

A decorative border of stylized roses surrounds the central text. The roses are arranged in a rectangular frame, with some corners featuring two roses and others one.

PROCEEDINGS
OF THE
Liverpool Botanical Society



**Fourteenth to Seventeenth Sessions
For the Years 1919-1922 inclusive**

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

September 1927



ARTHUR HORATIO DUDLEY.
PRESIDENT 1920.



ETHEL WARHURST, L.L.A.
PRESIDENT, 1921-1922.

PROCEEDINGS
OF THE
Liverpool Botanical Society

HEADQUARTERS:
HARTLEY BOTANICAL LABORATORIES, UNIVERSITY OF
LIVERPOOL.

FOURTEENTH TO SEVENTEENTH
SESSIONS.

For the Years 1919-1922 inclusive.

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Fourteenth to Seventeenth Sessions, 1919 to 1922.

SUMMARY OF COUNCIL'S REPORTS.

The activities of the Society have been well sustained on the lines followed in previous years. Regret is expressed in the Council's report for 1921 that too large a share of the Society's work is left to a small number of members, and an appeal is made for more active participation in various ways from a wider circle of members.

The membership has continued steady, but unfortunately a marked decline is noted in the attendance at field-meetings, as well as indoor meetings, as compared with the immediately preceding years.

The usual monthly meetings have been held throughout the winter months, but in 1921 and 1922 indoor meetings were discontinued during the summer months. The original papers and communications read at the meetings have been of a varied and instructive character. Some of these papers embody the results of valuable original work relating to the local flora and former local botanists. Many of the papers read before the Society have been published in the official organ of the Society, "The Lancashire and Cheshire Naturalist," and to the same journal we are indebted for publishing accounts of the Society's meetings.

The Society sustained a severe loss, in 1921, by the death of its late President, Mr A. H. Dudley, and also, in 1922, by the death of Mr J. C. Healey.

In October 1922 a cordial invitation was received from Prof. J. M'Lean Thompson, D.Sc., for the Society to make its headquarters at the Botanical Department of the Liverpool University. Consideration of this question was deferred until the annual business meeting early in the following year.

SUMMARY OF SOUTH LANCASHIRE FLORA COMMITTEE'S REPORTS (1919-1922).

The following summary of the progress of this investigation is compiled from the Flora Committee's Reports for the years 1919-1922:—

Phanerogamia.—The following additions to our lists refer to plants collected years ago, but only recently determined:—*Euphrasia Kernerii* Wettst., *Viola Riviniana* Reichb. $\times$ *canina* L., *Artemisia scoparia* W. & K., *Chenopodium album*, var. *subficifolium* Murr, and var. *lanceolatum* (Muehl.), *Sinapis turgida* Del. and *Medicago praecox* DC. Many interesting alien and adventive species have been noted in the period under review, including *Trigonella Foenum-graecum* L., *Nepeta Cataria* L., *Rumex salicifolius* Wein.,

Lepidium densiflorum Schrad., *Bidens frondosa* L., *Axyris amaran-
toides* L., *Trifolium echinatum* Bréb., and *Lythrum Hyssopifolium*
L. A number of these plants were collected by Mr F. Collier at
Stalybridge. Among several uncommon species reported in 1921
from the Southport district by Mr F. W. Holder was *Allium vineale*
L. from Marshside. Mr W. H. Western reported that the dwarf
cornel (*Cornus suecica* L.) flowered exceptionally well in 1922 in its
only known Lancashire station, and the plant appears to be slowly
increasing its area.

Cryptogamia.—Two collections of mosses, formerly belonging
respectively to Thomas Palgrave and F. P. Marrat, and now pre-
served in the Liverpool Museums, have been examined by Messrs
Lee, Travis and Wheldon, and numerous interesting local speci-
mens were found in these collections. The moss, *Archidium alterni-
folium* Schp., was found, in 1920, in a dune slack at Hightown, and
the hepatic, *Plagiochila asplenoides*, var. *humilis* Lindb., on the
Formby sandhills. *Petalophyllum Ralfsii* Gottsche was also found
in dune hollows at Hightown. *Nitella opaca* Ag. was sent from the
Rochdale district by Mr J. C. Healey. A list of fresh-water algae
collected in a pond at Didsbury was contributed by Miss Annie
Dixon.

A number of micro-fungi collected by Mr W. G. Travis are re-
ported to be additions to the South Lancashire fungus flora. Among
these may be mentioned *Psammia Boemmeriae* R. & S., on marram
grass, a species not hitherto recorded for England.

The following papers have been published:—"Two by-gone
Liverpool Bryologists—Frederick Price Marrat and Thomas Pal-
grave," by Miss A. Lee (*Lanc. and Cheshire Nat.*, vol. xiii.); "The
Liverpool Botanic Gardens," by Miss E. Warhurst (*Lanc. and Che-
shire Nat.*, vol. xii.); "The Rev. Henry Hugh Higgins," by Miss
A. Lee, and "The First Liverpool Flora and its Author (Thomas
Batt Hall)," by Mr A. A. Dallman (*Lanc. and Cheshire Nat.*, vol.
xiv.); "The Clay Bank Vegetation of the Mersey Estuary," by Mr
W. G. Travis (*Lanc. and Cheshire Nat.*, vol. xiii., February 1921).
A paper by Mr F. Taylor in the *Lanc. and Cheshire Nat.*, October-
November 1922, gives some old and new records of *Acorus Calamus*
L. for Lancashire and Cheshire.

The Flora Committee regret to hear of the death of Mr J. C.
Healey, of Rochdale, who for many years actively investigated the
flora of the Rochdale district and generously placed his results at
their disposal. They have also to regret the death of Mr George
Holt, who contributed numerous records for the Manchester district,
especially in connection with grasses.

The Flora Committee are particularly indebted for specimens
and information to the following contributors:—Miss Annie Dixon,
Mr F. Collier, Mr J. C. Healey, Mr C. R. Ritchings, Mr H. Robin-
son, Rev. M. Toohey, S.J., and Mr W. H. Western; and also to the
following botanists for assistance with critical plants:—Mr A. Ben-
nett, A.L.S.; Dr G. C. Druce; Mr W. B. Grove, M.A.; Mr
Thomas Hebden; Mr W. H. Pearson, A.L.S., and Miss A. L. Smith,
F.L.S.

SYNOPSIS OF PAPERS, 1919 to 1922.

ORDINARY MEETINGS, 1919.

- January 22nd—Annual Meeting.
 February 21st—"The Significance of Autumn," by Miss F. Swift, B.Sc.
 March 27th—"Madeira and its Flora," by Miss Eleanora Armitage.
 April 29th—"Abraham Stansfield, Poet and Naturalist," by J. S. Rowse.
 May 16th—"The Flowering Plants of the Sussex Downs," by E. F. Payne, B.Sc.
 July 21st—"The Muscineae of the Wirral," by Dr W. A. Lee, M.A.
 August 27th—"The Liverpool Botanic Gardens," by Miss E. Warhurst, L.L.A.
 September 29th—"The Lesser Celandine (*Ranunculus Ficaria* L.), Some Further Notes and Observations (1917-1919)," by A. A. Dallman, F.C.S.
 October 28th—"The Minute Side of Vegetable Life," by Hesketh Walker.
 November 11th—"Variegation," by Prof. L. Doncaster.
 December 10th—"Biological Symmetry" (Part I.), by A. H. Dudley.

ORDINARY MEETINGS, 1920.

- January 21st—Annual Meeting.
 January 28th—"The Transmission of Stimuli in Plants," by Miss M. Knight, M.Sc.
 February 18th—"Biological Symmetry" (Part II.), by A. H. Dudley.
 March 22nd—"Notes on the Flora of Abersoch," by Miss A. C. Griffiths.
 "A Corner of Wirral, from Personal Observations," by Miss J. V. Jones.
 April 26th—Lantern Lecture—"Seedlings," by A. A. Dallman, F.C.S.
 May 17th—"The Vegetation of the Clay Banks of the Mersey," by W. G. Travis.
 June 22nd—"Two By-gone Liverpool Bryologists—Frederick Price Marrat and Thomas Palgrave," by Miss A. Lee, L.L.A.
 September 14th—"The Moss Flora of Rochdale," by J. C. Healey.
 October 21st—"Some Observations on *Arum maculatum*," by Miss Eleanora Armitage.
 "The Identification of Mosses," by Dr W. A. Lee, M.A.
 November 23rd—"Symbiosis in Plants and Animals," by Miss O. R. Bangham, B.Sc.
 December 7th—"Some Forms of Fresh-Water Algae," by W. Naramore, F.L.S. (Lantern Lecture).

ORDINARY MEETINGS, 1921.

- January 18th—Annual Meeting.
 February 25th—"Linnaeus and His Life's Work," by Miss E. Lind.

- March 16th—"The Work of the Early Botanists," by Miss E. Warhurst, L.L.A.
 April 12th—"Some Botanical Notes on a Holiday in East Anglia," by E. F. Payne, B.Sc.
 September 22nd—"The Lichens of Wirral," by W. G. Travis.
 October 6th—"The Life and Work of the Rev. Henry Hugh Higgins, a Liverpool Naturalist," by Miss A. Lee, L.L.A.
 December 14th—"Botanical Poetry," by Dr W. A. Lee, M.A.

ORDINARY MEETINGS, 1922.

- January 11th—Annual Meeting.
 February 22nd—"Ecological Studies," by W. J. Hopkinson, B.Sc.
 March 22nd—"Liverworts," by Miss E. Armitage.
 April 26th—"Notes on the Mosaic Cosmogony," by Rev. M. Toohey, S.J.
 May 18th—"The Work of Sir Jagadis C. Bose, the Indian Scientist," by Miss E. Warhurst, L.L.A.
 September 28th—"Notes on Colour in Wild-Flowers," by Miss E. Warhurst, L.L.A.
 October 25th—"Botanizing in the Isle of Man," by J. A. Wheldon, F.L.S.
 November 29th—"The Relative Importance of the Several Branches of Botany," by Dr W. A. Lee, M.A.
 December 18th—"Alien Plants," by W. G. Travis.

BALANCE-SHEETS, 1921-1922.

Dr.

Cr.

	1919.	1920.	1921.	1922.
To Subscriptions,	£15 17 6	£16 0 0	£14 17 6	£17 7 6
„ Credit Balances,	10 4 9½	11 4 3½	16 1 4½	...
„ Sale of Proceedings,	0 1 0	...	2 12 6	0 12 6
„ Sale of Transactions,	...	0 6 0	...	...
„ Balance of Soiree,	0 2 11	...	...	...
„ Balance of Field Meetings, ...	0 0 8	1 7 3	...	...
„ Debit Balance,	...	...	2 19 8½	...
	£26 6 10½	£28 17 6½	£36 11 1	£18 0 0

	1919.	1920.	1921.	1922.
By Cost of Rooms,	£6 17 0	£5 7 6	£2 14 0	£2 12 6
„ Printing and Stationery,	3 4 4	3 2 7	3 16 3	3 8 9
„ Postages,	3 8 3	3 17 7	4 6 10	3 19 1
„ Lantern Expenses,	0 16 0	...	...	...
„ Nature Study Scheme,	0 17 0	...	...	...
„ Subscriptions paid to <i>Lanc.</i> and <i>Cheshire Naturalist</i> ,	...	0 8 6	0 11 6	0 7 0
„ Scientific Society,	...	...	...	1 0 0
„ Cost of Proceedings, 1916-18,	...	...	25 2 6	...
„ Balances—Cash in hand,	11 4 3½	16 1 4½	...	6 12 8
	£26 6 10½	£28 17 6½	£36 11 1	£18 0 0

LIBRARY ACCOUNT.

To Balance from 1918,	£0 18 0	£1 2 0	£1 2 0½	£1 4 0½
„ Donations,	0 4 0	0 2 0	0 2 0	0 6 0
	£1 2 0	£1 4 0	£1 4 0½	£1 10 0½

By Binding,	...	£0 1 11½	...	£0 9 0
„ Postages,	...	£1 2 0½	£1 4 0½	£1 1 0½
„ Credit Balances,	£1 2 0	£1 4 0	£1 4 0½	£1 10 0½

AUDITORS :—

Jan. 1920 } O. R. BANGHAM,
 } M. BOWEN.

Jan. 1921 } O. R. BANGHAM,
 } I. HANNAH.

Jan. 1922 } Mrs E. SMITH,
 } EVA MORGAN.

Jan. 1923 } F. H. GREEN,
 } H. E. GREEN.

W. A. LEE, *Hon. Treasurer.*

SATURDAY, 23rd AUGUST 1919.

West Derby, Croxteth, and Knowsley Park. *Leaders*—Miss E. WARHURST, L.L.A., and Mr F. MOLYNEUX.

Although the weather was somewhat showery, some pleasant ground was inspected and fine forest trees in the grounds evoked general interest. Although a special search was made in the lake for the rare species previously recorded, *Elatine hexandra* DC. could not be found; but the following were noted and good specimens obtained:—*Littorella lacustris* L., *Ceratophyllum demersum* L., *Potamogeton obtusifolius* Mert. & Koch, and the moss, *Fontinalis antipyretica* L. *Tanacetum vulgare* L. and *Malva rotundifolia* L. were seen near Knowsley village.

General Meetings.

WEDNESDAY, 21st JANUARY 1920.

The President, Mr A. A. Dallman, F.C.S., in the chair.

Reports of the Hon. Treasurer, Secretary and Librarian and of the South Lancashire Flora Committee were received and adopted. The election of Officers and Council was proceeded with. Mr A. H. Dudley was elected President; Miss E. Warhurst, L.L.A., and Mr A. A. Dallman, F.C.S., Vice-Presidents; Dr W. A. Lee was re-elected Hon. Treasurer, and Mr E. F. Payne, B.Sc., was elected Hon. Secretary.

WEDNESDAY, 28th JANUARY 1920.

The President, Mr A. H. Dudley, in the chair.

Examples of pine bark from the submerged forest near Meols, washed up during recent storms, were exhibited.

Mr A. A. DALLMAN, F.C.S., showed *Tanacetum vulgare* L. from Rock Ferry, galled by *Rhopalomyia tanaceticola* Karsh, not previously recorded for Cheshire.

Miss M. KNIGHT, M.Sc., read a paper on the "Transmission of Stimuli in Plants," an abstract of which was printed in the *Lanc. and Cheshire Nat.*, vol. xii., No. 11, May 1920.

WEDNESDAY, 18th FEBRUARY 1920.

Mr A. A. Dallman, F.C.S., Vice-President, in the chair.

The President, Mr A. H. DUDLEY, read the second part of his lecture on "Biological Symmetry—Form and Origin." The origin of forms was dealt with first from the point of view of biological antithesis. The alternation of generations in the life-cycles of plants and animals was discussed, together with the essential factors in the production of spore and zygote, and their bearing on the nuclear changes in the pollen-grain and embryo-sac. In the animal life-cycle spore formation is omitted, meiosis being deferred until the formation of the actual gametes. The nutrition and reproduction of plants and animals may be regarded as the dextro and laevo nature of their construction, and this antithesis may be correlated with chemical antithesis. A cordial appreciation was voted on the motion of Mr W. T. Haydon, F.L.S.

MONDAY, 22nd MARCH 1920.

The President, Mr A. H. Dudley, in the chair.

A herbarium specimen of *Paeonia corallina* L. from Steep Holme Island, its only British station, was shown by Mr W. G. Travis, as well as a flowering specimen of *Arabis stricta* Huds., from Bristol, by Dr Lee.

Miss A. C. GRIFFITHS read a paper on "Notes on the July Flora of Abersoch, Carnarvonshire." She described the cliff and seashore vegetation, of which Sea Rocket and Marram were characteristic plants, and in the month of July Sea Holly, *Convolvulus Soldanella* Br. and *Crithmum maritimum* L. were noteworthy. Privet is probably native. *Geranium striatum* L., apparently an escape, occurs in several spots.

Miss J. V. JONES contributed an account of a "Corner of Wirral" describing the dominant plants of the West Kirby and Hoylake area. *Lepidium latifolium* L. and *Butomus umbellatus* L. were among the more interesting survivals.

MONDAY, 26th APRIL 1920.

The President, Mr A. H. Dudley, in the chair.

Mr A. A. DALLMAN, F.C.S., gave a lecture, illustrated with lantern slides, on "Seedlings." He referred to the resting period passed through by most kinds of seeds before development begins, but in the case of *Galium Aparine*, *Veronica hederæfolia* and other species, seedlings were visible before Christmas. The latent phase might be modified by wet seasons and, in the case of exotic mangroves, no resting-period occurs. The rarity of certain seedlings was discussed, and in seedlings of laburnum the presence of enzymes was indicated, their function being to hydrolise the reserve material. Periods of germination varied from a few days to eight years.

MONDAY, 17th MAY 1920.

The President, Mr A. H. Dudley, in the chair.

Exhibits:—*Selaginella selaginoides* Gray from Cregg Connell, Co. Sligo, and *Trinia glauca* Dum. from Bristol, by Dr Lee, and a curious laciniate-leaved form of *Tilia europaea* L., by Mr A. A. Dallman, F.C.S.

Mr W. G. TRAVIS read a paper on "The Vegetation of the Clay Banks of the Mersey Estuary." This was published *in extenso* in the *Lanc. and Cheshire Nat.*, vol. xiii., No. 8, February 1921.

TUESDAY, 22nd JUNE 1920.

The President, Mr A. H. Dudley, in the chair.

Mr J. A. WHELDON showed a herbarium specimen of *Sphagnum riparioides* Warnst., a very rare form from Abbot's Moss, Cheshire, collected by G. A. Holt in 1887. He also showed specimens from the Oxford University Herbarium of *Parmelia olivacea* Ach. c.fr., and *Cetraria Richardsonii* Hook., rare lichens collected by Dr Richardson in North America in 1821.

Miss BRAY, Hailsham, exhibited seedlings and maturer plants of *Phyteuma spicatum* L. with marked variations of the leaves. Mrs BANGHAM showed *Habenaria chlorantha* Bab. and *Listera ovata* Br. from Shropshire.

Miss A. LEE, L.L.A., contributed a paper on "Two By-gone Liverpool Bryologists—Frederick Price Marrat and Thomas Pal-

grave." Mr Marrat was connected with the Liverpool Museum for more than 40 years and; in addition to his botanical studies, was an expert on conchology and agates. Mr Palgrave, who was influenced by the Norfolk school of botanists, formed a large bryological collection, which is now in the Liverpool Museum. The paper was printed *in extenso* in the *Lanc. and Cheshire Nat.*, vol. xiii., Nos. 3, 5, 6 and 7.

TUESDAY, 14th SEPTEMBER 1920.

Mr W. G. Travis in the chair.

Mr J. A. WHELDON mentioned his discovery in the Isle of Man of two species new to the Island—*Koeleria albescens* DC. and *Erythraea capitata* Willd.

Mr E. F. PAYNE, B.Sc., showed from East Anglia—*Cladium Mariscus* Br., *Althaea officinalis* L., *Frankenia laevis* L., and *Lathyrus maritimus* Big., the last a very local species.

Dr W. A. LEE read a paper, contributed by Mr John C. Healey, on the "Moss Flora of Rochdale," in which an instructive description was given of a large number of mosses, many rare locally. He explained the derivations of many of the names and in an illuminating way dealt with the economic value of certain species of Musci.

THURSDAY, 21st OCTOBER 1920.

The President, Mr A. H. Dudley, in the chair.

Dr W. A. LEE exhibited from Bristol:—*Hippocrepis comosa* L., *Cuscuta epithymum* L. and *Spiraea Filipendula* L.

Miss E. WARHURST, L.L.A., read a paper, contributed by Miss E. Armitage, entitled "Some Observations on *Arum maculatum* L.," based on many hundreds of observations. The paper was published in the *Lanc. and Cheshire Nat.*, vol. xiii., No. 7.

Dr LEE gave a short talk on Musci, dealing especially with the difficulties of identification.

SATURDAY, 6th NOVEMBER 1920.

The Annual Soirée attracted a large attendance, the exhibits including a varied selection of plants, some very rare. The President exhibited an interesting series of microscope slides, and another special feature was a volume of excellent botanical photographs. An enjoyable concert completed the evening's entertainment, to which the Misses Warhurst, Griffiths, and Bangham made appreciated contributions.

TUESDAY, 23rd NOVEMBER 1920.

The President, Mr A. H. Dudley, in the chair.

Mr J. A. WHELDON exhibited *Sagina maritima* Donn, var. *prostrata* Towns. from the Isle of Man, and the hepatic, *Marsupella sphacelata* Lindb., formerly only known from Scottish mountains, but found by Mr D. A. Jones in Carnarvonshire at sea-level.

Mr W. G. TRAVIS showed dried specimens of *Hyssopus officinalis* L. from Beaulieu Abbey, Hants, a locality known for three centuries. The species is not native in Western Europe, and a specimen from Italy exhibited had a more slender habit, more linear leaves and more hairy calyx. The hyssop of Scripture, he said, was commonly supposed to be *Capparis spinosa*, that grows wild in Palestine. He also exhibited *Lythrum Hyssopifolia* L., collected by Mr C. R. Ritchings, at Burnley, on rubbish, and only once previously recorded for

South Lancashire, viz., at Rusholme, and published in *Phytologist* ii. (1847).

Miss O. R. BANGHAM, B.Sc., read a paper on "Symbiosis in Plants and Animals." Dealing with the two main types, facultative and obligative, reference was made to parasitism and commensalism. Most cases of symbiosis serve purposes of nutrition, the example of nodules on leguminous plants was an instance. The case of the flat worm, *Convoluta*, living in symbiotic relationship with a green alga was discussed, and the association of alga and fungus in the life of lichens was fully treated. A discussion of the possible origin of the symbiotic habit concluded an illuminating study.

TUESDAY, 7th DECEMBER 1920.

The President, Mr A. H. Dudley, in the chair.

Mr WM. NARRAMORE gave a lecture on "Notes on the Evolution of Some Forms of Fresh-water Algae," illustrated with lantern slides. The lecture was mainly occupied with a discussion of the unicellular Algae. He referred to *Sphaerella nivalis*, believed to be associated with "red snow." The Pleurococcaceae were dealt with at some length, and an exposition was given of the methods of reproduction. Finally, the *Volvocaceae* were brought under notice with fine slides showing the swarming stage.

Field Meetings.

SATURDAY, 24th APRIL 1920.

Thurstaston and Irby. *Leader*—Miss E. M. BLACKWELL, M.Sc.

A special feature of this gathering was a demonstration by the leader of methods of working in the systematic survey of Wirral which is being undertaken by the Liverpool University. Not many flowering plants were recorded of outstanding interest, but many species of commoner plants were observed in blossom some days before their normal date. Amongst the mosses observed were:—*Barbula revoluta* Brid., *Trichostomum mutabile* Bruch, in sandy soil near Irby Hill, *Aulacomnium palustre* Schwaeg. and *Bryum pallens* Swartz on Thurstaston Common. Lichens included *Pertusaria amara* Nyl. and *Physcia grisea* on trees near Irby.

SATURDAY, 29th MAY 1920.

Storeton and Barnston. *Leader*—Mr A. H. DUDLEY.

Owing to the uncertain weather, there was a poor attendance, and a heavy thunder storm prevented much serious work. *Orchis morio* L. was seen in the fields, and *O. mascula* L. was growing in a neighbouring wood, but was in seed.

SATURDAY, 19th JUNE 1920.

Carr Mill Dam, near St Helens. *Leader*—Miss D. ANDERTON.

The following flowering plants were noted:—*Nasturtium palustre* Br., *Scirpus palustris* L., *Galium hercynicum* Weig., *Scrophularia nodosa* L., *Viburnum Opulus* L., *Quercus Cerris* L. MUSCI:—*Tetraphis pellucida* Hedw., *Hypnum cuspidatum* L. (submerged in

lake), *H. riparium* L., *Webera nutans* Hedw. HEPATICAE:—*Chiloscyphus polyanthus* Corda, *Lepidozia reptans* Dum., *Calypogeia trichomanis* Corda (on an old wall). GALLAE:—*Contarinia tiliarum* Kieff on *Tilia platyphyllos* Scop., *Cynips kollari* Htg. on Oak, *Pontania vesicator* Bremi on *Salix viminalis*, and *Phorodon humuli* Schank on *Prunus domestica* L. Bracken and oak were remarkably free from insect galls, and from a close examination of the district it would appear that the atmospheric conditions of the St Helen's area are unfavourable to zoocecidia.

SATURDAY, 3rd JULY 1920.

Hale. *Leader*—Mr W. G. TRAVIS.

The grounds of Hale Hall were kindly thrown open by Colonel R. Ireland-Blackburn, C.B., and Dungeon Marsh on the foreshore was investigated. The following species were recorded:—PHANEROGAMIA—*Thalictrum flavum* L., *Cochlearia anglica* L., *Reseda Luteola* L., *Lychnis alba* L., *Spergularia media* Pers., *Hypericum humifusum* L., *Linum catharticum* L., *Geranium dissectum* L., *Ononis repens* L., *Prunus avium* L., *Myriophyllum spicatum* L., *Epilobium parviflorum* Schreb., *Apium graveolens* L., *A. nodiflorum* Reichb., *Oenanthe aquatica* Poir., *Oe. Lachenalii* Gmel., *Oe. fistulosa* L., *Dipsacus fullonum* L., *Eupatorium cannabinum* L., *Picris echioides* L., *Statice maritima* Mill., *Honkenya peploides* L., *Lycopsis arvensis* L., *Scutellaria galericulata* L., *Rumex Hydrolapathum* Huds. FUNGI—*Stilbum erythrocephalum* Ditm. (on rabbit dung), *Dinaemaspodium graminum* Lev. (on old grass stems), *Taphrina Sadebeckii* Johans. (on alder).

SATURDAY, 17th JULY 1920.

Burton. *Leader*—Mr H. S. MARSH.

Burton was reached after a very pleasant walk by byroads and through Haddon Wood. Amongst the plants noted were *Geranium columbinum* L., *Geranium lucidum* L., *Geranium pratense* L., *Geranium pyrenaicum* Burm. f., *Verbascum Blattaria* L., and *Lemna polyrrhiza* L. The micro-fungus, *Melampsoridium betulinum* Kleb., was noted on birch leaves near Hadlow Road. *Humaria granulata* Sacc. on cow-dung, and *Mollisia melaleuca* Sacc. on decaying worked wood. By the kind permission of H. N. Gladstone, Esq., the gardens of Burton Manor were inspected.

SATURDAY, 14th AUGUST 1920.

Ainsdale Sandhills. *Leader*—Mr E. F. PAYNE, B.Sc.

Many of the well-known and typical dune species were observed at this excursion, and need not be detailed here.

SATURDAY, 11th SEPTEMBER 1920.

Raby and Poulton Lancelyn. *Leader*—Mr W. A. LEE, M.A., Ph.D.

During this ramble, a small marshy valley at Raby Mere, which has been called the "Pinguicula ground" by local botanists, was visited. The butterwort, *Pinguicula vulgaris* L., used to occur there, but nothing was seen of it on this occasion. The mosses, *Aulacomnium palustre* Schwaeg. and *Climacium dendroides* W. & M., were collected at this spot.

SATURDAY, 2nd October 1920.

Moreton and Moels. *Leader*—Miss J. V. JONES.

The party was taken through winding lanes and marshy fields from Moreton village. The river Birket being in flood, recourse was had to the railway bridge and thence by the level crossing to the Meols shore. Not many plants were still in bloom, but the yellow fleabane made a brave show in places. Search was made in vain for the flowering rush, *Butomus umbellatus* L., which occurred by the Birket, but has apparently been destroyed by drainage operations in 1917.

General Meetings.

TUESDAY, 18th JANUARY 1921.

Miss E. Warhurst in the Chair.

Mr W. G. TRAVIS reported that Dr W. A. Lee had found on Thurstaston Common the lichen, *Cetraria islandica* Ach. (Iceland Moss), a species not recorded for Wirral for half a century.

Mr Travis also showed and described some sub-fossil moss remains obtained from peat bands in the Wallasey sandhills. He also exhibited some interesting hepatics, two of them new to science, which had been found by him on logs of ebony imported into Liverpool from the Cameroons. These hepatics, which were determined by Mr W. H. Pearson, of Manchester, included *Aneura Travisiana* (nov. spec.) Pearson, *Ceratolejeunea Saxbyi* Pears. nov. sp., *Lophocolea Newtoni* Steph., *Homalolejeunea excavata* (Mitt.), and *Cheilo-lejeunea principensis* Steph.

The business of the annual meeting was then proceeded with. The Council's report was read and adopted, as well as the reports of the Hon. Librarian and the South Lancashire Flora Committee. The Hon. Treasurer presented his statement of accounts. The election of Officers and Council for 1921 was then proceeded with, and the following officers were elected:—President—Miss E. Warhurst, L.L.A.; Vice-Presidents—Mr J. A. Wheldon, F.L.S., and Mr A. H. Dudley; Hon. Secretaries—Miss A. Lee, L.L.A., and Mr E. Payne, B.Sc.; Hon. Treasurer—Mr W. A. Lee, Ph.D.; Records—Misses O. R. Bangham and J. Hannah.

FRIDAY, 25th FEBRUARY 1921.

The President, Miss E. Warhurst, in the chair.

The President referred to the serious loss the Society had sustained by the recent death of Mr A. H. Dudley, its President in the previous year, and a vote of condolence to his family was passed.

Miss E. LIND read a paper on "Linnaeus and His Life's Work," in which she described his early struggles and difficulties, his setting up in practice as a doctor, and his appointment as Professor in the University of Upsala. The system of classification which has since borne his name was described.

In moving a vote of thanks, Mr J. A. Wheldon related the story of the acquisition of Linnaeus' papers and collections by the Linnean Society of London.

Donations and Additions to the Library (1919 to 1922).

BY PRESENTATION.

- BOTANICAL SOCIETY AND EXCHANGE CLUB OF BRITISH ISLES—Report for 1917, presented by C. Waterfall; Report for 1921, presented by W. G. Travis.
 PLANT GALLS OF GREAT BRITAIN (E. Connold), presented by Miss E. Bray.
 SOME ZOOCECIDIA (A. A. Dallman), presented by the Author.
 FLORAL DEVELOPMENT AND EMBRYOGENY IN WHEAT (A. H. Dudley), presented by the Author.
 FLORA OF LIVERPOOL (T. B. Hall), presented by A. A. Dallman.
 THE MUSCINEAE OF THE WIRRAL (W. A. Lee and W. G. Travis), presented by the Authors.
 LIVERPOOL MICROSCOPICAL SOCIETY—Report (1914), presented by A. H. Dudley.
 NATURALIST, THE (1912), presented by W. A. Lee.
 VAN RIJK'S HERBARIUM—Report 1919-1921.
 POEMS, SONNETS AND TRANSLATIONS (A. Stansfield), presented by J. S. Rowse.

BY EXCHANGE.

- BOTANICAL SOCIETY OF EDINBURGH—Trans. and Proc. 1916-1919.
 BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE—Report for 1918, and Report of Corresponding Societies' Committee.
 BRISTOL NATURALISTS' SOCIETY—Report and Proc., vol. 5, Pts. 1 and 2.
 CHESTER SOCIETY OF NATURAL SCIENCE, &c.—49th Annual Report.
 CONNECTICUT ACADEMY OF ARTS AND SCIENCES.—Transactions—"Russia's Contribution to Science," by A. Petrunkovitch; Studies in the Calcite Group, by W. E. Ford.
 NEW YORK BOTANICAL GARDEN—Bulletin, April-September 1921.
 UNITED STATES NATIONAL HERBARIUM, CONTRIBUTIONS FROM—"Flora of the Glacier National Park, Montana;" "North American Grasses."
 UNITED STATES, DEPARTMENT OF AGRICULTURE—Yearbook (1918).
 WISCONSIN ACADEMY OF SCIENCE, ARTS AND LETTERS—Transactions, vol. 18, Part 2.

Presidents of the Liverpool Botanical Society.

1906. Rev. SAMUEL GASKING, B.A., F.L.S.
 1907-8. Professor R. J. HARVEY-GIBSON, M.A., F.L.S.
 1909-10. JAMES A. WHELDON, F.L.S.
 1911-13. WALTER T. HAYDON, F.L.S.
 1914-15. ARTHUR A. DALLMAN, F.C.S.
 1916-17. WM. G. TRAVIS.
 1918-19. ARTHUR A. DALLMAN, F.C.S.
 1920. ARTHUR H. DUDLEY.
 1921-22. ETHEL WARHURST, L.L.A.

List of Members.

The following list includes the names of all members during any or all of the years to which this volume relates:—

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 ROBERTS, Miss H., Convent of Notre Dame, Mount Pleasant, Liverpool.
 WESTERN, Mr W. H., 108 Greenway Street, Darwen, Lancashire.
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 DE VRIES, Prof. H., The Botanic Gardens, Amsterdam.
 FARLOW, Prof. W. G., F.L.S., Harvard University, Cambridge, U.S.A.
 GOEBEL, Prof. K., F.L.S., The University, Munich.
 IKENO, Prof. S., F.L.S., Imperial University, Tokio.
 LOTSY, Prof. J. P., The University, Leyden.
 TIMIRIAZEFF, Prof. P., The University, Moscow.
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* Foundation Members. † Read Papers. ‥ Served on Council.

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