

**The British**  
**Bryological Society**



**REPORT FOR 1933.**

**VOL. III, PART 2.**



Berwick-upon-Tweed :  
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—  
1934.



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**of the British Bryological Society**  
**for 1933.**

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Mr. D. A. JONES, M.Sc., A.L.S.  
54, Fremantle Road, Cotham,  
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## LIST OF MEMBERS, 1933.

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- Mr. E. W. Jones, 26, Pretoria Road, Cambridge.
- Mr. Iorwerth Jones, B.Sc., Dept. of Agriculture, University College of Wales, Aberystwyth.
- Mrs. C. Moore Kennedy, Hotel Victoria, Palma de Mallorca, Spain.
- Mr. H. H. Knight, M.A. (Cantab.), The Lodge, All Saints Villas Road, Cheltenham.
- Miss Margaret Knox, 63, Talbot Road, Highgate, London, N.6.
- Dr. Mauno J. Kotilainen, D.Ph., Korkeavuoren, Katu 8, Helsinki (Helsingfors), Finland.
- Dr. Wm. Leach, M.A., Ph.D., Dept. of Botany, The University, Birmingham.
- Mr. J. R. Lee, 96, Finlay Drive, Dennistoun, Glasgow.
- Mr. Johannes Lid, Botanical Museum, Oslo, Norway.
- Rev. D. Lillie, M.A., B.D., North Manse, Watten, Caithness.
- Miss F. M. Loader, 5, Westbourne Mansions, Westbourne Crescent, Southampton.
- Miss E. M. Lobley, Nether Knowe, Windmill Hill, Hexham, Northumberland.
- Mr. Percy Long, Glenlea, Carisbrooke Road, Newport, Isle-of-Wight.
- Dr. N. Malta, Prof. of Botany, Alberta 19, Riga, Latvia.
- Mr. C. V. B. Marquand, M.A. (Cantab.), F.L.S., Langdale, 46, Hook Rise, Tolworth, Surrey.
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- Rev. W. R. Megaw, B.A., M.R.I.A., The Manse, Rosetta, Belfast.
- Mr. R. H. Meldrum, F.L.S., 3, Muirhall Bank, Perth (deceased June, 1933).
- Mr. F. E. Milsom, B.Sc., Glen Lyn, Station Road, Shepley, Huddersfield.
- Dr. Hjalmar Möller, Naturhistoriska Riksmuseum, Stockholm, 50, Sweden.
- Mr. W. E. Nicholson, F.L.S., 50, St. Anne's Crescent, Lewes.
- Miss E. F. Noel, F.L.S., 37, Burnham Court, London, W.2.
- Mr. J. L. N. O'Loughlin, B.A. (Oxon), 21, Corsehill Street, Streatham, London, S.W.16.
- Miss D. Powell, M.Sc., F.L.S., Aldersyde, Reigate, Surrey.
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- Mr. P. W. M. Richards, Trinity College, Cambridge.  
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Bristol (3).  
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Doncaster.
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Miss A. Muriel Saunders, St. Ann's, Reigate, Surrey.  
Mr. G. B. Savery, Silverton, Exeter.  
Miss L. I. Scott, M.Sc., Lyddon Hall, Leeds.  
Herr Albert Schumacher, Waldbröl, Rheinland, Germany.  
Mr. W. R. Sherrin, A.L.S., South London Botanical Institute,  
323, Norwood Road, London, S.E. 24.  
Dr. A. I. Simey, M.D., Ivy Cottage, Old Tiverton Road,  
Exeter.  
Miss K. E. Smith, The Quarry, Lutterworth Road, Nuneaton.  
Mr. F. A. Sowter, Ashstead, North Avenue, Leicester.  
Capt. Carl Stenholm, Södra Vägen, 24, Göteborg, Sweden.  
Mr. E. H. Stevens, B.A., Haw House, Rothbury, Morpeth,  
Northumberland.  
Miss E. H. Stevenson, B.Sc., Training College, The Close,  
Salisbury.  
Miss B. M. Sutton, 7, Woodland Terrace, Chapel Allerton,  
Leeds.
- Mr. A. Thompson, 15, Bannercross Drive, Sheffield.  
Mr. Francis W. Thorrington, Sunnymead, Little Baddow,  
Chelmsford.  
Mr. W. G. Travis, 9, Barton Road, Liverpool.  
Dr. L. B. C. Trotter, M.D. (Cantab.), Rossway, Ledbury,  
Herefordshire.  
Mrs. Trotter, Rossway, Ledbury, Herefordshire.  
Mr. Harry Tully, Newton Hall, Stocksfield-on-Tyne.  
Mr. Arthur Turner, 140, Pine Street, Nelson, Lancashire.
- Colonel A. R. Uggla, F.L.S., 18, Sturegatan, Stockholm,  
Sweden.
- Mr. Fr. Verdoorn, P.O. Box 8, Leiden, Holland.
- Mr. E. C. Wallace, Springfield, 2, Strathearn Road, Sutton,  
Surrey.  
Dr. Walter Watson, D. Sc. (Lond.), A.L.S., Taunton School,  
Somerset.  
Mr. W. C. R. Watson, Rosedale, 245, Southlands Road,  
Bickley, Kent.

Miss M. Weightman, M.Sc., 13, Alexandra Road, Waterloo,  
Liverpool.

Mrs. A. White, 140, Station Road, Hendon, N.W.4.

Miss G. Wigglesworth, M.Sc., The Manchester Museum,  
Victoria University, Manchester.

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Conway, North Wales.

Mr. William Young, J.P., F.B.S.Ed., Fairview, Kirkcaldy,  
Fifeshire.

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**NEW MEMBERS, 1934.**

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Prof. P. Allorge, 63, Rue de Buffon, Paris (5<sup>e</sup>).

Miss Koren Breien, Cand. real., Botanical Museum, Oslo,  
Norway.

Miss Margaret S. Brown, 36, Kent Street, Halifax, Nova Scotia.



**MOSESSES AND HEPATICS SENT FOR  
DISTRIBUTION, 1933—1934.**

			<i>True</i>	<i>Hep-</i>	
		<i>Sphagna</i>	<i>Mosses</i>	<i>atics</i>	<i>Total</i>
Mr. J. H. Albrecht	....	....	30	....	30
Mr. G. H. Allison	....	....	20	43	....
Herr H. Andres (Germany)	....	....	107	....	107
Miss E. Armitage	....	....	120	134	78
Herr E. Bartling (Germany)	....	....	75	93	168
Mr. E. B. Bartram (U.S.A.)	....	....	75	....	75
Mr. W. Bellerby	....	....	16	59	15
Rev. C. H. Binstead	....	....	....	277	....
Rev. G. Birnie	....	....	....	60	....
Dr. A. Boros (Hungary)	....	....	40	95	....
Mr. D. B. Bradshaw	....	....	....	17	13
Mr. W. H. Burrell	....	....	....	74	9
Mons. J. Charrier (France)	....	....	29	172	35
Miss C. A. Cooper	....	....	....	20	....
Mr. H. N. Dixon	....	....	....	378	....
Mr. J. B. Duncan	....	....	....	156	67
Rev. F. H. Gray (U.S.A.)	....	....	....	90	....
Rev. R. Jackett	....	....	....	137	20
Mr. D. A. Jones	....	....	....	93	72
Mr. E. W. Jones	....	....	....	38	21
Mr. H. H. Knight	....	....	....	25	20
Dr. M. J. Kotilainen (Finland)	....	....	....	248	....
Mr. J. R. Lee	....	....	....	33	33
Mr. J. Lid (Norway)	....	....	....	55	....
Rev. D. Lillie	....	....	....	247	172
Miss E. M. Lobley	....	....	89	76	38
Herr L. Loeske (Germany)	....	....	107	12	119
Rev. W. R. Megaw	....	....	....	22	....
Mr. F. E. Milsom	....	....	....	102	....
Mr. W. E. Nicholson	....	....	....	58	62
Mr. P. W. Richards	....	....	....	34	16
Dr. S. P. Rowlands	....	....	....	189	....
Miss A. M. Saunders	....	....	....	15	....
Herr A. Schumacher (Germany)	....	....	190	128	161
Captain C. Stenholm (Sweden)	....	....	....	65	60
Mr. E. H. Stevens	....	....	....	67	....
Mr. W. G. Travis	....	....	....	52	11

				<i>True</i>	<i>Hep-</i>		
				<i>Sphagna</i>	<i>Mosses</i>	<i>atics</i>	<i>Total</i>
Dr. L. B. C. Trotter	....	....	....	112	....	112	
Mr. A. Turner	....	....	....	77	9	86	
Mr. E. C. Wallace	....	....	....	143	43	186	
Mrs. A. White	....	....	....	61	....	61	
Mr. A. Wilson	....	....	....	34	22	56	
Mr. W. Young	....	....	....	366	330	696	
				504	4446	1412	6362

## REFEREES.

### Sphagnaceae :—

Acutifolia and Cymbifolia	.....	Mr. HORSLEY.
Rigida, Squarrosa and Cuspidata		Miss LOBLEY.
Subsecunda	....	Mr. THOMPSON.
Referee-in-Chief	....	Mr. SHERRIN.

### True Mosses :—

Andreaeaceae to Grimmiaceae	....	Mr. SAVERY.
Tortulaceae to Timmiaceae, except Orthotrichum	....	Rev. Dr. RHODES.
Orthotrichum and Bartramiaceae to Leskeaceae	....	Mr. JONES.
Hypnaceae, except Harpidia	....	Mr. J. B. DUNCAN.
Harpidia and North American Mosses	....	Mr. SHERRIN.
European Mosses	....	Mr. NICHOLSON.
Non-European (except North American Mosses) and Referee- in-Chief	....	Mr. DIXON.

### Hepatics :—

British and European	....	Mr. KNIGHT.
Non-European and Referee-in- Chief	....	Mr. NICHOLSON.

## REPORT OF SECRETARY.

The Annual Report for the year 1933 shows continued success. The number of members is 116. The following have joined the Society during the year:—Prof. Allorge, Paris; Miss Brown, Nova Scotia; Mr. E. W. Jones, Cambridge; Mrs. Ch. Moore Kennedy, Spain, and Prof. Malta, Latvia.

The name of Dr. Alexander W. Evans, Yale University, U.S.A., has been added to the list of Honorary Members in recognition of his splendid work in Hepatics.

We very much regret to announce the death of Mr. R. H. Meldrum, F.L.S., of Perth, who passed away in June, 1933. He was an original and prominent member of the Moss Exchange Club and later on of the B.B.S. He acted as referee for many years to the M.Ex. Club, and gave valuable assistance to new members in their difficulties. An obituary is appended.

The numbers of specimens contributed to the Distribution during the year is satisfactory, but it was anticipated that several new contributors, especially among lady members, would have taken part. The number of specimens were:—Sphagna, 504; True Mosses, 4,446; Hepatics, 1,412; making a total of 6,362. The highest contributor was Mr. Young, 696. A fair number of new Vice-County records in the three groups has been added.

The visit to the Lake District last August was a great success, as reported by Miss Armitage. It is hoped that Ingleton with its fine scenery and interesting flora, will also appeal to members.

Dr. L. B. C. Trotter has kindly presented the Society with three sets of the valuable "Musci Americani," collected by Thomas Drummond and arranged and named by Wm. Wilson and Sir W. J. Hooker (1841), for which the Society is greatly indebted.

Members wish to thank the Distributors, Bibliographer and Referees for their much appreciated services.

Any gifts of books on mosses or hepatics or of specimens will be gladly received on behalf of the Society by Mr. W. R. Sherrin; copies of new papers for the Bibliography by Dr. L. B. C. Trotter, and specimens of new Vice-County records by Mr. J. B. Duncan (Mosses), by Mr. A. Wilson (Hepatics), and by Mr. W. R. Sherrin (Sphagna and Harpidia).

D. A. JONES.

54, Fremantle Road,  
Cotham, Bristol (6).  
*April, 1934.*

## STATEMENT OF

<i>RECEIPTS.</i>			
Balance from last Account	....	....	£96 19 9
Subscriptions—1933	....	£41 15 0	
„    Arrears	....	1 10 0	
„    1934 (paid before due)	....	3 0 0	
Special Donation	....	1 0 0	
		47 5 0	
Contribution to expenses—Annual Excursion		1 5 0	
Publications sold	....	9 4	
		£145 19 1	

### MOSS CENSUS

Sales, 1933—per Mr. W. R. Sherrin	....	£1 17 0
Balance due 31st December, 1933	....	5 16 2½
		£7 13 2½

### HEPATIC CENSUS

Sales, 1933—per Mr. W. R. Sherrin	....	1 4 6
Balance due 31st December, 1933	....	12 4 1½
		£13 8 7½

### BALANCE SHEET

<i>LIABILITIES.</i>			
Subscriptions, 1934—paid before due	....	£3 0 0	
Distribution costs, 1933-34 (estimated)	....	4 10 0	
Printing Report, 1933 (estimated)	....	25 10 0	
Deficit on Moss Census Catalogue Account	..	5 16 2½	
Deficit on Hepatic Census Catalogue Account	....	12 4 1½	
Balance (excess of Assets over Liabilities)	....	55 9 11	
		£106 10 3	

Examined and found correct—J. Y. ELDER,  
 Barclays Bank, Berwick-on-Tweed.  
 31st January, 1934.

**ACCOUNT for 1933.**

<i>EXPENSES.</i>					
Printing Report, 1932	....	....	....	....	£26 2 0
,,    Circulars, etc.	....	....	....	....	1 12 6
Stationery	....	....	....	....	12 6
Distribution Costs, 1932-33	....	....	....	....	4 11 10
Secretary's Expenses	....	....	....	....	3 11 5
Treasurer's Expenses	....	....	....	....	1 12 3
Librarian's Expenses, 1932-33	....	....	....	....	2 5 1
Set of Reports purchased	....	....	....	....	11 3
Balance in hand, 31st December, 1933	....	....	....	....	105 0 3
					£145 19 1

**CATALOGUE ACCOUNT.**

Balance, 31st December, 1932	....	....	....	....	£7 11 3½
Expenses—Postage	....	....	....	....	1 11
					£7 13 2½

**CATALOGUE ACCOUNT.**

Balance, 31st December, 1932	....	....	....	....	£13 7 8½
Expenses—Postage	....	....	....	....	11
					£13 8 7½

**31st DECEMBER, 1933.**

<i>ASSETS.</i>					
Cash in hand (General Account)	....	....	....	....	£105 0 3
Subscriptions in arrear (£3 15s.), estimated to produce	....	....	....	....	1 10 0
740 Copies unsold, Moss Census Catalogue, Ed. II.	.....				
318 Copies unsold, Hepatic Census Catalogue, Ed. III.	.....				
					£106 10 3

J. B. DUNCAN, *Treasurer.*

N.B.—Subscriptions, 10/- per annum, Foreign and Colonial Members, 5/-, **should be paid not later than 31st March, each year.**

## REPORT OF DISTRIBUTORS (Mosses).

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We are glad to state that the number of specimens received this year is considerably higher than in the two previous years, and compares very favourably with former distributions. The number of contributors too has increased.

Of the 91 vice-county records sent in, 40 are due to Miss E. Armitage and 30 to Miss E. M. Lobley. One of each of these has been deposited with the B.B.S. herbarium and the various museums.

The European mosses include several interesting *Grimmia* forms contributed by Dr. Trotter, Dr. A. Boros, and Mr. W. Young; *Webera proligera* from Ben Lawers gathered by the Rev. C. H. Binstead; and a set of Polish mosses from the herbarium of Dr. Tad. Wiśniewski of Warsaw, communicated by Mr. H. N. Dixon.

Herr L. Loeske has contributed some useful notes on the *Mnium* affine group, which are the outcome of his own observations.

The extra European gatherings consist of specimens from South and North America, Hawaii, New Zealand, Hong Kong, and Selangor.

The referees all reported favourably on the material sent in, both as to the quality and the quantity. There is still, however, a dearth of ecological data, particularly as to the altitude, the exact nature and exposition of the habitat.

We wish to thank the contributors who sent in a detailed list with their parcels; these lists have been of considerable help.

The task of the referees has been unusually heavy this year, and we cannot be sufficiently grateful for their valuable services.

We are holding over a parcel containing 175 specimens received from Dr. Hj. Möller until next year, as these arrived too late for distribution this year.

J. H. ALBRECHT.

A. M. SAUNDERS.

31st March, 1934.

## REPORT OF DISTRIBUTOR (Hepatics).

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The number of packets sent in for distribution is well up to that of the few previous years, 1,412 packets having been contributed by 24 members. The number of species and varieties is also very well representative. A good quantity of foreign species has also been sent in, notably a fine collection by Mr. Lillie, including *Plagiochilas*.

Many members continue to give good service by sending new vice-comital records, especially of the commoner species.

The best thanks of the Society are again due to Mr. Knight and Mr. Nicholson for their ungrudging services as referees. Owing to the considerably larger number of different species contributed, Mr. Knight's task has been more onerous than usual. He reports that the material has been generally well-packetted and correctly named, but he points out that in some cases packets contained only small and scrappy amounts of material, and stresses the fact that well-filled and representative packets should be sent wherever possible.

Many more members are now sending full descriptive lists with their parcels, but there is still some room for improvement in this direction.

F. E. MILSOM.

Shepley,  
Huddersfield,  
*April, 1934.*

## REPORT OF THE ANNUAL MEETING, 1933.

(Extracted from *The Journal of Botany*, February, 1934.)

### THE BRITISH BRYOLOGICAL SOCIETY.

The Society held its Annual Meeting and Excursion at Portinscale, Cumberland, from August 29th to September 5th, 1933, under the Presidency of Mr. H. H. Knight, M.A. Upwards of forty members and friends were present.

The glorious summer weather of 1933 was enjoyed to the full, though occasionally the mists rolled down from the mountain tops and caused some inconvenience to climbers. The first day was spent among the familiar surroundings of Lodore, in the rocky gorge and the steep woodland; after which the way led over Watendlath, and thence down to Rosthwaite.

The party visited Westmorland by motor coach on Thursday from Keswick by way of Thirlmere, Grasmere, and Rydal, up Great Langdale to Dungeon Gill. The Force and the rocky hillside yielded some interesting plants. Several of the party went farther to explore Crinkle Gill. On Friday Seatoller was visited, parts of the interesting woods were studied, and some rare plants were seen. On Saturday the party started to Braithwaite and thence up the long Cole Dale to the pass at the summit; but the sudden descent of mist from Grassmoor while the Hobcarton precipices were being worked caused trouble, and separated groups had to find their way down by devious tracks. Others who visited Scafell had similar trouble. On Monday some intensive work was done in the very rich and attractive rocky woods about Seatoller and Hause Gill, and also up Stonethwaite with its beck and steep wooded hillsides.

Though the bryology of the Lake District has been frequently studied, notably by the Rev. C. H. Binstead, our members were able to add a number of new records for v.c. 70 (Cumberland), and a few for v.c. 69 (Westmorland). These are starred in the list that follows, and rarer species previously known are included so far as space allows:—



Sphagna were numerous and many interesting forms were collected :—*Sphagnum teres* var. *subteres*\* ; *S. pulchrum*\* ; *S. fallax* var. *robustum*\* ; *S. obesum* var. *luxurians*\* (Mickleden, 69) ; *S. obesum* var. *hemi-isophyllum*\* ; *S. subsecundum* var. *tenellum*\* ; *S. inundatum* vars. *eurycladum*\* , *robustum*\* , and *densum*\* ; *S. auriculatum* vars. *ovatum*\* , *laxifolium*\* , *submersum*\* , and *plumosum*\* ; *S. aquatile* var. *mastigocladum*\* ; *S. contortum*\* ; *S. subbicolor*\* .

True Mosses :—*Andreaea petrophila* var. *gracilis*. *Tetraphis Browniana*. *Oligotrichum hercynicum* var. *laxum*\* . *Archidium alternifolium*\* . *Ditrichum tenuifolium*. *Dicranella heteromalla* var. *interrupta*\* , *D. curvata*. *Campylopus subulatus*, *C. Schwarzii*, *C. flexuosus* var. *zonatus*, *C. setifolius*\* (69), *C. atrovirens* vars. *falcatus*\* (69) and *muticus*\* (69). *Dicranum schisti*, *D. scoparium* var. *spadiceum*. *Fissidens crassipes*\* . *Grimmia retracta*, *G. ovata*, *G. elongata*. *Coscinodon cribrosus*. *Pottia intermedia*\* . *Barbula rubella* vars. *dentata* and *ruber-rima*. *B. convoluta* var. *Sardoa*\* . *Trichostomum tenuirostre* var. *Holtii*, *T. fragile*. *Oedipodium Griffithianum*. *Discelium nudum*\* : this rare plant was found on the banks of Newlands Beck near Portinscale, both male and female plants. *Philonotis caespitosa*\* , *P. capillaris*. *Webera annotina* var. *bulbifera*\* . *Bryum cyclophyllum*, *B. atropurpureum* var. *gracilentum*\* (also in 69\*), *B. argenteum* var. *lanatum*\* . *Mnium affine* var. *rugicum*\* , *M. serratum*, *M. orthorrhynchum*, *M. stellare*. *Eurhynchium praelongum* var. *Stokesii*\* , *E. myosuroides* var. *tenuinerve*\* (Lodore). *Sematophyllum micans*. *Amblystegium varium*, *A. irriguum*\* . *Hypnum cupressiforme* vars. *mamil-latum*\* and *tectorum*, *H. callichroum*, *H. molluscum* var. *erectum*\* . *H. cristacastrensis*. *Hylocomium umbratum*, *H. brevirostre*.

Hepatics :—These are of considerable interest, being mainly those associated with rocky woodland, cascades, and mountains. *Riccia sorocarpa*\* . *Aneura multifida* and *sinuata*. *Fossombronia pusilla* and *Wondraczeki*\* . *Gymnomitrium concinnatum*, *G. obtusum*, *G. crenulatum*, and *G. adustum*. *Marsupella ustulata* and *aquatca*. *Alicularia compressa*, *A. scalaris* var. *procerior*\* . *Eucalyx obovatus* and *paroicus*. *Aplozia crenulata* var. *gracillima*\* , *A. pumila* var. *rivularis*\* (Dungeon Gill, 69). *Jamesoniella autumnalis*. *Lophozia quinquedentata*, *L. Floerkii* and var. with gemmæ, *L. attenuata*. *Sphenolobus minutus*, *S. Hellerianus*\* , and *S. exsectiformis*\* . *Anastrepta orcadensis*. *Plagiochila punctata* and *tridenticulata*. *Leptoscyphus Taylori*, c.fr. *Harpanthus scutatus*. *Saccogyna*

*viticulosa*. *Cephalozia media*. *Odontoschisma Sphagni*.  
*Calypogeia Trichomanis* and *fissa*. *Bazzania trilobata* and  
*tricrenata*. *Lepidozia Pearsoni* and *setacea*. *Blepharostoma*  
*trichophyllum*. *Anthelia julacea*. *Herberta Hutchinsiae*.  
*Ptilidium ciliare* and *P. pulcherrimum\**. *Trichocolea tomentella*.  
*Scapania compacta*, *S. subalpina*, *S. gracilis*, *S. nemorosa* var.  
*uliginosa\**, *S. dentata*, *S. curta*, *S. umbrosa*. *Radula Lindberg-*  
*iana* and *voluta*. *Colura calyptrifolia*. *Cololejeunea calcarea*  
(69). *Lejeunea cavifolia* and *patens*. *Microlejeunea ulicina*.  
*Drepanolejeunea hamatifolia*. *Harpalejeunea ovata*.

The Annual Meeting was held on September 1st, when the usual business was transacted, and it was decided to hold the next Meeting in August, 1934, at Ingleton, Yorks.

ELEONORA ARMITAGE.

## REPORT ON PLANTS SENT IN BY MEMBERS.

An Asterisk (\*) denotes a new Vice-Comital Record.

### SPHAGNA.

*Sphagnum fimbriatum* Wils., Kesselscheider Heide, Rheinland, Aug., 1928, A. Sch. "This is *S. plumulosum* Roll." G.F.H.; Scotton Moor (54), 1933, G.H.A. "Two species are present, an aquatic form of *S. Girgensohnii* Russ., without the typical large pores on the upper surface of the branch leaves, and an "obesum" form" of one of the *subsecunda* group," G.F.H.; var. *validius* Card., Craggside, Rothbury (68\*), July, 1933, E.M.L.

*S. Girgensohnii* Russ., var. *microcephalum* Warnst., Staward-le-peel (67\*), June, 1933, E.M.L.; Coldburn Hill, Cheviot (68\*), May, 1933, E.M.L.; var. *gracilescens* Russ., Westert, Rheinland, May, 1929, A. Sch. "Near this var., but the branch leaves are larger than usual." G.F.H.

*S. Russowii* Warnst., var. *Girgensohnioides* Russ., male plants, Vulpicke, Rheinland, Oct., 1929, A.Sch.; var. *rhodochroum* Russ., Geilenkausen, Rheinland, 1925, A.Sch. "I should call this var. *purpurascens* Russ." G.F.H.

*S. fuscum* von Klinggr., var. *medium* Warnst., Kaltenbrunn, Schwarzwald, Aug., 1932, A.Sch.

*S. rubellum* Wils., var. *purpurascens* Russ., Kuhlbach, Rheinland, 1926, A.Sch.; var. *versicolor* Warnst., Ebbegebirge, Westfalen, Aug., 1929, A.Sch.

*S. acutifolium* Ehrh., Knowesgate (67), Sept., 1933, E.A.; Knockmealdown (I.6), July, 1933, E.A.; var. *rubrum* Brid., Knockmealdown (I.6), July, 1933, E.A.; var. *versicolor* Warnst., Westfalen, Sept., 1933, A.Sch.

*S. quinquefarium* Warnst., Kapellen, Styria, Oct., 1929, Harangi. "Possibly, but not typical," G.F.H.; Hungary, Aug., 1923, A. Boros. "This is *S. acutifolium* Ehrh.," G.F.H.; Comeragh Mtns., (I.6), July, 1933, E.A. "This is var. *versicolor* Russ.," G.F.H.; Netherwitton (67), Sept., 1933, E.A. "This is *S. acutifolium* Ehrh.," G.F.H.; var. *viride* Warnst., f. *gracilescens* Warnst., Rheinland, Nov., 1927, A.Sch.; var. *versicolor* Russ., Rheinland, Feb., 1928, A.Sch. "Very fine specimens," G.F.H.

*S. plumulosum* Roll., Knockmealdown (I.6), July, 1933, E.A. "Probably *S. acutifolium* Ehrh.," G.F.H.; Delf Burn, Rothley (67), Sept., 1933, E.A. "This is *S. acutifolium* Ehrh., var. *versicolor* Warnst.," G.F.H.

*S. molle* Sulliv., var. *molluscoides* (C.Mull.), f. *heterophyllum* Warnst., Craggside, Rothbury (68\*), July, 1933, E.M.L.; Westfalen, Sept., 1933, A.Sch.

*S. compactum* D.C., var. *squarrosum* Russ., Poolvona (I.6\*), July, 1933, E.A. "The var. is not well marked," E.M.L.; var. *subsquarrosum* Warnst., Poolvona (I.6\*), July, 1933, E.A.; Westfalen, April, 1933, A.Sch.; Koszeg, Hungary, Sept., 1931, A. Boros; var. *imbricatum* Warnst., Common Burn, Cheviot (68\*), May, 1933, E.M.L.; Knockmealdown (I.6\*), July, 1933, E.A.

*S. strictum* Sulliv., var. *subsquarrosum* (Warnst.), Ebbe, Piwick bei Valbert, Westfalen, April, 1933, A.Sch. "New to Germany," A.Sch.

*S. squarrosum* Pers., var. *subsquarrosum* Russ., Coldburn Hill, Cheviot (68\*), May, 1933, E.M.L.

*S. teres* Ångstr., Hamorto, Hungary, Aug., 1924, A. Boros. "Near var. *imbricatum* Warnst.," E.M.L.; var. *subteres* Lindb., Coledale (70\*), Sept., 1933, E.M.L.; Rheinland, Aug., 1933, A.Sch.

*S. obtusum* Warnst., var. *recurviforme* Warnst., Dreifelder Weiher, Westerwald, June, 1932, A.Sch.

*S. amblyphyllum* Russ., Netherwitton (67), Sept., 1933, E.A.; var. *mesophyllum* Warnst., Scotton Moor (54), 1932, G.H.A.

*S. pulchrum* Warnst., Coledale (70\*), Sept., 1933, E.A.

*S. recurvum* P. de Beauv., Borsmonostor, Hungary, Sept., 1931, A. Boros. "This is *S. fimbriatum* Wils., var. *validius* Card.," E.M.L.; var. *majus* Ångstr., Scotton Moor (54), 1933, G.H.A.; Knockmealdown (I.6\*), July, 1933, E.A.; var. *parvulum* Warnst., Knowesgate (67\*), Sept., 1933, E.A.

*S. cuspidatum* Ehrh., Knockmealdown (I.6\*), July, 1933, E.A.; var. *falcatum* Russ., Poolvona (I.6\*), July, 1933, E.A.; var. *plumosum* Bryol. germ., Coldburn Hill, Cheviot (68\*), May, 1933, E.M.L.; var. *plumulosum* Schimp., Scotton Moor (54), 1933, G.H.A.; Craggside, Rothbury (68\*), July, 1933, E.M.L.

*S. molluscum* Bruch., Knockmealdown (I.6), July, 1933, E.A.

*S. obesum* Warnst., var. *canovirens* Warnst., Netherwitton (67), Sept., 1933, E.A. ; var. *hemi-isophyllum* Warnst., Coledale (70\*), Sept., 1933, E.M.L. ; var. *mastigocladum* Warnst., Strensall Common (62), May, 1933, W.B.

*S. subsecundum* Nees., var. *tenellum* Warnst., Kühlbach, Rheinland, 1927, A.Sch. ; var. *intermedium* Warnst., Scotton Moor (54), June, 1932, G.H.A. ; Ellerbeck (62\*), May, 1932, G.F.H. "Omitted from last year's report in error," G.F.H.

*S. inundatum* (Russ.) Warnst., Netherwitton (67), Sept., 1933, E.A. ; Knockmealdown (I.6\*), July, 1933, E.A. ; Vendée, France, March, 1932, J.Ch. "I sent this to Miss Lobley, and we both agree that it is *S. auriculatum* Schimp., but do not agree as to the var.," A.T. ; var. *robustum* (Warnst.), Sherrin, Coledale (70\*), Sept., 1933, E.M.L. ; var. *eurycladum* (Warnst.) Sherrin, fells above Lcdore (70\*), Aug., 1933, A.T. and E.M.L., com. E.M.L. ; var. *lanceifolium* Warnst., Bizzle, Cheviot (68\*), May, 1933, E.M.L. ; Geltsdale (70\*), June, 1933, E.M.L. ; Nutscheid, Rheinland, Dec., 1928, A.Sch. "I think this is *S. subsecundum* Nees, var. *tenellum* Warnst.," A.T.

*S. auriculatum* Schimp., Knockmealdown (I.6\*), July, 1933, E.A. "The stem I examined was *S. inundatum*. It looks like a mixture," A.T. ; Poolvona (I.6\*), July, 1933, E.A. "Near var. *ovatum* Warnst.," A.T. ; var. *ovatum* Warnst., Poolvona (I.6\*), July, 1933, E.A. "Some of the branch leaves have very few pores on the convex surface. I took it, at first, to be *S. obesum* Warnst., var. *canovirens* Warnst., but now think the naming on the packet is correct," A.T. ; var. *laxifolium* Warnst., Honister Pass (70\*), Sept., 1933, A.T. and E.M.L., com. E.M.L. ; var. *plumosum* Warnst., Honister Pass (70\*), Sept., 1933, A.T. and E.M.L., com. E.M.L.

*S. aquatile* Warnst., Vendée, France, July, 1933, J.Ch. "Miss Lobley and I both agree that this is *S. auriculatum* Schimp., and put it down as var. *laxifolium* Warnst.," A.T. ; var. *intortum* Warnst., Henhole, Cheviot (68\*), May, 1933, E.M.L. ; Howtown (69\*), July, 1933, E.M.L. ; var. *sanguinale* Warnst., Honister Pass (70), Sept., 1933, A.T. and E.M.L., com. E.M.L.

*S. crassicladum* Warnst., Vendée, France, March, 1932, J.Ch. "Please let Mr. Sherrin examine this plant. I think it is *S. crassicladum* Warnst., var. *magnifolium* Warnst. Miss Lobley inclines to *S. obesum* var. *brachycladum*," A.T. "I incline to Miss Lobley's view," W.R.S. ; var. *magnifolium* Warnst., Westfalen, July, 1932, A.Sch.

*S. Camusii* (Card.) Warnst., Scotton Moor (54), 1933, G.H.A. "Miss Lobley and I think this is not *S. Camusii*, and I think it is a form of *S. crassicladium* Warnst.; Miss Lobley thinks *S. turgidulum*," A.T.

*S. contortum* Schultz, fells near Ashness-gate, Derwent-water (70\*), Sept., 1933, W.R.S., A.T. and E.M.L., com. E.M.L.

*S. platyphyllum* (Sull.) Warnst., Zsida, Hungary, Nov., 1930, A.Boros.

*S. imbricatum* (Hornsch.) Russ., var. *cristatum* Warnst., Kaltenbrunn, Schwarzwald, Aug., 1932, A.Sch.; var. *sublaeve* Warnst., Kesselweiher, Rheinland, Oct., 1927, A.Sch.; Dreifelder Weiher, Westerwald, June, 1932, and July, 1933, A.Sch. "Both gatherings seem to belong here," G.F.H.

*S. papillosum* Lindb., var. *normale* Warnst., Rheinland, July, 1928, A.Sch.; Manton Moor (54), 1932, G.H.A.; Knowesgate (67), Sept., 1933, E.A.; Knockmealdown (I.6), July, 1933, E.A.; var. *sublaeve* Warnst., Coldburn Hill, Cheviot (68\*), May, 1933, E.M.L.; Scotton Moor (54), 1933, G.H.A. "Nearer var. *normale*, I think, but these two vars. shade into each other," G.F.H.

*S. cymbifolium* Ehrh., Somogyszob, Hungary, July, 1929, A.Boros.; Vendée, France, March, 1932, J.Ch.; var. *glaucescens* Warnst., Bruch, Rheinland, Oct., 1933, A.Sch.; var. *pallescens* Warnst., Knockmealdown (I.6), July, 1933, E.A.; var. *flavescens* Warnst., Poolvona (I.6), July, 1933, E.A. "This is *S. papillosum* Lindb., var. *normale* Warnst.," G.F.H.; var. *rubescens* Warnst., Knockmealdown (I.6), July, 1933, E.A. "A beautiful colour-form," G.F.H.; var. *versicolor* Warnst., c.sp., Immerkopf, Rheinland, Aug., 1933, A.Sch.; var. *squarrosulum* Pers., Netherwitton (67), Sept., 1933, E.A. "This is var. *glaucescens* Warnst., f. *squarrosulum* Russ.," G.F.H.

*S. medium* Limpr., var. *versicolor* Warnst., Kühnbach, Rheinland, Oct., 1927, A.Sch.; Mitterbach, Hungary, July, 1923, A.Boros. "This also seems to belong here," G.F.H.

## TRUE MOSSES.

## EUROPEAN (British and Continental).

*Andreaea petrophila* Ehrh., Hoher Westerwald (Rhld.), Sept., 1928, H.A.

*A. alpina* Sm., Langdale Pike (69), Aug., 1933, J.R.L.; Sept., 1933, W.Y. "One packet is correctly named One, and probably both, of the other packets contain *A. crassinervis*," G.B.S.

*A. Rothii* W. et M., Simonside (69), May, 1931, E.H.S.; Blea Tarn (59), July 1931, A.T.; var. *falcata* Lindb., Langdale Pike (69), Sept., 1933, W.Y.; Aug., 1933, J.R.L.

*A. nivalis* Hook., Cairngorm (96), June, 1930, D.A.J.

*Tetraphis pellucida* Hedw., c.fr., Salen, I. of Mull (103), July, 1932, W.Y.

*T. Browniana* Grev., Hebden Bridge (63), Aug., 1929, W.H.B.

*Oligotrichum hercynicum* Lam., var. *laxum* Braithw., Honister (70), Sept., 1933, A.Wh.; Coledale (70\*), Sept., 1933, E.A.

*Polytrichum nanum* Neck., New Galloway (73), Oct., 1896, J. McAndrew, com. W.Y.; Speymouth (95), April, 1932, G.B.

*P. aloides* Hedw., Seatoller (70), Aug., 1933, W.Y.

*P. piliferum* Schreb., Mallièvre (Vendée), France, Sept., 1929, J.Ch.; Aberglaslyn (49), Aug., 1933, S.P.R.

*P. strictum* Banks, c.fr., Dungeon Ghyll (69), Aug., 1933, A.Wh.; Killin (88), June, 1932, E.C.W.

*P. gracile* Dicks., Harbottle (67), May, 1931, E.H.S.

*P. decipiens* Limpr., Håkker in Opdal, Norway, July, 1901, E. Ryan, com. J.L.

*P. fragilifolium* Lindb., fil. 1900 (*P. Jensenii* Hagen, 1898), Kemijarvi Vuostuno, Lapponia Kemensis, Finland, Aug., 1928, M.J.K.

*Diphyscium foliosum* Mohr., Glen Dhu (67\*), Sept., 1933, E.M.L.; Crafnant, above Harlech (48), Aug., 1933, S.P.R.

*Archidium alternifolium* Schp., Balerno (83), Aug., 1909, J. McAndrew, com. W.Y.; Wahner Heide (Rhld.), Sept., 1931, E.B.

*Pleuridium subulatum* Rabenh., Speymouth (95), Apr., 1932, G.B. ; wood, Walton (31\*), June, 1932, E.W. J.

*Pl. alternifolium* B. et S., Ashley (58), Apr., 1871, Col. G. E. Hunt, com. W.Y.

*Ditrichum tenuifolium* Lindb., Langdale (69), Sept., 1933, W.Y. "These are not very satisfactory specimens. *D. tenuifolium* may be present, but the plants look to me more like immature *Ceratodon purpureus*," G.B.S.

*D. homomallum* Hampe, c.fr., Kylemore (I.16), Sept., 1933, P.W.R. ; Edlingham (68), June, 1929, E.H.S.

*D. zonatum* Limpr., Cader Idris (49), July, 1901, H.N.D. "Occasionally papillose, but scarcely so as to be included in the var. *scabrifolium*," H.N.D. ; Ben More (88), July, 1897, H.N.D. ; var. *scabrifolium* Dixon, Ben Chalum (88), July, 1898, H.N.D.

*D. vaginans* Hpe., Feldberg (Baden), June, 1932, E.B.

*D. flexicaule* Hpe., Scafell Pike (70), July, 1891, H.N.D. ; var. *densum* B. et S., Collyweston quarries (32), April, 1897, H.N.D. ; Ben Lawers (88), July, 1897, H.N.D.

*Swartzia montana* Lindb., c.fr., Snowdon (49), Aug., 1933, S.P.R. ; Llandudno (49), Sept., 1933, E.H.S. ; Vértéskozma, Hungary, May, 1932, A.B.

*Sw. inclinata* Ehrh., Largo Sands (85), July, 1904, J. McAndrew, com. W.Y. ; Gwynfe (44), June, 1927, D.A.J. ; Penyghent (64), Aug. et Oct., 1931, W.H.B. ; Lomond Hills (85), April, 1904, W. Evans, com. W.Y.

*Seligeria tristicha* B. et S., Coldcates Moor (64), Jan., 1934, C.H.C., com. F.E.M.

*S. paucifolia* Carruth., Newmarket (29\*), June, 1933, E.W.J.

*S. diversifolia* Lindb., c.fr., Paltamo, Finland, Aug., 1902, M.J.K.

*Brachyodus trichodes* Fuernr., Hascombe (17), March, 1932, E.C.W.

*Ceratodon chloropus* Brid., Clevedon (6), June, 1932, L.B.C.T.

*C. conicus* Lindb., Kingsthorpe (32), April, 1885, H.N.D. ; Nassington (32), April, 1897, H.N.D.

*Rhabdoweisia denticulata* B. et S., Eisenach, Germany, Aug., 1920, leg. Krüger, com. L.L.

*Rh. crenulata* Jameson, Braithwaite (70), Sept., 1933, C.H.B. ; Seatoller (70), Aug., 1933, W.Y. "I should call this



*Rh. denticulata*. The plant is dwarf and the leaves narrow," G.B.S.

*Cynodontium Bruntoni* B. et S., Aberfoyle (87), June, 1913, J. McAndrew, com. W.Y. ; The Bizzle (68), May, 1933, J.B.D.

*C. polycarpum* Schp., Lillafüred, Hungary, June, 1932, A.B.

*C. Jenneri* Schp., Howtown, Ullswater (69\*), June, 1933, E.M.L.

*C. virens* Schp., Craig an Lochan (88), May, 1889, W. Evans, com. W.L. ; (*Oncophorus virens* Brid.), Duved, Fonsaberget, Sweden, July, 1933, C.St.

*Dichodontium pellucidum* Schp., c.fr., Normanby (62), Sept., 1929, W.B. ; var. *fagimontanum* Brid., Bizzle (68\*), May, 1933, E.M.L. ; var. *compactum* Schp., Warwick Bridge (70\*), April, 1933, E.M.L. ; Inchnadamph (108\*), June, 1933, J.B.D.

*D. flavescens* Lindb., Nant Col (48), Aug., 1933, S.P.R.

*Trematodon elongatus* (Stroem) Hagen, c.fr., Suistumo, Finland, July, 1930, M.J.K. "A synonym of *T. ambiguus*. But *Bryum elongatum* Stroem dates from 1791, is therefore pre-Hedwigian, and invalid according to the International Rules," H.N.D.

*Dicranella cerviculata* Schp., c.fr., Balerno (83), Nov., 1910, J. McAndrew, com. W.Y. ; Esher Common (17), Aug., 1933, J.H.A.

*D. secunda* Lindb., Linhope Spout (68\*), Aug., 1933, J.B.D.

*D. rufescens* Schp., c.fr., Braithwaite (70), Sept., 1933, A.Wh. ; C.H.B. ; Orton (95), Oct., 1931, G.B.

*D. varia* Schp., Coledale (70), Sept., 1933, E.A. ; Colinton (83), May, 1910, J. McAndrew, com. W.Y. ; Bonally Reservoir (83), Sept., 1905, J. McAndrew, com. W.Y. ; (*D. rubra* Moenk.), Bánhida, Hungary, Oct., 1931, A.B.

*D. Schreberi* Schp., Cartington (68), Aug., 1933, E.H.S. "A large form with wide leaves and lax cells, best under var. *elata*," G.B.S.

*D. squarrosa* Schp., Orton (95), Feb., 1932, G.B. ; Cleveland (62), April, 1912, J. Mennell, com. W.B. ; c.fr., Buttermere (70), Sept., 1933, C.H.B.

*Blindia acuta* B. et S., Usway Burn (68), June, 1933, E.H.S.

*Dicranoweisia cirrata* Lindb., c.fr., Crunwere (45), Jan., 1932, and Sept., 1933, R.J.

*D. crispula* Lindb., Ben Lawers (88), July, 1885, J. McAndrew, com. W.Y.; Ben Lawers (88), June, 1932, E.C.W.

*Campylopus subulatus* Schp., Piz Campascio, Switzerland, July, 1927, L.B.C.T.

*C. Schimperi* Milde., Killin (88), June, 1932, E.C.W.

*C. Schwarzii* Schp., Stonethwaite (70), Sept., 1933, C.H.B. "I think this is correct, but the points of the leaves are rather unusually much serrate," G.B.S.; Liathack (105), June, 1933, J.B.D.

*C. flexuosus* Brid., Speymouth (95), Nov., 1933, G.B.; Skitton (63), July, 1932, A.T.; appr., var. *zonatus*, c.fr., Stonethwaite (70), Sept., 1933, E.A.

*C. pyriformis* Brid., Aberfoyle (87), May, 1897, W. Evans, com. W.Y.

*C. fragilis* B. et S., Corstorphine Hill (83), March, 1903, J. McAndrew, com. W.Y.; c.fr., New Galloway (73), June, 1888, J. McAndrew, com. W.Y.

*C. Shawii* Wils., near Tarbet, Harris (110), Aug., 1903, W. West, ex-herb. D.A.J.; Adrigole (I 3), Aug., 1905, D.A.J.

*C. setifolius* Wils., Borrowdale (70), Sept., 1933, C.H.B.

*C. atrovirens* de Not., Dolgelly (48), Aug., 1933, S.P.R. "This plant is *C. setifolius* Wils. The leaves taper to a fine, spinulose apex, but there is no white hair. The habit points to the above species rather than *C. atrovirens*," G.B.S.; var. *falcatum* Braithw., E. side of Blaven, Coolins, Skye (104), June, 1933, L.B.C.T.; Coruisk, Skye (104), June, 1933, L.B.C.T.; J.B.D.; var. *muticus* Milde, Stonethwaite (70), Sept., 1933, C.H.B.

*C. introflexus* Brid., Tyn-y-groes (48), Aug., 1931, C.A.C.

*Dicranodontium longirostre* B. et S., Stonethwaite (70), Sept., 1933, A.Wh.; Lodore (70), Aug., 1933, E.A.; Seatoller (70), Sept., 1933, C.H.B.; Dolgelly (48), Aug., 1933, S.P.R.; (*D. denudatum* Hagen), Lerum, Hulan, Sweden, Sept., 1931, C.St.; var. *alpinum* Milde., Stonethwaite (70), Sept., 1933, C.H.B.; Ingleborough (64), Jan., 1915, W.H.B.

*D. falcatum* Hedw., Ben Lawers (88), Aug., 1872, G. E. Hunt, com. W.Y.; Killin (88), June, 1932, E.C.W.

*D. schisti* Lindb., Glen Callater (92), July, 1871, G. E. Hunt, com. W.Y.

*D. Starkei* W. et M., Cairngorm (93), July, 1890, W. Smith, com. W.Y.

*D. undulatum* Ehrh., bois de Bonneray (Vendée), France, March, 1932, J.C. ; Süd-Eifel (Rhld.), April, 1933, H.A. ; c.fr., Frakno, Hungary, Aug., 1927, A. Bartha, com. A.B.

*D. spurium* Hedw., Witley Common (17), Oct., 1931, E.C.W. ; Barlby Common (63), May, 1913, W.B. ; Süd-Eifel (Rhld.), April, 1933, H.A.

*D. Bergeri* Bland, Ford Moss (68), June, 1929, J.B.D.

*D. Bonjeani* de Not., var. *rugifolium* Bosw., Glenbrittle, Skye (101), June, 1933, L.B.C.T.

*D. scoparium* Hedw., var. *paludosum* Schp., Skipwith Common (61), May, 1933, W.B. "In these packets the specimens have the leaves almost entire and the nerve smooth on the back. They should therefore be placed under var. *spadiceum* Boul.," G.B.S. ; var. *spadiceum* Boul., St. Kilda (110), Sept., 1911, W. Evans, com. W.Y.

*D. brevifolium* Lindb., c.fr., Pälkjarvi, Finland, July, 1929, M.J.K. "This plant is generally regarded as a variety of *D. Muehlenbeckii* B. et S.," W.E.N.

*D. majus* Turn., c.fr., Barrow Wood (70), Sept., 1933, C.H.B. ; Thirlmere (70), Aug., 1933, W.Y.

*D. fuscescens* Turn., Fochabers (94), July, 1931, G.B. ; Ben Lawers (88), June, 1932, E.C.W.

*D. Scottianum* Turn., Killarney (I.1), Aug., 1911, J.C. Wilson, ex herb. D.A.J. ; Crunwere (45), Sept., 1933, R.J.

*D. strictum* Schl., Roslyn Glen (83), July, 1911, J. McAndrew, com. W.Y. ; St. Pierre du Chemin (Vendée), France, March, 1926, J.Ch. ; Bredower Forst, Berlin, May, 1929, L. Loeske.

*D. flagellare* Hedw., Borsmonostor, Hungary, Sept., 1931, A.B.

*D. uncinatum* C.M., Liathack (105), June, 1933, J.B.D. ; Slievemore (I.27), Aug., 1933, P.W.M.R.

*D. longifolium* Ehrh., Parád, Hungary, June, 1931, A.B. ; Hoher Westerwald (Rhld.), Oct., 1928, H.A.

*D. Sauteri* B. et S., c.fr., Feldberg (Baden), June, 1932, E.B.

*Leucobryum glaucum* Schp., Knockmealdowns (I.6\*), July, 1933, E.A. ; Poolvona (I.6\*), July, 1933, E.A.

*Fissidens pusillus* Wils., Doncaster (63), Sept., 1933, S.P.R.

*F. crassipes* Wils., Colinton Dell (83), Oct., 1908, J. McAndrews, com. W.Y.

*F. osmundoides* Hedw., Unishad Valley (I.6), July, 1933, E.A.; c.fr., Lawers Burn (88, June, 1932, E.C.W.

*F. polyphyllus* Wils., near Minehead (5), April, 1932, C.A.C.; near Aberglaslyn (49), Aug., 1933, S.P.R.; quarry between Portmadoc and Beddgelert (49), Aug., 1916, D.A.J., E. Cleminshaw, J. C. Wilson, ex herb. D.A.J.

*F. adiantoides* Hedw., Corris (48), May, 1929, R.J.; Ben More (88), July, 1933, E.C.W.; "luxuriant form," Unishad Valley (I.6), July, 1933, E.A.

*F. decipiens* De Not., Clapham (64), Sept., 1932, A.T.; (*Fissidens cristatus* Wils.), Vérteskozma, Hungary, May, 1932, A.B.

*F. grandifrons* Brid., bei Fohenheim (Baden), ca. 1900, C. W. Baur, com. L.L.

*Grimmia apocarpa* Hedw., "form with short, strongly dentate hair points," c.fr., Piz Campascio, Switzerland, July, 1927, L.B.C.T. "I should call this plant *G. apocarpa* var. *gracilis* W. et M. The upper leaves are strongly papillose on the back of the nerve; also, the colour and the habit point to this variety," G.B.S. "I should not have hesitated to place this plant under *Schistidium papillosum* Culmann, if it had not grown on chalk. The author has, however, made the habitat (avoiding chalk) a determinant character." L.L.

*Gr. apocarpa* Hedw., var. *gracilis* W. et M., Vaskapu, Tatra, July, 1933, A.B. "This is rather a mixed gathering. One packet contains var. *rivularis*. In the other the moss may be var. *gracilis*, but the plants are large for that variety, and the back of the nerve is hardly scabrous," G.B.S. "Although this has the habit of *G. apocarpa* var. *gracilis*, I do not think it can be referred there. It has neither the reddish colour, the rough nerve, nor the toothed apex characteristic of that. I think there is no doubt it is the much rarer *G. angusta* (Hag.) Par. Chalubinski, who first described it as f. *linearis* of *G. apocarpa*, in the *Grimmiae Tatrenses*, speaks of its having the habit of *Cinclidotus*, and as being a water form. Boros' specimen gives the impression of being more or less aquatic, although this is not mentioned on the labels. In the narrow leaves, etc., it agrees well with *Gr. angusta*," H.N.D.

*Gr. conferta* Franck., Largo Law (85), Sept., 1909, J. McAndrew, com. W.Y. "This seems to be correct, but the plant is robust, and the upper leaves have long hair-points.

Should not the plant go under var. *pruinosa*?" G.B.S. "I agree this is var. *pruinosa*. It was in fact distributed under that name in 1905, only that specimen was collected in July, 1904," H.N.D.

*Gr. maritima* Smith, Penrhyn (48), April, 1914, D.A.J., J. C. Wilson, ex herb. D.A.J.; Tromsø, Norway, Aug., 1885, Sophie Møller, com. J.L.

*Gr. anodon* B. et S., c.fr., Bernina Pass, Switzerland, July, 1927, L.B.C.T.

*Gr. funalis* Schp., Ben Lawers (88), May, 1909, W. Evans, com. W.Y.; Leirungsbu in Vågå, Norway, Aug., 1890, Chr. Kaurin, com. J.L.

*Gr. torquata* Hemsch., Mardale (69), Sept., 1903, A.W.; Jotunheimen, Norway, Aug., 1890, Chr. Kaurin et E. Ryan, com. J.L.; Cam Chreag, near Killin (88), June, 1932, E.C.W.

*Gr. trichophylla* Grev., "tall form," Bernina Pass, Switzerland, July, 1927, L.B.C.T.; var. *Muehlenbeckii* Husnot, Duved, Sweden, March, 1933, C.St.

*Gr. orbicularis* Bruch., Great Orme (49), Sept., 1933, E.H.S.; Inchnadamph (108\*), June, 1933, J.B.D.; Braid Hills (83), Aug., 1912, J. McAndrew, com. W.Y. "I should call this *Gr. trichophylla*. Note the tapering leaves and the general habit," G.B.S.

*Gr. trichophylla* Grev., Mallievre (Vendée), France, Sept., 1929, J.C.

*Gr. Stirtoni* Schp., Llandegla (50), Aug., 1914, D.A.J., J.B.D., J. C. Wilson, ex herb. D.A.J.

*Gr. subsquarrosa* Wils., Loch Ken (73), Sept., 1899, J. McAndrew, W.Y. "This is much too large and coarse a plant for *subsquarrosa*. It is *Gr. retracta*," G.B.S.; near Liberton (83), Sept., 1908, J. McAndrew, com. W.Y. "This cannot be *Gr. subsquarrosa*, as the leaves are not at all squarrose. I would suggest that it may be *Gr. Muehlenbeckii*," G.B.S. "I agree that this can hardly be *Gr. subsquarrosa*. It is a male plant, and I should refer it with little doubt to *Gr. Stirtoni*," H.N.D.

*Gr. decipiens* Lindb., Traprain Law (82), Oct., 1908, J. McAndrew, com. W.Y.; Glenbrittle, Skye (104\*), June, 1933, J.B.D.

*Gr. Hartmani* Schp., Kinlochewe (105\*), June, 1933, J.B.D.; Loch Tay, near Killin (88), July, 1885, J. McAndrew, com. W.Y.; Llanbedr (48), Aug., 1933, S.P.R.

*Gr. retracta* Stirton, Erwood (43), Sept., 1924, R.J. "I think this is correct, but the leaves seem more erect than squarrose," G.B.S.; Keswick (70), Sept., 1933, C.H.B. "I should call this *Gr. Hartmani*. The leaves are not squarrose, but are inclined to be secund at the tips of the stem. The cells too, are sinuose," G.B.S.

*Gr. patens* B. et S., Bälsnäs, Sweden, Aug., 1932, C.St.; Ben Lawers (88), June, 1932, E.C.W.; Stonethwaite (70), May, 1932, S.P.R.

*Gr. Doniana* Sm., c.fr., Honister Pass (70), Sept., 1933, A.Wh.; Cowie's Linn (78), April, 1902, W. Evans, com. W.Y.

*Gr. arenaria* Hampe, Talsarnau (48), Aug., 1933, S.P.R.

*Gr. ovata* W. et M. (*Gr. ovata* Schwaeg.), c.fr., Eifel (Rhld.), May, 1931, E.B.; Glenbrittle (104), June, 1933, J.B.D.

*Gr. commutata* Hübn., New Galloway (73), April, 1892, J. McAndrew, com. W.Y.; c.fr., Bré (Ticino) Switzerland, May, 1927, E.B.

*Gr. montana* B. et S., Traprain Law (82), Oct., 1908, J. McAndrew, com. W.Y.; Venn (Rhld.), Nov., 1926, E.B.

*Gr. alpestris* Schleich., Kleine Scheidegg, Switzerland, May, 1933, D.B.B.

*Gr. leucophaea* Grev., c.fr., Eifel (Rhld.), Oct., 1931, E.B.

*Gr. elongata* Kaulf., Snowdon (49), Aug., 1931, J.B.D.; "poor," Braithwaite (70), Sept., 1933, C.H.B.

*Gr. unicolor* Hook., Bernina Pass (Switzerland), July, 1927, L.B.C.T.

*Rhacomitrium protensum* Braun, Coomshingaun (I.6\*), July, 1933, E.A.

*Rh. heterostichum* var. *alopecurum* Hübn., Rosthwaite (70), Aug., 1933, W.Y. "Is not this *Rh. sudeticum*? The nerve is broad," G.B.S. "Too robust I think for *Rh. sudeticum*. I should agree with the naming," H.N.D.

*Rh. ramulosum* Lindb., Ben Lawers (88), June, 1932, E.C.W.

*Rh. lanuginosum* Brid., c.fr., Moel Hebog (49), Aug., 1933, S.P.R.

*Rh. canescens* Brid., Ben Mac Dhui (92), Aug., 1923, D.B.B.; Ingleborough (64), Sept., 1932, A.T.; var. *ericoides* B. et S., Aberglaslyn (49), Aug., 1933, S.P.R.; c.fr., Ochtendung (Rhld.), Feb., 1933, H.A.; formâ *tortuloides* (Herz.), Bernina Pass,

Switzerland, July, 1927, L.B.C.T. "Best described as approaching *tortuloides*, a snow-water form," L.L.

*Coscinodon cribrosus* Spr., Eifel (Rhld.), Aug., 1932, E.B. ; c.fr., Thornthwaite (70), Sept., 1933, C.H.B.

*Glyphomitrium Daviesii* Brid., c.fr., Glenbrittle, Skye (104), June, 1933, J.B.D. ; L.B.C.T.

*Hedwigia ciliata* Lindb., Mervent (Vendée) France, Dec., 1929, J.Ch.

*H. imberbis* Spruce, Llanbedr (48), Aug., 1933, S.P.R. ; Buttermere (70), Sept., 1933, C.H.B.

*Acaulon muticum* C.M., Speymouth (95\*), Oct., 1933, G.B.

*Phascum cuspidatum* Schreb., Speymouth (95), Oct., 1933, G.B.

*Ph. curvicolle* Ehrh., c.fr., Gogmagog Hills (29), Feb., 1932, P.W.R.

*Pottia bryoides* Mitt., Káposztásmegyer, Hungary, May, 1933, A.B.

*P. Heimii* Fuernr., Pagharn Harbour (13), May, 1933, A.M.S. ; Lymington (11), July, 1889, H.N.D. ; Kettering (32), July, 1903, H.N.D.

*P. truncatula* Lindb., Speymouth (95), Sept., 1933, G.B. ; Braid Hills (83), Oct., 1910, J. McAndrew, W.Y.

*P. intermedia* Fuernr., Speymouth (95), Oct., 1931, G.B.

*P. viridifolia* Mitt., Torquay (3), Feb., 1911, Miss C. E. Larter, com. H.N.D.

*P. Wilsoni* B. et S., "form appr. *P. asperula*," Looe (1), March, 1916, C. P. Hurst, com. H.N.D.

*P. minutula* Fuernr., Horningsea (29), Dec., 1933, E.W.J.

*P. caespitosa* C.M., c.fr., Fownhope (36), April, 1932, C.H.B. and L.B.C.T., com. L.B.C.T.

*P. lanceolata* C.M., Edinburgh (83), Feb., 1907, J. McAndrew, com. W.Y. ; Káposztásmegyer, Hungary, May, 1933, A.B. ; Little Billing (32), Feb., 1897, H.N.D. ; Folkstone (15), June, 1900, H.N.D. ; Roade (32), March, 1894, H.N.D. ; "leaves octofarious," Dungee Corner (30), May, 1902, H.N.D.

*Tortula pusilla* Mitt., Weston Favell (32), March, 1892, H.N.D. ; (*Pterigoneurum pusillum* Broth.), Budapest, Hungary, March, 1933, A.B.

*T. rigida* Schrad., Ancaster (53), 1933, G.H.A. ; Hemswell (54), 1933, G.H.A.

*T. ambigua* Ångstr., Hemswell (54), 1933, G.H.A. ; Little Billing (32), Feb., 1897, H.N.D. ; near Beaumaris (52), Dec., 1871, G. E. Hunt, com. W.Y. ; Bröltal (Rhld.), Dec., 1929, A.Sch.

*T. aloides* De Not., Beaumaris (52), Dec., 1871, G. E. Hunt com. W.Y. ; wall, between Kingsthorpe and Brampton (32), Dec., 1885, H.N.D.

*T. cernua* Lindb., Aberford (64), Oct., 1929, W.H.B. ; Aberford (64), Aug., 1929, W.H.B., H.H.K., D.A.J., com. D.A.J.

*T. atrovirens* Lindb., Port Erin Bay (71\*), March, 1932, E.W.J. ; var. *edentula* B. et S., Looe (1), Dec., 1914, H.N.D.

*T. marginata* Spruce, Levitt Hagg (63), Aug., 1932, S.P.R. " This is *T. muralis* var. *aestiva* Brid., P.G.M.R., var *aestiva* Brid., Rokeley (65), Oct., 1896, H.N.D.

*T. canescens* Mont., form, near Torquay (3), 1911, Miss Larter, com. H.N.D.

*T. subulata* Hedw., Morfa, Harlech (48), April, 1914, J. C. Wilson, ex herb. D.A.J. ; Quiraing, Skye (104), July, 1893, H.N.D.

*T. angustata* Wils., Gilmerton (83), March, 1907, J. McAndrew, com. W.Y.

*T. mutica* Lindb., Gt. Houghton (32), Dec., 1887, H.N.D.

*T. intermedia* Berk., Knock Maun (I.6\*), July, 1933, E.A. ; Glencorse (83), April, 1910, J. McAndrew, com. W.Y.

*T. ruralis* Ehrh., Liberton (83), May, 1910, J. McAndrew, com. W.Y. ; Creag na Caillich (88), June, 1932, E.C.W. ; Towcester (32), May, 1898, H.N.D. ; Bugbrooke (32), Jan., 1898, H.N.D.

*T. ruraliformis* Dixon, Gullane Links (82), July, 1909, J. McAndrew, com. W.Y.

*T. princeps* de Not., Stinchar Valley (75), May, 1933, J.R.L.

*T. papillosa* Wils., Coldingham (81), Jan., 1933, J.B.D. ; Roade (32), Sept., 1897, H.N.D. ; Pitlochry (89), June, 1914, J. McAndrew, com. W.Y.

*Barbula lurida* Lindb., Gilmerton (83), April, 1904, J. McAndrew, com. W.Y. ; Eastbourne (14), Jan., 1888, H.N.D. ; (*Didymodon luridus* Hornsch.), Purg de Serre (Vendée), France, March, 1932, J.Ch.



*B. rubella* Lindb. (*Erythrophyllum rubellum* Loeske), Szádelő, Hungary, Oct., 1929, A.B. ; near var. *dentata* Schp., above Bracklinn Falls (87), July, 1897, H.N.D. ; var. *ruber-rima* Ferg. (*B. ferruginascens* Stirt.), Keswick (70), Sept., 1933, C.H.B. ; Inchnadamph (108), July, 1899, E.G.S. and H.N.D., com. H.N.D. ; Teesdale (65), Aug., 1896, H.N.D.

*B. tophacea* Mitt., Roade (32), Sept., 1897, H.N.D. ; near S. Queensferry (84), May, 1909 and Oct., 1911, J. McAndrew, com. W.Y. ; f. *thermarum* Boros, Budapest, Hungary, July, 1927, A.B. ; var. *acutifolia* Schp., Charmouth (9), Dec., 1903, H.N.D.

*B. fallax* Hedw., New Galloway (73), Nov., 1886, J. McAndrew, com. W.Y. ; Tarbet (99), July, 1898, H.N.D. ; var. *brevifolia* Schp., Berlin, May, 1929, L.L. ; Barnwell Wold (32), Dec., 1887, H.N.D. ; Hayford Dion Workings (32), Jan., 1898, H.N.D. ; Roade (32), Nov., 1886, H.N.D.

*B. recurvifolia* Schp., Austwick (64), Sept., 1933, A.Wh. ; Malham (64), July, 1896, H.N.D. ; var. *robusta* Braithw., Ben Bulben (I.28), Sept., 1928, J.B.D.

*B. spadicea* Mitt., Berchtesgaden, Bavaria, July, 1914, L. Loeske ; Ingleton (64), July, 1896, H.N.D. ; Clapham (64), July, 1896, H.N.D. ; Aber (49), Aug., 1892, H.N.D. ; Quiraing Hill, Skye (104), July, 1893, H.N.D.

*B. rigidula* Mitt., near Cappagh (I.6\*), July, 1933, E.A. ; Inchnadamph (108), July, 1899, W.E.N., E.G.S. and H.N.D., com. H.N.D. ; c.fr., "gemmae sparingly present," Little Bardfield (19), July, 1886, H.N.D.

*B. Nicholsoni* Culmann, Fownhope (36), Aug., 1933, C.H.B.

*B. cylindrica* Schp., Creag na Caillich (88), June, 1932, E.C.W. ; c.fr., Builth (42), July, 1903, H.N.D.

*B. vinealis* Brid., Wolverton (24), April, 1890, H.N.D.

*B. sinuosa* Braithw., Cheltenham (33), Jan., 1928, P.G.M.R. and D.A.J., com. D.A.J. ; Northampton (32), Feb., 1886, H.N.D. ; Abington Park (32), Nov., 1887, H.N.D. ; Hayburn Wyke (62), July, 1931, E.H.St.

*B. gracilis* Schwaeg., Nash Scar (36), Nov., 1897, C.H.B., com. H.N.D. ; Ancaster and Sleaford (53), Welton (54), 1933, G.H.A. "Mr. Nicholson considers these may be referred to var. *viridis* B. et S.," P.G.M.R. ; var. *viridis* B. et S., Ancaster (53), 1933, G.H.A.

*B. Hornschuchiana* Schultz, Gullane Links (82), May, 1908, J. McAndrew, com. W.Y.

*B. paludosa* Schw., Isère-Voreppe, France, March, 1932, J.Ch.

*B. revoluta* Brid., c.fr., Grantchester (29\*), Jan., 1933, E.W.J.; Boughton (32), April, 1897, H.N.D.; near Cappagh (I.6\*), July, 1933, E.A.

*Leptodontium flexifolium* Hampe, Kilmington (3), Dec., 1903, H.N.D.; Badley Woods (32), March, 1897, H.N.D.; Rothbury (68), Dec., 1932, E.H.St.; "leaves often surrounded with a distinct pale border," Ben Douran (88), July, 1898, C.H.B. and H.N.D., com. H.N.D.

*L. recurvifolium* Lindb., Cwm Celli Iago (48), July, 1888, H.N.D.; Rhaiadr-Du (48), July, 1888 and July, 1901, H.N.D.

*Weisia crispa* Mitt., Boxley Warren (15), Jan., 1904, John Marten, W.Y.

*W. microstoma* C.M., Granton (83), May, 1909, J. McAndrew, W.Y.; Gog Magog Hills (29\*), Jan., 1932, E.W.J.; Edinburgh (83), Jan., 1911, J. McAndrew, com. W.Y. "Yes, but mixed with *W. viridula*, which diminishes their value as specimens," P.G.M.R.

*W. tortilis* C. Mull., Alsógalla, Hungary, April, 1931, A.B.

*W. mucronata* B. et S., Ravelston (83), Feb., 1907, J. McAndrew, com. W.Y.

*W. tenuis* C.M., Ridley Hall (67), April, 1933, E.M.L.; Nuneaton (38), Sept., 1933, C.A.C. "Not *W. tenuis*," P.G.M.R. "This is *Weisia reflexa* Brid., a new species for Britain. It is usually now placed in *Gyroweisia* (which also includes *Weisia tenuis*) as *G. reflexa* (Brid.) Schimp.; but the distinction from *Weisia* is very fine. It is only known in Europe from the Mediterranean region, and from Madeira and a few stations in N. Africa." H.N.D. (See description, p. 152). Cramond (83), Sept., 1913, J. McAndrew, com. W.Y.

*W. rupestris* C.M., Rothley (67), Sept., 1933, E.A.; Ben Lui (88), Aug., 1929, C.A.C.; Clapham (64), June, 1933, A.T.

*W. curvirostris* C.M. var. *insignis* Dixon, Ben Lui (88), Aug., 1929, D.A.J.

*W. verticillata* Brid., Chippenham (29\*), March, 1933; E.W.J.; Hayle (1), Aug., 1886, W. Curnow and H.N.D. com. H.N.D.; Boughton Green (32), May, 1887, H.N.D.; Langharne (44), Sept., 1931, R.J.

*Trichostomum crispulum* Bruch., near Kinghorn (85), July, 1911, J. McAndrew, com. W.Y.; Inverkip (75), Oct., 1933, J.R.L.; Ancaster (53), 1933, G.H.A.; Ingleborough (64), Aug., 1896, H.N.D.; Clapham (64), July, 1896, H.N.D.; Crunwre (44), Nov., 1924, R.J.; Ballymona (I.6\*), July, 1933, E.A.; var. *nigroviride* Braithw., Sulber (64), Nov., 1933, F.E.M.; var. *brevifolium* Schp., Hartlip (15), May, 1904, J. Marten, com. H.N.D.; var. *viridulum* Braithw., Long Crags, Hartside (70), Sept., 1933, C.V.B.M. and E.M.L., com. E.M.L.; Lyme Regis (9), Jan., 1904, Miss G. Lister and H.N.D., com. H.N.D.

*Tr. mutabile* Bruch., Clapham (64), July, 1896, H.N.D.; Ancaster (53), 1933, G.H.A. "This is *Barbula unguiculata*," H.N.D.; var. *littorale* Dixon, Derwentwater (70), Sept., 1933, C.H.B. "A peculiar form of this variety, with acute leaves," P.G.M.R. "I think this must be looked upon as a form of *T. mutabile*, not var. *littorale*, in view of the form of the apex, etc., though the lower margins are sometimes toothed," H.N.D.; Totland Bay (11), Aug., 1889, H.N.D.; Lodore Falls (70), Aug., 1895, H.N.D.; Carbis Bay (1), Aug., 1886, H.N.D.; var. *cophocarpum* Schp., Inchnadamph (108\*), June, 1933, J.B.D.

*Tr. tenuirostre* Lindb., c.fr., Rhaiadr-Du (48), Aug., 1888, H.N.D.; New Galloway (73), April, 1893, J. McAndrew, com. W.Y.; Seatoller (70), Sept., C.H.B.; var. *Holtii* Braithw., Scaw Fell Pike (70), Aug., 1895, H.N.D.

*Tr. hibernicum* Dixon, Kinlochewe (105\*), June, 1933, J.B.D.

*Tr. flavovirens* Bruch, Oloune (Vendée), France, Sept., 1933, J.Ch.; Hayle (1), Aug., 1886, W. Curnow and H.N.D., com. H.N.D.

*Tr. inclinatum* Dixon, Inchnadamph (108), July, 1899, W.E.N., E.G.S. and H.N.D., com. H.N.D.

*Tr. nitidum* Schp., Minehead (5), April, 1932, E.C.W.; Great Orme (49), Sept., 1933, E.H.St.

*Tr. tortuosum* Dixon, Brachlynn Falls (88), July, 1897, H.N.D.; Glen Dubh (108), July, 1899, H.N.D.; Allt-nan-Uamh (108), July, 1899, W.E.N., E.G.S. and H.N.D., com. H.N.D. "Form resembling *T. inclinatum*," H.N.D.; Cader Idris (49), June, 1929, R.J.; (*Tortella tortuosa* Limpr.), Wichltal (Rhld.), May, 1932, A.Sch.

*T. fragile* Dixon, Ben Lawers (88), July, 1885, J. McAndrew, com. W.Y.

*Pleurochaete squarrosa* Lindb., Newborough Sandhills, Anglesea (52), Aug., 1931, A.M.S. ; Cobern (Rhld.), Jan., 1934, A.H. ; (*Tortella squarrosa* Limpr.), Mayfeld (Rhld.), April, 1933, A. Sch.

*Cinclidotus fontinaloides* P.B., Saint Laurent sur Seire, (Vendée), France, Sept., 1929, J.Ch.

*Encalypta ciliata* Hoffm., Quiraing, Skye (101), July, 1893, H.N.D.

*E. rhabdocarpa* Schwaeg., Ingleborough (64), Aug., 1896, H.N.D. ; Gullane Links (82), May, 1913, J. McAndrew, com. W.Y.

*Encalypta streptocarpa* Hedw. (*E. contorta* Lindb.), Süttó, Hungary, May, 1932, A.B.

*Encalypta affinis* Hedw. fil., c.fr., Suistumo, Finland, June, 1910. M.J.K. "This plant is generally known of the Continent as *E. apophysata* Bry. Germ. Hedwig's *E. affinis* appears to have been applied to several different plants," W.E.N.

*Ancetangium compactum* Schwaeg., Liathack (105\*), June, 1933, J.B.D. ; c.fr., Thirlmere (70), Aug., 1933, W.Y.

*Zygodon lapponicus* B. et S., Helvellyn (69), June, 1932, W.R.M.

*Z. Mougeotii* B. et S., Hurstwood (59), May, 1932, A.T. ; (*Amphoridium Mougeotii* Schp.), Chantonay (Vendée), France, May, 1929, J.Ch. ; Unishad Valley (I.6), July, 1933, E.A.

*Z. viridissimus* R.Br., Seathwaite (70), Sept., 1933, W.Y. ; Eitrheim in Odda, Norway, Aug., 1873, N. Wulfsberg, com. J.L. "Yes, *eu-viridissimus* Malta var. *vulgaris* Malta. Not a common form with us," P.G.M.R.

*Z. Stirtoni* Schp., var. *occidentalis* Malta, Boxhill (17), Jan., 1934, A.M.S. "Ordinary *Z. Stirtoni*, which on Malta's system is named *Z. eu-viridissimus* var. *occidentalis* f. *Stirtoni*," P.G.M.R.

*Z. gracilis* Wils., Ingleborough (64), Dec., 1929, W.H.B. ; Heseltine Gill (64), Sept., 1930, C.A. Cheetham, com. W.H.B.

*Ulota Ludwigii* Brid., Glen Lochay (88), June, 1932, E.C.W. ; Linghulb, Sweden, June, 1933, C.St.

*U. Drummondii* Brid., Staward-le-peel (67), Nov., 1932, E.M.L. ; Braemar (90), June, 1930, D.A.J.

*U. curvifolia* Brid., c.fr., Ravaniemi, Finland, July, 1920, M.J.K.

*U. Bruchii* Hornsch., Knockmealdowns (I.6\*), July, 1933, E.A.

*U. phyllantha* Brid., near S. Queensbury (84), April, 1905, W. Evans, com. W.Y.; Angle (45), July, 1931, R.J.; Hayburn Wyke (62), June, 1931, E.H.St.

*U. Hutchinsiae* Hamm., Coomshingaun, Comeragh Mt. (I.6), July, 1933, E.A.; Tyn-y-groes (48), May, 1903, D.A.J.; Knocknarling Hill (73), Aug., 1897, J. McAndrew, com. W.Y.

*Orthotrichum rupestre* Schleich., Rothbury (68), July, 1933, E.H.St.

*O. anomalum* Hedw., var. *saxatile* Milde, Knock Mann (I.6\*), July, 1933, E.A.; Port Soldrick (71\*), March, 1932, E.W.J.

*O. cupulatum* Hoffm., Delf Burn near Rothley (67), Sept., 1933, E.A.; var. *nudum* Braithw., Cubbiedean Reservoir (83), April, 1905, J. McAndrew, com. W.Y.

*O. leiocarpum* B. et S., Slaggyford (67\*), Nov., 1933, E.M.L.; Cappagh Lake (I.6\*), July, 1933, E.A.

*O. Lyellii* H. et T., Knaresdale (67), Sept., 1933, E.M.L.; Cappagh (I.6\*), July, 1933, E.A.; near Fochabers (94), Aug., 1932, G.B.

*O. speciosum* Nees, Aviemore (96), July, 1930, D.A.J.

*O. rivulare* Turn., Faymoreau (Vendée), France, Sept., 1929, J.Ch.

*O. Sprucei* Mont., bank of R. Logan (I.39), April, 1933, W.R.M.

*O. tenellum* Bruch, Knaresdale (67\*), Sept., 1933, E.M.L. "This is correctly named. Small tufts of *O. diaphanum* were mixed with it," D.A.J.; Pitlochry (89), June, 1914, J. McAndrew, com. W.Y. "The capsule is not right for this species in colour or width, and the stomata are superficial. It is *O. affine*," D.A.J.

*Oedipodium Griffithianum* Schw., near Carsphairn (73), July, 1884, J. McAndrew, com. W.Y.

*Splachnum ampullaceum* L., near Lough Derg (15), July, 1931, C.A.C.

*S. sphaericum* L. fil., Little Fell (69), June, 1933, A.W.

*S. vasculosum* L., Bizzle (68\*), May, 1933, J.B.D., E.M.L., com. E.M.L.; Cheviot (68\*), May, 1933, J.B.D.

*Tetraplodon mnioides* B. et S., c.fr., Lochnagar (92), Aug., 1932, A.Wh.

*Tayloria lingulata* Lindb., Forsaberget, Sweden, July, 1933, C.St. ; Studl Hut, Austria, 1929, C.A.C. "This is *T. Froehlichiana* (Hedw.), Mitt., a rarer plant than *T. lingulata*, differing in some not easily detected fruiting characters," H.N.D.

*Discelium nudum* Brid., "protonema stage with sterile frutifications," Claybanks, Nelson (59), Aug., 1933, A.T. "Correct," H.N.D.

*Ephemerum serratum* Hpe., La châtagnerie (Vendée), France, July, 1929, J.Ch.

*Physcomitrella patens* B. et S., Budapest, Hungary, Aug., 1931, A.B.

*Physcomitrium pyriforme* Brid., c.fr., Doncaster (63), May, 1933, J.P.R.

*Funaria fascicularis* Schp. (*Entosthodon fascicularis* Schp.), Mallièvre (Vendée), France, May, 1933, J.Ch.

*F. Templetoni* Sm., c.fr., Lodore (70), Aug., 1932, A.Wh.

*F. hygrometrica* Sibth., c.fr., Hermitage Woods (62), June, 1933, W.B.

*F. hungarica* Boros, Hajdunánás, Hungary, May, 1933, J. Igmárdy, com. A.B.

*Amblyodon dealbatus* P.B., c.fr., Ainsdale (59), June, 1933, W.G.T. ; Gullane Links (82), Aug., 1908, J. McAndrew, com. W.Y.

*Meesia trichodes* Spruce, c.fr., Craig Chailleach (88), Aug., 1903, J. C. Wilson, ex herb. D.A.J. ; Killin (88), July, 1932, E.C.W. ; Skatstugan, Sweden, Aug., 1933, C.St.

*Paludella squarrosa* Brid., c.fr., Teufels-Moor, Berlin, May, 1926, L.L.

*Aylacomnium turgidum* Schw., Meall Tarmachan (88), May, 1929, W. Evans, com. W.Y.

*A. palustre* Schwaeg., Skipwith Common (61), May, 1933, W.B. ; Speymouth (95), July, 1932, G.B. ; var. *laxifolium* Kindb., Bernina Pass, Switzerland, July, 1927, L.B.C.T.

*A. androgynum* Schwaeg., Treize Vents (Vendée), France, May, 1932, J.Ch.

*Timmia bavarica* Hessel., Zermatt, Switzerland, July, 1901, W.E.N. ; c.fr., Ravaniemi, Finland, July, 1920, M.J.K.

*T. austriaca* Hedw., Bodetal, Harz, Germany, June, 1916, L.L.

*Conostomum boreale* Swartz., Flasham, near Killin (88), June, 1932, E.C.W.

*Anacolia Webbia* Schp., near Calvi, Corsica, July, 1931, L.B.C.T.

*Bartramia Oederi* Swartz. (*Plagiopus Oederi* Güm.), Hautes Pyrénées, July, 1909, J.Ch.

*B. stricta* Brid., Cobern-Gondorf (Rhld.), Oct., 1933, H.A.

*B. ithyphylla* Brid., c.fr., near Keswick (70), Sept., 1933, C.H.B.

*B. pomiformis* Hedw., Rosthwaite (70), Aug., 1933, W.Y.

*B. Halleriana* Hedw., Thirlmere (70), Aug., 1933, W.Y.

*Philonotis fontana* Brid., Speymouth (25), July, 1932, G.B.; c.fr., Cader Idris (48), Aug., 1931, S.P.R.; var. *tomentella*, Skaale, Loen, Nordfjord, Norway, July, 1925, L.B.C.T. "This is *Conostomum boreale* Swartz.," D.A.J.; var. *ampliretis* Dixon, Crafnant Woods (48), May, 1913, D.A.J.; Widdup Cross (59), July, 1933, A.T.; Aberglaslyn (49), Aug., 1933, S.P.R.

*Ph. caespitosa* Wils., f. *laxiretis* Loeske, near Wotton (17), May, 1933, E.C.W.; Wiehltal (Rhld.), May, 1932, A.Sch.

*Ph. calcarea* Schp., Leppetel (Rhld.), April, 1932, A.Sch.

*Ph. capillaris* Lindb., Saint Malo du Bois (Vendée), France, May, 1932, J.Ch.

*Breutelia arcuata* Schp., St. Keverne (1), May, 1933, W.E.N.

*Orthodontium gracile* Schwgr., Eridge Rocks (14), March, 1921, W.E.N.; near Harrogate (64), April, 1931, E.H.S. "The inflorescence is heteroicous, the capsule irregular and sometimes striate. It is var. *heterocarpum* Wats.," D.A.J.; var. *heterocarpum* Wats., Skipworth (61\*), May, 1933, F.E.M.

*Leptobryum pyriforme* Wils., Gordon Castle Gdns. (95), Oct., 1933, G.B.

*Webera elongata* Schwaeg., Glendue (67), Sept., 1933, E.M.L.

*W. cruda* Schwgr., New Galloway (73), May, 1896, J. McAndrew, com. W.Y.; Creagan Lochain (88), June, 1932, E.C.W.

*W. nutans* Hedw., "small leaved form," Skipton (64), Sept., 1932, A.T. "Yes, it is a barren form of *W. nutans*," D.A.J.

*W. prolifera* Bryhn, Alston (70\*), April, 1933, E.M.L. "The gemmae are few in number and not always present on

some of the stems, probably having fallen off," D.A.J. ; Ben Lawers (88), July, 1930, C.H.B. "Yes, quite distinct from *W. annotina* (Hedw.). It is much more closely allied to *W. cruda* Schwgr., than to *W. annotina* (Hedw.), as the leaf shape and areolation show," L.L. "It must be recognised that many continental bryologists draw a distinction between what they consider to be the true *Webera proliger* Bryhn. and the plant which has been usually referred to that in this country, which they name *W. annotina* var. *decipiens*. Both have a similar form of bulbil, but they are to be distinguished by a certain number of vegetative characters, as to the value and constancy of which there may be some disagreement. Herr Loeske refers the plant collected on Ben Lawers by C.H.B. (July, 1930) to the true *W. proliger*, but most of our British plants would come under the *W. annotina* var. It is to some extent a question as to how much importance is to be attributed to the form of the gemmae, how much to other vegetative characters," H.N.D.

*W. Ludwigi* Schp., Cheviot (68), May, 1933, J.B.D. ; var. *latifolia* Schp., Bernina Pass, Switzerland, July, 1927, L.B.C.T. "The larger areolation and the shortly excurrent nerve forming a denticulate point are characteristic of a *Bryum*, and I think it belongs to *Br. pseudotriquetrum*. The leaves of the *Webera* are also strongly decurrent." D.A.J.

*W. gracilis* Schl., f. *elongata* Breidler, Brocken, Hercynia Silva, Germany, July, 1911, L.L.

*W. carnea* Schp., Barrow Ford (59), May, 1933, A.T.

*W. calcarea* Warnst., Coverack (1), May, 1930, W.E.N.

*Bryum filiforme* Dicks., Stonethwaite (70), Sept., 1933, A.Wh. ; Linbrig (67), Aug., 1932, E.H.S.

*B. Warneum* Bland, c.fr., Freshfield (59), July, 1933, W.G.T. ; Ainsdale (59), May, 1932, W.G.T.

*B. calophyllum* R. Br., Freshfield (59), July, 1933, W.G.T.

*B. longisetum* Bland, c.fr., Tervola, Finland, July, 1908, M.J.K.

*B. pallens* Sw., a form, Inchnadamph (108), June, 1933, J.B.D. ; var. *speciosum* Schp., Ben Lawers (88), June, 1932, J.B.D.

*B. cyclophyllum* B. et S., margin of Bassenthwaite Lake (70), Sept., 1933, C.H.B.

*B. neodamense* Jtz., f. *elongatum*, Ichenheim (Baden), Germany, July, 1898, C. W. Baur, com. L.L.



*B. pseudotriquetrum* Schwaegr. (*B. ventricosum* Dicks.)  
Veresegyház, Hungary, Aug., 1926, A.B.

*B. fuscum* Lindb., Balatonfüred, Hungary, April, 1926,  
A.B. "I have compared this plant with an authentic specimen of *B. fuscum* Lindb., and I find marked differences in the inflorescence which appears to be dioicous in the present plant, and in the spores, which are about 12m in diameter, while those of *B. fuscum* are 20-22 m. Mr. Dixon suggests that the present plant should be referred to *B. caespiticium* L., and with this suggestion I agree," W.E.N.

*B. nitidulum* Lindb., e.fr., Paltamo, Finland, June, 1916,  
M.J.K. "Should be referred to *B. capillare* var. *Ferchellii*,"  
W.E.N. "I should consider this *B. capillare* var. *Ferchellii*  
B. et S.," H.N.D.

*B. obconicum* Hornsch., Carbis Bay (1), April, 1923,  
H.H.K. and W.E.N.

*B. Donianum* Grev., Vouvant (Vendée), France, April,  
1928, J.Ch.

*B. erythrocarpum* Schwaegr., Lizard (1), May, 1930,  
W.E.N.; Speymouth (95), April, 1933, G.B.

*B. atropurpureum* W. et M., var. *gracilentum* Tayl.,  
Stoneyford (I.39), May, 1933, W.E.M.

*B. alpinum* Huds., Ben Douran (88), July, 1933, E.C.W.;  
var. *viride* Husn., Braithwaite (70), Sept., 1933, C.H.B.

*B. Muehlenbeckii* B. et S., Inchnadamph (108), July,  
1899, W.E.N.; Partille, Sweden, Oct., 1932, C.St.

*B. Schleicheri* Schwgr., rocks by the Aletsch glacier,  
Switzerland, July, 1913, W.E.N.

*B. argenteum* L., var. *lanatum* B. et S., Robroyston (77),  
Sept., 1933, J.R.L.

*Mnium affine* Bland, var. *integrifolium* Lindb., on dead  
leaves in Ashstead Forest (17), Dec., 1933, J.H.A. "The  
variety is worth little, but it is well for attention to be drawn  
to it, since it is so often mistaken for *Mn. rugicum* or for *Mn.*  
*rostratum*," J.H.A. "This variety seems to be based on  
colour and habitat to separate it from var. *rugicum* and I agree  
with Mr. Albrecht that it has not much value," D.A.J. "I  
should quite agree that var. *integrifolium* is not worth keeping  
for *Mn. affine* as distinct from var. *rugicum*. I should either  
refer it to var. *rugicum*, preferably, or call it *Mn. affine* form  
*integrifolium*," H.N.D.

*Mn. rugicum* Laur. (*Mn. affine* var. *rugicum* B. et S.), swamp near river, Rydal (69), Sept., 1933, C.H.B.

“ In the description of the various forms of the *Mn. affine-rugicum-Seligeri* group, too much importance is attached to the amount of leaf-serration, the size of the cells, the breadth of the border, and similar characters that according to my experience vary so considerably, that though they may be of service in the separation of varieties and forms, they cannot come into question for the separation of species! As the use of the term species is nevertheless unstable, it would be quite conceivable to regard *Mn. affine*, *rugicum* and *Seligeri* as together forming the old species *Mn. affine* (grandspecies). For my part I am in favour of their being thus treated.

The best time to acquire an acquaintance with the bog forms of this group is in the spring, when the old tufts have developed green shoots several centimetres long. *Mn. rugicum* and *Mn. Seligeri* may be recognized then and there with the naked eye (or under the lens), if one pays attention to the erect sterile stems. The old stems are not always a reliable guide, nor are the fertile and male ones; for these stems often show deviations. In *Mn. rugicum*, including the male stems, the upper leaves in spring are concave upwards, forming basins that often contain drops of dew or rain; and they are scarcely decurrent, at any rate not from the leaf to leaf. In *Mn. Seligeri* the leaves are concave downwards, more or less recurved (moist or dry), and strongly decurrent, often from leaf to leaf, so that in this respect we are reminded of *Bryum Duvalii*. The leaves of *Mn. rugicum* are as in *Mn. affine*, more or less round; those of *Mn. Seligeri* oblong. These distinctions are not always obvious, when plants have been gathered at an unfavourable time of the year, or from less characteristic tufts; this is often true of herbarium specimens. It must not be denied that the sharp distinction between *Mn. rugicum* and *Mn. Seligeri* that I have constantly observed during the last ten years in the bogs near Berlin, may sometimes be absent. I am not, however, convinced by any of these cases, that the one form passes into the other, but simply that we are not yet sufficiently acquainted with these mosses and their variability.

On the other hand, there is a much closer relationship between *Mn. rugicum* and *Mn. affine*. Possibly *Mn. rugicum* is a bog form of *Mn. affine*; but its distinctiveness must be far advanced in time; for I have never observed *Mn. affine* passing into *Mn. rugicum* on the edge of boggy ground even

in places where it grows abundantly. Another question that is still open is how *Mn. rugicum* is related to *Mn. affine* var. *elatum*, which is often used as a synonym of *Mn. Seligeri*. In the herbariums there is a great deal of *Mn. Seligeri* under this name; and the confusion of the two is quite general nowadays. I am using *Mn. affine* var. *elatum* exclusively *in sensu* Limpricht Vol. I. p. 479, that is for hyprophilous forms of *Mn. affine* with erect, longer shoots, which are not identical with *Mn. Seligeri*. Only further observation will show in what relationship *Mn. affine* var. *elatum* stands to *Mn. rugicum*, and whether the two are not after all identical, or only unimportantly separated.

Mr. Binstead's specimens belong to *Mn. rugicum*; they are quite unlike *Mn. Seligeri*," L. Loeske (translated by J.H.A.).

*Mn. undulatum* Sw., c.fr., Ems (Rhld.), April, 1933, H.A.

*Mn. serratum* Schrad., Cornhill (68), Aug., 1933, E.C.W.

*Mn. orthorrhynchum* B. et S., Creag an Lochain (88), June, 1932, J.B.D.; Lodore (70), Sept., 1933, C.H.B.

*Mn. lycopodioides* Schwgr., Ben Lawers (88), June, 1909, W.E.N.

*Mn. riparium* Mitt., Cuckfield (13), June, 1917, W.E.N.

*Mn. cinclidioides* Huebn., Common Burn, Cheviot (68\*), May, 1933, F.M.L.; Loch Dochart (88), July, 1933, E.C.W.; Dreifelder Weiher (Rhld.), June, 1932, A.Sch.

*Mn. subglobosum* B. et S., c.fr., Malham Tarn (64), March, 1933, F.E.M.

*Mn. hymenophylloides* Huebn., rocks by the Abisko river, Tornean, Lapland, Aug., 1907, W.E.N.

*Cinclidium stygium* Swartz., Malham Tarn (64), March, 1933, F.E.M.

*Fontinalis antipyretica* L., Skarvik, Sweden, June, 1932, C.St.

*F. squamosa* L., Linhope Spout (68), Aug., 1933, J.B.D.; R. Wye (36), Aug., 1933, C.H.B. "A delicate, highly seriate form," H.N.D.

*Cryphaea heteromalla* Mohr., Crunwere (45), Dec., 1930, R.J.; Cappagh Lake (I.6\*), July, 1933, E.A.

*Neckera oligocarpa* Bruch, c.fr., Suistomo, Finland, June, 1910, M.J.K.

*N. crispa* Hedw., Llandudno (49), Sept., 1933, E.H.S.; c.fr., Fin Glen, Campsie (86\*), Aug., 1933, J.R.L.

*N. pumila* Hedw., Lodore (70), Aug., 1933, E.A.; var. *Philippeana* Milde, Tyn-y-groes (48), Aug., 1920, D.A.J.; 1922, R.J.

*N. complanata* Huebn., Kilreany (I.6), July, 1933, E.A.

*Homalia trichomanoides* B. et S., Downham (59), March, 1933, S. Lane, com. A.T.

*Hookeria laete-virens* H. et T., Mousehole Cave (1), June, 1931, D.A.J.

*Leucodon sciuroides* Schwaegr., Austwick (64), Sept., 1933, A.Wh.; Long Crag, Hartside (70), Sept., 1933, E.M.L.; var. *morensis* B. et S., Creag na Cailleach (88), June, 1932, E.C.W.

*Leucodon sciuroides* Schw., Vendée, France, April, 1929, J.Ch.

*Antitrichia curtipendula* Brid., Llyn Glas (49), Aug., 1933, S.P.R.; Austwick (64), Sept., 1933, A.Wh.

*Leskea polycarpa* Ehrh., c.fr., Loxwood (13), Aug., 1932, E.C.W.; Rhulen (43), Aug., 1922, R.J.; near Beuel (Rhld), July, 1931, H.A.

*Anomodon attenuatus* (Schreb.) Hueb., Siebengsbirge (Rhld.), July, 1929, A.Sch.

*A. viticulosus* H. et H., Kilgreany (I.6\*), July, 1933, E.A.; Goredale (64), Sept., 1933, A.Wh.

*Leptodon Smithii* Mohr., Bieton (45), Jan., 1913, R.J.

*Pterygynandrum filiforme* Hedw., Killin (88), July, 1932, J.R.L. "This is var. *heteropterum* B. et S., it is more robust than the type with thicker and obtuse branches, the leaves secund, rounded and apiculate at apex," D.A.J.

*Heterocladium heteropterum* B. et S., Aberglaslyn (49), Aug., 1933, S.P.R.; var. *fallax* Milde, Geltsdale (70), June, 1933, E.M.L.

*Pseudoleskea catenulata* B. et S., Inchnadamph (108), June, 1933, J.B.D.

*Thuidium abietinum* B. et S., Edenham (53), 1933, G.H.A.

*Th. Blandovii* B. et S., Bensberg (Rhld.), Dec., 1930, E.B.

*Th. delicatulum* Mitt., Lodore (70), Aug., 1933, A.Wh.; Seathwaite (70), Aug., 1933, W.Y.; Lodore (70), Sept., 1933, C.H.B.; Seatoller (70), Sept., 1933, J.R.L.; Tyn-y-groes (48), Aug., 1933, S.P.R.

*Climacium dendroides* W. et M., Treize-Vents (Vendée), France, May, 1932, J.Ch.

*Cylindrothecium concinnum* Schp., Appelby (54), 1933, G.H.A. "Probably a starved form of the species," G.H.A.; Inchnadamph (108), June, 1933, J.B.D.

*Myurum Hebridarum* Schp., Loch Coruisk, Skye (104), June, 1933, J.B.D.

*Pylaisia polyantha* B. et S., Matfin, near Newcastle (67\*), May, 1931, H.T., com. E.M.L.; near Ingleton (64), April, 1925, D.A.J.

*Orthothecium rufescens* B. et S., Wild Boar Fell (69), July, 1933, A.W.

*Camptothecium lutescens* B. et S., The Downs, Angle (45), Sept., 1929, R.J.

*C. nitens* Schp., Cartington (68), Aug., 1933, E.H.S.

*Brachythecium plicatum* B. et S., Ben Lawers (88), July, 1885, J. McAndrew, W.Y.

*B. glareosum* B. et S., near Port Seton (82), April, 1907, J. McAndrew, W.Y.; Cortina, S. Tirol, Aug., 1908, F. Savery, com. D.A.J.; Bredhurst (16), 1902, John Marten, com. W.Y.

*B. salebrosum* B. et S., c.fr., "shade grown," Fownhope (36), Nov., 1933, C.H.B.

*B. rivulare* B. et S., c.fr., Keswick (70), Sept., 1933, C.H.B.; var. *cataractarum* Sauter, Inchnadamph (108), June, 1933, J.B.D.; formâ *cataractarum*, Pendle Hill (59), June, 1933, S. Lane, com. A.T.; var. *latifolium* Husn., Gordale Scar (64), April, 1933, A.T.

*B. curtum* Lindb., Finkenkrug-Wald, Berlin, Winter, 1925-26, L.L. "On a specimen of this plant, which Herr Loeske sent me some years ago, he has inserted the following note. "I believe that there are enough transitions between this species and *B. Starkei*, L.L." "I am inclined to share the opinion formerly expressed by Herr Loeske, and Mr. Dixon informs me that Herr Moenkemeyer treats *B. curtum* as a variety only of *B. Starkei*, calling it var. *explanatum* (Brid.), the lowland form, while *B. Starkei* (type) is the alpine form," W.E.N.

*B. reflexum* B. et S., Dehrbachtal (Rhld.), July, 1933, A.Sch.

*B. populeum* B. et S., Crunwere (45), Sept., 1933, R.J.

*B. caespitosum* Dixon, near Stamford Bridge (37), May, 1931, D.A.J.; Cornhill (68), Aug., 1933, J.B.D.; Fownhope (36), Aug., 1933, C.H.B.

*B. illecebrum* de Not., Newent (33), Dec., 1913, D.A.J. ; (*Scleropodium illecebrum* B.E.), Chavagues les Redoux (Vendée), France, April, 1929, J.Ch.

*Hyocomium flagellare* B. et S., Lodore (70), Aug., 1933, A.Wh.

*Eurhynchium cirrosum* Jur., Loppen, Norway, July, 1894, Chr. Kaurin, com. J. Lid.

*E. piliferum* B. et S., Sprotborough (63), Sept., 1933, S.P.R.

*E. crassinervium* B et S., Mallièvre (Vendée), France, Sept., 1929, J.Ch.

*E. praelongum* Hobk., var. *Stokesii* Brid., Barden Mill (67\*), April, 1933, E.M.L. ; Seathwaite (70), Sept., 1933, W.Y.

*E. Swartzii* Hobk., Cappagh Lake (I.6\*), July, 1933, E.A. ; Kilgreany (I.6\*), July, 1933, E.A.

*E. abbreviatum* Schp. (*E. Schlericheri* Hartm.), Purg de Serre (Vendée), France, March, 1932, J.Ch.

*E. pumilum* Schp., Purg de Serre (Vendée), France, March, 1932, J.Ch.

*E. Teesdalei* Schp., c.fr., Helmside Gill (65), June, 1933, F.E.M. ; Nant-y-Ffrith (50), Jan., 1925, D.A.J.

*E. tenellum* Milde, Crunwre (45), Sept., 1933, R.J. ; Knock Maun (I.6\*), and Kilgreany (I.6\*), July, 1933, E.A.

*E. striatum* B. et S., Bredhurst (16), 1900, John Marten, W.Y.

*E. meridionale* de Not., West Weave (9), May, 1931, E.C.W. ; June, 1930, C. P. Hurst, com. H. H. Knight.

*E. striatulum* B. et S., Cheddar (16), May, 1928, D.A.J.

*E. rusciforme* Milde, var. *atlanticum* Brid., Downham Green (59\*), July, 1933, A.T.

*E. murale* Milde, Coton (29\*), Jan., 1932, E.W.J. ; Claygate (17), Aug., 1933, c.fr., J.H.A.

*E. confertum* Milde, Eashing (17), May, 1932, E.C.W. "Branches curved, slender, acute and julaceous; this is not the habit of *E. confertum*. It is *Brachythecium caespitosum* Dixon, which the habitat suggests," J.B.D. ; near Braid Hills (83), March, 1912, J. McAndrew, W.Y.

*Sematophyllum micans* Braithw., Longthwaite (70), Nov., 1933, F.E.M. ; Seatoller (70), Sept., 1933, D.B.B. ; Stone-

thwaite (70), May, 1930, S.P.R.; Sept., 1933, A.Wh.; Rosthwaite (70), Aug., 1933, W.Y.

*Plagiothecium elegans* Sull., Seatoller (70), Aug., 1933, W.Y.

*P. Müllerianum* Schp., c.fr., Nordfjord, Norway, July, 1925, L.B.C.T. "Autoicous; this cannot be *P. Müllerianum*. The leaves are acutely pointed with apiculus often decurved, cells narrow. It may be placed best as *P. denticulatum* var. *aptychus* Spruce," J.B.D.

*P. Muehlenbeckii* B. et S., Ben Eighe (105\*), June, 1933, J.B.D.

*P. denticulatum* B. et S., var. *obtusifolium* H. et T., Ben Lawers (88), July, 1929, W.E.M.

*P. silvaticum* B. et S., Braid Hills (83), Oct., 1910, J. McAndrew, com. W.Y.

*P. platyphyllum* Moenk., Windecker Berg (Rhld.), March, 1933, A.Sch. "I think simply *P. silvaticum* (Hedw.) B.E.," H.N.D.

*Amblystegium compactum* C.M., on rocks between Staadt and Castel (Saar), Dec., 1930, Wm. Freiberg, com. L.L.; Berwick (68), Dec., 1933, J.B.D.

*A. serpens* B. et S., Speymouth (95), July, 1933, G.B.; Kilgreany (I.6\*), July, 1933, E.A.

*A. irriguum* B. et S., Eardisley (36), June, 1933, C.H.B.

*A. filicinum* de Not. (*Cratoneurum filicinum* L.), "schlanke, kurzästige Form," Breiniger Berg (Rhld.), Aug., 1933, A.Sch.; var. *trichodes* Brid., Berwick, (81), Jan., 1933, J.B.D.

*A. fallax* Milde (*A. filicinum* var. *vallisclausae* (Brid.) Dixon), Herrenstrunden (Rhld.), Oct., 1931, E.B.

*Hypnum riparium* L., Askham Bog (62), March, 1933, W.B.; Humphrey Head (69), July, 1932, A.T.; var. *longifolium* Schp., Monlough (I.38), June, 1928, W.E.M.

*H. elodes* Spruce, Ainsdale (59), June, 1933, W.G.T.; Gullane Links (82), Aug., 1908, J. McAndrew, com. W.Y.

*H. polygamum* Schp., Studland Heath (9), June, 1933, E.W.J.

*H. stellatum* Schreb., var. *protensum* Rochl, Sprotborough (63), May, 1933, S.P.R.; Rothley (67), Sept., 1933, E.A.

*H. chrysophyllum* Brid., Doncaster (63), July, 1933, S.P.R.

*H. hispidulum* Brid., var. *Sommerfeltii* Myr., c.fr., Cheltenham (33), June, 1933, H.H.K.

*H. aduncum* Hedw., var. *gracilescens* Schp., Portmadoc (49), June, 1916, J. C. Wilson and D.A.J., ex herb. D.A.J.; var. *polycarpon* Bland, Minffordd (48), Aug., 1933, S.P.R. and Doncaster (63), Aug., 1933, S.P.R. "Two very different forms of var. *polycarpon* Bland, neither can be looked upon as typical," W.R.S.

*H. Sendtneri* Schp., Gullane Links (82), July, 1913, J. McAndrew, W.Y. "This is *H. Wilsoni* Schp.," W.R.S.

*H. lycopodioides* Schwaeg., Freshfield (59), July, 1933, A.T.; Aug., 1906, S. J. Owen, J.B.D. and D.A.J., com. D.A.J.; Doncaster, (63), July, 1933, S.P.R.

*H. fluitans* L. var. *submersum* Schp., Penistone Moor (64), Sept., 1932, S.P.R.; (*Drepanocladus fluitans* Dill.), formâ *similis* *Drep. uncinato*, Ebbe (Rhld.), Sept., 1933, A.Sch. "I should place these interesting plants under var. *falcatum* Schp.," W.R.S.; var. *Jeanbernati* Ren., Wahner Heide (Rhld.), June, 1928, A.Sch. "This plant is dioicous, and that with large swollen auricles brings it under one of the forms of *D. exannulatus*," W.R.S.

*H. exannulatum* Gumb., Speymouth (95), April, 1933, G.B.; near var. *brachydictyon*, Poolvona (I.6\*), July, 1933, E.A.; var. *purpurascens* Schp., Killin (88), July, 1931, J.R.L. "Yes, but not well marked," W.R.S.

*H. vernicosum* Lindb., near Keswick (70), Sept., 1933, C.H.B.; Remington Moor (64), May, 1933, A.T. "This is *H. revolvens* var. *Cossoni* Ren. A transverse section of the stem will show the enlarged cells on the outer layer. This character separates *revolvens* and *intermedium* from the rest of the Harpidia," W.R.S.

*H. revolvens* Swartz, c.fr., Bachnagair (90), June, 1930, D.A.J.; Remington Moor (64), May, 1932, A.T. "Yes, var. *Cossoni* Ren.," W.R.S.

*H. intermedium* Lindb., Rothley (67), Sept., 1933, E.A.; Cader Idris (49), 1920, R.J.; Ainsdale (59), June, 1933, W.G.T.

*H. decipiens* Limpr., Skalstugan, Sweden, July, 1933, C.St.

*H. commutatum* Hedw., Laugharne (44), Sept., 1931, R.J.

*H. falcatum* Brid., var. *gracilescens* Schp., Jungfrau, Switzerland, July, 1927, L.B.C.T. "These plants are too large to come under var. *gracilescens* compared with those sent by W.G.T.," W.R.S.; Birkdale (59), June, 1933, W.G.T.; var. *virescens* Schp., Austwick (64), Sept., 1933, A.Wh.



*H. reptile* Mich., Mährisch-Schönberg, Moravia, 1917, F. Schenk, com. L.L.

*H. fastigiatum* Hazen, Berchtesgaden (Bavaria), Aug., 1900, L.L.

*H. cupressiforme*. L. var. *filiforme* Brid., Hart Burn (67\*), Sept., 1933, E.A.; var. *mamillatum* Brid., Lodore (70\*), Aug., 1933, E.A.; var. *ericetorum* B. et S., Comeragh Mtns (I.6\*), July, 1933, E.A.; var. *tectorum* Brid., Rothley (67\*), Sept., 1933, E.A.; Skiddaw (70), Sept., 1933, E.A.; Ballin Taylor (I.6\*), July, 1933, E.A.; var. *elatum* B. et S., Llangollen (50), Sept., 1924, D.A.J.

*H. imponens* Hedw., Graffham Common (13), March, 1910, W.E.N., com. D.A.J.; Calerno (83), July, 1912, J. McAndrew, com. W.Y.

*H. Patientiae* Lindb., R. Wye (43), 1924, R.J.

*H. pratense* Koch, Teufelsmoor, Berlin, June, 1926, L.L.

*H. hamulosum* B.E., Borgakampen in Lom, Norway, July, 1889, Chr. Kaurin et J. Hagen, com. J.L.; Killin (88), Aug., 1872, G.E. Hurst, com. W.Y.

*H. callichroum* Brid., Glendue (67), Sept., 1933, E.M.L.; Cader Idris (48), Aug., 1929, R.J.; c.fr., near Blanefield (86), Sept., 1933, J.R.L.; Lodore (70\*), Aug., 1933, A.Wh. "One packet is correct; the others contain *H. cupressiforme* var. *ericetorum*," J.B.D.

*H. molluscum* Hedw., var. *condensatum* Schp., Easedale (69), June, 1932, C.H.B.; Twll Du (49), Aug., 1931, E.C.W. "A form but not robust enough nor with quite the habit of var. *condensatum*," J.B.D.; var. *fastigiatum* Bosw., Inchnadamph (108\*), June, 1933, J.B.D.; var. *erectum* Schp., boulders, Rosthwaite, Cumberland (70), Aug., 1930, W.Y., F.E.M., D.A.J., com. D.A.J., conf. H.N.D.

*H. crista-castrensis* L., Seatoller (70\*), Sept., 1933, D.B.B., A.Wh.; Dalmally (98), June, 1931, C.H.B.; c.fr., near Fochabers (94), Jan., 1932, G.B.

*H. palustre* Huds., a form, Inchnadamph (108), June, 1933, J.B.D.

*H. molle* Dicks., c.fr., Yllástunturi, Sweden, Feb., 1927, M.J.K.

*H. dilatatum* Wils., Besshø in Vågå, Norway, Aug., 1890, Chr. Kaurin, com. J.L.

*H. alpinum* Schp., Krimmler Tauern, Austria, Aug., 1926, L.L.

*H. arcticum* Sommerf., Granwander, Tirol, July, 1908, L.L.

*H. eugyrium* Schp., c.fr., Llanbedr (48), 1933, S.P.R.; var. *Mackayi* Schp., Llwyngwrl (48), Aug., 1930, S.P.R. "May pass for this var., which there is little to distinguish except the more robust habit, and arrangement of the leaves," J.B.D.

*H. ochraceum* Turn., Pentland Hills (83), Sept., 1904, W., Evans, W.Y.; Killin (88), June, 1932, E.C.W.; Widdup (63), April, 1933, A.T.; var. *flaccidum* Milde, Cader Idris (48), Aug., 1929, R.J.; Pendle Hill (59), June, 1933, A.T.

*H. scorpioides* L., c.fr., a form, Gors Goch (43), 1932, R.J.

*H. stramineum* Dicks., Speymouth (95), April, 1932, G.B.; Thursden (59), Aug., 1933, A.T.; Sutton Park (38), Dec., 1933, E.W.J.

*H. trifarium* W. et M., Ben Lui (88), Aug., 1929, D.A.J.; Beinn Dorain (98), July, 1933, E.C.W.; c.fr., Sotkamo, Finland, July, 1932, L. Lebtoven, com. M.J.K.

*H. cordifolium* Hedw., Strensall Common (62), May, 1917, J. Mennell, com. W.B.; Studland Heath (9), June, 1933, E.W.J.; Strensall Common (62), May, 1933, W.B. "Yes, but at least two of the packets contain a large admixture of *H. cuspidatum*," J.B.D.

*H. sarmentosum* Wahl., Tyndrum (88), July, 1933, E.C.W.

*H. cuspidatum* L., a form, Nelson (59), Oct., 1932, A.T. "Its appearance when growing was almost spinous, no doubt due to habitat, which was ledge of a bridge," A.T.

*H. Schreberi* Willd., c.fr., Speymouth (95), April, 1932, G.B.

*Hylocomium umbratum* B. et S., Lodore (70), Sept., 1933, E.A.; Auchmore Woods (88), Aug., 1905, W. Evans, com. W.Y.; Seatoller (70), Sept., 1933, D.B.B., C.H.B.; Rhaiadr Du (48), Aug., 1931, S.P.R.

*H. brevirostre* B. et S., Llanbedr (48), Aug., 1933, S.P.R.; Unishad Valley (I.6\*), July, 1933, E.A.; Horner Wood (5), April, 1932, A.Wh.; Lodore (70), Aug., 1933, E.A.

*H. loreum* B. et S., Llanbedr (48), Aug., 1933, S.P.R.

*H. squarrosum* B. et S. (*Rhytidiadelphus squarrosus* Warnst.), c.fr., Bingerwald (Rhld.), April, 1932, H.A.

*H. rugosum* de Not., Killin (88), July, 1933, E.C.W.

And 51 Polish specimens from the herbarium of Dr. Tad Wisniewski of Warsaw, communicated by Mr. Dixon.

**NON-EUROPEAN (Including specimens of European species from Countries outside Europe).**

Arranged according to Brotherus, in Engler and Prantl,  
("Pflanzenfamilien," Ed. 2.).

*Fissidens asplenioides* (Sw.) Hedw., Moonshine Hutt Valley, Wellington, N.Z., Nov., 1928, leg. E. Piggott, det. et com. M.J.K.

*Ditrichum flexifolium* (Hook.) Hampe, c.fr., Moonshine Hutt Valley, Wellington, N.Z., Nov., 1928; leg. E. Piggott, det. et com. M.J.K.

*Microdus Miquelianus* (Mont.) Besch., c.fr., Kuala Selangor, F.M.S., Dec., 1932, P.W.R., det. H.N.D.

*Campylopus incrassatus* (Kuntze) C.M., Bio Bio Province, S. Chile, 1922, J. Hamilton, com. D.L.

*C. umbellatus* (W.Arn.) Bartr., Mani, Hawaii, Feb., 1930, E.B.B.

*Pilopogon praemorsus* (C.M.), Hawaii, 1913, leg. Brother Matthias Newell, det. Brotherus, com. D.L. "This is, as Bartram has pointed out, only a form of *Campylopus (Thysanomitrium) exasperatus* Brid.," H.N.D.

*Dicranodontium falcatum* Broth., Mani, Hawaii, Feb., 1930, E.B.B.

*Dicranum nigrocaule* Ångstr., Stag River Station, S. Chile, 1912, J. Earsman, com. D.L. "The correct name for this is *Dicranoloma nigricaule* (Ångstr.) Par.," H.N.D.

*D. austrogeorgicum* C.M., South Georgia, 1919, J. Hamilton, com. D.L.

*D. perhorridum* (Dus.) Card., lat. 52°s., Patagonia, Jan., 1920, J. Hamilton, com. D.L.

*D. aciphyllum* Hook. fil. et Wils., lat. 52°s., Argentina, 1932, J. Hamilton, com. D.L.

*Dicranoloma Billardierii* (Schwaegr.) Par., Chiloe Island, S. America, 1920, J. Hamilton, com. D.L.

*D. Menziesii* (Hook. fil. et Wils.) Per., Tauranga, N.Z., Chas. Cameron, com. F.W.G.

*Leucobryum candidum* (Brid.) Hook. fil. et Wils., Tauranga, N.Z., 1933, Chas. Cameron, com. F.W.G.

*L. scaberulum* Card., Hong Kong, 1931, Dr. G. A. C. Herklots, com. W.H.B.

*L. neilgherrense* C. Mull., Ma On Shan, Hong Kong, April, 1931, Dr. G. A. C. Herklots, com. W.H.B.

*L. pachyphyllum* C.M., Hawaii, 1911, Brother Matthias Newell, com. D.L.

*Syrrhopodon spiculosus* Hook. et Grev., Selangor, F.M.S., Dec., 1932, P.W.R.

*S. oahuensis* Broth., Tantalus, Oahu, Hawaii, Jan., 1930, E.B.B.

*Thyridium obtusifolium* (Lindb.) Flsch., Pitcairn Island, 1922, Whitney Expedition, det. E.B.B.

*Calymperes Dozyanum* Mitt., Kuala, Selangor, F.M.S., Dec., 1932, P.W.R.

*Astomum Sullivantii* Schimp., Alderson, W.Va., U.S.A., Feb., 1932, F.W.G.

*Acaulon triquetrum* (Spruce) C. Mull., Alderson, W.Va., U.S.A., Feb., 1932, F.W.G.

*Phascum cuspidatum* Schreb., Alderson, W.Va., U.S.A., Feb., 1932, F.W.G.

*Tortula leptosyntrichia* (C.M.) Broth., South Georgia, 1919, J. Hamilton, com. D.L.

*T. Porteri* (James) Broth., Sinks Grove, W.Va., U.S.A., July, 1932, F.W.G.

*T. robusta* Hook. et Grev., lat. 52°s., Argentina, 1932, J. Hamilton, com. D.L.

*Webera sessilis* Lindb., Philippi, W.Va., U.S.A., July, 1932, F.W.G. (*Diphyscium sessile* (Schmid.) Lindb. is the correct name).

*Rhizogonium spiniforme* (L.), Hilo, Hawaiian Islands, 1911, Brother Matthias Newell, com. D.L.

*Hypnodendron arcuatum* (Hedw.) Mitt., Tauranga, N.Z., 1933, Chas. Cameron, com. F.W.G.

*H. marginatum* Hook. fil. et Wils., Upper Hutt, Moonshine, N.Z., Oct., 1928, E. Pigott, com. M.J.K.

*Philonotis vagans* Hook. fil. et Wils., Stag River Station, S. Chile, 1911, J. Earsman, com. D.L. "The correct citation of this is *P. vagans* (H.f. et W.) Mitt.," H.N.D.

*Ph. tenuis* (Tayl.) Jaeg., c.fr., Moonshine Hutt Valley, Wellington, N.Z., Nov., 1928, E. Pigott, com. M.J.K.

*Breutelia Kilaueae* (C.M.) Broth., Hawaii, 1913, Brother Matthias Newell, com. D.L. "Bartram (Manual of Hawaiian mosses, p. 143) points out that it is very doubtful whether there is anything to separate this from the sub-Antarctic *B. affinis* (Hook.) Mitt.," H.N.D.

*B. pendula* (Hook.) Jaeg., c.fr., Moonshine, Wellington, N.Z., Nov., 1928, E. Pigott, com. M.J.K.

*Macromitrium piliferum* Schwaegr., Hilo, Hawaiian Islands, 1911, Brother Matthias Newell, com. D.L.

*Rhacopilum cuspidiferum* (Schwaegr.), Hilo, Hawaiian Islands, 1909, R. J. Lillie, com. D.L.

*Rh. cristatum* Hook. fil. et Wils., c.fr., Picton, N.Z., Jan., 1929, E. Pigott, com. M.J.K.

*Pilotrichopsis dentata* (Mitt.) Besch., Lantau Island, Hong Kong, April, 1931, Dr. G. A. C. Herklots, com. W.H.B.

*Ptychomnium aciculare* (Brid.) Mitt., Tauranga, N.Z., 1933, Chas. Cameron, com. F.W.G.; Waikanae, N.Z., Jan., 1929, E. Pigott, com. M.J.K.

*Pt. subaciculare* Besch., Chiloe Island, S. America, 1920, J. Hamilton, com. D.L.

*Lepyrodon lagurus* (Hook.) Mitt., Chiloe Island, S. America, 1917, J. Hamilton, com. D.L.

*Trachypodopsis ornans* (Rchdt.) Flsch., Mani, Hawaii, Feb., 1930, E.B.B.

*Trachyloma planifolium* (Hedw.) Brid., Muritai, Wellington, N.Z., Feb., 1929, E. Pigott, com. M.J.K.

*Pilotrichella versicolor* (C.M.) Jaeg., Misiones, Argentina, 1919, J. Hamilton, com. D.L.

*Papillaria Aongstroemiana* C.M., Mangareva, April, 1922, E.H. Quayle, com. E.B.B.

*Barbella trichophora* (Mont.) Flsch., Oahu, Hawaii, Jan., 1930, E.B.B.; Hawaii, 1911, Brother Matthias Newell, com. D.L.

*Floribundaria floribunda* (D. et M.) Flsch., Oahu, Hawaii, Jan., 1930, E.B.B.

*Neckera Lepineana* Mtg., Viti-Insulae, Ovalau, 1864, Dr. Graeffe, com. L.L. "In Brotherus, "Musci," and most modern authors this will be found as *Neckeropsis Lepineana* (Mont.) Fleisch. It is, of course, a matter of opinion as to

whether *Neckeropsis* is separated from *Neckera* on good grounds," H.N.D.

*N. comorensis* C.M., Comoro Islands, 1880, Hildebrandt, com. L.L. "Correctly *N. comorae* C.M. It is, however, only a slight variety of *N. Lepineana*, and should be known as *N. Lepineana* var. *comorae* (C.M.) Card.," H.N.D.

*Homaliodendron flabellatum* (Dicks. Sm.) Flsch., Oahu, Hawaii, Jan., 1930, E.B.B.

*Camptochaete arbuscula* (Hook.) Jaegr., Moonshine, Wellington, N.Z., Oct., 1928, E. Pigott, com. M.J.K.

*Acrocladium auriculatum* (Mont.), Picton, N.Z., 1928. E. Pigott, com. M.J.K.

*Distichophyllum Freycinetii* Mitt., Hawaii, 1911, Brother Matthias Newell, com. D.L.

*D. pulchellum* (H. f. et W.) Mitt., Waikanae, N.Z., Jan., 1929, E. Pigott, com. M.J.K.

*Hypopterygium concinnum* (Hook.) Brid., Tauranga, N.Z., 1933, Chas. Cameron, com. F.W.G.

*H. Novae-Seelandiae* C. Mull., Waikanae, N.Z., Jan., 1929, E. Pigott, com. M.J.K.

*Cyathophorum bulbosum* (Hedw.) Broth., Picton, N.Z., Jan., 1929, E. Pigott, com. M.J.K.

*Thuidium glaucinum* (Mitt.), Hilo, Hawaiian Islands, 1910, Brother Matthias Newell, com. D.L.

*Thuidiopsis sparsa* (Hook. fil. et Wils.) Broth., Moonshine, Wellington, N.Z., Nov., 1928, E. Pigott, com. M.J.K. "I should consider this *Thuidium furfurosum* H.f. et W. *Th. sparsum* is a much more slender plant; whether specifically distinct from *Th. furfurosum* is doubtful. There appears to me no sound reason for separating *Thuidiopsis* as a genus from *Thuidium*. There is no distinguishing character, except that the branch-leaves are incurved and catenulate when dry." H.N.D.

*Plagiothecium Draytoni* (Sull.) Bartr., Mani, Hawaii, Feb., 1930, E.B.B.

*Acanthocladium extenuatum* (Brid.) Mitt., Tauranga, N.Z., 1933, Chas. Cameron, com. F.W.G.

*Sematophyllum Baldwinii* C.M., Hilo, Hawaiian Islands, Brother Matthias Newell, com. D.L.

*Glossadelphus Zollingeri* (C.M.) Flsch., var. *filicaulis* (Flsch.) Flsch., Mani, Hawaii, Feb., 1930, E.B.B.

*Stereodon Lechleri* (C.M.) Mitt., Chiloe Island, S. America, 1920, J. Hamilton, com. D.L.

*Ectropothecium helvense* Broth., Hawaii, 1913, Brother Matthias Newell, com. D.L. "This is an unpublished name. Brotherus makes no reference to it in his "Hawaii Mosses" (Bernice P. Bishop, Museum Bull. 40, 1927); and I think there is no doubt that it was because he had recognized that it was identical with *E. sandwichense* (Hook. et W. Arn.) Mitt.," H.N.D.

*E. Zollingeri* (C.Mull.) Jaeg., Hong Kong, Jan., 1931, Dr. G. A. C. Herklots, com. W.H.B.

*Versicularia* sp., near *perviridis* (Ångstr.) C. Mull., country of origin unknown, growing luxuriantly on floor of orchid house at Rawdon near Leeds, temperature about 70°F., Sept., 1933, com. W.H.B.

*Buxbaumia aphylla* L., Philippi, W.Va., U.S.A., Feb., 1933, F.W.G.

*Catharinea angustata* Brid., Philippi, W.Va., U.S.A., Jan., 1934, F.W.G.

*Polytrichum juniperinum* Hedw., Tauranga, N.Z., 1933, Chas. Cameron, com. F.W.G.

*Polytrichadelphus magellanicus* (L.) Mitt., c.fr., Moonshine Hutt Valley, Wellington, N.Z., Nov., 1928, E. Pigott, com. M.J.K.

*Dendroligotrichum dendroides* (Hedw.) Broth., Chiloe Island, S. America, 1920, J. Hamilton, com. D.L.

*Dawsonia longiseta* Hampe, Healesville, Victoria, Australia, Dec., 1931, C. French, jr., com. F.W.G.

## HEPATICS.

## EUROPEAN (British and Continental).

*Riccia Beyrichiana* Hampe, Burnfoot Hill (73), Sept., 1898, leg. J.McA. com. W.Y.

*R. fluitans* L., Rheinland, Aug., 1928, A.S.

*Ricciocarpus natans* (L.) Corda, pool at Holme Lacy (36), Aug., 1933, H.H.K. and E.A., com. E.A.; do. com. H.H.K.

*Lunularia cruciata* (L.) Dum., Gillsland (70), Apr., 1933, E.M.L.

*Preissia quadrata* (Scop.) Nees, near New Galloway (73), Oct., 1894, leg. J.McA., com. W.Y.

*Marchantia polymorpha* L., Knockmealdown Mts. (I.6.), July, 1933, E.A.

*Aneura multifida* (L.) Dum., Bennan Hill (73), Apr., 1894, J.McA., com. W.Y.; Pen Wood (33), July, 1931, H.H.K. and D.A.J.

*A. sinuata* (Dicks.) Dum., var. *major* Lindb., Knowesgate Moor (67), Sept., 1933, E.A.

*A. latifrons* Lindb., Bennan Hill (73), May, 1885, J. McA., com. W.Y. "This is *A. multifida* as shown by the section of the frond and the unistratose margin of the branches," H.H.K.

*A. palmata* (Hedw.) Dum., Wood near Forkins (73), Dec., 1890, J.McA., com. W.Y.

*Metzgeria furcata* (L.) Dum., Rheinland, June, 1926, A.S.

*M. conjugata* Lindb., Lough Fee (I.16), Sept., 1933, P.W.R.; Rheinland, Apr., 1930, A.S.

*M. hamata* Lindb., Benlister Glen, Arran (100), June, 1909, J.McA., com. W.Y.

*M. pubescens* (Schrank) Raddi, Nant-y-Ffrith, Wrexham (50), Aug., 1913, J.C.W. and D.A.J.

*Moerckia Blyttii* (Moerck) Brockm., Am Binnéin (88), July, 1903, P. Ewing, com. W.Y.

*Pellia Fabbroniana* Raddi, Kilgreany (I.6.), July, 1933, E.A.; Rheinland, Dec., 1929, A.S.; "densely tufted form approaching var. *lorea*," New Park Wood, Netherwitton (67), Sept., 1933, E.A.



- Blasia pusilla* L., Studland (9), June, 1933, E.W.J.
- Fossombronia Wondraczeki* Dum., Vendée, France, Mar., 1933, J.C.; Rheinland, Oct., 1931, A.S.
- Gymnomitrium concinnatum* (Lightf.) Corda, Ben Lawers (88), July, 1903, P. Ewing, com. W.Y.
- G. obtusum* (Lindb.) Pears., Honister Pass (70), Aug., 1933, W.Y.; Beinn Dorain (98), July, 1933, E.C.W.
- G. corallioides* Nees, Creag-an-Lochain (88), June, 1933, E.C.W.
- G. crenulatum* Gottsche, Honister Pass (70), Aug., 1933, W.Y.; Black Craig, New Galloway (73), Oct., 1898, J.McA., com. W.Y.; near Llyn Llgi (49), Apr., 1930, A.W.
- G. varians* (Lindb.) Schiffn., Meal Ghaordi, Killin (88), July, 1903, P. Ewing, com. W.Y.
- G. alpinum* (Gottsche) Schiffn., Black Craig, New Galloway (73), July, 1899, J. McA., com. W.Y.
- Marsupella condensata* (Angstr.) Kaal., Ben Lawers (88), June, 1932, E.C.W.
- M. Stableri* Spruce, Loch Kander, Glen Callater (92), July, 1930, H.H.K., J.B.D., D.A.J.
- M. Funckii* (Web. et Mohr) Dum., New Galloway (73), June, 1899, J.McA., com. W.Y.
- M. emarginata* (Ehrh.) Dum., Westphalia, Aug., 1929, A.S. "Evidently an aquatic plant, and more correctly placed under *M. aquatica*," H.H.K.
- M. aquatica* (Lindenb.) Schiffn., New Galloway (73), Aug., 1888, J.McA., com. W.Y.; Langdale (69), Aug., 1933, E.M.L.
- M. sphacelata* (Gies.) Lindb., in springs, Ben Eighe (105\*), June, 1933, J.B.D.
- M. Jörgensenii* Schiffn., Irfon Valley (42), June, 1929, H.H.K., J.B.D., D.A.J.
- Alicularia compressa* Nees, Rheinland, Oct., 1931, E.B.; var. *gigantea* Macv., Bowfell (70), 1908, leg. J.A.W. and A.W., com. W.G.T.
- A. scalaris* (Schrad.) Corda, Vendée, May, 1932, J.C.; Rheinland, Apr., 1927, A.S.; var. *distans* Carr., in springs, Ben Eighe (105\*), June, 1933, J.B.D.
- Eucalyx obovatus* (Nees) Breidl., New Galloway (73), Sept., 1901, J.McA., com. W.Y.
- E. hyalinus* Breidl., Rheinland, Oct., 1923, E.B.

*Aplozia crenulata* (Sm.) Dum., Honister Pass (70), Aug., 1933, W.Y.; on damp river bank, Coledale (70), Sept., 1933, E.A.; var. *gracillima* (Sm.) Heeg., New Galloway (73), Aug., 1895, J.McA., com. W.Y.; Lodore (70\*), Aug., 1933, E.A.; Keswick (70\*), Sept., 1933, E.M.L.

*A. cordifolia* (Hook.) Dum., Ben Lawers (88), July, 1885, J.McA., com. W.Y.

*A. riparia* (Tayl.) Dum., Glenlee Glen (73), Aug., 1899, J.McA., com. W.Y.; Ellerbeck (62), June, 1933, W.B. "This is *Alicularia compressa*," H.H.K.

*A. pumila* (With.) Dum., var. *rivularis* Schiffn., Dungeon Gill (69\*), Aug., 1933, H.H.K.

*Jamesoniella autumnalis* (D.C.) Steph., Seathwaite (70), Aug., 1933, W.Y.; Loch Lomond (86), May, 1904, J.McA., com. W.Y.; Seatoller (70), Aug., 1933, H.H.K.; Nantcol Ravine, Llanbedr (48), Feb., 1911, E.C. and D.A.J.; Seatoller (70), Sept., 1933, E.M.L.

*J. Schraderi* (Nees) Schiffn., Mitcheldean (34), Oct., 1931, W.E.N., H.H.K., D.A.J., com. D.A.J.

*J. Carringtoni* (Balf.) Schiffn., Ben Laoigh (88), July, 1902, P. Ewing, com. W.Y.; Am Binnein (88), July, 1933, E.C.W.

*Gymnocolea inflata* (Huds.) Dum., Dulax (46), July, 1917, R.J.; Poolvona (I.6), July, 1933, E.A.; Rheinland, Aug., 1933, A.S.

*Lophozia turbinata* (Raddi) Steph., Spital (58), June, 1933, W.G.T.

*L. badensis* (Gottsche) Schiffn., near Cramond (83), Aug., 1912, J.McA., com. W.Y.; Knowesgate Moor (67), Sept., 1933, E.A.

*L. Muelleri* (Nees) Dum., Colinton (83), Sept., 1905, J.McA., com. W.Y.; Rheinland, May, 1932, A.S.

*L. bantriensis* (Hook.) Steph., New Galloway (73), Mar., 1899, J.McA., com. W.Y.; Wark-on-Tyne (67\*), Mar., 1933, E.M.L.; Creag-an-Lochain (88), June, 1933, E.C.W.

*L. longidens* (Lindb.) Macoun, Cwm Bychan (48), Sept., 1922, D.A.J.

*L. ventricosa* (Dicks.) Dum., Rheinland, July, 1933, A.S.

*L. alpestris* (Schleich.) Evans, Rheinland, Apr., 1933, A.S.

*L. bicrenata* (Schmid.) Dum., New Galloway (73), Mar., 1894, J.McA., com. W.Y.; Rheinland, Aug., 1931, A.S.

*L. excisa* (Dicks.) Dum., Blackford Hill (83), Aug., 1912; J.McA., com. W.Y.

*L. incisa* (Schrad.) Dum., New Galloway (73), Jan., 1894, J.McA., com. W.Y.; Poolvona (I.6\*), July, 1933, E.A.; Studland Heath (9\*), Apr., 1933, E.W.J.; Kepplecove, Helvellyn (69), May, 1932, A.W.

*L. quinquedentata* (Huds.) Cogn., Seathwaite (70), Aug., 1933, W.Y. "This is *L. barbata*," H.H.K.; Glenlee, New Galloway (73), May, 1882, J.McA., com. W.Y.

*L. lycopodioides* (Wallr.) Cogn., limestone rocks, Mickle Fell (65\*), Sept., 1932, E.W.J.; Skalstugan, Jämtland, Sweden, July, 1932, C.S.; Ben Heasgarnich (88), July, 1915, W.E.N.

*L. Hatcheri* (Evans) Steph., Braid Hills (83), Jan., 1904, J. McA., com. W.Y.; Flumserberg, Switz., Jan., 1928, E.B.

*L. Floerkii* Schiffn., Rheinland, Aug., 1931, E.B.; Skalstugan, Jämtland, Sweden, July, 1933, C.S.

*L. atlantica* (Kaal.) Schiffn., Hebden Bridge (63), May, 1914, P.G.M.R. and J.C.W., com. D.A.J. "I presume this comes under *L. Floerkii* (W. & M.) Schiffn., with gemmae," D.A.J. "Yes," H.H.K.; Halta, Bohunslan, Sweden, Aug., 1932, C.S. "This is the plant formerly named in this country *L. atlantica*, but which Mr. Nicholson now considers to be the gemmiferous form of *L. Floerkii*. Capt. Stenholm remarks on the variable character of his specimens. The underleaves are sometimes absent or small and subulate, at other times larger and bifid. Also, the leaves sometimes have on the postical margin cilia characteristic of *L. Floerkii*," H.H.K.

*L. attenuata* (Mart.) Dum., New Galloway (73), July, 1893, J.McA., com. W.Y.; Netherwitton (67), Sept., 1933, E.A.; (= *L. gracilis*) Schwarzwald, Aug., 1932, A.S.

*L. barbata* (Schmid.) Dum., New Galloway (73), Dec., 1893, J.McA., com. W.Y.; Rheinland, Apr., 1933, A.S.

*Sphenolobus minutus* (Crantz) Steph., Barmfoot Hill (73), Feb., 1891, J.McA., com. W.Y.; Schwarzwald, Aug., 1932, A.S.

*S. ovatus* (Dicks.) Schiffn., New Galloway (73), Oct., 1897, J.McA., com. W.Y.

*S. Pearsoni* (Spruce) Steph., New Galloway (73), Sept., 1887, J.McA., com. W.Y.

*S. exsectiformis* (Breidl.) Steph., New Galloway (73), Dec. 1893, J.McA., com. W.Y.; Studland Heath (9\*), Apr., 1933, E.W.J.

*Anastrepta orcadensis* (Hook.) Schiffn., Launchy Gill, Thirlmere (70), Aug., 1933, W.Y.; Aberfoyle (87), June, 1913, J.McA., com. W.Y.; near Bergen, Norway, Jan., 1898, leg. E. Jorgensen, com. E.B.

*Plagiochila asplenoides* (L.) Dum., var. *major* Nees. f. *subintegerrima* Sch., Longwitton Dene (67), Sept., 1933, E.A.; var. *minor* Lindenb., Dunveoch Glen (73), Apr., 1894, J.McA., com. W.Y.

*P. spinulosa* (Dicks.) Dum., Seathwaite (70), Aug., 1933, W.Y.; Whistlefield (99), May, 1931, J.R.L.

*P. punctata* Tayl., Seathwaite (70), Aug., 1933, W.Y. Seatoller (70), Sept., 1933, D.B.B.; "forma," Seatoller (70), Sept., 1933, J.B.D.; var. *minuta* Breb., Seatoller (70), Sept., 1933, J.R.L.

*Pedinophyllum interruptum* (Nees) Pears., Ben Bulbin, Sligo (I.28), Sept., 1928, B.B.S., com. D.A.J.

*Leptoscyphus Taylori* (Hook.) Mitt., Skalstugan, Jämtland, Sweden, July, 1933, C.S.

*L. anomalus* (Hook.) Mitt., Studland Heath (9), June, 1933, E.W.J.; Rheinland, Apr., 1929, A.S.

*Lophocolea cuspidata* Limpr., Poolvona (I.6\*), July, 1933, E.A.

*L. heterophyllum* (Schrad.) Dum., Longwitton Dene (67\*), Sept., 1933, E.A.

*L. minor* Nees, Rheinland, Oct., 1931, E.B.

*Chiloscyphus polyanthus* (L.) Corda, var. *fragilis* (Roth.) K. Mull., Rheinland, Apr., 1926, and Nov., 1933, A.S.; Horton-in-Ribblesdale (64), A.T.; Downham (59\*), A.T.; var. *rivularis* (Schrad.) Nees., Seathwaite (70), Aug., 1933, W.Y.; Dals-Ed, Dalsland, Sweden, Aug., 1932, C.S.

*Harpanthus scutatus* (Web. et Mohr) Spruce, shady rocks, Seatoller (70), Sept., 1933, J.B.D.; do., do., Aug. and Sept., 1933, H.H.K.

*Saccogyna viticulosa* (Sm.) Dum., Seathwaite (70), Aug., 1933, W.Y.

*Cephalozia connivens* (Dicks.) Lindb., near Balerno (83), May, 1907, J.McA., com. W.Y.; var. *compacta* (Warnst.) Nichols., (= *C. compacta* Warnst.), Pomerania, Curow-Wald, Apr., 1913, leg. Hintze, com. L.L.

*C. media* Lindb., near New Galloway (73), Dec., 1890, J.McA., com. W.Y.

*C. macrostachya* Kaal., Rheinland, Aug., 1932, A.S.

*C. fluitans* (Nees) Spruce, near Balerno (83), June, 1904, J. McA., com. W.Y.; Studland Heath (9), June, 1933, E.W.J.; Strensall Common (62), May, 1933, W.B.; "This is *Gymnocolea inflata* with perianths," H.H.K.

*Nowellia curvifolia* (Dicks.) Mitt., near New Galloway (73), Feb., 1884, J. McA., com. W.Y.; Aberdour (85), Sept., 1907, J.McA., com. W.Y.; Blane field (86), Aug., 1933, J.R.L.

*Cephaloziella Starkei* (Funck) Schiffn., Poolvona (I.6\*), July, 1933, E.A.; Rheinland, Nov., 1931, A.S. "This is *Aplozia crenulata*," H.H.K.

*C. stellulifera* (Tayl.) Schiffn., var. *Limprichtii* Warnst., Belgard, Pomerania, May, 1932, Leg. F. Hintze, com. L.L.

*C. Massalongi* (Spruce) K. Mull., var. *aeraria* (Pears.) K. Müll., copper mine, Llanfrothen (48), June, 1931, H.H.K. and D.A.J.

*C. dentata* (Raddi) K. Mull., Lizard Down (1), May, 1930, W.E.N.

*Hygrobiella laxifolia* (Hook.) Spruce, Ben Lui (88), Aug., 1929, B.B.S., com. D.A.J.

*Odontoschisma Sphagni* (Dicks.) Dum., near Balerno (83), June, 1907, J.McA., com. W.Y.; Westphalia, Sept., 1933, A.S.; Rheinland, Aug., 1930, A.S.; forma *erectum* Macv., Rendsburg, July, 1928, leg. K. Koppe, com. L.L.

*O. denudatum* (Nees) Dum., Balerno Moss (83), Oct., 1902, J.McA., com. W.Y.; Llanfrothen (48), May, 1911, D.A.J.

*Adelanthus decipiens* (Hook.) Mitt., Slievemore, Achill Is. (I.27), Aug., 1933, P.W.R.

*Calypogeia fissa* (L.) Raddi, Schull (I.3), Oct., 1933, D.B.B.; Chopwell Woods (67\*), June, 1933, E.M.L.

*C. arguta* Nees et Mont., Chopwell Woods (67\*), June, 1933, E.M.L.

*Bazzania trilobata* (L.) Gray, Schwarzwald, Aug., 1932, A.S.; Skipton (64), A.T.

*B. tricrenata* (Wahl.) Pears., Seathwaite (70), Aug., 1933, W.Y.; Ben Lawers (88), July, 1885, J.McA., com. W.Y.; Seatoller (70), Aug., 1933, J.B.D.; Ben Laoigh (88), June, 1931, J.R.L.; Seatoller (70), Sept., 1933, J.R.L.; var. *inflexa* Nees, Schwarzwald, Aug., 1932, A.S.

*Lepidozia pinnata* (Hook.) Dum., Lamash, Arran (100), June, 1909, J.McA., com. W.Y.; Thrunton (68), Mar., 1933, J.B.D.; Slievemore, Achill Is. (I.27), Aug., 1911, J.C.W., com. D.A.J.; Warks Burn (67), Mar., 1933, E.M.L.; "small form," Thrunton (68), Mar., 1933, J.B.D.

*L. reptans* (L.) Dum., Rheinland, Apr., 1925, A.S.; "small compact form approaching var. *julacea*," New Park Wood, Netherwitton (76), Sept., 1933, E.A.

*L. Pearsoni* Spruce, Seathwaite (70), Aug., 1933, W.Y.; near New Galloway (73), June, 1898, J.McA., com. W.Y.

*Chandonanthus setiformis* (Ehrh.) Lindb., var. *alpinus* (Hook.) Kaal., Lui Water, Braemar (92), July, 1930, J.B.D.; Loch Brandy, Clova (90), June, 1930, J.B.D.

*Anthelia julacea* (L.) Dum., near New Galloway (73), May, 1893, J.McA., com. W.Y.

*Mastigophora Woodsii* (Hook.) Nees, Loch Coruisk, Skye (104), June, 1933, J.B.D.; Ben Chiurm (88), Aug., 1929, B.B.S., com. D.A.J.

*Ptilidium ciliare* (L.) Hampe, near New Galloway (73), Nov., 1901, J.McA., com. W.Y.; Westphalia, Aug., 1931, A.S.

*P. pulcherrimum* (Web.) Hampe, Dalmeny (84), Dec., 1905, J.McA., com. W.Y.; Blanfield (86), Sept., 1933, J.R.L.; Rheinland, Aug., 1933, A.S.

*Trichocolea tomentella* (Ehr.) Dum., Netherwitton (67), Sept., 1933, E.A.

*Diplophyllum taxifolium* (Wahlenb.) Dum., Duved, Jämtland, Sweden, July, 1933, C.S.

*D. gymnostomophilum* Kaal., Glen Beag, Glen Shee (89), July, 1930, D.A.J.

*Scapania compacta* (Roth) Dum., Laggan of Dee (73), Apr., 1886, J. McA., com. W.Y.; Vendée, France, May, 1932, J.C.

*S. subalpina* (Nees) Dum., Craighall Bridge (83), Aug., 1906, J.McA., com. W.Y.

*S. cuspiduligera* (Nees) K. Mull., Gwynfe, Caermarthen (44), June, 1929, H.H.K., J.B.D., D.A.J.

*S. gracilis* (Lindb.) Kaal., Coomshingaun, Comeragh Mts. (I.6\*), July, 1933, E.A.; Vendée, France, May, 1932, J.C.; Moraine, Crunwere (45), Sept., 1932, R.J.; Studland Heath (9\*), Apr., 1933, E.W.J.; Benmore Farm (88), July, 1933, E.C.W.

*S. aspera* Bernet, Rheinland, May, 1926, E.B. ; Alston (70), Apr., 1933, E.M.L.

*S. nemorosa* (L.) Dum., Launchy Gill, Thirlmere (70), Aug., 1933, W.Y. ; Strancally Castle (I.6\*), Sept., 1933, E.A. ; Rheinland, Aug., 1928, A.S. "This is *S. gracilis*," H.H.K.

*S. intermedia* (Husn.) Pears., Colinton (83), May, 1909, J.McA., com. W.Y.

*S. undulata* (L.) Dum., Rheinland, Apr., 1928, A.S.

*S. uliginosa* (Swartz) Dum., Am Binnein (88), July, 1903, P. Ewing, com. W.Y. ; wet ground, Finse, Norway, Aug., 1932, J.B.D.

*S. irrigua* (Nees.) Dum., near Balerno (83), Aug., 1909, J.McA., com. W.Y. ; Studland Heath (9\*), Apr., 1933, E.W.J.

*S. curta* (Mart.) Dum., New Galloway (73), Oct., 1899, J.McA., com. W.Y. ; Rheinland, Nov., 1933, A.S. "This is *S. irrigua*," H.H.K.

*S. umbrosa* (Schrad.) Dum., Ridley Hall (67), Apr., 1933, E.M.L.

*Radula complanata* (L.) Dum., Rheinland, Mar., 1931, and Aug., 1933, A.S.

*R. Lindbergiana* Gottsche, New Galloway (73), Apr., 1901, J.McA., com. W.Y. "One specimen is correctly named ; this is the male plant with long spicate androecia and numerous gemmae on the leaves. The two other specimens are *R. complanata* with perianths and paroicous inflorescence," H.H.K.

*R. aquilegia* Tayl., New Galloway (73), Dec., 1895, J.McA., com. W.Y.

*R. voluta* Tayl., Seathwaite (70), Aug., 1933, W.Y. ; do., do., B.B.S., com. D.A.J. ; do., do., Sept., 1933, E.A. ; do., do., do., D.B.B.

*Pleurozia purpurea* (Lightf.) Lindb., Kenmare (I.1), Oct., 1931, D.B.B. ; Salen, Mull (103), July, 1932, J.B.D. ; Coire Ardrain (88), July, 1932, E.C.W. ; Beinn Dorain (98), July, E.C.W.

*Madotheca laevigata* (Schrad.) Dum., Portmadoc (49), June, 1909, J.C.W., D.A.J., com. D.A.J.

*M. Thuja* (Dicks.) Dum., Tarbert, Loch Fyne (101), June, 1912, J.McA., com. W.Y.

*M. platyphylla* (L.) Dum., Inchnadamph (108), June, 1933, J.B.D. ; Robeston, Wathen (43), Mar., 1931, R.J. ; Blackdown (9), May, 1931, E.C.W. ; c.per., Boxwell (34), Mar., 1928, H.H.K. and D.A.J.

*M. Cordeana* (Hüben.) Dum., New Galloway (73), Sept., 1893, J.McA., com. W.Y.

*M. Porella* (Dicks.) Nees, Vendée, France, Sept., 1929, J.C. ; Artro Valley (48), Aug., 1909, J.C.W., com. D.A.J.

*Cololejeunea calcarea* (Lib.) Schiffn., Tailbridge Hill (69), June, 1933, A.W.

*Lejeunea cavifolia* Lindb., Fin Glen, Campsie (86), Aug., 1933, J.R.L. ; Worthy Wood, Porlock (5), Apr., 1932, E.C.W.

*L. Macvicari* Pears., Bonithon Plantation, Lizard (1), May, 1931, W.E.N.

*Microlejeunea ulicina* (Tayl.) Evans, Rothesay (100), June, 1908, J.McA., com. W.Y. ; Seatoller (70), Aug., 1933, W.Y.

*Marchesinia Mackaii* (Hook.) Gray, Lamlash, Arran (100), June, 1909, J.McA., com. W.Y. ; Cheddar (5), May, 1928, H.H.K., J.B.D., D.A.J.

*Frullania Tamarisci* (L.) Dum., on walls, Cappagh (I.6), July, 1933, E.A. ; Rheinland, Apr., 1927, A.S. ; var. *Schiffneri* Nicholson, Caerthillian Valley, Lizard (1), May, 1932, W.E.N.

*F. microphylla* (Gottsche) Pears., Lizard Village (1), Nov., 1933, W.E.N.

*F. fragilifolia* Tayl., Lamlash, Arran (100), June, 1909, J.McA., com. W.Y. ; Rosthwaite (70), Aug., 1933, W.Y. ; Portpatrick (74), July, 1900, J.McA., com. W.Y.

*Anthoceros punctatus* L., Portpatrick (74), J.McA., com. W.Y.

*A. crispulus* (Mont.) Douin, Newent District (33), Oct., 1931, W.E.N., H.H.K., D.A.J., com. D.A.J.



**NON-EUROPEAN (Including specimens of European species from Countries outside Europe).**

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*Plagiochila gigantea* (Hook.) Lindb., Hillgrove, Otago, N.Z., Feb., 1930, leg. Mrs. J. Meiklejohn, com. D.L.

*P. Stephensoniana* Mitt., near Greymouth, N.Z., 1926, leg. Mrs. J. Meiklejohn, com. D.L.

“The above two plants should both be referred to *P. arbuscula* L. & L., *P. arbuscula* has frequently been confused with these two species, though it is difficult to understand why it is so. Both *P. gigantea* and *P. Stephensoniana* have stout central stems with relatively short branches which give them a markedly dendroid habit which is altogether lacking in *P. arbuscula*,” W.E.N.

*P. gregarea* H. & T., Lake Wakatipu, N.Z., 1911, leg. J.M., com. D.L.

*P. Volkensii* St., near Mt. Kenia, E. Africa, 1911, leg. A. Y. Allan, com. D.L.

*P. squarrosa* St., L. Wakatipu, N.Z., 1911, leg. J.M., com. D.L.

*P. Lyallii* Mitt., near Dunedin, N.Z., 1926, leg. Mrs. J.M., com. D.L. “I make these plants to be *P. fasciculata* Lindb., which is rather a variable plant but quite distinct from *P. Lyallii* Mitt. of which there are twelve specimens from Lake Wakatipu which are correctly named,” W.E.N.

*P. Rutlandii* St., Greymouth, N.Z., 1925, leg. Mrs. J.M., com. D.L.

*P. Beckettiana* St., L. Wakatipu, N.Z., 1911, leg. J.M., com. D.L.

*P. annotina* Lindb., L. Wakatipu, N.Z., 1914, leg. J.M., com. D.L.

*P. Ferdinandi Mulleri* St., L. Wakatipu, N.Z., 1910, leg. J.M., com. D.L.

*P. deltoidea* Lindb., = *P. Howeana* St., dup. det. W. E. Nicholson, L. Wakatipu, N.Z., 1910, leg. J.M., com. D.L. “It is scarcely correct to say that *P. deltoidea* Lindb. = *P. Howeana* St. In the past, plants both from Tasmania and New Zealand were both referred to *P. deltoidea* Lindb., but Stephani has reserved the name *P. deltoidea* for the Tasmanian

plant and has described the New Zealand plant as a distinct species—*P. Howeana*. The two species do not differ much except in the armature of the antical margin of the leaves, but the present plants agree well with *P. Howeana*," W.E.N.

*P. deltoidea* Lindb., = *P. Howeana* St., dup. det. Stephani, L. Wakatipu, N.Z., 1911, leg. J.M., com. D.L. "These plants belong neither to *P. deltoidea* nor *P. Howeana* but to *P. Banksiana* G., which is a very different plant characterized by its curiously flaccid habit," W.E.N.

*Chiloscyphus triacanthus* (Tayl.) St., L. Wakatipu, N.Z., 1910, leg. J.M., com. D.L.

*Bazzania involuta* Mont., Ulva Is., Stewart Is., N.Z., 1930, leg. A. Manson, com. D.L.

*Mastigobryum cordistipulum* (Mont.) Lindb., Hilo (?), Alt. 4,000 ft., Hawaiian Is., 1910, leg. Bro. Matthias Newell, com. D.L.

*M. Diedrichsenii* St., Hawaii, 1,300 ft., 1911, leg. Bro. M. Newell, com. D.L. "Stephani spells the specific name *Didrichsenii* and most British hepaticologists would prefer to use the generic name *Bazzania*," W.E.N.

*Schisma sanguineum* Aust., Hilo, 2-3,000 ft., Hawaiian Is., leg. Bro. M. Newell, com. D.L.

*Herpocladium gracile* (Mont.) St., Hilo, 2-3,000 ft., Hawaiian Is., leg. Bro. M. Newell, com. D.L.

*Mastigophora diclados* (Brid.) Nees, Hong Kong New Territories, 1,500-2,000 ft. alt., Apr., 1931, leg. G. A. C. Herklots, com. W.H.B.

*Madotheca Stangeri* L. & G., L. Wakatipu, N.Z., leg. J.M., com. D.L.

*M. Queenslandica* St., Kikuryu, E. Africa, 1910, leg. A. Y. Allan, com. D.L. "I have passed this plant on the authority of Stephani, though I cannot quite square it with his description in Spec. Hep. It is very remarkable that a plant from Eastern Australia should be found in Kikuryu as the species of this genus have mostly a very restricted range," W.E.N.

*Frullania nodulosa* (R., B. & N.) Nees., Guapo, Trinidad, Dec., 1929, P.W.R.

*F. cordistipula* Nees, Hilo, 2-3,000 ft., Hawaiian Is., 1910, leg. Bro. M. Newell, com. D.L. "The true *F. cordistipula* Nees is endemic to the island of Java and differs from the present plant. I therefore submitted it to our member Mr. F. Verdoorn who has specilized in this difficult genus and he refers it to *F. apiculata* Auct., mod. *pachyderma colorata*." W.E.N.

ADDENDUM.

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FOREIGN HEPATICS.

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*Plagiochila Sandei* Dozy, Cinting Simpak, Selangor, Malay Peninsula, Oct., 1901, leg. H. L. Hume, com. W.E.N.

*Mastigophora diclados* (Brid.) Nees, G. Kajang, Pahang, Malay Peninsula, May, 1927, leg. M. R. Henderson, com. W.E.N.

*Trichocolea pluma* Ehrh., on a rock in forest, alt. 2,100 ft., Penang, Malay Peninsula, July, 1917, leg. I. H. Burkill, com. W.E.N.

*Pleurozia gigantea* (Web.) Lindb., on ridge on trees, alt. 3,500 ft., G. Tahan, Pahang, Malay Peninsula, Aug., 1928, leg., R. E. Holttum, com. W.E.N.

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CORRECTION.

REPORT, 1932, p. 32.—*Pottia Randii* Kennedy.

## WEISIA REFLEXA BRID.

Bryol. univ. I., p. 355.

P. G. M. RHODES.

Stem *extremely short* (1-3 mm.), dying at the base as the new innovations are produced; these latter appear *nodulose* through the close arrangement of the leaves; tufts more or less dense, or lax, *bright green* above. Leaves slightly crisped when dry, *very patent*, recurved when moist, oblong-lanceolate at base, then narrowed, *lanceolate-ligulate*, very *obtus*e or *rounded* at apex, slightly canaliculate, plane at margin; 1-1½ mm. long, ¼-⅓ mm. wide; cells of the lower third of the leaf hyaline, smooth, rectangular or hexagonal, 2-6 times as long as wide, rather large; upper cells quadrate, almost opaque, with *large, often unequal papillæ*, which by projecting from the marginal cells make the edge of the leaf more or less *sinuolate*. Perichaetial leaves larger, half sheathing, then narrowed, ligulate, very patent, sometimes 2 or 3 remaining erect; vaginula oblong, thick; pedicel *yellowish-green*, 4-6 mm. long. Capsule oblong, somewhat narrowed at mouth, 1¼ mm. long, ½ mm. wide; lid conical with small often oblique beak. *Annulus* of several rows of elongated cells. *Peristome* of 16 red teeth, which are finely granulated, often unequal and rather irregular, lanceolate, *very small*, only passing the annulus by 2-3 segments. Dioicous.

On tufa covering calcareous rocks. Mediterranean region (Boulay). Easily separated from *W. tenuis* by the peristome. Much resembles reduced forms of *W. verticillata*, but distinguished by the well developed annulus, which is only present in a rudimentary state in the latter plant. The presence of the annulus also distinguishes it from *W. calcarea*.

The key in the Handbook might be modified as follows:—

16	Annulus absent or rudimentary	<i>calcarea</i>
	Annulus well-developed	16 bis
16 bis	Peristome absent	<i>tenuis</i>
	Peristome present	<i>reflexa</i>

Dwarfed specimens of *W. verticillata*, if in fruit, should be re-examined, in view of this discovery.

## Alternative Key.

- |        |  |                 |
|--------|--|-----------------|
| 16     | Basal cells of leaves very long and narrow | 16 bis          |
|        | Basal cells short                          | <i>calcareo</i> |
| 16 bis | Leaves much recurved, peristome present    | <i>reflexa</i>  |
|        | Leaves not much recurved, no peristome     | <i>tenuis</i>   |

The plant is placed in many modern works, with *W. tenuis*, under *Gyroweisia*, as *G. reflexa* (Brid.) Schimp. It is probably scarcely separable from *W. tenuis* apart from the fruit; indeed some authors have suggested that *W. tenuis* is a gymnostomous form of it only.

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An asterisk (\*) denotes that a copy of the work has been presented to the Library.

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In order to reduce as much as possible the unavoidable delay in bringing important bryological works to the notice of members it has been decided to include all publications that have come to hand up to the date of going to press, instead of—as hitherto—up to the previous December 31st. This means that, for example, in the 1933 Report some works will appear bearing the date 1934. It is felt that the advantages of this new arrangement outweigh the disadvantages of the apparent anachronism.

I am most grateful to all those who have helped me to compile this list, either by sending reprints of their own or other bryologists' works, or by bringing to my notice contributions to the literature.

I would remind those engaged in research that the Index is available for supplying references. All that is necessary is a post-card notifying me of the subject. It does not take very long to look up the references in the Index, and type them out.

LESLIE B. C. TROTTER.

March, 31st, 1934.

## OBITUARY.

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JAMES GROVES (1858-1933).

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By the death of James Groves, on 20th March last, botanical science has lost the leading authority on the *Charophyta* not of this country alone, but throughout the world. Although he modestly disclaimed being a bryologist he had been a member of our Society since its foundation. He knew the British Mosses and Hepatics fairly well and always regretted he had never had the time to study the latter critically. On his last visit to Corsica he made a good collection of Mosses for the present writer and many members have specimens in their herbaria of the rarer bryophytes of Ben Lawers, collected by him in company with well-known bryologists nearly half a century ago. At this time Groves' interests included a number of groups, although he and his brother Henry were already recognized specialists on the *Characeae*. His work was marked by great accuracy and his specimens were invariably prepared with care. Up to the year 1912, when his elder brother Henry died, James was intimately associated with him in all his botanical work. After this he continued his work on the living species from all parts of the world largely alone, but partly in association with the late Canon Bullock-Webster and others. When the present writer saw him in Paris in 1910 he was just beginning to turn to the study of the fossil remains of this extraordinarily interesting group. In this he had the co-operation of the late Clement Reid, and later, Mrs. Reid. Much interesting material came from the cliffs near his new home in the Isle of Wight, where he settled on his retirement in 1918. The writer has pleasant memories of days spent searching the oligocene beds, followed by evenings over the microscope in the investigation of the fossil oospores. Up to the year 1918 all his botanical work was confined to the scanty leisure hours snatched from an exacting business career in London, and considering this the amount of botanical research Groves accomplished is remarkable. Unfortunately, among the papers which he did not live to complete, is a "Conspectus of the World's *Charophyta*," which we began as a joint work some years ago.



Groves' botanical publications are far too extensive to enumerate here. It must suffice to mention his *Magnum opus*, "British Charophyta" published in two volumes by the Ray Society. He was elected a Fellow of the Linnean Society in 1885, served on the Council for 1914-18 and was a Vice-President during this period. An active member of the Isle of Wight Natural History Society, he was President a few years before his death.

James Groves will be remembered as a very kindly man, thorough in all his doings, with strong views which made his influence felt in many activities. He never allowed ill-health and suffering to destroy his sense of humour up to the end, and will be greatly missed by his many friends.

C. V. B. M.

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ROBERT HUNT MELDRUM (1858-1933).

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Robert Hunt Meldrum, who passed away on 12th June, 1933, was born in 1858 at Tibbermore, Perthshire. The son of typical Scottish parents, deriving their livelihood from the cultivation of the soil, he, throughout the 74 years of his life, loved and studied the natural products obtained from it. Showing natural abilities, his parents struggled to give him a chance in life. He was trained for the scholastic profession at the Edinburgh Training College. He taught in Balhousie School, Perth, and then returned to his native parish as headmaster at Tibbermore, where he continued till his retiral in 1917. During this period he acted as Registrar of the Parish and as Session Clerk to the Church. After his retiral from school work he took up accountancy work with Messrs. Morrison, and became resident in Perth.

In 1884 he joined the Perthshire Society of Natural Science, which was then actively engaged in building up its Museum. To Meldrum was allotted the task of arranging and setting out a Collection of Mosses. The magnificent collection found there represents many years of patient collection and observation. Much of this was made in duplicate

and at his death passed, together with specimens from exchange sources, to the Herbarium of the Royal Botanic Garden, Edinburgh. The Transactions of the Perthshire Society from time to time published various papers by him on this group of plants. Mr. Meldrum was no mean mountaineer, having topped most of the Perthshire heights in search of new species or new records, also, acting as Cairnmaster of the Mountain Club of the above Society.

He was one of the original members of the Moss Exchange Club instituted in 1896, which in 1922 became the British Bryological Society. In pursuit of his favourite hobby he visited the continent in 1882, going as far east as Russia. He was a linguist of no mean order and could read at first hand seven European languages. Married twice, he left a widow and her son to mourn his loss.

JOHN RITCHIE, F.R.A.I.,

*Curator, Perth Museum.*