host. Information was also requested in regard to the *Polyporaceae* of the district, with special reference to the trees affected.

The feature of the evening was a paper read by Professor R. J. Harvey Gibson on "The debt of Botany to Theophrastus." After some account of the science of Botany as known to the Greeks, three centuries before the Christian era, the speaker proceeded to give some biographical notice of the subject of the paper, of whose works only two have survived—"Historia Plantarum" and "De Causis Plantarum." Professor Harvey Gibson showed that, whether regarded as a morphologist or an anatomist, Theophrastus was far in advance of his period. Even what was commonly regarded as a most modern branch of botanical science—Ecology—appeared to have been known to him, and it was interesting to find that he originated certain terms and botanical divisions which have persisted.

A cordial vote of thanks was proposed by the President and seconded by Mr. W. Chesher, M.A.

WEDNESDAY, 17th APRIL, 1912.

At the University, Mr. W. T. Haydon, F.L.S., in the chair.

Miss E. BRAY contributed a number of phanerogamia and micro-fungi from Sussex.

Dr. W. A. LEE showed an old book of plant figures, which afforded additional interest from various annotations on Welsh Plant names.

Mr. W. G. TRAVIS exhibited, on behalf of Mr. H. Robinson, two photographs illustrative of the depredations of larvae on the foliage of trees in Bolton Abbey Woods, near Skipton. One photograph taken July 1st showed sycamore, oak, and other trees, so divested of foliage that only petioles remained. A later photograph, taken September 8th, shewed the same trees with new foliage, produced subsequent to the ravages of the larvae.

Mr. J. A. WHELDON, F.L.S., announced the discovery of what appeared to be a new British lichen, observed by Miss Knowles, of the Dublin Museum, intermixed with examples of *Arthropyrenia arenisea*, a plant lately new to science, first discovered on the Lancashire sand dunes by Mr. Wheldon. It was believed that the plant might prove to be a variety of *Polyblussia diminuta*, or a new species.

Mr. W. T. HAYDON then delivered his Presidential Address—postponed from last session—on "Henry David Thoreau—Poet-Naturalist" (published in the Proceedings for 1911).

A hearty vote of thanks was accorded on the motion of Mr. G. Pryce, B.A., seconded by Mr. Sibbald.

TUESDAY, 14th MAY, 1912.

At the University, Dr. J. W. Ellis, F.E.S., in the chair.

Miss E. BRAY contributed flowering specimens of *Aesculus glabra* and *A. Pavia*.

Miss E. G. HILL forwarded a specimen of the "hen and chickens" daisy, found in Somerset.

Miss O'Loughlin exhibited a nettle infected with *Aecidium urticae*, a fungus usually regarded as a stage of *Puccinia caricis*.

The Chairman exhibited a number of coloured drawings of new Wirral fungi.

Mr. J. A. WHELDON called attention to an important botanical discovery recently made in S. Lancashire. A moss found early in May in a canal between Manchester and Ashton proved to be *Octodiceras julianum*. The interest of this discovery lay in the fact that the species was first noticed in the river Severn in 1901, and was then new to Britain. Until the present discovery it had not been found elsewhere. Mr. Wheldon also exhibited flowering examples of *Cochlearia danica*, which occurred in the precincts of Walton Goal. He considered that the plant had probably been introduced, doubtless originating from sand brought from the coast.

The feature of the evening was a lantern lecture by Mr. A. A. Dallman, F.C.S., on "Some Problems in Floral Biology." After some account of the work and views of Darwin and other botanists on the dimorphism of the primrose, the lecturer showed that there were various objections to many of the text-book statements in regard to the pollination of this species. He then described his own field observations and experiments in North Wales, continued over a period of four years. In presenting his results the lecturer showed that these were essentially in harmony with, although supplementary to, Darwin's work. The fact that many erroneous ideas occurred in text-books was mainly traceable to slavish transliteration and lack of experimental verification. References were made to a number of suggestive problems in floral biology and to the lecturer's work on the influence of colour and other factors in regard to the pollination of certain flowers.

A cordial vote of thanks was passed to Mr. Dallman on the motion of Mr. Wheldon, seconded by Mr. W. J. Bayliss.

WEDNESDAY, JUNE 12th, 1912.

At the Common Hall, Mr. A. A. Dallman, F.C.S., in the chair.

Miss E. BRAY contributed some flowering specimens of *Phyteuma spicatum* from Sussex.

Mr. C. B. TRAVIS exhibited and commented upon a specimen of *Stigmana*, a common carboniferous fossil.

Dr. J. W. ELLIS showed drawings of two species of *Septonia*—*S. plantaginis* and *S. digitalis*—micro-fungi which he had lately observed, and previously unrecorded for Britain. A third species of the same genus, of which a coloured drawing was shown, appeared to be new to science. Dr. Ellis had named this species *Septonia lunariae*. Examples had been found on the fruits of *Lunaria biennis* at Wallasey, by Miss O'Loughlin.

Mr. J. A. WHELDON, F.L.S., exhibited a teratological form of a cultivated rose.

Mr. A. A. DALLMAN, F.C.S., showed a photograph of *Victoria regia*—in its native home on the Amazon.

The following papers were read:—

1. "The Arctic and Alpine plant formation of Ben-y-Gloe," by Messrs. A. Wilson, F.L.S., and J. A. Wheldon, F.L.S.
2. "Marram Grass and Dune Formation on the Lancashire Coast," by W. G. Travis.

Both papers were illustrated by a number of specimens.

The chairman, in opening the discussion, remarked that the first contribution might be regarded as a distinct addition to our knowledge of British plant communities. The paper acquired additional value from the fact that the joint authors were recognised authorities on bryophyta and lichens, which entered so largely into the composition of the Plant formation in question. Mr. Travis had remarked on the occurrence of peculiar swollen structures on the Marram rhizomes, and it was desirable that these should receive further notice.

In proposing a vote of thanks, Dr. Lee paid a tribute to the methods underlying both the papers, which revealed careful analysis and interesting lines of investigation. Mr. Sibbald seconded, Dr. Ellis, Messrs. Routledge and C. B. Travis also taking part in the discussion.

WEDNESDAY, JULY 10th, 1912.

At the Common Hall, Mr. J. A. Wheldon, F.L.S., presiding.

Miss E. BRAY contributed specimens of *Linaria vulgaris*, showing abnormal development, and examples of *Linum angustifolium*.

Miss O'LOUGHLIN showed flowering and fruiting specimens of *Thlaspi arvense*, from Wallasey.

Miss K. WHITE exhibited a curiously fasciated stem of a garden rose.

Dr. J. W. ELLIS showed a coloured drawing of an unusually fine example of *Amanitopsis vaginata*, found by Mr. Holt on the Birkenhead golf links.

Mr. A. A. DALLMAN exhibited flowering specimens of *Iris foetidissima* from Flintshire. This is a plant of South-Western type of distribution, and the Flint station represents its northern limit on this side of Britain.

Dr. W. A. LEE's paper was postponed to the next meeting owing to the small attendance.

WEDNESDAY, SEPTEMBER 11th, 1912,

At the Liverpool University, Mr. W. G. Travis presiding.

An example of *Urticularia minor*, in flower, was sent by Mr. Pearsall, from Dalton-in-Furness. Mr. H. J. Wheldon exhibited an interesting series of water-colour sketches of Fungi. Among them was an example of *Coprinus roseo-tinctus*, Rea, gathered at Walton two years before and laid aside as unnameable.

Specimens sent by Mr. W. H. Western from Darwen were referred to *Clavaria acuta* by Mr. Colton, the well-known expert. These were new to Lancashire. Mr. Crossland reported that *Glopixis ammophila* had been found on the Southport dunes. Mr. J. A. Wheldon showed *Lamium amplexicaule* from Walton, with cleistogamous flowers, and specimens of *Pyrus Achras* were sent by the Rev. S. Gasking from Guernsey. Messrs. Wheldon and Travis commented on the new variety *condensata* of *Parnassia palustris* and exhibited examples of both the inland and the sand dune form.

Dr. LEE then delivered a very able lecture on "The Use of Hypotheses in Botanical Science." The subject was novel, and was treated in an original manner, Dr. Lee illustrating it by many felicitous references to the past history of botanical science, and pointing out the desirability of fully utilising hypotheses in order to advance knowledge. An interesting discussion followed, in

which Messrs. Sibbald, C. B. Travis, Wheldon, and the chairman took part, Dr. Lee replying to the questions and criticisms which his paper elicited.

WEDNESDAY, OCTOBER 16th, 1912.

At the Liverpool University, Mr. A. A. Dallman, F.C.S., presiding.

Miss E. BRAY sent examples of fruiting specimens of *Chili Nettle* (*Lonsa*), also *Malva pusilla*, an alien which seems to be spreading in this country.

Miss E. WARHURST, L.L.A., showed examples of cultivated Coniferae and allied plants from the Calthorpe nurseries, Yorkshire.

Dr. Lee brought examples of *Artemisia maritima*, cultivated in his garden from roots gathered at Knott End, and gave an interesting account of the changes occurring in their characters, the plants having become more luxuriant and less hoary. He also showed fresh specimens of *Erica*, with artificially produced hybrids, and an example of *Veronica longifolia*, found near the Railway at Wallasey, and sent to Kew for identification. The occurrence in this station was difficult to explain as the species is a native of Southern Europe.

Dr. C. T. GREEN sent specimens of the alien *Ambrosia Artemisiifolia* found in the Birkenhead district.

Mr. W. G. TRAVIS remarked on the recent discovery of *Colchicum autumnale*, sent by Mr. Western, from Whalley, South Lancashire, which definitely settled the question of the admission of this species to the South Lancashire flora.

Dr. ELLIS exhibited a choice collection of *Mycetozoa*, mounted in a glass case, which enabled a ready comparison of the macro-characters of the different genera, and their internal structure was shown under the microscope. These specimens were in illustration of his paper "On the Life History and General Characters of the Mycetozoa." The address covered in clear and untechnical terms the singular history of these wonderful organisms. Their disputed status, whether animal or vegetable, was fully discussed.

Miss E. WARHURST, L.L.A., read a paper entitled "Notes on the Yorkshire Dales," in which she described the physical features and vegetation of Wharfedale, Wensleydale, and other beauty spots of the county. Both papers were greatly appreciated, and a lively discussion followed, in which numerous members took part, after which the specimens illustrating the papers were examined.

WEDNESDAY, 13th NOVEMBER, 1912.

At the Liverpool University, the President, Mr. W. T. Haydon, F.L.S., in the chair

Miss E. BRAY contributed specimens of *Iris foetidissima* in fruit, and flowering examples of *Petasites fragrans*.

Dr. ELLIS gave some account of the life history of *Xylaria Tulasnei*, the fruiting condition of which has been found for the first time in Britain, at a recent meeting of the Mycological Society at Torres. He also showed drawings of two recent additions to the British Mycological Flora which he had obtained in Cheshire. These were *Phoma strobiligena*, var. *macrospora*, Sacc., occurring on the distal ends of the scales of fir cones, and *Pezicula (Dematea) encrita*, Karst., one of the Discomycetes. Dr. Ellis also showed

specimens of *Trientalis europaea*, and *Goodyera repens*, the former showing rich autumnal colouring. Both these examples were obtained near Torres.

Mr. W. G. TRAVIS exhibited *Salix arbuscula*, and the rare hybrid *Salix Myrsinites* $\times$ *nigricans* from Ben Lui, Argyll. He also showed *Salix Capreola*, regarded as a hybrid between *S. Caprea* and *S. Aurita*, found at Brincall, South Lancashire.

The PRESIDENT gave an account of a striking instance of grafting or marching, recently observed in Westmoreland. Four trees—ash, beech and two sycamores—on the bank of the Greta at Keswick, and about forty or fifty yards beyond the North bridge in the park, were all fused together near the base in an apparently organic union. The beech appeared to be carrying the other three trees, and the ash and beech had fused again at a point higher up. Photographs were shown, taken from various aspects, illustrating the incongruous union.

Mr. A. A. DALLMAN exhibited autograph letters of two botanists of last century, one from William Wilson, of Warrington, to Miss Potts, of Chester, and the other from Hewett C. Watson to Robert Brown.

Mrs. S. S. ALSTON contributed a paper entitled "Concerning Yorkshire Dales—being extracts from a diary." At the close of a very attractive paper, a vote of thanks was passed to Mrs. Alston, on the motion of the President.

Miss K. E. MARIS read a paper entitled "Notes on Wicken Fen, Cambridgeshire." Mr. Wheldon, in moving a vote of thanks, remarked on the graphic description of the flora and general aspect of the Fen which had been given. He asked if the Lecturer had observed the plant referred to in the books as *Aster Novi Belgii*, stated to grow in the area under notice. The motion was seconded by Mr. Waterfall, Mr. W. G. Travis and Dr. Ellis also speaking in support. In acknowledging the vote, Miss Maris said that she had not seen the plant, about the identity of which there is dispute, neither had she seen *Viola lactea*, which is also recorded.

SATURDAY, DECEMBER 14th, 1912.

At the Liverpool University, Mr. W. T. Haydon, F.L.S., being in the chair.

The meeting was devoted to an exhibition of work and distribution of prizes in connection with the Society's Nature Study Scheme. The chairman delivered an interesting and stimulating address, in which he exhorted the young members of his audience to active personal efforts in the study of the processes of Nature. Some of the work submitted was of excellent quality, and indicated a good grounding in natural science.

FIELD MEETINGS.

SATURDAY, 27th APRIL, 1912.

AT AINSDALE, *Leader*—Mr. W. G. TRAVIS.

On arrival it was found to be too early for many of the Phanerogamia, and comparatively few flowers were in evidence. A solitary example of *Lepidium Draba* was found near the station, and several

plants of *Claytonia perfoliata* were seen close by. Other flowering specimens noted were *Myosotis collina*, the pretty sandhill violet, (*Viola ericetorum*) and *Teesdalia nudicaulis*. A form of the Whitlow grass was seen, which Mr. J. A. Wheldon considered to be the plant named *majuscula* by Jordan. A moss found in fruit by Mr. Chesher proved to be *Brachythecium albicans*, a frequent plant on the sand dunes, but the capsules are very rarely produced. *Equisetum variegatum*, a local arenicolous species, was also seen, and was new to some members. A short address was given by Mr. W. G. Travis on the features of the local vegetation.

SATURDAY, 11th MAY, 1912.

At Mollington and Stoke, under the guidance of the President. The party were met at the Station by the Rev. J. M. New, who accompanied them to the bounds of his parish, pointing out the various features of natural and archaeological interest. On the route to Stoke the sub-species of the dandelion to which the name *erythrospermum* has been applied was seen at a sand quarry, and, close by, examples of that uncommon paradox the white red dead nettle. Mr. Haydon called attention to the abundance of forms of *Lamium purpureum* in this area. Many of these were extremely puzzling and difficult of diagnosis, and afforded an excellent study in variation. The canal yielded a number of hygrophilous species including *Potamogeton perfoliatus*, *Ranunculus fluitans*, *Acorus Calamus*, and several carices. The elegant-fruited *Physcomitrium pyriforme* was found in some quantity by Mr. W. Chesher, M.A., and Dr. W. A. Lee. The President pointed out the curious fact that the Goutweed and Greater Celandine are invariably associated with cottages. Other records were *Galium*, *Cruciata*, *Adoxa Moschatellina* and *Orchis Morio*.

SATURDAY, 8th JUNE, 1812.

At THURSTASTON. *Leader*—Miss N. SPEAKMAN.

The chief plants noted were *Geranium sanguineum*, *Anchusa sem-pervirens*, *Elymus arenarius*, *Genista tinctoria*, *Rosa spinosissima*, *Lepidium* *Draba*, *Trifolium strictum*, as well as many more characteristic species.

WEDNESDAY, 19th JUNE, 1912.

At CALDERSTONES PARK.

Mr. J. HORTON, the superintendent of the Park, kindly undertook the leadership of the party, and drew attention to the very fine trees and numerous floral attractions cultivated in this extensive and interesting enclosure.

SATURDAY, 29th JUNE, 1912.

At SAUGHALL AND BLACON POINT

Leaders—Messrs. G. LOFTUS AND H. S. MARSH.

The following species were recorded. *Orchis pyramidalis*, *Bryonia dioica*, *Geranium columbinum*, *Vicia hirsuta*, *Thlaspi arvense*, *Campanula Trachelium*, *Cerastium arvense*, and other more common species.

SATURDAY, 13th JULY, 1912.

At Llyn Helig. *Leader*—Mr. A. A. DALLMAN, F.C.S.

The outing took place in conjunction with the Chester Society of Natural Science. The beautiful situation of the lake among the pine woods, 600 feet above the level of the sea, was much admired. The lake nowhere exceeds six feet in depth, and is the haunt of many rare and interesting forms of plant life. The following were recorded. *Salvia verticillata*, *Pilularia*, *Littorella*, *Orchis pyramidalis*, *Hypericum montanum*, *Helianthemum* sp., *Euphorbia Paralias*, *Elymus*.

SEPTEMBER 28th, 1912.

At LATHOM PARK. *Leader*—Mr. J. A. WHELDON, F.I.S.

It was intended to make a special study of the fungi on this occasion, but the members were disappointed at the very few species which they were able to find. The broad-stretching grounds were, however, much enjoyed, and some attention was given to the interesting forest trees with which the park is interspersed. Mr. H. J. Wheldon gave a brief address on the study of mushrooms, dividing them into classes, viz.:—Agarics, with gills. Polypores, with pores underneath, and Polypores with teeth-like spines. The colours of the spores whether white, pink, brown or yellow, were a valuable character in identification. Genera were founded on the presence or absence of the annulus. He then dealt in detail with the various species, and a brief account of their life history concluded a most instructive discourse.