

PROCEEDINGS
OF THE
Liverpool Botanical Society

ELEVENTH TO THIRTEENTH SESSIONS.

For the Years 1916-1918 inclusive.

ARBROATH :
PRINTED BY T. BUNCLE & CO., MARKET PLACE.

February 1921.



W. G. TRAVIS,

President 1916-1918.

PROCEEDINGS
OF THE
Liverpool Botanical Society

HEADQUARTERS:
COMMON HALL, HACKINS HEY.

Eleventh to Thirteenth Sessions.

For the Years 1916-1918 inclusive.

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PROCEEDINGS
OF THE
Liverpool Botanical Society
Eleventh—Thirteenth Sessions, 1916-1918.

Summary of Council's Reports.

The interest shown in previous years continued to increase and the period dealt with is marked by a growing membership and well-attended indoor and field meetings. Although systematic botany still takes a foremost place in the Society's activities, some excellent work in this department having been achieved, there has been a gratifying development of specialised study and the papers read before the meetings have already been published in many cases in the official organ of the Society, "The Lancashire and Cheshire Naturalist." Owing to the railway restrictions the excursions were mainly occupied with places of easy access and the result has been an intensive scrutiny of many habitats which had hitherto received but superficial attention.

The specimens exhibited at the Society's meetings and the communications made have been of scientific value and the members have realised in greater measure the importance of this feature.

The Society's Library, which contains a good number of standard volumes, has been more freely availed of, although the country members have not yet utilised this advantage to any appreciable extent. Text-books and Systematic works were most in demand, while Plant biology came in for a substantial share of support. As the purchase of new issues depends solely upon voluntary aid, it rests with the members to decide the extent to which the collection can be improved.

SOUTH LANCASHIRE FLORA.

The Flora Committee's reports for the years 1916, 1917 and 1918, refer to the unfavourable effect of war conditions on the progress of their investigations.

Phanerogamia.—The following critical genera and groups have received particular investigation:—*Viola* (Melanium Section). *Erodium*, *Sagina*, *Plantago*, *Orchis*, *Potamogeton*, and *Festuca*. *Orchis praetermissa* Druce is recorded for the vice-county. The dune form of *Helleborine viridiflora* (Reichb.) has been distinguished as *f. dunense* by Messrs Stephenson in *Journ. Bot.* (Jan. 1918), and the results of a further study of the distinctions between this species and *H. latifolia* are now available. Among alien plants new or rare in the area the following are reported:—*Bidens bipinnata* L., *B. frondosa* L., *Thelesperma trifolium* (Poir.), *Lychnis macrocarpa* Boiss. & Reut., *Trifolium pannonicum* Jacq., *Sideritis montana* L., *Poa palustris*, var. *muralis* Asch., *Trigonella incisa* Benth., *Grindelia robusta* Nutt., *Centaurea montana* L., *Helianthus Bolanderi* A. Gray and *Eragrostis capillaris* Nees.

The two following papers have been published :—" The Development of Vegetation on the Lancashire Dunes," by W. G. Travis, *Lancashire and Cheshire Naturalist*, May and June 1916, and " Early Botanical Notes and Records," by A. A. Dallman, *Lancashire and Cheshire Naturalist*, July 1918.

Cryptogamia.—As regards the Bryophyta, *Philonotis caespitosa* Wils. has been added to the list of mosses, and the discovery of remains of *Sphagnum imbricatum* Russ. in peat at Red Moss, near Horwich, is of interest, as the species is not now known to be extant in the vice-county. A paper which includes a complete list of the bryophytes of the Lancashire sandhills has been prepared by J. A. Wheldon and W. G. Travis, but it is not yet published. Additions to the hepatic flora are *Aplozia rivularis* Schiffn., *Cephalozia Francisci* Dum. and *Eucalyx paroicus* (Schiffn.) Macv. Six species of lichens, new to South Lancashire, have been recorded, namely :—*Homodium pusillum* Nyl., *Physcia aipolia* Nyl., *Phlyctis argena* Koerb., *Arthonia Swartziana* (Sydow), *Opegrapha atra* Pers. and *O. vulgata* Ach., the last five from near Clitheroe. Good progress has been made with the investigation of the fungus flora and numerous additions have been made in the period under review. In the *Lancashire and Cheshire Naturalist*, July 1918, Mr H. J. Wheldon commenced the publication of a " Fungus Flora of Lancashire," and this was completed in the issue of that journal for March, 1919.

By the death of Dr J. W. Ellis, on 20th August 1916, the Flora Committee lost a highly-valued member who had served on the Committee for seven years and had substantially aided the work of investigation, especially in connection with the fungi.

The Flora Committee is indebted for specimens and information to the following contributors :—W. Ashworth, T. Baddeley, H. Bendorf, Miss E. M. Blackwell, M.Sc., J. C. Healey, W. H. Pearson, A.L.S., Miss E. Reid, C. R. Ritchings, H. Robinson, Rev. M. Toohey, S.J., and W. H. Western; also to the following botanists for assistance with critical plants :—E. G. Baker (British Museum), A. Bennett, F.L.S., G. C. Druce, LL.D., F.L.S., Miss G. Lister, W. E. Nicholson, F.L.S., C. E. Salmon, F.L.S., Miss A. L. Smith, F.L.S. (British Museum), and Miss E. M. Wakefield (Kew).

Synopsis of Papers, 1916-1918.

ORDINARY MEETINGS, 1916.

- January 18th.—Annual Meeting.
- February 25th.—“ The Development of Vegetation on Lancashire Sand-dunes,” by the President.
 “ Some Botanical Place Names,” by Dr W. A. Lee, M.A.
- March 23rd.—Informal Meeting.
- April 10th.—Lantern Lecture—“ A Border Pilgrimage,” by A. A. Dallman, F.C.S.
- May 12th.—A Note on *Ranunculus Ficaria* L., by Dr W. A. Lee, M.A.
- June 16th.—“ School Gardens,” by Miss A. P. Lloyd, B.A.
 “ Nature Study Teaching to Infants,” by Miss E. Warhurst, L.L.A.
 “ Botany in a City School,” by Miss A. Lee, L.L.A.
 “ A Three Years’ Course,” by Miss A. B. Gleave, B.Sc.
- July 15th.—“ Further Notes and Observations on the Lesser Celandine (*Ranunculus Ficaria* L.), by A. A. Dallman, F.C.S.
- August 17th.—“ Interim Report on the Research into the Occurrence of Oikogetons,” by Dr W. A. Lee, M.A.
 “ The Whitening of Flowers of *Ranunculus acris* L. after Opening,” by Miss E. Bray.
 “ Phases in the Opening, Pollination and Fading of Flowers of *Cichorium Intybus* L.,” by A. A. Dallman, F.C.S.
- September 21st.—“ The Simplification of Classification,” by C. Waterfall, F.L.S.
- October 19th.—Lantern Lecture—“ Rambles in India with Dog and Gun among Birds, Beasts, Flowers and Ferns,” by J. Thompson.
- November 17th.—“ Scottish Plant Names,” by A. A. Dallman, F.C.S.

ORDINARY MEETINGS, 1917.

- February 26th.—Annual Meeting.
- March 15th.—“ The Hybridisation of Mosses,” by J. A. Wheldon, F.L.S.
- April 26th.—Lantern Lecture—“ Altruism in Plant Life,” by A. H. Dudley.
- May 24th.—Lantern Lecture—“ Scottish Wild Flowers in their Haunts,” by A. A. Dallman, F.C.S.
- June 18th.—“ Old Liverpool Botanising Haunts,” by the President (W. G. Travis).
- July 17th.—“ Some Desiderata in a Local Flora,” by Dr W. A. Lee, M.A.
- August 20th.—“ Notes on the Study of Grasses,” by A. A. Dallman, F.C.S.
 “ Notes on the Study of Galls,” by Dr W. A. Lee, M.A.
- September 18th.—“ Collection, Taxonomy and Ecology of Sphagna,” by J. A. Wheldon, F.L.S.

October 20th.—“Sphagnum as a Dressing for Wounds,” by R. Croston.

November 15th.—Lantern Lecture—“Some Personal Experiences of Plant Life in the Federated Malay States,” by W. S. Laverock, M.A., B.Sc.

December 10th.—Lantern Lecture—“Thoreau and his Environment,” by W. T. Haydon, F.L.S.

ORDINARY MEETINGS, 1918.

January 15th.—Annual Meeting.

February 25th.—“The Scope and Functions of a Botanical Society,” by Dr W. A. Lee, M.A.

March 21st.—“The Identification of Plants by Professor Gaston Bonnier,” a study by Rev. M. Toohey, S.J.

April 17th.—Lantern Lecture—“Trees of Lancashire and Cheshire,” by the President (A. A. Dallman, F.C.S.).

May 16th.—“Sand-dune Mosses,” by W. G. Travis and J. A. Wheldon.

June 17th.—“Résumé of the Field Meetings,” by Miss E. Warhurst, L.L.A.

July 3rd.—“Parasitism in the Plant World,” by Dr W. A. Lee, M.A.

August 20th.—“Old Botanising Haunts of Birkenhead,” by Miss A. Lee, L.L.A.

September 16th.—“Regional Survey of the Wirral,” by Miss E. M. Blackwell, M.Sc.

October 8th.—“*Adoxa Moschatellina* L. throughout the Year,” by A. H. Dudley.

November 13th.—“Descriptive Account of Limestone Flora,” by R. H. Day.

December 12th.—Demonstration of the Preparation of Microscopical Material, by A. H. Dudley.

BALANCE SHEET, 1916—1918.

Dr.

Cr.

	1916.	1917.	1918.		1916.	1917.	1918.
To Credit Balance,	£15 1 0	£15 9 6	£20 6 0	By Rent of Rooms,	£5 17 6	£4 5 0	£4 5 0
„ Subscriptions,	13 7 6	19 0 0	17 10 0	„ Circulars, Stationery, and Postages, <i>re</i> Hon. Secretaries,...	5 18 1	9 14 8	5 14 10½
„ Balance from Soiree,	1 9 1	1 15 2	0 0 10	„ Postages—			
„ Balance from Field Meetings,	—	—	0 3 11	Hon. Treasurer,	0 6 10	1 5 7	0 5 8
„ Special Subscription from C. Waterfall, F.L.S.,	0 3 0	—	—	Hon. Secy., South Lancashire Flora,	0 11 8	0 5 2	0 4 5
„ Two Tickets Soiree,	—	—	0 3 6	„ Lantern Expenses,	0 17 0	0 8 3	0 6 0
„ Sale of Proceedings,	—	—	1 16 0	„ Wreath,	1 0 0	—	—
				„ Printing Proceedings, 1912-15,	—	—	16 0 0
				„ Debit Balance, Nature Study Scheme, 1911-18,	—	—	2 12 0
				„ Subscription to <i>Lancashire Naturalist</i> , 1918,	—	—	0 7 6
				„ Credit Balance,	15 9 6	20 6 0	10 4 9½
	£30 0 7	£36 4 8	£40 0 3		£30 0 7	£36 4 8	£40 0 3

LIBRARY ACCOUNT.

o Balance brought forward,	£0 16 0	£0 17 0	£0 18 0	By Credit Balance,	£0 17 0	£0 18 0	£0 19 0
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	£0 17 0	£0 18 0	£0 19 0		£0 17 0	£0 18 0	£0 19 0

Audited and found correct.

Jan. 1917 { A. C. GRIFFITHS.
 { F. M. HAMILTON.

Jan. 1918 { A. C. GRIFFITHS.
 { F. M. HAMILTON.

Jan. 1919 { J. V. JONES.
 { A. C. GRIFFITHS.

GENERAL MEETINGS.

TUESDAY, 18th JANUARY 1916.

In the Common Hall, Dr W. A. Lee, M.A., in the chair.

The Council's report for the previous year was adopted unanimously, as was also the report of the South Lancashire Flora Committee.

The Treasurer's statement was approved, subject to acceptance by the auditors. The election of Officers and Council for the year 1916 resulted as follows:—

President:—W. G. Travis.

Vice-Presidents:—Dr W. A. Lee, M.A., J. A. Wheldon, F.L.S.

Treasurer:—G. Loftus.

Secretary:—W. R. Sibbald.

Council:—Mrs Bangham, Miss M. B. Barr, W. Chesher, M.A., Miss L. R. Cooke, A. A. Dallman, F.C.S., Miss A. B. Gleave, B.Sc., E. Horton, H. S. Marsh, Miss S. J. Shoobridge, Miss N. Speakman, J. Thompson and Miss E. Warhurst, L.L.A.

Mr. Sibbald proposed an addition to Rule XIII., which was carried in the following form:—The manuscript or copy of every paper read to the Society, or a clear and legible duplicate thereof on foolscap, shall be handed to the Secretary immediately after the reading of the paper. The included matter shall thereafter be at the disposal of the Council. A copy of all communications and a description of all exhibits shall be handed to the Secretary at the time when such communications or exhibits are presented.

FRIDAY, 25th FEBRUARY 1916.

In the Common Hall, Mr. W. G. Travis, President, in the chair.

Mr J. A. WHELDON, F.L.S., exhibited *Sphagna*, including a plant supposed to be *S. Holtii* W., from Kent. This species was described by Warnstorff from a plant collected by Mr G. A. Holt, at Delamere, Cheshire, which hitherto has been the only recorded station for it. Other species shown were *S. fuscum* Klinggr., var. *pallescens* W., from South Barrule, Isle of Man (Hartley and Wheldon), *S. fuscum*, var. *medium* Russ., from Glen Feshie, Inverness (Wilson and Wheldon), *S. quinquefarium* W., var. *flavum* W., from South Barrule (Hartley and Wheldon), and var. *viride* W., f. *heterocladum* W.; from Somerset (W. Watson). Mr Wheldon gave some account of the recent advance in the economic importance of *Sphagna*, alluding to their value as absorbent dressings for wounds.

Dr LEE commented on the occurrence of *Galanthus nivalis* L. at Bromborough, Cheshire.

The following ladies were elected to membership:—The Misses Irene Hilton, Mina Moore, D. M. Chester, and Renkin.

The President read a paper on the "Development of Vegetation on the Lancashire Sand-dunes," tracing the mature dune vegetation from its inception as Marram grass, basing his account on observations continued over a period of seven years. He also dealt with the physical conditions which contribute to the rise and maintenance of the association.

A paper was read by Dr LEE, on "Some Botanical Place Names," in which he traced the derivation of a large number of local names, as well as some from Wales and Ireland. The paper was much appreciated and elicited a lively discussion.

THURSDAY, 23rd MARCH 1916.

The evening was devoted to an informal conversation and an inspection of the contents of the library. Some proposals for the advancement of the Society's research scheme also received consideration.

MONDAY, 10th APRIL 1916.

In the Common Hall, Mr W. G. Travis in the chair.

Mr A. A. DALLMAN, F.C.S., exhibited a collection of lichens from Cumbrae, and called attention to their idiosyncracies of habitat on the various rocks of that island.

A curious *Chenopodium*, sent to the Botanical Exchange Club as *C. Vulvaria* L., was discussed by Mr Travis, who compared it with a local example, and pointed out the difference. In the discussion which followed the preponderance of opinion was in favour of regarding the Leicester plant as a microphylline state of *C. opulifolium* Schrad. Subsequently it has been named *C. hircinum* Schrad.

Mr WHELDON showed two species of Fungi from Sierra Leone sent by Mr W. WHELDON. The latter belonged apparently to the genera *Schizophyllum* and *Polystictus*.

Mr A. A. DALLMAN, F.C.S., delivered his lecture, illustrated by a profusion of his own lantern views, in which he described an extended period spent in the remote corners of the "Borderland." The lecturer compressed in the course of his remarks a wealth of details referring to the flora and fauna of the district and, in addition, much history and folk-lore was pleasantly introduced. The excellence of the photographs aroused very general admiration.

MONDAY, 1st MAY 1916.

In the Common Hall, Miss E. Warhurst, L.L.A., in the chair.

Dr LEE exhibited *Scrophularia vernalis* L., *Myosotis collina* Hoffm., and *Helleborus foetidus* L., from near Abergele, Denbighshire.

Mr A. A. DALLMAN, F.C.S., contributed a note on the name "Andurion," current in the Ormskirk district for Hemp Agrimony (*Eupatorium cannabinum* L.), and the name "Bazier," probably a corruption for "Bear's Ear," for *Primula Auricula* L., current in Eccles, quoted in Chambers' "Book of Days," 1869, vol. i., 547.

Mr C. WATERFALL, F.L.S., exhibited a new willow-herb, believed to be *Epilobium palustre* L. $\times$ *hirsutum* L., which had been provisionally named *E. Waterfalli*. The plant combines the inflorescence of *E. hirsutum* with the foliage of *E. palustre* and occurred in the Alvanley district, Cheshire.

FRIDAY, 12th MAY 1916.

In the Common Hall, Dr W. A. Lee, M.A., in the chair.

A letter of apology for non-attendance was read from Mr Joseph Thompson, of Chester, who was announced to give a lecture on "Rambles in India."

Dr LEE drew attention to a reference in S. T. Dunn's "Alien Flora of Britain," in which *Chelidonium majus* L. was regarded as "native in shady mountain woods in the east of Europe." Mr Clement Reid's discovery of its seeds preserved with other plant remains in interglacial deposits in Sussex seemed to show that its native range once included England, so that, although now found only adjacent to human habitations, the species was formerly not an Oikogeton.

Mr A. A. DALLMAN, F.C.S., sent a communication describing the occurrence of galls on *Salix Caprea* L., and *S. cinerea* L., caused by *Cecidomyia salicis* Schrank. The notes were accompanied by specimens of twigs and insects.

Mr W. R. SIBBALD exhibited photo-micrographs of various transverse sections of stems in which the growth of the vascular cylinder takes place in a special manner. The specimens displayed included *Bignonia*, sp., *Amarantus* sp. and *Beta vulgaris* L.

Dr LEE contributed a note on the variation of floral parts in *Ranunculus Ficaria* L., and suggested that investigations had not, so far, pointed definitely to the causes of variation, which needed to be observed intensively. It might be a question of nutrition or difference of aspect.

FRIDAY, 16th JUNE 1916.

In the Common Hall, Dr W. A. Lee in the chair.

Miss BRAY, Hailsham, sent specimens and notes dealing with *Symphytum tuberosum* L., which occurs between Bridge and Groombridge, Tunbridge Wells. She also sent specimens of *Trifolium scabrum* L., *T. squamosum* L., *T. striatum* L., from shingle at Pevensey Bay, and *T. subterraneum* L. and *Trigonella purpurascens* Lam., from Crumbles, Eastbourne.

Mr A. A. DALLMAN, F.C.S., sent specimens of *Senecio squalidus* L., from Oxford, *Schoenus nigricans* L., from Cumbrae, *Salix pentandra* L., observed at Formby, Litherland, Lancashire, and Leasowe, Cheshire, *Cirsium heterophyllum* L. and *Claytonia sibirica* L., from Greenock.

The following papers were read:—"School Gardens," Miss A. P. LLOYD, B.A., "Nature Study Teaching to Infants," Miss E. WARBURST, L.L.A., "Botany in a City School," Miss A. LEE, L.L.A., "A Three Years' Course," Miss A. B. GLEAVE, B.Sc.

Keen interest and appreciation were aroused by the varied and original treatment of the subject, the importance of which is being gradually and widely recognised.

THURSDAY, 13th JULY 1916.

In the Common Hall, the President in the chair.

The Misses Dennant, Gregson, and A. P. Lloyd, B.A., were elected members.

An exhibit was received from Miss E. Bray, Hailsham, showing the gradations of albinism in *Ranunculus acris* L.

Mr A. A. DALLMAN, F.C.S., showed a specimen of *Cardamine impatiens* L., from the Leete. This species was recorded by Robert Brown about 40 years ago from the same locality, but diligent search on many occasions failed to reveal its whereabouts until recently, when Mr Dallman discovered over a dozen plants on a bank of lead-mine refuse.

Mrs DALLMAN exhibited a specimen of *Thlaspi arvense* L., from Chester Cop. The name "penny-cross" is said to be derived from the resemblance of the fruit to the old silver pennies.

Mr A. A. DALLMAN read a paper elaborating further notes and observations on *Ranunculus Ficaria* L. In a highly interesting and valuable contribution he gave comprehensive statistics showing the variations in floral structure in specimens culled in various counties. Although he had not reached final conclusions he was able to offer some important tentative results.

THURSDAY, 17th AUGUST 1916.

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

Miss BRAY, Hailsham, sent specimens of *Serratula tinctoria* L., white and purple forms, showing large and small flowers. Mr Sibbald remarked that the large-flowered specimens had slender stems and scanty foliage as compared with the smaller-flowered. She also sent specimens of *Centaurea nigra* L., white and purple, grown from seed.

Mr W. CHESHER, M.A., exhibited specimens of *Sison Amomum* L. and *Senecio erucifolius* L., found near Meols, Cheshire.

Mr C. WATERFALL, F.L.S., showed garden specimens of *Aster linosyris* Bernh., the original from Bircham, South Devon, *Lepidium latifolium* L., originally from Cheshire, *Melittis Melissophyllum* L., originally from Herefordshire, *Scrophularia vernalis* L., originally from Gloddaeth, Llandudno.

The following communications were read and caused a good discussion:—"An Interim Report on the Research into the Occurrence of Oikogetons," by Dr W. A. LEE, M.A., "Phases in the Opening, Pollination, and Fading of Flowers of *Cichorium Intybus* L.," by Mr A. A. DALLMAN, F.C.S., "The Whitening of Flowers of *Ranunculus acris* L. after Opening," by Miss E. BRAY, Hailsham.

THURSDAY, 21st SEPTEMBER 1916.

In the Common Hall, Dr W. A. Lee in the chair.

Exhibits:—Mr J. A. WHELDON, F.L.S., *Reseda lutea* L., var. *pulchella* P. J. Müll. (new to Lancashire), *Galium Mollugo* L. (probably an alien), both from Walton, the hepatic, *Alicularia compressa* (Hook.) Nees, var. *gigantea* Macv., from Westmoreland, the only known station, *Fissidens pusillus*, var. *Wilsoni* Wheldon, a new variety from Heald Brow, Silverdale (see *Journ. Bot.* Nov. 1916, p. 317). The exhibitor remarked, with reference to the last-named species, that the splitting of the lamina was noted by de la Pylaie in 1814. Robert Brown, in 1819, expressed the opinion that the structure was a true leaf with a dorsal and terminal wing. In 1878 Lindberg and Braithwaite had come to the conclusion that there is a single leaf with a stipule adnate. Salmon (1899) supported the theory of Brown.

Mrs A. A. DALLMAN:—Specimens of *Xanthium spinosum* L. and *Amaranthus spinosus* L. (aliens from S. Europe and India respectively), found at Chester Cop, and now recorded for the first time for Flintshire, *Rubus laciniatus* Willd., a garden escape growing at Prenton.

The Secretary read a paper contributed by Mr CHARLES WATERFALL, F.L.S., on "The Simplification of Classification." Hints for the assistance of beginners and teachers included the use of scientific

names exclusively, the constant making of and reference to notes, and the necessity of overcoming difficulties without reference to books. The objection to specific and varietal names derived from surnames met with criticism on the grounds that inadequate descriptive titles only confuse the student.

THURSDAY, 19th OCTOBER 1916.

In the Common Hall, Mr J. A. Wheldon, F.L.S., in the chair.

Exhibits:—Mr J. A. WHELDON, F.L.S., *Hypnum aduncum* Hedw., var. *Wheldoni* Renaud, and *Sphagnum imbricatum* Russ., var. *cristatum* W., the former from sand-dunes near Burnham, West Somerset, coll. C. P. Hurst, a new county record, hitherto found only in Yorkshire, West and South Lancashire. It was described by Renaud in the *Revue Bryologique*, 1910, p. 29, from specimens collected near Birkdale. The latter was found in peat collected at Red Moss, near Horwich, by Mr W. G. Travis. The species has not yet been found in Lancashire in the recent state, but the fossil examples indicate that it occurred there at no distant period. It still grows in Westmoreland, Yorkshire, and Wales. The material submitted by Mr Travis was quite good, and Mr Wheldon had no hesitation in referring it to the moss named.

Mr J. THOMPSON gave a lecture on "Rambles in India with Dog and Gun among Birds, Beasts, Flowers, and Ferns." The lecture was illustrated by numerous specimens, as well as by a number of lantern slides.

FRIDAY, 17th NOVEMBER 1916.

In the Common Hall, Mr W. G. Travis in the chair.

Exhibits and Communications:—Mr A. A. DALLMAN, F.C.S., *Puccinia menthae* Pers., Mint Rust. Teleutospore stage on foliage of *M. aquatica* L., gathered at Ardentinnny, Loch Long, Argyllshire—a common micro-fungus found on garden mint and several other species of *Menthae*.

Dr LEE:—*Neuroterus fumipennis* Htg., Cupped Spangle Gall. Mr J. Brown, of the Lancashire and Cheshire Entomological Society, had prepared notes on microscopic observations. The point of adherence in cross-section forms an irregular oval, within the cup are hair-like amber-coloured incurved structures, not unlike a composite flower, the cup-flower showing minute particles of a sugar-like substance. On the obverse side, the point of attachment exhibits a pith-like structure from which radiate the hair-like processes, resembling a minute chrysanthemum flower-bud. The ovum could not be detected either in the leaf tissue or in the gall. An incipient gall caused part of the leaf to assume a crimson hue, and the ordinary reticulation was obscured by the assembling of minute grains of sugar, a deep depression appearing in the centre. *Neuroterus lenticularis* Oliv., Common Spangle Gall. The disc bears small tufts of terra-cotta coloured hairs, each tuft containing 20 or 30, terminating in a sharp hyaline point. The tufts are so closely arranged, especially in the centre, that the hairs touch and become entangled with those of adjacent tufts. The under surface exhibits depressions apparently due to cellular structure, in some cases four or five times as long as broad. At the point of attachment to the leaf a system of medullary rays supplants the parenchyma, the actual point of contact showing pith-cells at first sight resembling crystallised sugar. The tufts appear to

have no root system but are parasitic on the disc. A sectional view of the gall reveals an inner gallery or larval chamber extending from the centre almost to the circumference. The process of gall formation appears to be initiated by the depositing of an ovum by the female insect. A puncture is made by the ovipositor in the leaf and, together with the egg, is transferred a small quantity of virus, resulting in hypertrophy. This is probably nature's own *vis medicatrix*, or the attempt to rid the organism of the foreign intrusion. The process at least succeeds in localising the malady and confining it to a limited point. The deposit or concentration of sugar at this juncture may serve also as a store of nourishment for the growing larva, which emerges, after tunnelling its way out, as a complete imago. The insect, which is extremely minute, belongs to the order Hymenoptera, tribe Entomophaga, and family Cynipidae. Mr W. G. TRAVIS:—*Senecio spathulæfolius* DC. A very rare British plant, known from only two localities in the British Isles, viz.:—Anglesea and Mickel Fell, Durham. The specimen exhibited was from Holyhead. *Anthyllis Vulneraria* L., var. *coccinea* L., also from Holy Island, Anglesea, where it occurs on grassy cliffs by the sea. An example of *Plantago lanceolata* L., of considerable teratological interest, was also exhibited. In this case the scape at its apex bore a cluster of small leaves in the axils of which were developed a number of spikes of inflorescence, some sessile or nearly so, others on stalks or small secondary scapes, two or three inches long. The specimen resembled a small example of *Plantago lanceolata* growing on the top of a normal scape, the "woolly neck" at the base of the leaves being also present. The specimen was gathered on waste ground at Walton in September last.

Mr A. A. DALLMAN, F.C.S., read a paper on "Scottish Plant Names." Leaving out of his purview those of known Gaelic origin, he introduced a number of highly interesting terms, including some clearly derived from ancient Keltic sources and showing close affinity with corresponding Welsh names; others were evidently continental or scientific names transformed, while some again were quaint and expressive titles, the outcome of contempt for troublesome weeds.

Dr LEE read a short paper dealing with recent observations on "The Pollination of the Henbane."

The President, in moving the thanks of the meeting, took the opportunity of congratulating Mr Dallman on his having been recently awarded the Kingsley Medal by the Chester Society of Natural Science—a signal honour.

FIELD MEETINGS.

SATURDAY, 15th APRIL 1916.

At Bromborough, from whence, under the leadership of Miss K. WHITE, the way lay over field-paths and through woods to Eastham Village. Owing to the lateness of the spring only a small number of flowering plants were observed. *Salix Caprea* L. was blooming freely near Bromborough, both the pistillate and staminate forms being noticeable. On a wall near Eastham Ferry *Cardamine hirsuta*

suta L. was seen flowering. The woods afforded little of note and very few trees were in leaf, although *Pyrus Aucuparia* Ehrh. was green and its flowers visible. A visit was paid to the churchyard where a famous yew tree is said to have attained the age of two thousand years. On the journey to Bromborough *Lamium purpureum* L., *Stellaria Holostea* L., *S. media* Vill., *Viola tricolor* L., and *Veronica hederacifolia* L. were observed in flower. *Luzula campestris* DC. and *L. pilosa* Willd. were abundant. *Bryum caespiticium* L., *Leucobryum glaucum* Schp., *Pellia Fabbriana* Raddi, *Lepidozia reptans* Dum., *Buellia canescens* De Not., *Candelariella vitellina* Mull-Arg. and *Parmelia saxatilis* Ach. were also noted.

SATURDAY, 20th MAY 1916.

Leader—Mr W. R. SIBBALD.

Owing to the floods, the walk from Hoylake to Thurstaston was abandoned and the party explored the area between Hoylake and Moreton. Near the Hoylake gas-works *Reseda luteola* L. and *Saponaria officinalis* L. were observed, and at Meols *Orchis Morio* L., *Saxifraga tridactylites* L., *Valerianella olitoria* Poll., and *Vicia lathyroides* L. Other species recorded were *Erodium cicutarium* L'Hér., *Geranium lucidum* L. and *Lepidium Smithii* Hook.

SATURDAY, 3rd JUNE 1916.

Acton Bridge to Bostock and Brocklehurst. Leaders—Miss E. WARHURST, L.L.A. and Mr WHITEHEAD.

A pleasant walk through part of the Earl of Ellesmere's estate alongside the river gave opportunities for gathering a large variety of woodland species amongst which, however, nothing of striking rarity was found. Bostock Hall grounds, which Captain Hayhurst had kindly granted permission to visit, contained many choice flowers, and amongst the fine trees was a patriarchal beech, the trunk of which measured 25 feet in circumference. Two of the branches were naturally grafted or inarched.

SATURDAY, 17th JUNE 1916.

Freshfield and Ainsdale. Leader—Mr W. G. TRAVIS.

The object of the meeting was to illustrate the paper given by the leader, on "The Development of Sand-dune Vegetation" (vide *Lancashire and Cheshire Naturalist*, May-July, 1916), and on this occasion additional explanations were given in the course of short field-talks.

WEDNESDAY, 5th JULY 1916.

Leader—Miss E. WARHURST, L.L.A.

An evening ramble was taken from Oxton through Prenton to Landican, the records taken being confirmations of previous ones.

SATURDAY, 8th JULY 1916.

Kirkby. Leader—Mr W. G. TRAVIS.

On the route to Kirkby Moss were noted *Matricaria Chamomilla* L., and its alien congener, *M. suaveolens* Buchenau, *Aethusa Cynapium* L., *Spergularia arvensis* L., *Fumaria* spp., *Lamium album* L., *L. incisum* Willd., *Veronica agrestis* L., *Bromus sterilis* L., *Bromus*

mollis L., var. *glabrescens*, *Festuca sciuroides* Roth, and in the vicinity of houses, *Symphytum officinale* L., var. *patens* Sibth. Approaching the peat-moss, some sand-loving species were observed, such as *Jasione montana* L. and *Spergularia rubra* Pers. Along the ditches occurred *Rhamnus Frangula* L., small specimens of *Pyrus Aucuparia* Gaertn., as well as *Quercus pedunculata* Ehrh., *Betula alba* L., *Ilex Aquifolium* L. and *Rubus Idaeus* L. The unreclaimed peat-moss showed *Molinia caerulea* Moench, *Eriophorum vaginatum* L., with *Calluna vulgaris* Salisb., *Erica Tetralix* L., *Hypnum fluitans* L. and *Dicranella cerviculata* Schp., fruiting freely.

WEDNESDAY, 19th JULY 1916.

Fornalls Green, Meols.

The opportunity was taken to study mainly the sub-aquatic species which grow luxuriantly in this area. *Typha latifolia* L., *Carex Pseudo-cyperus* L., *Sparganium ramosum* Huds., *S. simplex* Huds. were gathered, and *Hippuris vulgaris* L. and *Agrimonia Eupatoria* L. occurred in small quantity. In addition the following species were recorded:—*Erythraea Centaurium* Pers., *Blackstonia perfoliata* Huds., and *Menyanthes trifoliata* L.

SATURDAY, 19th AUGUST 1916.

Sealand Nurseries. Leader—Mr E. HORTON.

The meeting was chiefly devoted to an inspection of the horticultural products of this extensive nursery, the herbaceous plants and rose-gardens occupying the most attention.

THURSDAY, 31st AUGUST 1916.

Ainsdale.

An evening ramble to this well-worked area was specially directed to the study of dune-flora, but no fresh records were added.

SATURDAY, 9th SEPTEMBER 1916.

Leader—Mr W. R. SIBBALD.

The route followed led by field-paths from Hoylake station to China plate farm, thence by Hill Bark grounds to Thurstaston Common, returning by lanes to West Kirby. The following species were recorded:—*Achillea Ptarmica* L., with aborted inflorescence presumably by a gall, *Carex vulpina* L., *Erigeron acre* L., *Potentilla palustris* Scop., *Prunus Padus* L., *Rubus affinis* Wh. and N., *R. discolor* Wh. and N., *R. caesius* L., *R. pulcherrimus* Neum., *Silene pratensis* Bess.; *Sison Amomum* L., and *Sisymbrium pannonicum* Jacq. The following lichens were also noted on rocks and walls:—*Parmelia fuliginosa* Nyl., *P. omphalodes* Ach., *Xanthoria parietina* Th. Fr., *Lecanora sulphurea* Ach. On earth, *Lecidea uliginosa* Ach., *L. granulosa* Schaer., *Cladonia pyxidata* Fr., and *C. cervicornis* Schaer.