

THE BOTANICAL SOCIETY  
AND EXCHANGE CLUB  
OF THE BRITISH ISLES

VOL. XIII. PART III.

REPORT FOR 1946-47

(WITH BALANCE SHEET FOR 1949).

BY

THE HONORARY EDITOR,  
E. C. WALLACE.

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1948

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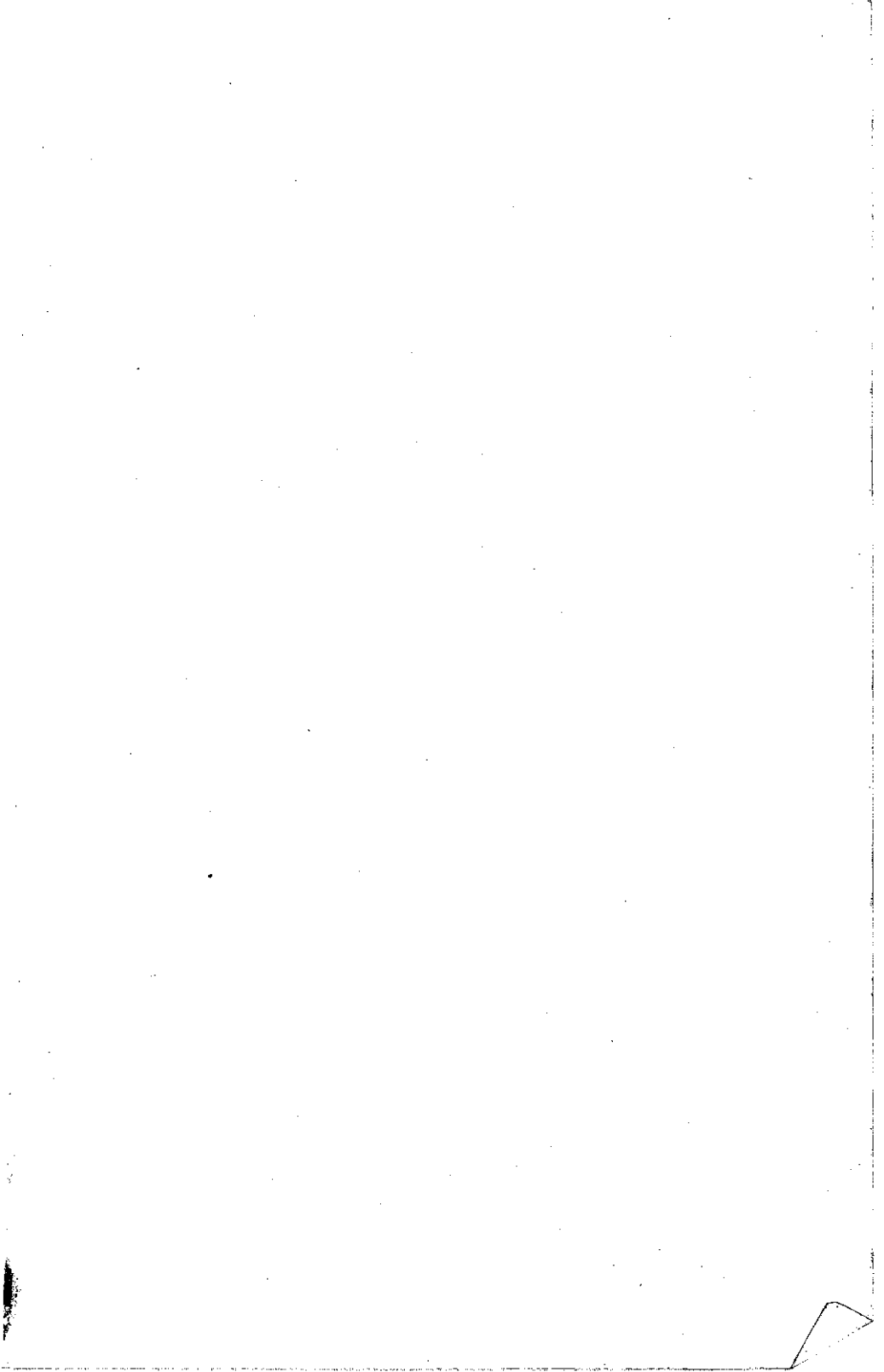
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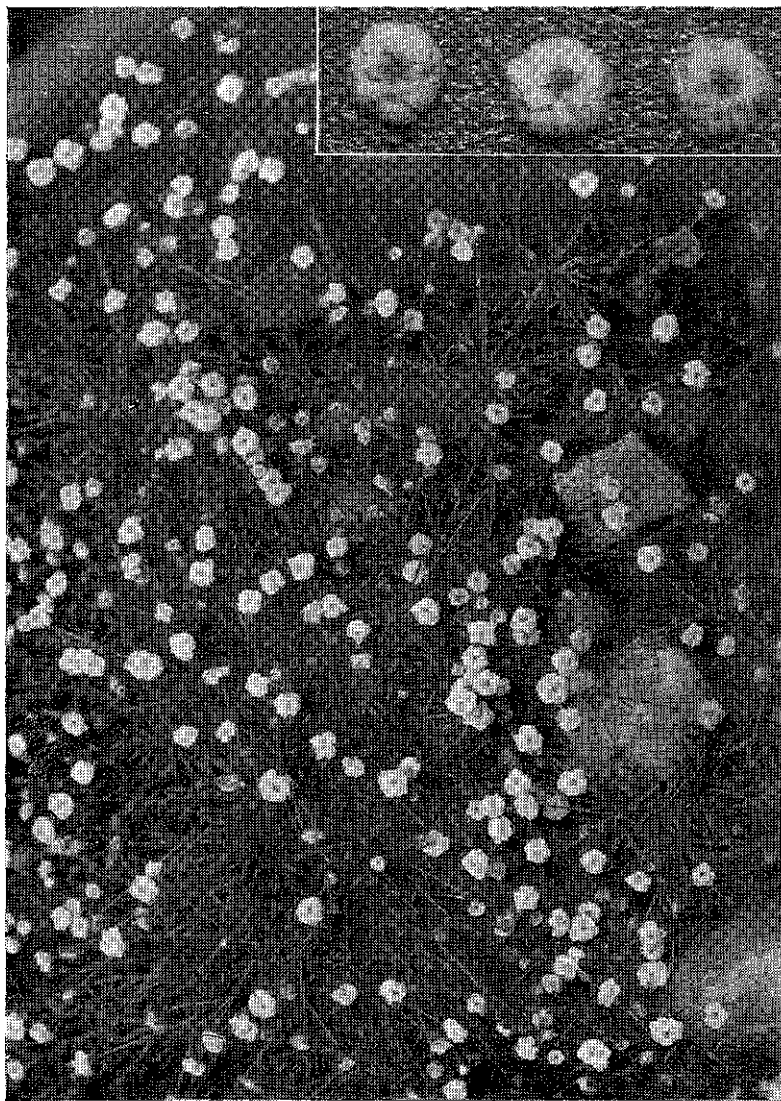
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*SAGINA PROCUMBENS* var. *DAVIESII* Dr. Slightly reduced.

Inset—Enlarged Flowers.

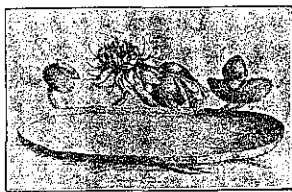
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From the Trower Fund.

THE BOTANICAL SOCIETY  
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OF THE BRITISH ISLES

(VOL. XIII. PART III)

Victoria regia



Floreat Flora

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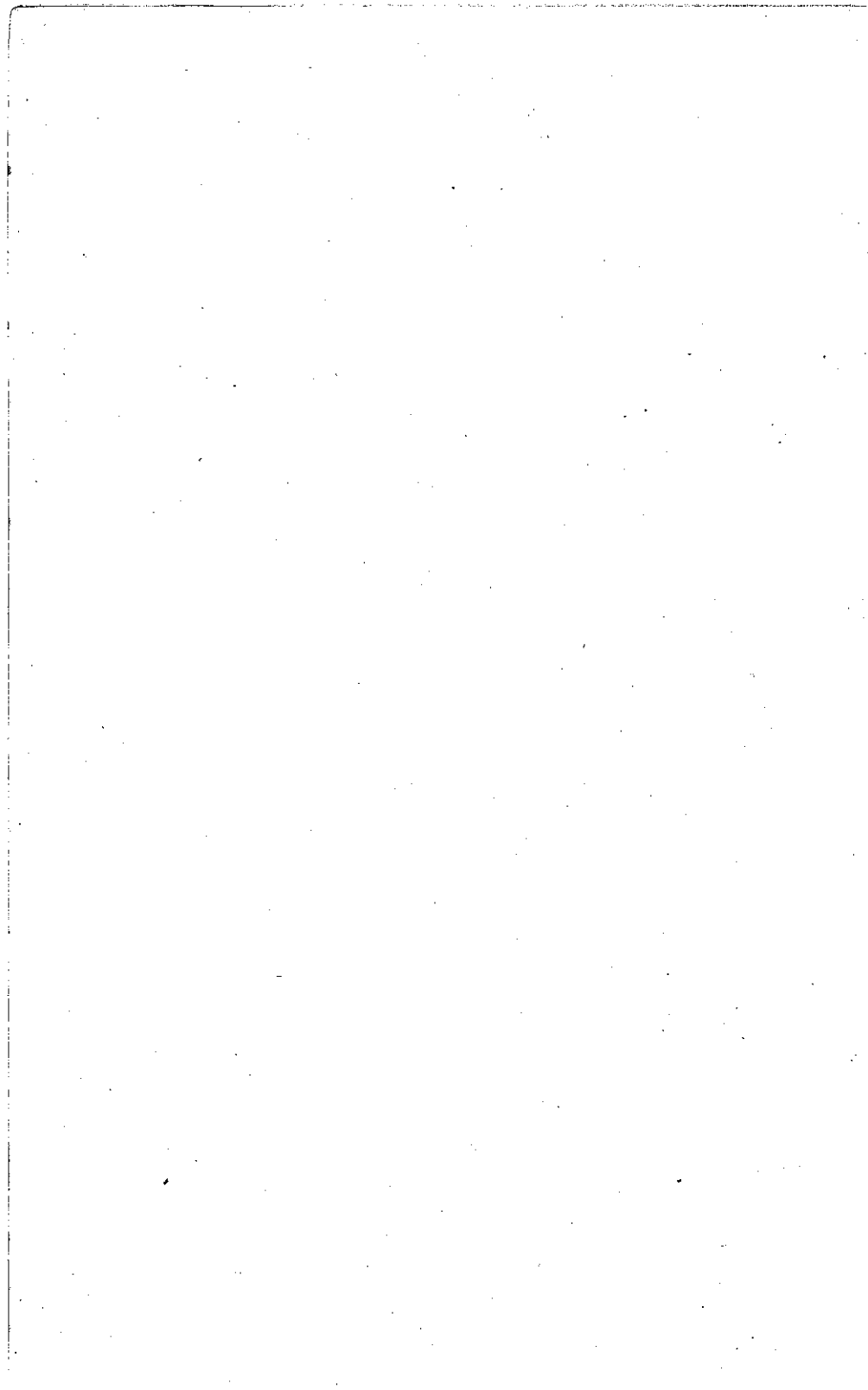
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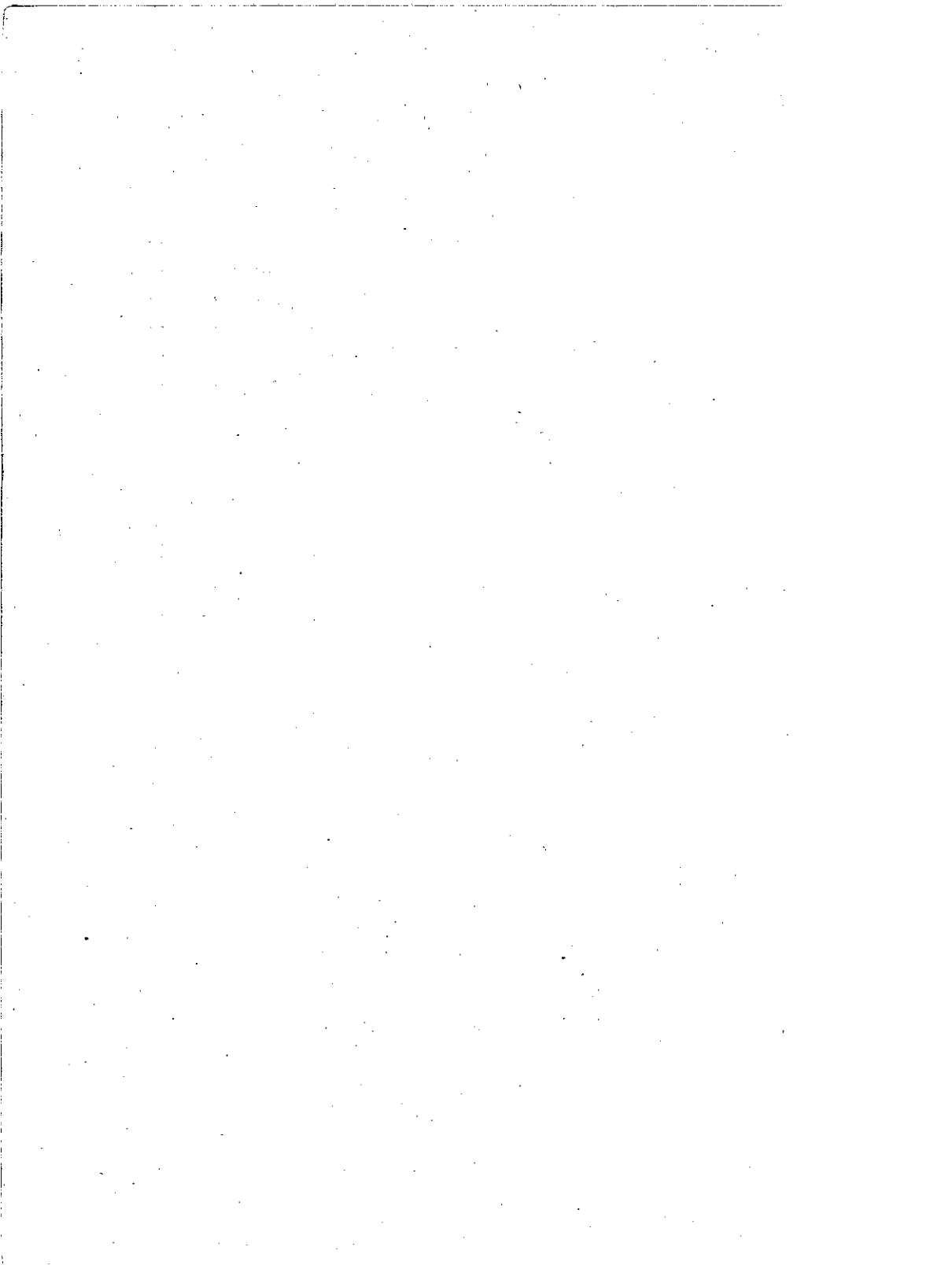
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Honorary Members	...	...	...	23
Life Members	...	...	...	20
Ordinary Members	...	...	...	394
Junior Members	...	...	...	5
Family Members	...	...	...	2
Subscribers	...	...	...	38
Standing Orders	...	...	...	4
				443
Total Membership	...	...	...	486

Changes of address and any corrections or additions should be notified to the  
 Hon. Assistant Secretary, Mr W. R. Price, 64 Elsworthy Road, N.W.3.

## HONORARY GENERAL SECRETARY'S REPORT FOR 1946

The year 1946 witnessed a great and encouraging revival in the spirit and activities of the Society. The gradual return from war-time to more normal conditions and the consequent de-regimentation of many people's lives has made it possible to resume our pre-war activities. The Tea Party held in conjunction with the Annual General Meeting in March, and the programme of four Excursions arranged during the season (of which reports appear elsewhere) received excellent support, and fully justified the Committee's decision to resume these functions at the earliest opportunity. These events, together with the publication of the 1943-44 Report and the resumption of the Exchange Distribution, provided a stimulus which is clearly reflected in the considerable increase obtained in our membership during the year.

During this period a total of 55 new members joined the Society, 8 resigned or ceased to be members under Rule 6 (d), and we lost four by death. Thus our total membership (including all classes) at 31st December 1946 stood at 423, representing a net gain of 43.

We deeply regret having to record the death of the following:— Professor J. H. Priestley (in 1945), Mr Carleton Rea, Mr Andrew Templeman, and Major William Van de Weyer.

New members are:—Hon. Mrs G. Baring, Hon. Margaret Colville, Drs G. H. Bates, G. H. Hughes, H. Milne-Redhead and E. F. Warburg, Major E. Hensler, Mesdames Croker Fox, Boyd Watt and Whitwell, Misses Jean Allison, P. Barrett, W. M. A. Brooke, G. H. Day, G. M. Ekins, D. M. Ellen, Joan Gibbons, K. M. Hollick, Anne Horsfall, B. Hurst, B. Kitson, M. Knox, D. M. Wethered, C. Wickham and A. F. Wood, Messrs F. V. Ambrose, H. E. Bannister, H. Bland, J. H. Burnett, F. L. Chesham, C. L. Collenette, G. W. Coxhead, R. Cumming, G. Grigson, F. W. Holder, W. Howell, A. Jones, C. Langridge, R. L. Lucas, A. G. Lyon, H. E. R. Mugridge, C. Pearson, O. V. Polunin, C. E. Raison, T. V. Roberts, G. A. Shaw, R. W. Sidwell, D. C. Slater, P. Taylor, T. G. Tutin, A. F. Twist, J. G. Vaughan, Carlisle Public Library, Museum and Art Gallery, Göteborgs Botaniska Trädgård, Southport Botanic Gardens, Museum.

A very encouraging fact is the number of the younger generation (students, etc., under 30) in the above list of new members.

This is satisfactory progress, but continued effort is required to bring our membership up to a figure which will remove any possibility of future financial embarrassment hindering the Society in the achievement of its objects and in the performance of its activities. That figure is still a long way off, but its realization would be brought much

nearer if (and this should be possible) every member introduced one new member to the Society. That the Society needs more publicity is appreciated by the Committee, and steps are being taken to remedy this defect. Even so, the best method of obtaining the additional members we require is by personal introduction, and it is hoped that members will respond to this appeal. The greater our membership, the greater the privileges and facilities which can be offered to members.

Communication with our Honorary Members in parts of Europe still remains difficult, but with the exception of Dr Kükenthal,\* about whom there has been no news since the war, all have been contacted and have had volume XII of our Reports sent to them.

Several requests have been received, either direct or through The British Council, to exchange our publications with those of continental Universities and Institutions. The Committee has decided to pursue an active policy in this matter in order that our Reports shall have a wider circulation in various countries than they do at present.

The sales of Reports and other publications during the year have been greater than ever before, and have yielded a substantial revenue.

J. F. G. CHAPPLE.

1st February 1947.

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#### HONORARY TREASURER'S REPORT FOR 1946

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The year 1946 has been noteworthy for the resumption of facilities which we were unable to offer to members during the war and preparations for extending and improving our other activities. These developments are reflected in the printed accounts.

In the General Fund it will be observed that the amount received from subscriptions has shown a welcome increase from £143 in 1945 and £116 in 1944 to £210 in 1946—a result largely attributable to improved membership. The sale of Reports and Reprints amounted to £69 as compared with £20 in 1945 and £17 in 1944 and our thanks are due to Mr Chapple, whom we were pleased to welcome back to his post as Honorary Secretary in March, for handling the despatch of publications.

The improvement in our income has, however, been more than offset by the very substantial increase in disbursements. The issue of the Report for 1943/4 cost £325, while the work of the several Sub-committees and the carrying out of some of their preliminary recommendations increased our postage bill to nearly £28 and Printing (other than Report) to £59—the heaviest figures in the history of the Society. A

\*Since this was written it has been learnt with pleasure that Dr Kükenthal is alive and well.

small loss on running the Tea-party (which is considered very well justified), and the expenses involved in carrying out the Excursion Programme, with other small items, brought the total disbursements for the year in the General Fund to £426—an excess of £138 over receipts.

While the present balance of this Fund is as much as £485 it must be remembered that out of this we have to provide for the printing of the Reports for 1945 and 1946, since unfortunately it has not proved possible to bring our publications up to date during the year as had been intended. Moreover, the cost of printing has risen rapidly during recent months and may well increase still more. It is quite clear that the Society cannot continue to overspend income at the present rate and at the same time offer members larger and more frequent Reports and other facilities, and this is more especially the case as rising costs make it very difficult to budget for the future. I have therefore asked the Committee to recommend that the rate of subscription charged to Ordinary Members should be increased from 1st January 1948, and details of this and other proposed changes will be circulated later. In the meanwhile members may rest assured that the funds at present available are adequate to ensure an excellent return for their subscriptions during 1947. The balance standing to members' credit for subscriptions paid in advance amounted to £32 19s 8d on 31st December 1946, when we also held £1 6s 6d on account of an Honorary Member for publications to be ordered.

The Publications Fund has shown an increase of £55 during the year. This money is derived mainly from the sale of the *British Plant List* and *Comital Flora*, of which the remaining stocks are not large, and it is intended for the publication of fresh editions of these works when they can be prepared. It is already plain that much larger sums will be required for these purposes than was formerly thought necessary. The Life Members' Fund has increased during the year owing to four members having paid composition fees, but as the return on invested monies is so low it is considered advisable to recommend that no more such fees should be accepted until the position becomes clearer and less unprofitable from the point of view of the Society.

A part of Miss Trower's Fund has been expended for the purpose for which it was set up—the provision of illustrations for the Report, and there has been no call upon the Benevolent Fund.

My reports for the past five years have included a statement on membership, but, as the Hon. Secretary has now assumed responsibility for this part of the work, the pre-war practice of including it in his report will be resumed.

J. E. LOUSLEY.

31st December 1946.

**ACCOUNTS FOR THE YEAR 1946**

GENERAL FUND.

To Balance from 1945 ...	£623 8 4	By Cheque Book ...	£0 10 0
„ Interest on Post Office Savings Bank Deposit for 1945 ...	8 8 4	„ Gratuities at Meetings ...	2 10 0
„ Excursion Fees Received ...	0 12 6	„ Purchase of 13 Wooden Boxes for Storing Stock of Publications ...	2 18 6
„ Subscriptions Received ...	210 17 8	„ Loss on Tea-Party, 1946 ...	2 10 3
„ Sales of Reports and Reprints ...	69 6 2	„ Printing (other than Report) and Stationery ...	59 6 11
		„ Postages and Petty Expenses:—	
		Hon. Secretary ...	£10 0 0
		Hon. Treasurer ...	8 17 8
		Hon. Secretary to Committee ...	5 0 0
		Hon. Secretaries to Sub-Committees ...	4 0 0
			27 17 8
		„ Honorarium to Caretaker at Yardley Lodge ...	1 1 0
		„ Fire Insurance on Books, etc., at Yardley Lodge ...	0 10 0
		„ Excursion Expenses ...	3 15 9
		„ Advertisement in Wild Flower Magazine ...	0 10 0
		„ Printing 1943-4 Report and Postage thereon ...	325 8 6
		„ Balance ...	485 14 5
	<u>£912 13 0</u>		<u>£912 13 0</u>

PUBLICATIONS FUND.

To Balance from 1945 ...	£240 10 5	To Balance ...	£295 13 8
„ Donation (R. Lewis, Esq.) ...	0 10 0		
„ Sales Fl. Northants ...	4 2 2		
„ Sales of Comital Flora and British Plant List ...	50 11 1		
	<u>£295 13 8</u>		<u>£295 13 8</u>

LIFE MEMBERS' FUND.

To Balance from 1945 ...	£191 8 11	By Balance ...	£225 0 11
„ Subscriptions compounded during the year:—			
Ordinary ...	21 0 0		
Exchange ...	12 12 0		
	<u>33 12 0</u>		
	<u>£225 0 11</u>		<u>£225 0 11</u>

## MISS TROWER'S FUND.

To Balance from 1945	... £16 7 11	By 5 Half-tone Blocks in 1943-4 Report	... .. £4 16 2
		„ Balance	... .. 11 11 9
	<u>£16 7 11</u>		<u>£16 7 11</u>

## BENEVOLENT FUND.

To Balance from 1945	... £41 3 6	By Balance	... .. £41 3 6
	<u>£41 3 6</u>		<u>£41 3 6</u>

## BALANCE SHEET as at 31st December 1946.

General Fund	... .. £485 14 5	500 National Savings Certi- ficates at cost	... .. £400 0 0
Publications Fund	... .. 295 13 8	Cash at Bank	... .. 210 15 9
Life Members' Fund	... .. 225 0 11	Deposit at Post Office Sav- ings Bank	... .. 453 8 6
Miss Trower's Fund	... .. 11 11 9		
Benevolent Fund	... .. 41 3 6		
Cheque issued but not yet presented for payment	... .. 5 0 0		
	<u>£1064 4 3</u>		<u>£1064 4 3</u>

Examined and found correct,  
26th February 1947.

(Signed) J. E. LOUSLEY,  
Hon. Treasurer.  
(Signed) H. W. PUGSLEY,  
Hon. Auditor.



**HONORARY EDITORS' REPORT FOR 1946**

The reasons for the delay in the appearance of the Report for 1945 are given in that Report, which should be in members' hands before the Annual General Meeting.

The preparation of the Report for 1946 has been begun, and it is hoped that its publication will take place during the summer. Judging by the increased number of Plant Records received and papers of taxonomic interest submitted, it is evident that members are renewing their botanical activities after the years of dislocation. The study of changes observed in the vegetation of land now de-requisitioned from war-time occupation should recommend itself to those members living near such areas, and should provide material for interesting papers.

It has long been the Editors' aim to achieve publication of the Report in May. If this is to be achieved, papers and plant notes already prepared should be sent in as early as possible, so that the attention of the Editors in the New Year can be concentrated on work which cannot be done until then, such as checking the Plant Records, finishing the Abstracts from Literature and investigating the nomenclatural problems which arise. Early receipt of contributions in the autumn would greatly assist early publication of the Report.

A. J. WILMOTT.

E. C. WALLACE.

27th March 1947.

[The official information concerning 1947 will appear in a new publication—the Society's "Yearbook."]

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The name of the Society was changed to THE BOTANICAL SOCIETY OF THE BRITISH ISLES on 25th October 1947.

## FUNCTIONS OF LOCAL SECRETARIES AND RECORDERS

### PREAMBLE

While it is highly desirable that whenever possible the functions of Local Secretary and Recorder should be performed by one person, in practice this will not always be possible. The distinct functions are therefore here separately defined. It is felt that Local Secretaries and Recorders should not become the only, or even the usual, channels of communication between members on the one hand and the Officers, Referees, or Panel Members of the Society on the other. On the appointment of a Local Secretary or Recorder, he/she shall have the boundary of his/her area defined. Areas will where possible be on the basis of Watsonian vice-counties, but it may be found desirable to appoint either for a smaller area.

### LOCAL SECRETARIES

1. To keep in touch with other local members and where possible and desirable to arrange meetings and excursions for their benefit.
2. To encourage the enrolment of new members.
3. To act as a centre for some botanical work of local bearing where they are qualified to do so.
4. To provide information to members of the Society from outside their areas, either by correspondence or otherwise, on travel facilities, accommodation, and botany. (This does not include supplying information about localities for rare plants, although statements as to their continued existence or frequency may be given for the purpose of scientific work.)
5. To keep in touch with local libraries, museums, and, especially, local herbaria and Natural History Societies, supplying information about them to other members, and particularly to the Panel, and also keeping the name of the Society before officials, officers, and members of local Societies.
6. To assist the Hon. Field Secretary and Leaders of excursions prior to and at the time of visits of the Society to their area.
7. To report without delay to the Secretary or Treasurer the death of any member living within their area.
8. To make regular visits to habitats of special interest within their areas so far as possible, and to report any threat which may call for conservation measures without delay to the Secretary of the Society.

### RECORDERS

To assist the Editors by collecting records of more than local interest, checking records contributed for the Reports, and forwarding information about important changes in the flora.

### LOCAL SECRETARIES AND RECORDERS

The following members have agreed to act as Local Secretaries (L.S.) and Recorders (R.) for the Vice-Counties indicated. Unless shown

otherwise, these members have undertaken to combine the duties of the two offices, the nature of which is explained above.

Scilly Is.	J. E. Lousley (R.).
V.-c. 4.	F. A. Brokenshire.
6.	Mrs C. I. Sandwith.
7, 8.	J. D. Grose.
13.	Mrs P. German.
15.	F. Rose (R.).
16.	D. McClintock (L.S.). F. Rose (R.).
17.	J. E. Lousley.
21.	D. H. Kent.
23.	J. P. M. Brenan.
25.	Miss M. M. Whiting (L.S.).
26.	F. J. Bingley (L.S.).
27.	E. A. Ellis (R.).
28.	E. L. Swann (R.).
29.	S. M. Walters.
30, 31.	Dr J. G. Dony.
33.	C. C. Townsend (L.S.) W. R. Price (R.).
34.	W. R. Price (R.).
35.	A. E. Wade.
36.	F. M. Day (R.).
37.	Dr R. C. L. Burges (L.S.). F. M. Day (R.).
38.	Dr R. C. L. Burges.
39.	E. S. Edees.
41.	Miss E. Vachell.
42-52.	A. E. Wade (R.).
53, 54.	Miss E. J. Gibbons.
55.	F. A. Sowter (L.S.). Prof. T. G. Tutin (R.).
57.	Miss K. M. Hollick (L.S.). R. H. Hall (R.).
60.	A. Wilson (R.).
61, 63, 64.	Dr W. A. Sledge.
62, 65.	Miss C. M. Rob.
66.	D. H. Valentine (L.S.). G. W. Temperley (R.).
67, 68.	G. W. Temperley.
70.	Miss C. W. Muirhead (Carlisle Museum) (R.).
78-85.	Dr G. Taylor (R.).
87-89.	Miss M. S. Campbell.
90.	Miss U. K. Duncan (L.S.). Dr G. Taylor (R.).
105-109.	A. J. Wilmott (R.).
110.	Miss M. S. Campbell.

It is hoped to extend these arrangements to cover as much of the country as possible. Any member who is willing and able to carry out the duties of either Local Secretary or Recorder, or both, in any area not already covered, or who knows any person, whether a member of the Society or not, who might be suitable, is invited to communicate with the Hon. General Secretary.

## PANEL OF SPECIALISTS

The Council is pleased to be able to announce the Panel of Specialists in accordance with Rule 19.

- B.P.L. no.            CRITICAL SYSTEMATIC GROUPS:
2.    *Thalictrum* L. Dr R. W. Butcher.
6.    *Ranunculus* L. § *Batrachium*. Dr R. W. Butcher.
7.    *Caltha* L. Prof. A. R. Clapham.
32.   *Fumaria* L. N. Y. Sandwith.
- 35/1. *Nasturtium* L. (excluding *Rorippa*). H. K. Airy Shaw.
45.   *Cochlearia* L. A. J. Wilmott.
- 64/3. *Thlaspi alpestre* L. Prof. A. R. Clapham, A. J. Wilmott.
88.   *Viola* § *Nomimium*. Dr D. H. Valentine.
88.   *Viola* § *Melanium*. R. D. Meikle.
100.   *Cerastium* L. E. Milne-Redhead.
123.   *Tilia* L. H. A. Hyde.
128.   *Erodium* L'Hérit. Dr E. F. Warburg.
183.   *Prunus* L. Dr R. Melville, Dr E. F. Warburg.
185.   *Rubus* L. W. Watson, F. Rilstone (S. W. Peninsula).
190.   *Alchemilla* L. S. M. Walters, A. J. Wilmott.
194.   *Rosa* L. Dr R. Melville, N. Y. Sandwith.
195.   *Sorbus* L. Dr E. F. Warburg, A. J. Wilmott.
196.   *Crataegus* L. Dr E. F. Warburg.
199.   *Saxifraga* L. § *Robertsonia*. A. J. Wilmott.
199.   *Saxifraga* L. § *Dactyloides*. R. D. Meikle.
220.   *Fipilobium* L. G. M. Ash.
247.   *Apium* L. R. D. Meikle.
296.   *Galium* L. (*palustre* L. and allies). Prof. A. R. Clapham.
383.   *Senecio* L. J. E. Lousley.
393.   *Arctium* L. Dr W. A. Sledge.
395.   *Carduus* L. Dr W. A. Sledge.
396.   *Cirsium* Mill. Dr W. A. Sledge.
405.   *Centaurea* L. E. Marsden-Jones.
423.   *Taraxacum* Weber ex Wigg. A. J. Wilmott.
457.   *Limonium* Mill. A. J. Wilmott.
478.   *Centaureium* Hill. J. S. L. Gilmour.
480.   *Gentiana* L. J. E. Lousley.
497.   *Symphytum* L. A. E. Wade.
506.   *Myosotis* L. A. E. Wade.
527.   *Verbascum* L. J. E. Lousley.
545.   *Euphrasia* L. Dr E. F. Warburg.
548.   *Rhinanthus* L. A. J. Wilmott.
558.   *Mentha* L. R. Graham.

561. *Thymus* L. A. J. Wilmott.  
 596. *Amaranthus* L. J. P. M. Brenan, N. Y. Sandwith.  
 600. *Chenopodium* L. J. P. M. Brenan.  
 611. *Salicornia* L. Miss M. S. Campbell, A. J. Wilmott.  
 615. *Rumex* L. J. E. Lousley.  
 633. *Ulmus* L. Dr R. Melville.  
 642. *Betula* L. Dr E. F. Warburg, A. J. Wilmott.  
 650. *Salix* L. R. D. Meikle, Dr R. Melville, A. J. Wilmott.  
 651. *Populus* L. P. G. Beak, Dr R. Melville.  
 668. *Epipactis* Adans. V. S. Summerhayes, C. P. Thomas, Dr D. P. Young.  
 669. *Orchis* L. V. S. Summerhayes, A. J. Wilmott.  
 718. *Juncus* L. Dr P. W. Richards.  
 737. *Potamogeton* L. J. E. Dandy, Dr G. Taylor.  
 740. *Zostera* L. Prof. T. G. Tutin.  
 745. *Heleocharis* R. Br. S. M. Walters.  
 753. *Carex* L. E. Nelmes, E. C. Wallace, A. J. Wilmott.  
 754→ *Gramineae*. C. E. Hubbard.  
 780. *Agrostis* L. W. R. Philipson.  
 826. *Festuca* L. Dr W. O. Howarth.  
 830. *Agropyron* Gaertn. Prof. T. G. Tutin.  
 844→ *Pteridophyta*. A. H. G. Alston.  
 872→ *Charophyta*. G. O. Allen.

NOTE.—The specialists' names in the above list are given in *alphabetical* order when two or more are available for consultation.

Unlike the last Panel of Referees (*B.E.C. Rep. 1936*, 639-646: 1938) this list includes only critical groups. Members may send their specimens direct to the specialist indicated, together with a stamped addressed envelope for reply. If the specimens submitted are required to be returned the necessary postage should be forwarded. Addresses as in this Report.

Non-critical plants for identification should be sent to the Hon. General Secretary. It may not be possible to undertake to name plants of critical groups not covered by the above list.

It should be understood that the specialist is not necessarily prepared to name all specimens submitted. In some cases the specialist indicated may not yet have attained sufficient knowledge of the group he is studying. In other cases the material submitted may be incomplete, lacking adequate data or badly prepared. All the specialists will, however, do the best they can to identify plants submitted by members.

Unless it is reasonably certain that specimens will arrive in good fresh condition, they should be sent flat in paper between stiff millboards to prevent shrivelling. Dried pressed specimens may be sent similarly. Specimens should be carefully labelled with locality, habitat, date and any other notes likely to be of use. Whenever possible speci-

mens should be submitted in duplicate, so that the specialist may retain one specimen if he so desires. If only one specimen of a gathering is submitted it should be clearly stated whether its return is desired.

Any member who is studying a critical group and would like his name added to the Panel should forward particulars to the Hon. General Secretary for consideration by the Council.

#### MISCELLANEOUS SUBJECTS:

Nomenclature: J. E. Dandy and A. J. Wilmott.

Local Floras: N. Douglas Simpson.

Vice-County Boundaries: J. E. Dandy.

Maps: E. Milne-Redhead.

Systematic Works and Monographs: N. Y. Sandwith.

Foreign Floras and Foreign Field Work: A. H. G. Alston.

Botanical Apparatus and Material: to be announced later.

Preparation of Botanical Specimens: E. Milne-Redhead.

Location of Private Herbaria: A. J. Wilmott.

Plant Conservation and Nature Reserves: A. J. Wilmott.

History of British Botany, before Linnaeus: Rev. Prof. C. E. Raven.

History of British Botany, Linnaeus and after: J. S. L. Gilmour.

Ecology: Prof. A. R. Clapham.

Genetics in Relation to Systematics: Dr D. H. Valentine.

Cytology in Relation to Systematics: Dr E. F. Warburg.

Economic Uses of British Plants: Dr R. Melville.

Phenology and Meteorology: E. Nelmes.

Folk Lore and Popular Names: Miss M. S. Campbell.

Members wishing to avail themselves of the privilege of consulting the specialists in the list, should write to them direct and enclose a stamped addressed envelope for reply. (Addresses as in this Report).

**EXCHANGE REGULATIONS**

[As amended and agreed by the Council, 1948]

*A. Regulations affecting the Distributor.*

1. The Distributor shall be appointed annually by the Council on the recommendation of the Hon. General Secretary. Members shall be notified, not later than 1st August, of the name and address of the Distributor for the ensuing year.
2. The Distributor should submit gatherings of critical species to the Society's Referees for comment. Normally the whole gathering, and not selected sheets, should be submitted.
3. The Distributor shall stamp with the Society's stamp, showing the year of distribution, all labels of plants distributed.
4. The Distributor shall reserve one sheet of every gathering for each of the following Institutions:—

The Herbarium of the British Museum (Nat. Hist.).

The Herbarium, Royal Botanic Gardens, Kew.

The Clavidge Druce Herbarium, Oxford University.

5. The Distributor shall make up return parcels according to the merit of the parcels received from contributing members. These should be despatched to contributors not later than 1st April, and earlier if possible, and one month shall be allowed to recipients for submitting notes for the Distributor's Report.
6. The Distributor will compile the "Distributor's Report," including a list of the plants distributed, together with such notes as he thinks desirable.
7. In the event of rare plants being sent in contrary to Regulation B.I, they shall not be distributed, and the Distributor shall report the matter to the Council through the Hon. General Secretary.
8. The Distributor shall dispose of surplus material in consultation with the Hon. General Secretary. It should normally be sent to Institutions.
9. The Distributor should keep an account of his expenses for postages, etc., and shall send the account to the Hon. Treasurer for reimbursement from the funds of the Society.

*B. Regulations affecting Members.*

1. Members shall contribute dried specimens of plants only of critical or special interest, or those specially requested. Under no circumstances shall plants which have no interest other than rarity be submitted for exchange, and in no instance should a collection be made which is likely to endanger the existence or seriously diminish the quantity of the plant in the locality concerned.

2. Members should not submit indiscriminate gatherings of critical plants, but should take steps to ascertain from the Referees, or otherwise, that a gathering would be of real value for distribution.
3. Only well dried and well selected specimens should be sent in; the specimens should not exceed 18 ins. by 11 ins. in size, and should be unmounted; badly prepared specimens may not be distributed.
4. Normally, not less than 10 sheets of each gathering shall be sent, and it is suggested that 20 sheets is a desirable number at which to aim for a gathering.
5. Appropriate labels should be sent with each gathering. The labels should contain the following information:—

Name of the species.

Vice-county (name and number), locality and habitat.

Date of collection and relevant notes.

Name of collector and his reference number, if any.

One label should be sent for each sheet of the gathering, and one additional label for each gathering. All the labels for each gathering should be placed together in an envelope and not placed singly with the sheets.

6. Members are entitled to demand the return of any sheets they have marked for their own use. They may also indicate which sheets should be reserved under Regulation A.4.
7. It is essential that members who contribute should inform the Distributor of their special needs and requirements.
8. Members are invited to send in gatherings for distribution, even though they do not wish to receive any specimens in return.



## EXCURSIONS, 1946

JUNE 14-17, BRECON.

Leader: Miss E. VACHELL.

FRIDAY, JUNE 14.

About 22 members and friends arrived in Brecon in readiness to carry out the rather strenuous programme that had been arranged for the two following days.

The members taking part were: Miss L. Abell, Rev. R. B. Abell, Mr H. K. Airy Shaw, Commander Graham, Miss Hurst, Miss Longfield, Miss Marsh, Mr E. Milne-Redhead, Mrs M. Milvain, Dr Morgan, Mr N. D. Simpson, Miss Swaine, Mr A. E. Wade, Hon. Mr Waldy, Mr W. Watson, Dr C. West, Mr J. E. Woodhead and Miss E. Vachell (Leader). Also present were Mr T. S. Jones who brought two friends on one of the expeditions, Miss Wickham and Miss Wight. At the very last moment Mr H. W. Pugsley fell ill and was unable to attend, and Mr E. Nelmes and his brother were prevented from coming in their car but were represented by Mr D. Dawson.

Difficulties of all sorts had been encountered by the leader in arranging the Excursion, and as it was the first to be held since 1939 considerable pleasure was expressed by those present at the resumption of botanical activities after seven years of war.

SATURDAY, JUNE 15.

An early start was made to Craig-y-Cilau.

Before proceeding far along the slippery rain-soaked path under the cliffs three *Sorbus* species had been seen as well as good examples of *Tilia cordata* and *T. platyphyllos*; *Pinguicula vulgaris* and *Hutchinsia* had been duly admired growing on the face of the rock and *Asplenium viride*, and *Cystopteris fragilis* had been noticed in abundance in the crevices. *Melica nutans* and *M. uniflora* were growing together, looking very attractive.

It was decided to descend the screes at the end of the cliff track near a clump of *Polygonatum officinale* and to return by the side of the marsh where interesting plants were known to occur.

The marsh was then examined and yielded quantities of *Drosera*, *Pinguicula*, Carices and other fascinating species, and in excellent time the cars were rejoined and the members made their way to the little baker's shop in Crickhowell where a delicious tea awaited them.

Mr T. V. Jones of Brecon who knew the district well then led those members of the party who desired to work Llangorse Lake along narrow winding roads to a spot near Llangasty Tal-y-llyn church where the lake margin could be easily reached and the marsh plants examined. Marsh Marigold plants were carefully examined to see if any of them

were *C. radicans* which they certainly were not, a Marsh Orchis was gathered for Dr P. Vermeulen of Amsterdam who had asked Miss Vachell for Welsh specimens, and *Nymphoides* and *Polygonum amphibium* var. *glandulosum*, *Rorippa palustris*, etc., were noticed. *Littorella uniflora* and *Scirpus palustris* were abundant near the water's edge.

Mr Airy Shaw and Mr Milne-Redhead who had stopped to examine a marsh a short way away brought back specimens of *Catabrosa aquatica*.

Passing a mass of *Geranium pyrenaicum* by the roadside the cars made their way back to Brecon, and in the evening all members assembled in the ballroom of the Wellington Hotel, which had been placed at the Society's disposal, to press their plants and discuss the finds of the day.

#### SUNDAY, JUNE 16.

At 10 o'clock a start was made in the motor coach for Penderyn where the party was to be met at 10.45 by Mr Price of Mountain Ash, who had promised at Dr North's request to lead the party in the Vale of Neath. Alas, the road over the Brecon Beacons, usually so very lovely, was not looking its best, for rain blotted out the view, but we set off across the moor, slithered down the steep gorge to Sewd-yr-eira and searched for plants under the waterfall where it was not much wetter under the spray than it was elsewhere.

Then back to the bus when the party set off to the nearest spot to Port-yr-Ogof, a grim limestone cave where the water passes underground. The surrounding rocks and banks are covered with vegetation but the weather was not conducive to unnecessary struggles with the thick undergrowth and botanising was not easy.

Owing to tree-felling operations which Mr Price discovered by kindly going over the ground a few days before, it was necessary to alter the programme somewhat as it was impossible to walk as usual from one place to another along the river bed.

The bus was then rejoined and when Penderyn was again reached a delicious tea awaited the party at the Lamb Inn and a roaring fire had been prepared by Mrs Richards at which turns were taken to dry wet clothes.

After tea the party set off in the bus for Brecon and met together once more in the ballroom of the Wellington Hotel after dinner.

They were joined by Mr Jones of Brecon who had much enjoyed the expedition and wanted the Leader to interview a representative of the local press!

#### MONDAY, JUNE 17.

Mr Wade, Mr Dawson, Miss Marsh, Miss Wight, Miss Swayne and Dr West left for home and three cars containing Hon. Mrs Waldy, Miss Hurst, Commander Graham, Miss Wickham, Rev. A. B. Abell, Miss Abell, Mr Watson, Mr Woodhead, Miss Longfield, and Miss E. Vachell made their way to Craig Cerig Gleisiad where a most enjoyable morning was spent examining the plants on the rock ledges, including *Saxifraga oppositifolia*, *Geum rivale*, *Luzula sylvatica*, *Asplenium viride*, etc., etc.

In the afternoon Miss Vachell undertook to lead Rev. A. B. and Miss Abell, Mr Woodhead and Mr Watson to the banks of the Wye near Erwood to show them *Thalictrum expansum*, where it was duly located and the Island covered with Chives also examined. Miss Abell found a *Scrophularia* which appears to be *S. nodosa* var. *Bobartii* in a roadside quarry.

E. VACHELL.

LIST OF PLANTS OBSERVED:

Craig-y-Cilau.

- 37/1. *Arabis hirsuta* (L.) Scop.  
 39/4. *Cardamine flexuosa* With.  
 67/1. *Hutchinsia petraea* R. Br.  
 103/8. *Sagina apetala* Ard.  
 109/2. *Montia verna* Neck.  
 123/1. *Tilia platyphyllos* Scop.  
 123/3. *Tilia cordata* Mill.  
 127/13. *Geranium lucidum* L.  
 155/22. *Trifolium filiforme* L.  
 185/154. *Rubus saxatilis* L.  
 190/8. *Alchemilla glabra* Neyg.  
 195/8. *Sorbus anglica* Hedl.  
 195/10. *Sorbus porrigens* Hedl.  
 195/12. *Sorbus minima* (Ley) Hedl.  
 199/10. *Saxifraga hypnoides* L.  
 199/20. *Saxifraga tridactylites* L.  
 225/1. *Circaea lutetiana* L.  
 277/2b. *Heracleum Sphondylium* L. var. *angustifolium* Huds.  
 284/1b. *Hedera Helix* L. var. *borealis* Druce.  
 419/154(2). *Hieracium cillense* Pugsl.  
 423/. *Taraxacum erythrospermum* Andrz. ex Bess., agg.  
 425/4. *Lactuca muralis* (L.) Gaertn.  
 541/1b. *Digitalis purpurea* L. var. *nudicaulis* Saunders.  
 545/9. *Euphrasia curta* (Fr.) Wettst.  
 553/2. *Pinguicula vulgaris* L.  
 669/14. *Orchis mascula* L.  
 691/3. *Polygonatum officinale* All.  
 753/20(2). *Carex tumidicarpa* Anderss.  
 794/2. *Avena pubescens* Huds.  
 818/1. *Melica nutans* L.  
 818/2. *Melica uniflora* Retz.  
 851/2. *Asplenium Trichomanes* L.  
 851/3. *Asplenium viride* Huds.  
 856/8. *Dryopteris Thelypteris* (L.) A. Gray.  
 856/11. *Dryopteris Robertiana* (Hoffm.) C. Chr.  
 857/4. *Cystopteris fragilis* (L.) Bernh.

## Bog below Craig-y-Cilau.

- 213/3. *Drosera rotundifolia* L.  
 737/2. *Potamogeton polygonifolius* Pourr.  
 753/56. *Carex stellulata* Good.

## Enviorns of Llangorse Lake and Llangasty-Tal-y-llyn.

- \*35/1(2). *Nasturtium microphyllum* Boenningh. ex Reichb. (*uniseriatum* Howard et Manton).  
 35/4. *Rorippa islandica* (Cr.) Bess.  
 127/7. *Geranium pyrenaicum* Burm. f.  
 184/11. *Spiraea Ulmaria* L., glabrous form.  
 189/3. *Potentilla Anserina* L. var. *sericea* Koch.  
 189/7. *Potentilla reptans* L. var. *microphylla* Trott.  
 220/10. *Epilobium montanum* L. (large white flowers).  
 482/1. *Nymphoides peltatum* (S. G. Gmel.) Britt. & Rend.  
 543/8. *Veronica Anagallis-aquatica* L.  
 589/1. *Littorella uniflora* (L.) Asch.  
 615/5c. *Polygonum amphibium* L. var. *glandulosum* Schönheit.  
 \*628/2. *Euphorbia dulcis* L.  
 669/7. *Orchis latifolia* L. sec. Pugsl.  
 669/10. *Orchis ericetorum* (Linton) E. S. Marshall.  
 676/1b. *Iris Pseudacorus* L. var. *acoriformis* (Bor.) Baker.  
 753/4. *Carex vesicaria* L.  
 753/9c. *Carex hirta* L. var. *hirtiformis* Pers.  
 753/66. *Carex disticha* Huds.  
 \*814/1. *Catabrosa aquatica* (L.) Beauv. Wern-ddu, Cathedine.

## Penderyn and Scwd-yr-eira, river Hepste.

- 6/31. *Ranunculus Lenormandi* F. Schultz.  
 35/1. *Nasturtium officinale* R. Br.  
 545/19c. *Euphrasia Rostkoviana* Hayne var. *obscura* Pugsl.  
 753/21. *Carex lepidocarpa* Tausch.  
 \*753/59. *Carex Otrubae* Podp.  
 824/6b. *Poa trivialis* L. var. *glabra* Doell.  
 825/3(2). *Glyceria declinata* Bréb.  
 851/3. *Asplenium viride* L.  
 854/3. *Polystichum lobatum* (Huds.) Woyнар var. *cambrieum* (S. F. Gray).  
 857/4. *Cystopteris Filix-fragilis* (L.) Bernh.

## Ystradfellte: Porth-yr-Ogof, river Mellte.

- 6/32. *Ranunculus hederaceus* L.  
 31/1. *Corydalis claviculata* (L.) DC.  
 190/2. *Alchemilla xanthochlora* Rothm.  
 190/8. *Alchemilla glabra* Neyg.  
 298/1. *Asperula odorata* L.  
 301/3. *Valeriana dioica* L.

- 326/1. *Antennaria dioica* (L.) Gaertn.  
 545/3. *Euphrasia brevifolia* Burnat & Gremli.  
 545/19. *Euphrasia Rostkoviana* Hayne.  
 702/6. *Allium ursinum* L.  
 719/4. *Luzula multiflora* (Retz.) DC. var. *congesta* (Thuill.) Koch.  
 753/20(2). *Carex tumidicarpa* Anderss.  
 753/32. *Carex pilulifera* L.  
 753/57. *Carex remota* L.  
 834/1. *Nardus stricta* L.  
 854/3. *Polystichum lobatum* (Huds.) Woyнар var. *cambricum* (S. F. Gray).

## Craig Cerig Gleisiad.

- 2/2(4). *Thalictrum collinum* Wallr.  
 187/2. *Geum rivale* L.  
 199/2. *Saxifraga oppositifolia* L.  
 199/3. *Saxifraga sponhemica* Gmel.  
 719/1. *Luzula sylvatica* (Huds.) Gaud.  
 844/6. *Equisetum palustre* L.  
 851/3. *Asplenium viride* L.  
 856/1(2). *Dryopteris Borreri* Newm.  
 856/7. *Dryopteris Oreopteris* (Ehrh.) Maxon.  
 856/9. *Dryopteris Phegopteris* (L.) C. Chr.

## River Wye, between Erwood and Bulth.

- 2/2(9). *Thalictrum expansum* Jord.  
 37/1. *Arabis hirsuta* (L.) Scop.  
 54/4d. *Brassica Rapa* L. var. *Briggsii* Wats.  
 178/25. *Lathyrus montanus* Bernh.  
 535/4b. *Scrophularia nodosa* L. var. *Bobartii* Pryor.  
 702/7. *Allium Schoenoprasum* L.

## Head of Dyffryn Cwannon.

- 11/1. *Aquilegia vulgaris* L.  
 419/96. *Hieracium pellucidum* Laest.  
 419/106. *Hieracium sanguineum* (Ley) W. R. Linton.  
 856/1(2). *Dryopteris Borreri* Newm.

## Brecon and Crickhowell.

- 651/3b. *Populus nigra* L. var. *betulifolia* Torr.

## JUNE 22-29, PITLOCHRY, PERTHSHIRE.

Leader: Miss M. S. CAMPBELL, assisted by Mr A. J. WILMOTT.

This excursion was arranged for the purpose of making an extensive botanical survey of the country surrounding Loch Tummel included in the North of Scotland Hydro-Electric Board's Tummel-Garry scheme. In addition, visits to the Moor of Rannoch and to Ben-y-Vrackie were included in the programme.

The following members took part:—Miss Duncan, Mrs Evetts, Miss Kitson, Miss Knox, Mrs Phelps, Miss Vivian, and Messrs Alston, Wilmott, Simpson, and they were joined by Dr Fraser from The Macaulay Institute of Soil Research and his son, Mr Hermon (Resident Engineer, North of Scotland Hydro-Electric Board, Miss Ramsay (a Perthshire member of the W.F.S.), Miss Drew, and Miss Thompson.

It was not possible for all members to be accommodated in the same hotel, though all except the Leaders were in Pitlochry. In spite of many difficulties over transport the full programme was carried out. Details are as follows:—

In its main aim—the study of *Schoenus ferrugineus* and its habitat with a view to its preservation when the level of Loch Tummel is raised by the Tummel-Garry scheme—the Pitlochry excursion did all that could be expected. The plant was found to extend westward on the north shore of the loch for about a mile west of the well-known station just west of the Borenich Burn, and an isolated plant was found by Messrs Alston and Simpson further east under the hill where the river Tummel flows out of the loch. Subsequently the plant was found to extend for about half a mile on the opposite (south) side of the loch to the east of Loch Tummel Lodge, where it had been found many years previously by Miss Campbell, who had gone to the south bank in error!

The Borenich habitat was examined on the 27th by Dr Fraser, who, with two helpers, came specially from Aberdeen to take samples and report on the soil.

It is proposed to publish a separate account of *Schoenus ferrugineus* in Britain, which will include Dr Fraser's analysis of the soil on which it grows and also details concerning such transplants as have been made.

One evening the party had the pleasure of meeting the Board's Biologist (Dr Berry) and the Resident Engineer to the Scheme and heard from them the aims and work of the Board. Dr Berry stated that although his main work is connected with the prevention of all avoidable damage to the fish, his duties included similar prevention of damage to other forms of life. He had the full co-operation of the Board, and had, two years previously, taken preliminary steps concerning the *Schoenus*. (Specimens were taken by Mr R. M. Adam to the Royal Botanic Garden, Edinburgh, but did not, however, survive.) In May 1945 plants had been removed to two places by a small lochan (at a higher altitude than Loch Tummel) near Fincastle, the residence of the late Dr Barbour, who had given the Falls of Tummel to the National Trust for Scotland. Mr Wilmott, after visiting the Borenich habitat with Mrs Barbour in March 1946, discussed with her the creating of a habitat where the *Schoenus* might possibly survive long enough to be available for replanting by the raised Loch Tummel. Even if unsuccessful, observations of this transplant experiment may throw light on the requirements of the plant.

Mr Hermon expressed willingness to do anything possible, even to the use of a bulldozer to carve out a new site above the existing one (17 ft. above the present level of the loch). It remains for a suitable site to be found based on the study of the present habitats. Detailed observations were made and the results of the examination of the soil samples are awaited with interest.

In addition to the meeting with Dr Berry two evening meetings were held in the Pitlochry Institute, at which informal discussion of the field work as well as of matters of a more general interest, including the Society's recent Questionnaire to members, took place.

#### JUNE 22.

Walk to the Falls of Tummel. Nothing of special interest was seen. Quantities of *Melampyrum* near the Falls all proved to be *M. pratense* var. *ericetorum*. A maculate-leaved form of *Taraxacum spectabile sensu lato* was collected by the river. *Pyrola minor* was seen near Cluny Bridge. In Pitlochry several members saw *Poa Chaixi* running wild in a garden bordering the main road.

#### JUNE 23.

The party went by train to Blair Atholl and walked in Glen Tilt. Some of the more interesting plants observed were:—*Geranium pyrenaicum*, *Vicia sylvatica* (form with white flowers, veins inconspicuous), *Alchemilla pseudo-minor*, *Parnassia palustris*, *Circaea alpina*, *Myosotis versicolor* var. *dubia*, *Euphrasia brevipila* f. *gracilior*, *Convallaria majalis*, *Milium effusum* and *Festuca sylvatica*.

#### JUNE 24.

The Borenich habitat of *Schoenus ferrugineus* was visited and the party divided up to determine its extent along the shore. A list was made of associated plants and contained nothing unusual. It included a seedling Ash; some *Scirpus pauciflorus* and *Festuca capillata*. *Viola canina* (*ericetorum*) and a *Thalictrum* (not flowering) were in the neighbouring damp meadows with *Trollius*, *Carex pallescens* and, between Borenich Farm and the loch, *Orchis purpurella* and hybrids with *O. ericetorum*. *Raphanus Raphanistrum* var. *aureus* occurred in an arable field in which *Trifolium hybridum* was collected. *Carex lasiocarpa* was noted at the east end of the Loch.

At the western end of the Loch, *Calamagrostis neglecta* was found to be plentiful over a zone of wet marsh included in the area for flooding. *Carex rostrata* and *C. vesicaria* were seen growing together, and a fine form of *Cardamine pratensis* with large and deeply-coloured flowers. *Eriophorum latifolium* and *Carex canescens* in the very wet marsh where the river enters the loch were found by the party working from the boat. *Lysimachia vulgaris* (shade form) and *Carex remota* were growing in the wooded verge of the loch.

## JUNE 25.

Most members of the party ascended Ben-y-Vrackie with Miss Drew in charge. The *Oxytropis* was in flower on the rocks only. No flower was seen on *Carex rupestris*. (Has anyone ever seen it flowering here?) *Claytonia alsinoides* was in the wood on the way up and *Ribes alpinum* in the glen. *Anemone nemorosa* was still in flower on the rocks.

Members not going to Ben-y-Vrackie visited the west bank of the Tummel below Pitlochry and near Dunfallande House found a handsome *Rubus* with the terminal flowers 7-petalled, and on the flood bank *Polygonum Bistorta* and hybrids between *Orchis Fuchsii* and *O. purpurella*.

## JUNE 26.

The party set out by private bus to Loch Rannoch, travelling by way of Dunalaister, where a stop was made at the salmon ladder of the Grampian Electric Supply Co. A *Thalictrum* and *Hieracia* were collected on riverside rocks and a wood of *Pinus sylvestris* var. *scotica* noted on the slope.

The south side of Loch Rannoch was selected for the outward journey and a part of the Black Wood was searched for *Corallorhiza* without success. Miss Duncan found *Carex irrigua* and *C. laevigata*. *Meum* was seen at Bridge of Gaur.

No unknown locality for *Scheuchzeria* was seen on Rannoch Moor, where a heavy shower of rain was encountered. *Erophila verna* was seen at Rannoch Station, and by Loch Laidon a *Nymphaea* (? *occidentalis*) was growing with rhizomes exposed on the bare mud.

Returning by the North shore of L. Rannoch, a stop was made near Killychonan, where an *Isoetes* was found washed up and *Subularia aquatica* and *Arabidopsis Thaliana* were seen on the shore. A meadow contained abundant *Meum*, *Viola ericetorum*, *V. Riviniana* and a hybrid. Nearby Miss Campbell collected a series of *Valeriana officinalis* ranging from gross plants three feet high with broad leaflets to small plants which would seem to fit "*V. angustifolia*" as distinguished by Drabble, and *Barbarea intermedia*.

After tea at Loch Rannoch Hotel the *Thalictrum umbrosum* was examined at the east end of Loch Rannoch.

## JUNE 27.

Some of the party revisited the Borenich habitat to meet Dr Fraser and party from Aberdeen together with Mr Hermon, and to explore the possibilities for preserving the *Schoenus* close to its present station.

Later some of the party went to the south shore of Loch Tummel and found the *Schoenus* almost opposite Borenich, as already stated.

## JUNE 28.

Glen Errochy, where a new loch is to be created as part of the Tummel-Garry scheme, was visited. On the way a stop was made at the Falls of Bruar. A fine plant of *Verbascum Thapsus* was noted by the falls



and planted *Sorbus Aria* near the road. *Senecio sylvaticus* was abundant on the hillside. Other finds of interest were *Teesdalia nudicaulis*, a small *Viola* apparently *V. lepida*, *Genista anglica*, *Pyrola media*, *Veronica officinalis* with crimson-tipped flowers and *Poa nemoralis*. The next stop was at Struan, where *Melampyrum sylvaticum* was in fine flower by the salmon leap.

In Glen Errochy *Bromus lepidus*, *B. hordeaceus* and *Phleum nodosum* were growing together in a hay meadow. Further on a stop was made at a bank coloured with *Gymnadenia conopsea* and *Orchis ericetorum*, but no hybrids were found. Nearby a few spikes of *Gymnadenia albida* were noted coming into flower.

Above Trinafour the bridge bore *Asplenium Trichomanes*, *A. viride*, *Cystopteris fragilis* and *Arabis hirsuta*, and nearby were *Mimulus guttatus* and *M. moschatus*. On the moorland above were *Dryopteris Oreopteris* by a burn, *Tofieldia* in a wet *Carex panicea* flush, *Helianthemum Chamaecistus* on a grassy hillside and *Eriophorum latifolium* in a bog by the river.

#### JUNE 29.

Ballinluig Island in the Tummel was visited in the morning. On the banks of the Tummel *Cardamine amara*, *Circaea alpina*, and *Carex remota* were seen. On the Island *Dianthus deltoides* was spotted by Miss Duncan some distance from its old station. Other interesting plants noted were *Meconopsis cambrica*, *Papaver nudicaule*, *Teesdalia nudicaulis* in plenty, a hybrid between *Silene Cucubalus* and *S. maritima* on the shingles, *Cerastium arvense*, *Arenaria trinervia*, *Ononis arvensis*,  $\times$  *Geum intermedium*, *Saxifraga aizoides*, *S. stellaris*, *Filago minima*, *Gentiana campestris*, *Symphytum officinale*, *S. peregrinum* and a welter of hybrid colour forms, *Thymus neglectus* and *Scleranthus annuus*. Some *Polygala oxyptera* with blue, red, pink and white flowers attracted attention.

The excursion ended in the early afternoon.

There appear to be five new vice-county records amongst the material so far determined. These were:—*Meconopsis cambrica* (88: wet shade by R. Tummel opposite Ballinluig Island, M. S. Campbell and A. J. Wilmott, 29th); *Barbarea intermedia* (88: 26th, as above); *Viola segetalis* (89: near Pitlochry, Mrs Evetts, det. A. J. Wilmott, 21st); *Hieracium brunneocroceum* (89: Pitlochry, near the church, A. J. Wilmott, 22nd); *Bromus lepidus* (88: A. J. Wilmott, 28th, as above). *Poa Chaixii* (89: Pitlochry, N. D. Simpson, 21st) is an addition to *C.F.* but not a new v.-c. Record, see White (*Fl. Perthsh.*, 353, 1898).

It is hoped to publish further information relating to the fate of *Schoenus ferrugineus*.

The Leader wishes to thank the following for their kind co-operation: The Hon. Mrs Barbour, Dr Berry, Miss Jean Drew, Dr Fraser, Mr Hermon and the owners of the various properties visited.

M. S. CAMPBELL.

## JULY 19-22, BEDFORD AND DISTRICT.

Leader: Dr J. G. Dony.

The excursion to Bedford which was blessed with one of the few fine week-ends of the 1946 summer was attended by the following members: Miss I. J. Allison, Mr F. V. Ambrose (July 19th-20th only), Miss W. M. A. Brooke, Miss G. H. Day, Mrs B. Hassall, Lady Roche, Miss C. Vivian, The Hon. Mrs H. P. Waldy, Mrs B. Welch, H. K. Airy Shaw, J. P. M. Brennan, R. C. L. Burges (20th only), J. F. G. Chapple, C. L. Collenette, J. G. Dony, J. S. Holland, R. Lucas, E. Milne-Redhead, R. Melville, N. D. Simpson, N. Y. Sandwith, P. Taylor, D. P. Young and seven friends of whom Mrs B. Garrett has since joined the society. Its main objects, which were explained on the Friday evening, were to visit some of the local Bedfordshire plants and to study some of the less worked river drainage districts in search of records as a contribution to a new Bedfordshire Flora being prepared by the leader. Where the finder of plants is known his name is inserted. New county records of plants listed in the *Comital Flora* are as usual indicated by \*, species not native in the locality in which they were found are indicated † unless they are new to v.-c. 30 and are not included in the *Comital Flora* in which case they are indicated ‡. Where critical plants are concerned the name of the person, if other than the finder, responsible for the determination is added, except for the following: *Epilobium* determined by G. M. Ash and Grasses determined by C. E. Hubbard.

## SATURDAY, JULY 20.

On Saturday morning a start was made in the Ouse district in the examination of some gravel pits at Eaton Socon. These are rich in wool aliens and among the more interesting plants seen were †*Viola Deseglisei* Bor., N. D. Simpson, †*Geranium rotundifolium* L., †*Erodium moschatum* (L.) Ait., †*Medicago hispida* Gaertn. var. *denticulata* (Willd.), ‡var. *apiculata* (Willd.), D. P. Young, †*M. arabica* (L.) Huds., †*M. minima* (L.) Bartal. var. *recta* (Desf.) Burnat, †*Melilotus indica* (L.) All., †*Trifolium subterraneum* L., \**T. glomeratum* L., E. Milne-Redhead, †*T. angustifolium* L., found independently by a number of members, *Lotus tenuis* Willd., †*Vicia dasycarpa* Tenore, H. K. Airy Shaw, †*Acaena anserinifolia* (J. R. & G. Forst.) Druce, †*Myriophyllum verrucosum* Lindl. (see paper by J. P. M. Brennan and J. F. G. Chapple), †*Ammi majus* L., J. P. M. Brennan, †*Carduus tenuiflorus* Curt., †*Centaurea melitensis* L. det. R. C. L. Burges, J. G. Dony and P. Taylor, †*Juncus Gerardi* Lois., †*J. tenuis* Willd., †*Polypogon monspeliensis* (L.) Desf. and †*Bromus tectorum* L. (det. as var. *longipilus* Borbas by C. E. Hubbard), J. P. M. Brennan. The Australian rushes seen in the pits include †*Juncus pallidus* R. Br. and †*J. vaginatus* R. Br., and other species still to be determined. Members who joined the excursion will be interested to know that Mr Ash has since visited the pits and named the willow-herbs there as *Epilobium hirsutum* L., *E. parviflorum*

Schreb., †*E. adenocaulon* Hausskn., *E. tetragonum* L. sec. Curt., and *E. Lamyi* F. Schult., with the following hybrids: †*E. hirsutum* × *Lamyi*, †*E. hirsutum* × *parviflorum*, †*E. hirsutum* × *tetragonum*, †*E. adenocaulon* × *hirsutum*, †*E. adenocaulon* × *parviflorum*, †*E. Lamyi* × *parviflorum* and †*E. Lamyi* × *tetragonum*.

It was with some regret that the gravel pits were left and after lunch at St Neects the party travelled to the north of the county stopping to look at *Ornithogalum pyrenaicum* L. and *Melampyrum cristatum* L. on the way. The attention of the members was also drawn by Dr Melville to a coppiced wood consisting almost entirely of *Ulmus glabra* × *Plotii*—an unusual occurrence. The party later divided, one section to make a study of West Wood in the Kym district and the other to visit a railway cutting at Wymington in the Nene district.

West Wood—a boulder clay wood typical of this neighbourhood—revealed new district records with *Rosa stylosa* Desf. var. *systyla* (Bast.) Baker, N. Y. Sandwith, *R. canina* L. var. *fracinoidea* (H. Br.) W. Dod f. *recognita* (Rouy) W. Dod, N. Y. Sandwith, and f. *urbica* Léman, R. Melville, *R. tomentosa* Sm. var. *pseudocuspidata* (Crép.) Rouy, R. Melville, *Carex remota* L., E. Milne-Redhead, *Milium effusum* L., Mrs B. Welch, and *Deschampsia caespitosa* (L.) Beauv. var. *parviflora* (Thuill.), E. Milne-Redhead. Other interesting plants seen in the wood were *Achillea Ptarmica* L., *Centaurium pulchellum* (Sw.) E. H. L. Krause, and *Laszula sylvatica* (Huds.) Gaud. The best find of the afternoon was R. Melville's discovery of *Salix cinerea* L. in the wood.

The railway cutting at Wymington exposes the Oolite Series and produced some interesting plants. The Nene is a small district and a number of district records were made, including *Arenaria leptocladus* (Rchb.) Guss., D. P. Young, *Atriplex patula* L. var. *linearis* G. & G., det. A. J. Wilmott, *Allium vineale* L., *Avena fatua* L. var. *pilosissima* S. F. Gray, *Festuca longifolia* Thuill. var. *trachyphylla* (Hack.) Howarth, and *Galeopsis angustifolia* Hoffm. Other plants seen here included *Genista tinctoria* L., *Trifolium medium* L., *Euphorbia platyphyllos* L., *Valerianella dentata* (L.) Poll. var. *mixta* (L.), D. P. Young, and *Bartsia Odontites* var. *verna* (Rchb.).

#### SUNDAY, JULY 21.

In the morning Flitwick Moor was visited, a stop being made on the way to look at *Trifolium ochroleucon* Huds. by the roadside at Wilshamstead. The moor, which is in the Ivel district, is an acid marsh which has been well botanised, and although the party divided into three sections little new was recorded. Among other plants seen were *Potentilla reptans* L. var. *mollis* Borbás, N. D. Simpson, *Dipsacus pilosus* L., *Galeopsis speciosa* Mill., *Populus deltoides* Marsh. × *nigra* L., × *P. canadensis* Moench var. *Eugenii* (Simon-Louis) Schelle, R. Melville, *Agropyron repens* (L.) Beauv. var. *dumetorum* (Schreb. ex Schweigg. et Koert.) Roem. et Schult., N. D. Simpson, and *A. caninum* (L.) Beauv. var. *glaucescens* Lge., N. Y. Sandwith. The following *Salices* were also

recorded by R. Melville: *S. cinerea* L., *S. atrocineria* Brot., *S. viminalis* L., *S. Caprea* × *viminalis* and *S. atrocineria* × *aurita*.

The main party then proceeded to Woburn for lunch but a small group visiting Flitwick Station found another fine colony of wool aliens including †*Medicago minima*, †*M. hispida* var. *apiculata*, †*Trifolium subterraneum*, †*T. angustifolium* and †*Polygogon monspeliensis* (already seen at Eaton Socon), and with them †*Erodium Botrys* (Cav.) Bert., †*Medicago laciniata* Mill., J. P. M. Brenan, †*Brassica juncea* Coss., R. Melville, and †*Bromus rubens* L., J. P. M. Brenan. Other plants seen at the station were *Jasione montana* L. var. *major* M. & K. and †*Hieracium brunneo-croceum* Pugsl., J. P. M. Brenan, both det. H. W. Pugsley.

From Woburn the party went into the Ouzel district to King's Wood, Heath and Reach. The north-west side of this wood is on open Lower Greensand but the remainder is covered with a variable layer of Boulder Clay. The wealth of plant life seen included *Hypericum dubium* Leers, *Polygala serpyllifolia* Hose, *Tilia cordata* Mill. (probably native here), *Trifolium filiforme* L., *Epilobium montanum* × *obscurum*, J. P. M. Brenan, *E. adenocaulon* × *montanum*, E. Milne-Redhead, *Gnaphalium sylvaticum* L., *Campanula latifolia* L., *Salix aurita* L., *S. atrocineria* × *aurita*, *S. atrocineria* × *Caprea* (all *Salices* by R. Melville), *Neottia Nidus-avis* (L.) L. C. Rich., *Epipactis Helleborine* (L.) Crantz, *Carex pallescens* L., *C. pilulifera* L., and *Dryopteris Borreri* Newm., P. Taylor. The early evening was spent on the Heath where the following plants were seen: *Sagina apetala* Fr., N. D. Simpson, *Anagallis foemina* Mill., J. P. M. Brenan, *Chenopodium opulifolium* Schrad., J. P. M. Brenan, and *Polygonum aequale* Lindm., N. D. Simpson—all new district records—and *Antirrhinum Orontium* L.

#### MONDAY, JULY 22.

A smaller party set out on Monday for the final excursion, a number of members having left on the Sunday evening. The whole day was spent in the Ivel district, *Orobanche Rapum-genistae* Thuill. being seen at Shefford and *Ulmus Plotii* Druce (H. K. Airy Shaw) at Pegsdon. The latter is a first record for the Ivel district. Knocking Hoe, the main objective, is a small hill on the Lower Chalk escarpment. *Hypochoeris maculata* L. (I had not previously seen both in flower on the same day), *Iberis amara* L., *Senecio integrifolius* (L.) Clairv. and *Euphrasia pseudo-Kernerii* Pugsl. (confirmed by H. W. Pugsley), E. Milne-Redhead).

After lunch at Silsoe the afternoon was spent on a large rubbish dump at Sundon. Aliens were here in evidence and included *Lepidium sativum* L., *Silybum Marianum* (L.) Gaertn., R. Melville, †*Spinacia oleracea* L., †*Amaranthus caudatus* L., det. N. Y. Sandwith, R. Melville, †*Panicum miliaceum* L., N. D. Simpson, *Agropyron repens* (L.) Beauv. var. *pubescens* (Doell) Hegi, N. D. Simpson, and two varieties of wheat, †*Triticum compactum* Host var. *Humboldtii* (Koern.) and †*T. turgidum* L. var. *iodurum* (Koern.), R. Melville.

The party dispersed near Houghton Regis where a fine show of *Melampyrum arvense* L. by the roadside made an appropriate ending to an enjoyable excursion.

Additional plants observed by individual members during the week-end included *Sagina flicaulis* Jord., at Bedford, D. P. Young; *Chenopodium ficifolium* Sm., near Woburn (confirmed by J. P. M. Brenan), H. K. Airy Shaw, *Rumex crispus* × *obtusifolius* at Great Barford, N. Y. Sandwith, and × *Festulobium loliaceum* (Huds.) P. Fourn. in a meadow near Eaton Socon, J. P. M. Brenan.

I must thank Lady Roche, Mrs Vivian, Messrs Burges, Chambers, Chapple, Guppy, Melville, Lucas and Shaw who at various times during the week-end gave lifts to members of the excursion.

J. G. DONY.

#### SEPTEMBER 6-9, THE NEIGHBOURHOOD OF OXFORD.

Leader: Mr J. P. M. BRENAN.

The following 41 members and guests, besides the leader, took part in this excursion, including some who were present only for a portion of the period:—Mr W. B. Alexander, Miss Barton, Mrs Boyd-Watt, Miss Brooke, Dr Burges, Mr R. Burn, Mr R. Burnett, Miss Campbell, Mr Chapple, Mrs Clokey, Mr Clokey, Mr Collenette, Dr Dony, Lady Douie, Mrs Evetts, Mrs Foggitt, Mr Gough, Commander Graham, Dr Harley, Mrs Hassall, Mr Holland, Dr Hughes, Miss I. B. King, Miss Kitson, Miss Longfield, Mr Lousley, Miss M. Marriott, Miss Morgan, Mrs Milvain, Mr Pugsley, Mr Raison, Lady Roche, Miss Rudkin, Mr Simpson, Mr Taylor, Miss Vachell, Mr Warren, Mrs Welch, Miss Wethered, Mrs Whitwell, Mr Woodhead.

#### FRIDAY, SEPTEMBER 6.

In the evening members and friends met at the School of Forestry, Oxford, where Prof. H. G. Champion had kindly allowed us the use of a lecture-room. Mrs W. O. James, of the University Department of Botany, then showed us two of her films on Deadly Nightshade (*Atropa*) and Foxglove (*Digitalis*). Although made in connection with the collecting of these plants for medicinal purposes that was organised by Dr and Mrs James at Oxford during the late war, these films embodied much interesting information both about the economic uses of these plants and their haunts in the field. After a vote of thanks to Mrs James had been passed with applause and some discussion on the films had taken place, there was a brief talk about the excursion for the following day.

#### SATURDAY, SEPTEMBER 7.

In the morning the party visited the Oxford Botanic Garden, the oldest in Britain and still, for the most part, contained within the high, venerable, stone walls that were erected shortly after its foundation in 1621. The beds, in which an extensive range of plants, grouped in sys-

tematic order of families, is grown, were inspected, together with the excellent rock-garden, alas, not at its best at this time of year, and the greenhouses with their ferns, orchids, grotesque succulents and the many exuberant brightly-coloured tropical plants. In the library, adjoining the garden, a selection from the numerous treasures at the Department of Botany was on display. Specially noteworthy among these were various early and rare botanical books, sheets from historic herbaria such as those of Bobart and Sherard, and the ancient and price-less herbarium of Gregory of Reggio. Much interest was aroused by an exhibit of a living specimen of *Colechicum latifolium* Sibth. & Sm. (*C. Sibthorpii* Baker), native of Greece, placed next to Bauer's original magnificent coloured drawing of the same species, together with that drawing as it was actually published in Sibthorp and Smith's sumptuous *Flora Graeca*. Thanks are due to Prof. T. G. B. Osborn for permission and facilities for making this visit, to Miss R. Guiney and Mrs Clokey for the care and trouble that they took in preparing the exhibits in the Library, and to Mr G. W. Robinson, the Curator of the Garden, for having the greenhouses opened for us. Genial sunshine attended us at the garden, and, except for a brief shower at lunch-time, for the rest of the day.

After an hour and a half at the garden, the party went, mostly by motor-coach, to Wytham, an estate of over 3000 acres lying in Berkshire on the western confines of Oxford and now mostly under the aegis of the University. The estate covers all sides of an extensive hill rising to over 500 feet, mostly on limestone (Coral Rag and Calcareous Grit), but with the base on Oxford Clay; the hill is mostly clothed with woodland of oak, ash, sycamore, etc., but has extensive areas of grassland and more or less open bushy scrub, the latter, however, recently much reduced by ploughing. The party started from the western end of the area, following a path leading up the hill to near its summit. On the way up *Cirsium eriophorum*, the alien *Quercus Cerris* and *Centaurium pulchellum* were noted, the latter a new plant for the district and a great rarity in the county generally. The party then turned off to explore the south side of the hill. The abnormally rainy summer had caused the rides to become much overgrown with wonderfully tall bracken and codlins-and-cream, making the going difficult in places. The more noteworthy plants in these damp woodlands were *Pimpinella major*, *Agri- monia odorata* (in abundance on the clay), more *Centaurium pulchellum* by the side of a track, and an interesting series of *Epilobium* hybrids. Lunch was eaten by a small, secluded pond close to Guy's Copse, round the shores of which *Samolus Valerandi* was plentiful. In grassland close by *Cirsium eriophorum*, *Blackstonia*, *Gentiana Amarella* and *Thymus glaber* Mill. (*sens. Ronniger*) were observed, and a mass of *Inula Helenium* in a very "wild" locality, in full bloom and making a striking picture. The high water-level of the pond prevented a search for *Sonchus arvensis* var. *glabrescens* which the leader had previously seen there. After lunch most of the party walked along the crest of Wytham Hill,

passing on the way a large area of *Calamagrostis epigejos*, and dropped down the north-east side to Hagley Pool, where other members of the party who had made the journey by road were rejoined.

Hagley Pool is a backwater of the R. Thames lying to the north-west of Wytham village, and is one of the most interesting areas of riparian vegetation in the neighbourhood of Oxford. The incessant rain preceding the excursion had left much standing water in the normally dry meadows near the pool, and the party was at times compelled to paddle. *Ranunculus Lingua*, *Stellaria palustris* var. *Dilleni-ana*, *Sium latifolium*, *Utricularia vulgaris*, *Polygonum mite* and *Triglochin palustre* were seen, and some interesting rushes near-by, including *Juncus acutiflorus* × *articulatus* and the as yet apparently unnamed rush close to *J. acutiflorus* and known as "Large S0." Just before leaving, a very peculiar plant of spear-thistle was seen in a field close to the pool, a fuller discussion of which will be found in the list of additions to floras at the end of this report. From Hagley Pool the party returned to tea at the Kemp Cafeteria, Oxford; and in the evening we met again at the School of Forestry where the day's finds were examined and discussed.

#### SUNDAY, SEPTEMBER 8.

On this day the weather did its very worst. Our original intention was to explore the insufficiently known area of Wychwood, and thirty-one members and friends set off by motor-coach beneath a pall of heavy, lowering clouds. A halt was called at Eynsham to look at *Calamintha Nepeta*, recently refound after having been apparently last recorded here by Boswell in 1857. A second stop was made near Freeland to look at a large patch of × *Mentha niliaca* var. *villosa* by the roadside, where too the party found a new locality for × *Stachys ambigua*. At North Leigh Common, where the rain started in earnest, we saw × *Mentha piperita*. As we progressed the rain, already heavy, became a deluge, and on arrival at Wychwood, where other members were joined, something akin to a cloudburst occurred. After waiting in vain a long while for any sign of a break, it was requested that a vote be taken on whether to wait longer or to declare an official abandonment of the Wychwood project, and on a show of hands the party was almost unanimously in favour of the latter.

The party therefore returned to Oxford, where Mr Chapple kindly threw open Yardley Lodge and the Druce Herbarium. Lunch was eaten here, and some members looked at a selection of interesting Oxfordshire plants that was put on view, while others worked on material of special interest to them.

In the afternoon the rain ceased temporarily and allowed the leader to take a small party to look at the rich flora of the Port Meadow area. Although much of the meadow was under water, a number of the interesting plants were found, including *Hippuris*, *Apium repens*, *Carum segetum*, *Oenanthe fistulosa*, *Caucalis nodosa*, *Nymphoides*, *Juncus com-*

*pressus* and *Carex disticha*, and we were further rewarded by a most remarkable and unexpected N.C.R. from this well-worked area—*Carex serotina* Mérat (*C. Oederi* auct.). The party returned just in time to escape a thunderstorm.

#### MONDAY, SEPTEMBER 9.

The principal object of the last day's excursion was to explore the canal and its neighbourhood between Oxford and Banbury. As if in compensation for the previous day we were favoured with fine weather and sunshine throughout. The party set off by motor-coach, stopping first at the Wolvercote end of Port Meadow in order to see *Limosella*. The mud on which it had been plentiful a week or so earlier was under water, soon made turbid by wading botanists. However, after a little searching, a goodly number of detached, floating plants were found. Near-by the alien *Veronica filiformis* had made itself at home on a grassy bank. The next stop was at Bletchington Station, where, as at the succeeding stops by the canal, the party split into two, one part going north and the other south. In a yard by the canal *Epilobium adenocaulon*, as yet rare in Oxfordshire, occurred, and by the canal itself and the adjacent River Cherwell *Rorippa amphibia*, *Sium erectum*, *Bidens tripartita* var. *integra* and *Carex paniculata* grew. The fine fruiting plants of *Sagittaria* in the canal, with their conspicuous, greenish balls of achenes borne in close whorls of three, aroused interest here and later on at Upper Heyford. Drags were thrown in and emerged festooned with disappointingly common pondweeds. From Bletchington the party moved on to Rousham Gap, near Tackley, where Mrs Evetts, temporarily taking over the leadership, showed us in one of her fields a rich and unusual selection of cornfield weeds, including *Silene noctiflora*, *Geranium columbinum*, plenty of *Bupleurum rotundifolium*, *Valerianella dentata*, *Legousia hybrida*, Blue Pimpernel, *Linaria spuria*, *L. Elatine* and *Calamintha Acinos*. After a productive stay here, the party moved on to Lower Heyford where an *al fresco* lunch was eaten. Among the more interesting plants seen here were *Sisymbrium orientale*, *Geranium pusillum*, *Crataegus monogyna* var. *splendens*, *Epilobium roseum*, *Melissa*, *Chenopodium Bonus-Henricus*, *Triglochin palustre*, *Heleocharis acicularis* (non-flowering) and *Poa compressa*. Upper Heyford was next visited but was less productive. *Alisma lanceolatum* was collected in the canal, and there was an unusually fine display of *Arctium Lappa*. Before going on to Banbury a final stop was made at Somerton, where, however, nothing of major interest was found, though *Thalictrum flavum* and *Lysimachia vulgaris*, both over, grew on the Cherwell banks.

In general the aquatic flora of the canal was not found to be rich, and seems to have deteriorated a good deal during the last few years, possibly owing to the disturbance of the water caused by heavier barge-traffic. The pondweeds seen were common species (*Potamogeton natans*, *P. lucens*, *P. perfoliatus* and *P. pectinatus*) and, although both parent-



species were present and a special search was made for it, no sign was seen of *×P. decipiens* Nolte ex Koch, which was once recorded by Druce for Upper Heyford in 1886.

At Banbury the party made a brief visit to the classic locality of *Ulmus Plotii* in West Bar Street. The type-tree had rotted and been cut down, though the base of the trunk was still standing and putting forth green shoots. The second large tree of *U. Plotii* near-by was fortunately in good condition.

An excellent tea was eaten at Wincott's Café in Banbury, after which Commander Graham made a brief speech proposing a vote of thanks to the leader for running the excursion. The party then returned by motor-coach to Oxford, where the excursion officially ended.

Grateful acknowledgment must be made to the owners for permits to visit private property and estates. The leader's thanks are also especially due to Mr J. F. G. Chapple and Mrs Evetts for much valuable assistance before and during the excursion; and, by no means least, to all those who have contributed records or given expert opinions on plants found on the excursion.

#### RECORDS ADDITIONAL TO THE FLORAS OF OXFORDSHIRE AND BERKSHIRE.

The numbers between 1 and 5 preceding the records refer to the botanical districts (see *Fl. Berks.*, 1897, and *Fl. Oxfordsh.*, ed. 2, 1927). Those numbers in brackets after each record refer to the date, enabling the record to be correlated easily with the preceding narrative of the excursion. Voucher-specimens of the more critical or interesting plants are deposited in Herb. Druce, in the leader's herbarium, or in those of other members of the party.

- 2/1. *Thalictrum flavum* L. 23, Oxon. 3. By R. Cherwell near Somerton station (9).
- 35/3. *Rorippa amphibia* (L.) Bess. 23, Oxon. 4. By R. Cherwell near Bletchington station (9).
- †49/4. *Sisymbrium orientale* L. 23, Oxon. 4. One plant on a wharf by the canal at Lower Heyford (9).
- 61/5. *Lepidium campestre* (L.) R. Br. 22, Berks. 1. S. side of Wytham Hill (7). 23, Oxon. 4. Field-border, Rousham Gap near Tackley (9), previously found here by Mrs Evetts.
- 98/3×4. *Lychnis alba* Mill. *× dioica* L. 22, Berks. 1. Wytham Woods (7).
- 101/1. *Stellaria aquatica* (L.) Scop. 23, Oxon. 4. By the canal, Upper Heyford (9).
- 127/12. *Geranium pusillum* L. 22, Berks. 1. Cornfield on Wytham Hill (7).
- 194/6r. *Rosa canina* L. var. *ramosissima* Rau. 23, Oxon. 3. Roadside between Somerton Station and R. Cherwell (9).

- 194/19f. *Rosa tomentosa* Sw. var. *scabriuscula* Sm. 23, Oxon. 4. A large bush in hedge, Rousham Gap near Tackley (9). An unusual and puzzling rose, which seems best named as above, though it is peculiar in its sparsely glandular pedicels, smooth fruit with rising and very weakly glandular sepals.
- 196/1k. *Crataegus monogyna* Jacq. var. *splendens* Druce. 23, Oxon. 4. Hedge by canal at Lower Heyford (9), and observed here a short while before the excursion by Mr J. F. G. Chapple and the leader.
- 220/4×8. *Epilobium parviflorum* Schreb. × *roseum* Schreb. 22, Berks. 1. Wytham Woods, S.W. slope (7). Det. G. M. Ash.
- 220/7×4. *Epilobium obscurum* Schreb. × *parviflorum* Schreb. 22, Berks. 1. Wytham Woods, S.W. slope (7). Det. G. M. Ash.
- +220/7(2). *Epilobium adenocaulon* Haussk. 23, Oxon. 4. Several plants in a yard by the canal near Bletchington Station (9).
- 220/8. *Epilobium roseum* Schreb. 22, Berks. 1. Wytham Woods, S.W. slope (7). Det. G. M. Ash. 23, Oxon. 4. By Lower Heyford railway station (9), previously noted here by Mr J. F. G. Chapple and the leader.
- 220/10×4. *Epilobium montanum* L. × *parviflorum* Schreb. 22, Berks. 1. Wytham Woods, S.W. slope (7). Det. G. M. Ash.
- 220/10×7. *Epilobium montanum* L. × *obscurum* Schreb. 22, Berks. 1. Wytham Woods, S.W. slope (7). Det. G. M. Ash.
- 253/2. *Sium erectum* Huds. 23, Oxon. 4. By canal, Upper Heyford (9); by R. Cherwell near Bletchington Station (9).
- 255/1. *Pimpinella major* (L.) Huds. 22, Berks. 1. In scrub on S. side of Wytham Hill (7).
- 266/1b. *Aethusa Cynapium* L. var. *agrestis* Wallr. 23, Oxon. 4. Rousham Gap near Tackley (9).
- 274/1a. *Angelica sylvestris* L. var. *vulgaris* Lallemand. 23, Oxon. 4. Bletchington (9).
- 274/1b. *Angelica sylvestris* L. var. *decurrens* Lallemand. 22, Berks. 1. Wytham Woods (7).
- 304/3. *Valerianella dentata* (L.) Poll. 23, Oxon. 4. Cornfield at Rousham Gap near Tackley (9).
- 353/2. *Bidens tripartita* L. 22, Berks. 1. Hagley Pool near Wytham (7).
- 353/2b. *Bidens tripartita* L. var. *integra* Koch. 23, Oxon. 4. By the canal near Bletchington Station (9).

- 365/11. *Achillea Ptarmica* L. 23, Oxon. 3. Frequent by R. Cherwell near Somerton Station (9).
- 393/1. *Arctium Lappa* L. 23, Oxon. 4. Plentiful by the canal, Upper Heyford (9), previously noted here by Mr J. F. G. Chapple and the leader.
- 393/2. *Arctium vulgare* (Hill) Evans. 22, Berks. 1. Abundant in Wytham Woods (7), as was *A. minus* (Hill) Bernh.
- 396/2. *Cirsium vulgare* (Savi) Ten. 22, Berks. 1. A single most extraordinary plant in a dry pasture between Northfield Farm, near Wytham, and the R. Thames (7). The plant had several stems from the base, the stems again branching freely. The capitula were much smaller and narrower in outline than those of *C. vulgare*, with less radiating phyllaries, and densely clustered towards the ends of the branches. In appearance it suggested a cross with *C. palustre*, but Dr W. A. Sledge, who kindly reported on this plant, says that it is not, in his opinion, a hybrid, and I agree with that verdict. He adds:—"Your plant is in my opinion a very abnormal specimen of *C. vulgare*, but I can find no evidence of galling or any other possible cause of the abnormality."
- 463/2. *Lysimachia vulgaris* L. 23, Oxon. 3. By the R. Cherwell near Somerton Station (9).
- 478/4. *Centaurium pulchellum* (Sw.) E. H. L. Krause. 22, Berks. 1. By the side of tracks and with *C. umbellatum* on a grass-patch on the S.W. side of Wytham Hill (7). The second record for the county, it having been previously recorded only from Curridge Common (dist. 3) by G. C. Druce in 1893 (see Druce, *Fl. Berks.*, 341: 1897).
- +543/41. *Veronica filiformis* Sm. 23, Oxon. 5. Grassy bank at Wolvercote end of Port Meadow (9).
- +565/1. *Melissa officinalis* L. 23, Oxon. 4. By the canal, Lower Heyford (9).
- 577/5×3. *Stachys palustris* L. × *sylvatica* L. (×*S. ambigua* Sm.). 23, Oxon. 5. Large patch in roadside ditch near Freeland (8).
- +646/3. *Quercus Cerris* L. 22, Berks. 1. In woodland on S.W. side of Wytham Hill (7).
- 729/1b. *Alisma lanceolatum* With. 23, Oxon. 4. Canal close to Upper Heyford (9).
- 735/2. *Triglochin palustre* L. 23, Oxon. 4. By the canal, Lower Heyford (9).
- 745/4. *Eleocharis acicularis* (L.) R. Br. 23, Oxon. 4. By the canal, Lower Heyford (9).

- \*753/22. *Carex serotina* Mérat (*C. Oederi* auct., non Retz.). 23, Oxon. 5. S. end of Port Meadow (8). The plants were growing in short turf, which was at the time submerged by flooding. The occurrence of this species here is most unexpected and remarkable, since Port Meadow is a well-worked locality and in addition *C. serotina* has hitherto been considered a plant of acid or at least base-poor habitats. Port Meadow, as was only too obvious at the time, is frequently inundated by the strongly calcareous waters of the R. Thames. There is, however, no question about the identity of the plant, a specimen of which is deposited in Herb. Druce. It seems thus that the ecological tolerance of *C. serotina* requires further investigation.
- 753/63. *Carex paniculata* L. 23, Oxon. 4. By the canal near Bletchington Station (9).
- 824/10. *Poa compressa* L. 23, Oxon. 4. Dry ground on wharf by canal, Lower Heyford (9).
- 851/2. *Asplenium Trichomanes* L. 23, Oxon. 3. Wall by R. Cherwell near Somerton Station (9).
- 851/5. *Asplenium Adiantum-nigrum* L. 23, Oxon. 3. Wall by R. Cherwell near Somerton Station (9).
- 851/7. *Asplenium Ruta-muraria* L. 23, Oxon. 3. Wall by R. Cherwell near Somerton Station (9).
- 876/7. *Chara contraria* Kuetz. 23, Oxon. 4. In the canal near Bletchington Station (9).

J. P. M. B.

PLANTS OBSERVED ON WYTHAM HILL, v.c. 22, ON 7TH SEPTEMBER 1946.

The following list, although certainly far from complete, may be useful as a basis for further exploration of this interesting area.

- |  |   |
|--|---|
| <i>Clematis Vitalba</i> L.                 | <i>H. quadrangulum</i> L.               |
| <i>Ranunculus repens</i> L.                | <i>H. dubium</i> Leers.                 |
| <i>R. arvensis</i> L.                      | <i>H. humifusum</i> L.                  |
| <i>Brassica nigra</i> (L.) Koch.           | <i>Linum catharticum</i> L.             |
| <i>Capsella Bursa-pastoris</i> (L.) Médic. | <i>Geranium pusillum</i> L.             |
| <i>Lepidium campestre</i> (L.) R. Br.      | <i>G. Robertianum</i> L.                |
| <i>Helianthemum nummularium</i> (L.) Mill. | <i>Erodium cicutarium</i> (L.) L'Hérit. |
| <i>Viola Riviniana</i> Reichb.             | <i>Ilex Aquifolium</i> L.               |
| <i>V. hirta</i> L.                         | <i>Euonymus europaeus</i> L.            |
| <i>Lychnis alba</i> Mill.                  | <i>Rhamnus catharticus</i> L.           |
| <i>L. alba</i> Mill. × <i>dioica</i> L.    | <i>Acer Pseudo-platanus</i> L.          |
| <i>L. dioica</i> L.                        | <i>A. campestre</i> L.                  |
| <i>Cerastium vulgatum</i> L.               | <i>Trifolium pratense</i> L.            |
| <i>Stellaria media</i> (L.) Vill.          | <i>T. dubium</i> Sibth.                 |
| <i>S. graminea</i> L.                      | <i>Lotus corniculatus</i> L.            |
| <i>Arenaria serpyllifolia</i> L.           | <i>Viola sepium</i> L.                  |
| <i>Hypericum hirsutum</i> L.               | <i>Prunus spinosa</i> L.                |
| <i>H. pulchrum</i> L.                      | <i>Spiraea Ulmaria</i> L.               |

- Rubus vestitus* Weihe.  
*R. caesius* L.  
*Geum urbanum* L.  
*Fragaria vesca* L.  
*Potentilla Anserina* L.  
*P. reptans* L.  
*P. erecta* (L.) Rausch.  
*P. sterilis* (L.) Garcke.  
*Agrimonia odorata* (Gouan) Mill.  
*Pyrus Malus* L.  
*Crataegus monogyna* Jacq.  
*Hippuris vulgaris* L.  
*Epilobium angustifolium* L.  
*E. hirsutum* L.  
*E. parviflorum* Schreb.  
*E. parviflorum* Schreb. × *roseum* Schreb.  
*E. obscurum* Schreb.  
*E. obscurum* Schreb. × *parviflorum* Schreb.  
*E. roseum* Schreb.  
*E. montanum* L.  
*E. montanum* L. × *obscurum* Schreb.  
*E. montanum* L. × *parviflorum* Schreb.  
*Circaea lutetiana* L.  
*Bryonia dioica* Jacq.  
*Pimpinella major* (L.) Huds.  
*Angelica sylvestris* L. var. *decurrens* Lallemand.  
*Peucedanum sativum* (L.) B. & H.  
*Heracleum Sphondylium* L.  
*Cornus sanguinea* L.  
*Sambucus nigra* L.  
*Verbena Opulus* L.  
*V. Lantana* L.  
*Lonicera Periclymenum* L.  
*Galium uliginosum* L.  
*G. verum* L.  
*G. Aparine* L.  
*Dipsacus fullonum* L. (*D. sylvestris* Huds.).  
*D. pilosus* L.  
*Scabiosa Succisa* L.  
*Bellis perennis* L.  
*Inula Helentium* L.  
*I. Conyza* DC.  
*Pulicaria dysenterica* Bernh.  
*Achillea Millefolium* L.  
*Senecio Jacobaea* L.  
*S. erucifolius* L.  
*Carlina vulgaris* L.  
*Arctium vulgare* (Hill) Evans.  
*A. minus* (Hill) Bernh.  
*Cirsium eriophorum* (L.) Scop.  
*C. vulgare* (Savi) Ten.  
*C. acaulon* (L.) Scop.  
*C. arvense* (L.) Scop.  
*C. palustre* (L.) Scop.  
*Centaurea nemoralis* Jord.  
*C. Scabiosa* L.  
*Crepis capillaris* (L.) Wallr.  
*Leontodon hispidus* L.  
*L. Leysseri* (Wallr.) Beck.  
*Taraxacum officinale* Weber.  
*T. laevigatum* (Willd.) DC.  
*Sonchus asper* (L.) Hill.  
*Campanula rotundifolia* L.  
*Primula veris* L.  
*Lysimachia Nummularia* L.  
*Anagallis arvensis* L.  
*Samolus Valerandi* L.  
*Fraginaria excelsior* L.  
*Ligustrum vulgare* L.  
*Blackstonia perfoliata* (L.) Huds.  
*Centaurium umbellatum* Gilib.  
*C. pulchellum* (Sw.) E. H. L. Krause.  
*Gentiana Amarella* L.  
*Cynoglossum officinale* L.  
*Lycopsis arvensis* L.  
*Myosotis arvensis* (L.) Hill.  
*Lithospermum officinale* L.  
*Echium vulgare* L.  
*Solanum nigrum* L.  
*Hyoscyamus niger* L.  
*Verbascum Thapsus* L.  
*Linaria minor* (L.) Desf.  
*Scrophularia aquatica* L.  
*S. nodosa* L.  
*Veronica officinalis* L.  
*V. montana* L.  
*V. serpyllifolia* L.  
*V. arvensis* L.  
*V. persica* Poir.  
*Euphrasia nemorosa* (Pers.) Loehr.  
*Bartsia Odontites* Huds.  
*Mentha aquatica* L.  
*Thymus glaber* Mill.  
*Clinopodium vulgare* L.  
*Nepeta hederacea* (L.) Trev.  
*Prunella vulgaris* L.  
*Ajuga reptans* L.  
*Plantago major* L.  
*Chenopodium polyspermum* L.  
     var. *obtusifolium* Gaud.  
*Polygonum Convolvulus* L.  
     var. *sudatum* Lej. & Court.  
*P. lapathifolium* L.  
*P. Persicaria* L.  
*P. aviculare* L.  
*Rumex sanguineus* L. var. *viridis* Sibth.  
*R. Acetosella* L.  
*Euphorbia amygdaloides* L.  
*E. exigua* L.  
*Mercurialis perennis* L.  
*Urtica dioica* L.  
*Betula alba* L.  
*Carpinus Betulus* L.  
*Corylus Avellana* L.

- Quercus Robur* L.  
*Q. Cerris* L.  
*Fagus sylvatica* L.  
*Salix atrocinerea* Brot.  
*Orchis Fuchsii* Druce.  
*Tamus communis* L.  
*Juncus effusus* L.  
*J. inflexus* L.  
*J. bufonius* L.  
*Typha latifolia* L.  
*Lemna minor* L.  
*L. trisulca* L.  
*Atisma Plantago-aquatica* L.  
*Potamogeton natans* L.  
*Scirpus lacustris* L.  
*Carex riparia* Curt.  
*C. pendula* Huds.
- C. sylvatica* Huds.  
*C. flacca* Schreb.  
*Calamagrostis epigejos* (L.) Roth.  
*Holcus mollis* L.  
*Dactylis glomerata* L.  
*Poa annua* L.  
*Scieropoa rigida* (L.) Griseb.  
*Festuca gigantea* (L.) Vill.  
*F. rubra* L.  
*Brachypodium sylvaticum* (Huds.)  
 Beauv.  
*B. pinnatum* (L.) Beauv. var. *pubescens*  
 S. F. Gray.  
*Equisetum Tetmateta* Ehrh.  
*E. palustre* L.  
*Pteridium aquilinum* (L.) Kuhn.

J. P. M. B.

## OBITUARIES

WILLIAM EDWARD NICHOLSON (1866-1945). The passing of W. E. Nicholson should be chronicled in our pages, for though known as an eminent bryologist for about fifty years, he had formerly been a member of the Botanical Society. In his younger days he had been a keen student of the Sussex flora, utilising all his spare time in exploring the county in which he spent nearly all the years of his life. Although mosses and hepatics claimed all of his interest as the years went by, many of his records can be found in the *Flora of Sussex* (1937). He knew the flora of the downs in East Sussex about Lewes extremely well, and his knowledge of plant habitats brought him the friendship among others of our late member C. B. Tahourdin, well known for his study of our native orchids.

E. C. WALLACE.

JOHN FREDERICK RAYNER (1854-1947). The late Mr J. F. Rayner will be remembered for his work on the Hampshire flora and also as a writer of popular articles on many aspects of plant life.

For the greater part of his life he was in business as a florist at Swaythling, Southampton, and much of his leisure was spent in exploring the New Forest and Isle of Wight. This work culminated in the publication of his Supplement to Townsend's *Flora of Hampshire* in 1929. His interests were not restricted to the flowering plants and indeed he wrote the chapters on fungi for Frank Morey's *Guide to the Natural History of the Isle of Wight*, 1909, and the Bournemouth Natural Science Society's *Natural History of Bournemouth and District*, 1914. In addition, he was interested in mosses and liverworts, and wrote many papers on all these groups for local periodicals.

Rayner possessed that rare gift of making difficult subjects interesting to readers who are not botanists and his long series of contributions to *Countryside* appealed to a wide public. Finding that scientific names were a stumblingblock to some of his readers he produced his *Standard Catalogue of English Names of our Wild Flowers* (undated) which included representatives of the critical groups.

My own correspondence with him extending over twenty-five years led to a warm appreciation of his sound practical knowledge. His long training as a horticulturalist provided a deeper insight into the life of plants than some of us can hope to obtain, and while he had a keen eye for differences he was apt to be sceptical of the work of "garret-botanists." While interested in critical plants early experience of specialists giving various names to single gatherings rendered him sometimes rather cynical of their efforts.

Aliens were a favourite study and he wrote "The Alien Flora of Hampshire and the Isle of Wight" (*Proc. I.o.W. Nat. Hist. Soc.*, 1923). Moreover, while keenly interested in the conservation of our flora, he used aliens on the credit side of the balance-sheet to give a very fair account of gains as well as losses in his writings.

Rayner was a member of this Society from 1915 to 1934, and for a time he was a contributor to the Watson Botanical Exchange Club. His activities about 1929 give a good indication of his interests: he was President of the Southampton Natural History Society, Vice-President of the Southampton Rambling Club and the British Empire Naturalists' Association, member of the Council of the Hampshire Field Club, Honorary Member of the Isle of Wight Natural History Society and Bournemouth Natural Science Society, Fellow of the Royal Horticultural Society, and a member of the British Mycological Society, the South-Eastern Union of Scientific Societies and our own Society.

All his botanical specimens with the exception of the mosses and lichens have been sent to the Bournemouth Natural Science Society and his books to the Southampton Central Library. The mosses and lichens have been offered by his daughter, Mrs Esther M. Edwards, to the South London Botanical Institute.

He died on January 19, 1947, at Westerham, Kent, in his 93rd year, and in accordance with his wishes his ashes were scattered in the New Forest—in a heathy spot not far from Pickett's Post.

Some of the information incorporated in this appreciation has been kindly provided by Mrs Edwards.

J. E. LOUSLEY.

DR W. H. WACHTER (1882-1946). Dr W. H. Wachter was born on December 5th, 1882. He attended a teachers' college and in 1901 was appointed a teacher at Rotterdam. He studied mathematics and later biology. In 1916 ensued his appointment as master of biology at a secondary school in Rotterdam, and 1935 he was pensioned off. In January 1946 Leyden University conferred upon him an honorary degree of Doctor of Science. On September 1st, 1946, he died of heart-failure.

From his early days Wachter collected and studied plants. In 1896 Wachter and the writer of this obituary joined forces in building up a large herbarium, which contains over 50,000 items and has been bequeathed to the National Herbarium at Leyden. Wachter specialised in the difficult genera: *Carex*, *Orchis*, *Salix*, *Rumex*, *Polygonum*, *Erodium*, *Rubus*, etc., and after 1925 more particularly in mosses and hepatics. The results of this research were published (in collaboration with the present writer) in *Nederlandsch Kruidkundig Archief* (Floristische Aantekeningen 1-34; Briologische Aantekeningen 1-10) of which periodical he had been the editor ever since 1919. During this time he edited over ten thousand pages, providing them with various indices. Also the personal notes were largely his work. Since Heukels' death,



he edited the floras in general use at Dutch schools. His last work was the memorial volume, written on the occasion of the centenary of the Royal Dutch Botanical Society of which Dr Wachter was an honorary member.

P. JANSEN.

At their meeting on March 27th, 1946, the Council had agreed that the name of Dr W. H. Wachter should be put forward at the next Annual General Meeting of this Society for election as an Honorary Member but his sudden death six months later has prevented fulfilment of the intention. I never met Dr Wachter but knew him as a most kindly and generous correspondent who would take the utmost trouble to answer my enquiries. At 63 we might have hoped that he had a good many years of active work before him and yet it was difficult to believe that he was not older in view of the very long period during which he had taken a leading part in the field botany of the Netherlands. At the time of his death he was looking forward eagerly to the appearance of the first part of the important new Flora on which he had worked so hard and of which publication had been delayed by the war.

J. E. LOUSLEY.

## BIOLOGICAL FLORA OF THE BRITISH ISLES

At the Botanical Tea Party held in Oxford in January 1947, Dr P. W. Richards gave an account of the above-mentioned undertaking and appealed to members of this Society to assist in any way they could. The scope of this work is set out below. The Editors of the *Biological Flora* (Professor W. H. Pearsall, Professor A. R. Clapham and Dr P. W. Richards) would be glad to receive notes and data of any kind on British species for the flora, including notes on species of which accounts are not at present in preparation, and corrections or additions to accounts already published.

### REVISED SCHEDULE FOR CONTRIBUTORS

The roman figures, italic letters and italicized titles given in this schedule should also appear as section headings in the published accounts. Sections may consist of one or more paragraphs according to the amount of relevant information available. Where there is no information on any point specifically mentioned in the schedule, the fact should be stated.

Accounts should in general *not exceed 4000 words of text, including tables (6 pages of the Journal) with a further allowance of 2 pages for maps, drawings and diagrams.* For a limited number of species, at the editors' discretion, the space allowance may be increased to a maximum of 12 pages of text and 4 of diagrams, etc.; before preparing their MSS. contributors should ascertain from the editors in which category the species they are concerned with belong. For British vascular plants nomenclature should follow the "Check-list of British vascular plants" (*J. Ecol.*, 33, 1946, pp. 308-47). For bryophytes referred to in the text nomenclature should follow the *Census Catalogue of British Mosses* (2nd ed., 1926) and the *Census Catalogue of British Hepatics* (3rd ed., 1930). "Authorities" for names of British plants other than fungi need not be quoted, but should be given for fungi and all non-British plants and for the names of animals. References should follow the memorandum on "References in the Biological Flora" (*J. Ecol.*, 32, 1944, pp. 116-17). On the map the types of shading desired, and the limits of the distribution in the inset map of Europe should be marked *in pencil*; suitable mechanical tints will be applied by the printers.

### SCHEDULE

Name. The name of the species should be followed by the number according to the *London Catalogue of British Plants* (11th ed., 1925), and if necessary by not more than one or two of the most important synonyms.

Taxonomic description. Subgenus or section to which species belongs. Variability, including mention of subspecies, varieties, ecotypes, forms, etc., known to be British (see "Memorandum on Nomenclature and Taxonomy in the Biological Flora," *J. Ecol.*, 31, 1943, pp. 93-6). A brief statement of the status (native, naturalized, etc.) of the species, and of its habitat or habitats.

I. *Geographical and altitudinal distribution.* Distribution\* and abundance in the British Isles. Extra-British distribution. Altitudinal limits in Britain and abroad.

II. *Habitat.* (a) *Climatic and topographical limitations.* Climatic (including micro-climatic) limitations and preferences with regard to temperature, rainfall, atmospheric humidity, exposure to wind, etc. Light intensity and its seasonal variation in relation to the life history and distribution of the species. Topographical limitations and preferences (restriction to north- or south-facing slopes, open or shaded habitats, etc.). Tidal range, etc., for maritime species.

(b) *Substratum.* Parent material. Appearance of soil profile. Height and seasonal variation of the water table. Abundance of worms and other burrowing animals. Rate of decay and incorporation of humus. Appearance and texture of raw humus or peat, if present. pH at different depths, stating how determined: the depths should be selected in relation to the layers of the soil profile and the rooting depth of the characteristic plants. Humus content or "loss on ignition." CaCO<sub>3</sub> content. Other chemical analyses (potassium, phosphate, total nitrogen, nitrate nitrogen, salinity, etc.). Mechanical analyses.

Where a species occupies a great variety of habitats it may be impossible to give precise information under all the above headings, but some indication of ranges and of the characteristics of the most frequent habitats may be valuable.

III. *Communities.* Communities in which the species occurs with its frequency in each and with lists of closely associated species.

Complete lists with frequency symbols should be given if possible, but lists only of the chief associated species, and especially of the dominants, will be adequate. The most useful form in which to give this information is a table with the names of associated species in the left-hand column, the remaining columns showing the frequencies in the various localities named at the heads of the columns. These frequencies may be indicated by the conventional symbols or by figures representing the percentage occurrence of the associated species in a stated number of quadrats (e.g. of 1 sq.m. for herbaceous plants), all of which include the species in question. It is important that any one list should

\*Contributors who wish to consult the most recent vice-comital records should send their data of vice-comital distribution (with a stamped and addressed envelope) to Mr A. J. Wilmott, 17 Melrose Road, Merton Park, London, S.W.19, asking him to check them against his annotated copy of Druce's *Comital Flora*.

refer only to one kind of habitat and to restricted areas including the species in question. Lists should include characteristic species of other groups than flowering plants, if possible.

IV. *Response to biotic factors.* Effect of felling, burning, coppicing, mowing, peat-cutting, grazing, rabbit-nibbling, trampling, manuring, ploughing, etc.

V. (a) *Gregariousness.* Solitary plants, large patches, small patches, etc.

(b) *Performance in various habitats.* Average height; whether flowering freely, poorly, not at all; whether setting seed, etc.

(c) *Effect of frost, drought, etc.* Sensitivity to exceptional weather conditions.

VI. (a) *Morphology.* Form, depth, direction of growth and length of underground stems and functional roots. Other morphological data only if of special ecological importance.

(b) *Mycorrhiza.* Presence or absence of mycorrhiza and its type if present.

(c) *Perennation; reproduction.* Raunkiaer life-form. Mode of perennation and general description of winter conditions. Mode and rate of vegetative reproduction and spread. Longevity of the individual plant. Age of plant at first flowering. Does the plant set seed (or produce seedlings) every year, or at what interval?

(d) *Chromosome number.* State the authority and the source (British or foreign) of the material examined.

(e) *Physiological data.* Transpiration rates, osmotic values, etc., where relevant.

VII. *Phenology.* Times of maximal growth of roots and other underground organs; of appearance of new leafy shoots; of flowering; of maturation and shedding of seeds; of germination of seeds.

VIII. (a) *Floral biology.* Mode of pollination of flowers. Insect visitors to flowers and their behaviour. Are the flowers self-compatible? Are cleistogamic flowers produced, and, if so, when? Is reproduction amphic- or apomictic? Does vivipary occur?

(b) *Hybrids.* Existence and frequency of natural hybrids. By what criteria are the hybrids recognized as such? To what extent do the hybrids show a diminished fertility as compared with the parents? Do they show any differences in ecological behaviour?

(c) *Seed production and dispersal.* Average numbers of seeds per fruit and per plant. Mode of seed dispersal and special features, if any, e.g. seeds tend to stick together.

(d) *Viability of seeds; germination.* Viability of seeds under different conditions (state how determined). Place of germination under natural conditions. Special conditions affecting germination, e.g. sensitivity to light, necessity for preliminary freezing, etc. Conditions for successful establishment of seedlings.

(e) *Seedling morphology.* Short description and sketch of young seedlings.

(f) *Effective reproduction.* Relative importance of reproduction by seed and by vegetative means.

IX. (a) *Animal feeders or parasites.* Insects or other animals feeding on the plant, and the part or parts eaten by them.

(b) *Plant parasites.* Fungi or other plants of which the species is a host, and the parts attacked by them.

(c) *Diseases.* Descriptions of the symptoms and the names of causal organisms, if any, of diseases causing serious damage. Assess as far as possible the importance of the damage done by the diseases. Does the incidence of the disease vary with habitat and season?

Contributors should, as early as possible, send provisional lists of insects and fungi, with stamped and addressed envelopes, to Dr O. W. Richards (Imperial College Field Station, London Road, Slough, Bucks.) and Dr Alex. Smith (Plant Pathologist Laboratory, Ministry of Agriculture and Fisheries, Milton Road, Harpenden, Herts.) respectively, who have kindly consented to assist contributors with references to these groups.

#### NOTE ON REFERENCES TO INSECTS (O. W. RICHARDS)

The lists of insects will in general be restricted to those closely associated with a single genus or species of plant, but may include some which feed on two or more allied genera of plants, or on a few genera living in the same habitat. Insects for which the records do not state the individual species of plants will be listed only in the accounts of genera.

Sometimes insects with polyphagous feeding habits may actually be more common on a plant than the restricted feeders, but a list of general feeders would be extremely long and very difficult to make complete. Where a general feeder is actually known to be a serious check to a plant, the record will be included.

Only British insects will be listed, but they will include some whose feeding habits may have been observed only on the Continent. Records will be given of the British distribution, in a very condensed form, where there is reason to think the information reliable. Absence of records often means that an insect has not been collected rather than that it is not present. The very imperfect state of the records of insect feeding habits and distribution must be stressed.

Lists will be given of the larger works from which the records have been taken, and the experts who have been consulted.

X. *History.* A brief account of the history of the species as a member of the British flora, with notes on fossil records, dates of introduction of denizens and aliens, etc.

#### ACCOUNTS PUBLISHED OR IN PREPARATION

The parts already published are:

*Juncus* L., by P. W. Richards and A. R. Clapham. *J. Ecol.*, 29, no. 2.  
*J. inflexus* L., by P. W. Richards and A. R. Clapham. *J. Ecol.*, 29, no. 2.

- J. effusus* L., by P. W. Richards and A. R. Clapham. *J. Ecol.*, 29, no. 2.  
*J. conglomeratus* L., by P. W. Richards and A. R. Clapham. *J. Ecol.*, 29, no. 2.  
*J. subnodulosus* Schrank, by P. W. Richards and A. R. Clapham. *J. Ecol.*, 29, no. 2.  
 \**Zostera* L., *Z. marina* L. and *Z. hornemanniana* Tutin, by T. G. Tutin. *J. Ecol.*, 30, no. 1.  
*Cladium mariscus* R. Br., by V. M. Conway. *J. Ecol.*, 30, no. 1.  
*Aster tripolium* L., by A. R. Clapham, W. H. Pearsall and P. W. Richards. *J. Ecol.*, 30, no. 2.  
*Juncus filiformis* L., by P. W. Richards. *J. Ecol.*, 31, no. 1.  
*J. macer* Gray, by P. W. Richards. *J. Ecol.*, 31, no. 1.  
 \**Rhamnus cathartica* L. and *Frangula alnus* Mill., by H. Godwin. *J. Ecol.*, 31, no. 1.  
*Tamus communis* L., by I. H. Burkill. *J. Ecol.*, 32, no. 1.  
*Acer campestre* L. and *A. pseudo-platanus* L., with a note on *A. platanoides* L., by E. W. Jones. *J. Ecol.*, 32, no. 2.  
 \**Polygonum* L. em Gaertn., *P. persicaria* L., *P. lapathifolium* L. and *P. petecticale* (Stokes) Druce, by N. W. Simmonds. *J. Ecol.*, 33, no. 1.  
*Gentiana pneumonanthe* L., by N. W. Simmonds. *J. Ecol.*, 33, no. 2.  
*Allium vineale* L., by R. H. Richens, *J. Ecol.*, 34, No. 1.  
 \**Glyceria maxima* (Hartm.) Holmb., by Dr J. M. Lambert, *J. Ecol.*, 34, No. 2.  
*Atropa bella-donna* L., by R. W. Butcher, *J. Ecol.*, 34, No. 2.

These may be obtained from the Cambridge University Press, 200 Euston Road, N.W.1, at 1s each; those marked with an asterisk are sold as double parts, 2s. Standing orders for all parts issued may be placed at the reduced price of 9d each, double parts 1s 6d.

The following are being prepared:

- Aconitum anglicum* Stapf, H. A. Hyde, National Museum of Wales, Cardiff.  
*Adoxa moschatellina* L., Prof. M. Skene, The University, Bristol.  
*Alchemilla vulgaris* agg., *A. alpina* L., and *A. conjuncta* Bab., S. M. Walters, Botany School, Cambridge.  
*Allium ursinum* L., Prof. T. G. Tutin, University College, Leicester.  
*Anagallis arvensis* L. and *A. foemina* Mill., J. L. Crosby, Department of Botany, The University, Durham.  
*Andromeda polifolia* L., Prof. W. H. Pearsall, F.R.S., Department of Botany, University College, Gower Street, W.C.1.  
*Anemone nemorosa* L., A. C. Crundwell, Loadhams, Farnham, Surrey.  
*Arenaria verna* L., Dr K. Blackburn, King's College, Newcastle-on-Tyne.  
*A. norvegica* Gunn., Dr W. A. Clark, King's College, Newcastle-upon-Tyne.  
*Arum maculatum* L., F. A. Sowter, 9 North Avenue, Leicester.  
*Asperula odorata* L., Prof. A. R. Clapham, Department of Botany, The University, Sheffield.

- Blackstonia perfoliata* (L.) Huds., Dr B. Colson, University Department of Botany, Reading.
- Carex acutiformis* Ehrh., *C. bigelowii* Torr., *C. curta* Good., *C. disticha* Huds., *C. riparia* Curt., and *C. saxatilis* L., E. Vernon Watson, University Department of Botany, Reading.
- Carlina vulgaris* L., *Cirsium palustre* (L.) Scop. and *C. vulgare* (Savi) Ten. (*C. lanceolatum* (L.) Scop.), Dr W. A. Sledge, University Department of Botany, Leeds, 2.
- Clematis vitalba* L., O. Polunin, Charterhouse, Godalming.
- Colchicum autumnale* L., Dr R. W. Butcher, Culford House, Ewe Lamb Lane, Bramcote, Notts.
- Corallorrhiza trifida* Châtel., Prof. J. R. Matthews and Dr Downie, University Department of Botany, Old Aberdeen.
- Cornus sanguinea* L., J. W. Wilson, Department of Botany, Oxford.
- Cuscuta europaea* L., Bernard Verdcourt, 86 Claremont Road, Luton, Beds.
- Danaea cornubiensis* (L.) Burnat, Dr G. Pethybridge, Penlee, Harleigh Road, Bodmin.
- Daphne laureola* L., Dr P. W. Richards, The Botany School, Cambridge.
- Elymus arenarius* L., T. E. T. Bond, Tea Research Institute, Ceylon.
- Epilobium nummulariifolium* R. Cunn., Miss A. J. Davey, Department of Botany, Memorial Buildings, Bangor.
- Eriocaulon septangulare* With., Dr Leighton Hare, Jodrell Laboratory, Royal Botanic Gardens, Kew.
- Galium debile* Desv., *G. palustre* L. and *G. uliginosum* L., A. C. Crundwell, Department of Botany, Oxford.
- G. erectum* Huds. and *G. mollugo* L., Miss M. Priestley, c/o The Botany School, Cambridge.
- Glaux maritima* L., Miss C. M. Gibson, Municipal College, Portsmouth.
- Glyceria declinata* Bréb., *G. plicata* Fr. and *G. fluitans* (L.) R. Br., Dr J. M. Lambert, Westfield College, Hampstead, N.W.3.
- Goodyera repens* R. Br., Prof. J. R. Matthews and Dr Downie, University Department of Botany, Old Aberdeen.
- Helictotrichon (Avena) pratense* (L.) Pilger and *H. pubescens* (Huds.) Pilger, Dr G. Carson, School of Agriculture, Cambridge.
- Juncus articulatus* L., em. Wahlenb. and *J. acutiflorus* Ehrh. ex Hoffm., Prof. A. R. Clapham, Department of Botany, The University, Sheffield.
- J. squarrosus* L., Prof. W. H. Pearsall, F.R.S., University College, Gower Street, London, W.C.1.
- J. triglumis* L., Dr W. A. Clark, King's College, Newcastle-on-Tyne.
- Juniperus communis* L., Prof. T. G. Tutin, University College, Leicester.
- Leontodon leysseri* (Wallr.) Beck (*Thrinicia hirta* Roth) and *L. hispidus* L., Dr K. Blackburn, King's College, Newcastle-on-Tyne.
- Leucojum aestivum* L., Dr F. B. Hora, University Department of Botany, Reading.

- Limosella aquatica* L., Dr F. W. Jane and Miss R. Dowling, Department of Botany, University College, Gower Street, London, W.C.1.
- L. subulata* Ives, Dr K. Blackburn, King's College, Newcastle-on-Tyne.
- Listera cordata* (L.) R. Br., Prof. J. R. Matthews, University Department of Botany, Old Aberdeen.
- Lloydia serotina* (L.) Reichb. and *Lobelia dortmanna* L., Dr N. Woodhead, University Department of Botany, Bangor, North Wales.
- Luzula forsteri* (Sm.) DC. and *L. pilosa* (L.) Willd., Prof. T. Harris, University Department of Botany, Reading.
- L. sylvatica* (Huds.) Gaud., Miss E. M. Leyland, 25 Devon Street, Barrow-in-Furness, Lancs.
- Melandrium dioicum* (L.) Coss. & Germ. and *M. album* (Mill.) Garcke, H. G. Baker, University Department of Botany, Leeds, 2.
- Myosotis arvensis* (L.) Hill, *M. collina* Hoffm. and *M. versicolor* Sm., A. E. Wade, National Museum of Wales, Cardiff.
- Myrica gale* L., Miss A. J. Davey, Department of Botany, Memorial Buildings, Bangor.
- Najas flexilis* Rostkov, Prof. J. W. Heslop Harrison, F.R.S., King's College, Newcastle-on-Tyne.
- Narcissus pseudo-narcissus* L., Dr J. Caldwell, University College, Exeter.
- Nardus stricta* L., R. Elfyn Hughes, Department of Agricultural Botany, Bangor.
- Narthecium ossifragum* (L.) Huds., Dr Mollison, University Department of Botany, Old Aberdeen.
- Nasturtium officinale* R. Br., agg., H. W. Howard, School of Agriculture, Cambridge.
- Obione portulacoides* (L.) Moq., and *O. pedunculata* (L.) Moq., Prof. V. J. Chapman, c/o Botany School, Cambridge.
- Ophrys arachnites* Hoffm., Francis Rose, The Forge House, East Malling, Kent.
- Orchis fuchsii* Druce, *O. elodes* Gris., *O. latifolia* L. sec. Pugsl. (*O. incarnata* auct. angl.) and *O. purpurella* Stephenson, Prof. J. W. Heslop Harrison, F.R.S., King's College, Newcastle-on-Tyne.
- O. purpurea* Huds., Francis Rose, The Forge House, East Malling, Kent.
- Oxalis acetosella* L., Miss Ethel Bolton, King's College, Newcastle-on-Tyne.
- Potamogeton coloratus* Hornem., *P. filiformis* Pers. and *P. pectinatus* L., Prof. J. W. Heslop Harrison, F.R.S., King's College, Newcastle-on-Tyne.
- P. gramineus* L. and *P. rutilus* Wolfg., Dr W. A. Clark, King's College, Newcastle-on-Tyne.
- Quercus robur* L. and *Q. petraea* (Mattuschka) Liebl., Dr E. W. Jones, Imperial Institute of Forestry, Oxford.
- Ranunculus aquatilis* L., agg., Dr R. W. Butcher, Culford House, Ewe Lamb Lane, Bramcote, Notts.



- Rhynchospora alba* (L.) Vahl and *R. fusca* (L.) Ait. f., Miss E. Canton, Department of Biology, Technical College, Sunderland.
- Rosa* spp. (excl. *R. arvensis*, *micrantha* and *tomentosa*), Prof. J. W. Heslop Harrison, F.R.S., King's College, Newcastle-on-Tyne.
- Rumex* spp., J. E. Lousley, 7 Penistone Road, Streatham Common, S.W.16.
- Scilla non-scripta* (L.) Hoffmanns. & Link, Dr G. E. Blackman, Imperial College of Science, London, S.W.7.
- Sedum acre* L., Dr B. Barnes, Department of Biology, Chelsea Polytechnic, London, S.W.3.
- Sinapis arvensis* L., G. E. Fogg, Department of Botany, University College, Gower Street, W.C.1.
- Sonchus asper* (L.) Hill and *S. oleraceus* L., emend. Hill, R. A. Lewin, c/o The Botany School, Cambridge.
- S. palustris* L., Francis Rose, The Forge House, East Malling, Kent.
- Spiranthes stricta* Nels., Prof. J. W. Heslop Harrison, F.R.S., King's College, Newcastle-on-Tyne.
- Stellaria nemorum* L., Dr K. Blackburn, King's College, Newcastle-on-Tyne.
- Subularia aquatica* L., Dr N. Woodhead, Department of Botany, Bangor.
- Suaeda fruticosa* (L.) Forsk. and *S. maritima* (L.) Dum., Prof. V. J. Chapman, c/o Botany School, Cambridge.
- Thlaspi alpestre* L., Dr K. Blackburn, King's College, Newcastle-on-Tyne.
- Tilia cordata* Mill. and *T. platyphyllos* Scop., H. A. Hyde, National Museum of Wales, Cardiff.
- Trientalis europaeus* L., Prof. J. R. Matthews, University Department of Botany, Old Aberdeen.
- Ulmus* spp., Dr R. Melville, The Herbarium, Royal Botanic Gardens, Kew.
- Urtica* spp., P. Greig-Smith, Department of Botany, The University, Manchester.
- Vaccinium vitis-idaea* L., P. A. Tallentire, 14 Hulme Hall Avenue, Cheadle Hulme, Cheshire.
- Valeriana officinalis* L. and *V. sambucifolia* Mikan, J. Carpenter, Department of Botany, King's College, Strand, W.O.2.
- Veronica anagallis-aquatica* L., *V. aquatica* Bernh. and *V. beccabunga* L., J. H. Burnett, Department of Botany, Oxford.
- Viburnum lantana* L. and *V. opulus* L., Dr H. Godwin, The Botany School, Cambridge.
- Viola lutea* Huds. and *V. tricolor* L., Dr P. E. Fothergill, King's College, Newcastle-on-Tyne.
- Wahlenbergia hederacea* Reichb., Francis Rose, The Forge House, East Malling, Kent.

[The arrangement and nomenclature of the above lists are as in the British Ecological Society's schedule published in the *Journal of Ecology*. See also Check List of British Vascular Plants, *Journal of Ecology*, 33, 308-347, 1946.]

The assistance of members of the Society will be greatly welcomed by the authors who are preparing these accounts. Information should be sent direct to the addresses given above. Anyone wishing to write an account singly or in collaboration should communicate with one of the members of the Committee or with the Hon. Secretary of the Society.

Accounts ready for publication should be sent to Dr P. W. Richards, Botany School, Cambridge.

## PERSONALIA

The Botanical Society of the British Isles is represented at meetings as follows:—Association of School Natural History Societies—Dr J. G. Dony. British Association for the Advancement of Science—Mr A. H. G. Alston. Phenological Executive Committee of the Royal Meteorological Society—Mr E. Nelmes. Wild Plant Conservation Board—Mr A. J. Wilmott.

## BRITISH WILD FLOWER SEED EXCHANGE

Mr B. T. Lowne has restarted the British Wild Flower Seed Exchange in connection with the South Eastern Union of Scientific Societies.

A printed list of seeds available can be obtained from Mr Lowne and seeds gathered should be sent to him in the autumn.

## PERTSHIRE, v.-cs. 87, 88, 89

The Hon. General Secretary invites any members who may be visiting Perthshire, particularly the Ben Lawers district, during the summer and autumn (1949) to get in touch with her either before or during their visit, as she expects to be at home (near Aberfeldy) from time to time. Correspondence should be addressed to the official address (c/o Dept. of Botany, British Museum (Natural History), Cromwell Road, London, S.W.7, but those unable to write beforehand are welcome to telephone: KENMORE 244.

## FLORA OF THE OUTER HEBRIDES, v.-c. 110

Miss M. S. Campbell wishes to remind members that she has resumed work on the Flora of the Outer Hebrides and is anxious to get in touch with anyone planning to visit any of the Outer Isles during 1948-9. She would also be glad to receive any notes of botanical interest.

## CERASTIUM

Dr Wilhelm Möschl of Bruck/Mur, Steiermark, Österreich-Englische Zone, requests specimens or seeds of the following species of *Cerastium*:

<i>C. campanulatum</i> Viv.	<i>C. ramosissimum</i> Boiss.
<i>C. carpetanum</i> Lomax	<i>C. Schmalhauseni</i> Paczoski
<i>C. glutinosum</i> Fries	<i>C. semidecandrum</i> L.
<i>C. gracile</i> Dufour	<i>C. siculum</i> Guss.
<i>C. litigiosum</i> De Lens	<i>C. simplex</i> Sennen & Pau
<i>C. pentandrum</i> L.	<i>C. subtetrandrum</i> Murb.
<i>C. pumilum</i> Curt.	<i>C. tetrandrum</i> Curt.

A key to these species is given by Dr Möschl in Fedde, *Rep. Sp. Nov.*, xli, 153 (1936).

## AGRIMONIA

Mr N. H. Brittan, B.Sc., Dept. of Botany, King's College, Newcastle-on-Tyne, 1, is studying the British species. Specimens of *A. Eupatoria* L., *A. Eupatoria* L. var. *sepium* Bréb and of *A. odorata* (Gouan) Mill. will be gratefully received together with information concerning localities where any two of the three plants grow together.

## VERONICA

Mr J. H. Burnett, c/o Dept. of Botany, The University, Oxford, is studying the British species with an aquatic habitat. He would value information on the distribution of *V. scutellata* L., *V. Beccabunga* L., *V. Anagallis-aquatica* L. and *V. aquatica* Bernh. in the British Isles. The loan of herbarium material for critical examination, and fresh material would be welcome.

## POPULUS

P. G. Beak is working on Poplars and would be glad to receive carefully collected dried specimens of any, *cultivated or wild*, but especially of the Black Poplars (Sect. *Aigeiros*) and their hybrids. Material from suckers, epicormics or abnormal branchlets of any kind is useless (unless correlated with normal material from the same tree). Wherever possible, at least two collections should be made from each tree: (a) flowers or fruits; (b) leaf material of long and short shoots from normal older branches of adult trees, preferably collected not earlier than August.

Notes on habit (angle and type of branching; shape of crown), bark, incidence of disease (especially canker), dates of flowering and foliation (leaves beginning to unfold), and colour of branchlets, petioles and blades, flower parts, etc., are particularly desired and would be much appreciated. Specimens should be sent to: P. G. Beak, 10 Montague Road, Botley, Oxford.

## EXCHANGE SECTION

The Council are pleased to announce that Mr A. E. Wade has kindly undertaken to act as Distributor for the 1948 season. New Regulations have recently been drawn up and copies are available on application to the Hon. General Secretary.

As there is now no separate Exchange membership, all those who wish to take part in the Annual Exchange are asked to notify the Hon. General Secretary so that the Society's records may be brought up to date.

An application for exchange of specimens has been received from the National Museum of Prague as the flora of the British Isles is "little represented." Would any members who would like to exchange British material for foreign, please inform the Hon. General Secretary?

**THE WEATHER OF 1946 AND ITS EFFECTS**

(Adapted by permission from the Report on the Phenological Observations in the British Isles, 1945-6, by Major H. C. Gunton, M.B.E., F.R.E.S.)

The mild spell at the end of 1945 resulted in the early flowering of *Helleborus niger*, and the extreme mildness of mid-January 1946 in the south quickly brought the Hazel into flower. Following this, the cold weather of February and the first half of March effected a slowing down of plant development. Then came the exceptional warmth of late March and of most of April, which had a marked effect on vegetation, causing many spring plants, such as *Anemone nemorosa*, to come into flower three to four weeks before their average dates. The persistent coolness of May and June not only checked the forwardness of the spring flora, but brought about a gradual change to average or even late conditions in the south. May was warm and very sunny in the north, where June also behaved better than it did in the south. Although the warm spell early in July caused some recovery in the dates of flowering, there was a definite falling off later in the month, and the subsequent inclement conditions in August and September caused the plant season to end with considerable lateness.

E. N.

## NOMENCLATURE AND CORRECTIONS TO BRITISH PLANT LIST

By A. J. WILMOTT.

The following corrections are almost all necessitated by entries in other parts of this *Report*. The genera *Sorbus*, *Odontites*, and *Vulpia* have been accepted, but the necessary revisions of *Pyrus*, *Bartsia*, and *Festuca* are not yet ready for printing, and must follow later.

## 35 NASTURTIUM.

1 *officinale*

1 × 1(2) × *microphyllum*—*cf. Plant Notes*.

- 2 *microphyllum* (Boenn.) Rehb.—1832: *Fl. Germ. exc.*, 683; 1837: *Icon. Fl. Germ.*, 2, 15, t. L f. 4360 (“*planta e manu cl. auctaris*”), *N. officinale* [var.] *β. microphyllum* Boenn. 1824: *Prodr. Fl. Monast.*, 195. *N. uniseriatum* Howard & Manton, 1946—see *Plant Notes*.

## 39 CARDAMINE.

- 8 *latifolia* Vahl—see *Plant Notes*.

## 67 HUTCHINSIA.

- 1 *petraea* (L.) R. Br.—*Lepidium petraeum* L. 1753: *Sp. Pl.*, 644.

## 80 RAPHANUS.

1 *Raphanistrum*

- d. *hispidus* Lange—1866: *Pug. Pl. Hisp.*, IV; *Kjoeb. Vidensk. Meddel.*, 1865, 81 (reissue p. 276). Lange's use of the Latin word “*forma*” may not indicate that the epithet should not be regarded as of varietal rank. In 1880 (*Prodr. Fl. Hisp.*) we read “*Variat petalis luteis . . . Ex Hispania hucusque non pisi formam floribus albis . . . vidimus*,” and “*hispidus*” is again listed merely as “*β*”.

## 128 ERODIUM.

3 *cicutarium*

- f. *pimpinellifolium* (Sibth.) DC.—1824: *Prodr.*, 1, 646. *E. pimpinellifolium* Sibth., 1794: *Fl. Oxon.*, 211.

## 127 GERANIUM.

7 *pyrenaicum*

- b. *pallidum* (Druce) comb. nov.—see *Plant Records*. The intraspecific units in *B.P.L.* have so far been treated uniformly as *varieties*.

## 129(2) PELARGONIUM.

- 1 *Capitatum* Solander in Ait.—see *Plant Notes*.

152 **TRIGONELLA.**

- 1 **ornithopodioides** (L.) DC.—*Trifolium* [*M.*] *ornithopodioides* L., 1753: *Sp. Pl.*, 766.

153 **MEDICAGO.**6 **minima**

- f. **viscida** Koch—Native as well as alien, see *Plant Records*.

185 **RUBUS.**

- 16(2) **pullifolius** W. Watson—see paper following.

- 86(2) **Daltrii** Eedes & Rilstone—see *Plant Notes*.

189 **POTENTILLA.**

- 9 **erecta** (L.) Raeuschel—1797: *Nomenclator bot.*, ed. 3, 152; Hampe, 1837: *Linnaea*, 11, 50.

190 **ALCHEMILLA**—cf. Rothmaler, 1937: *Fedde Rep.*, 42, 164-169.

- 2 **xanthochlora** Rothmaler—1937: 167. *A. pratensis* auct. angl., haud *A. vulgaris* ["var."] "A." *pratensis* Schmidt, 1794: *Fl. Boëm. inch.*, *Cent.* 3, 88 ("folia supra pubescentia")

- 4 **vestita** (Bus.) Raunkiaer—1906: *Dansk Ekursionsfl.*, ed. 2, 145. *A. filicaulis* f. *vestita* Buser, 1893: *Bull. Herb. Boiss.*, 1, app. ii, 23. *A. minor* auct., haud Huds. *A. pseudominor* Wilmott (see *B.E.C. 1941-2 Rep.*, 517).

- 5 **monticola** Opiz ap Bercht. & Opiz—1838: *Ökon.-Techn. Fl. Böhmen*, 2 (1), 13; Rothmaler, 1937: 167. *O. pastoralis* Buser, 1891: *Notes sur quelques Alchem.*, 18.

- 8 **glabra** Neygenf.—1821: *Enchir. Bot. Siles*, 67; Rothmaler, 1937: 168. *A. alpestris* (Schmidt) Buser, 1893: in Magnier *Scrin.*, fasc., 12, 282. *A. vulgaris* ["var."] "A." *alpestris* Schmidt, 1794: *Fl. Boëm. inch.*, *Cent.* 3, 88.

194 **ROSA.**5 **stylosa**

- d. **systyla** (Bast.) Baker—1871: *Journ. Linn. Soc. Bot.*, 11, 239. *R. systyla* Bast., 1812: *Suppl. Fl. Maine-et-Loire*, 31.

7 **canina** (see 1943-44 *Rep.*, 662).

- m. **sylvularum** (Rip.) W.-Dod—1931: *Revis. Br. Ros.*, 36. *R. sylvularum* Rip. ap. Déségl., 1877: *Cat. Ros.*, 164. *R. vulgaris* [spp. *canina*] var. *sylvularum* (Rip.) Rouy in Rouy & Camus, 1900: *Fl. Fr.*, 6, 302.

195 × 196 × **CRATAE-MESPILUS** E. G. Camus, 1899: *Journ. de Bot.*, 13, 326.

- 1 **grandiflora** (Sm.) Camus—1899: *loc. cit.* *Mespilus grandiflora* Sm., 1804: *Exot. Bot.*, 1, 33, t. 18. × *Crataego-mespilus grandiflora* (Sm.) Bean; see *Plant Notes*.

+*Crataego-mespilus* Simon [1899?]: *Prix-courant pour la Saison 1899-1900 des Arbres . . .*, 41, [with description] is the correct name for graft-hybrids between Hawthorn and Medlar, but is not correct for the natural hybrids. If Simon's catalogue of plants for sale was unpublished—there is no indication of price on it—the authority for the name is Simon ex Bellair, 1899: *Rév. Horticole*, 71, 482. As the Medlar is so rare as a native plant it seems doubtful if the records of the hybrid refer to plants of native origin, but it is possible that the Medlar parent was in a garden and the Hawthorn wild; further evidence on this point would be welcome.

196 **CRATAEGUS.**1 **monogyna**

1. *xanthocarpa* Lange—see *Plant Notes*.

199 **SAXIFRAGA.**27(2) *Cymbalaria* L.—

- b. *Huctiana* (Boiss.) Engl. & Irm.—1916: *Pflanzenreich*, 4 (117), pt. 1, 203. See *Plant Notes*.

216 **MYRIOPHYLLUM.**

- 5 *verrucosum* Lindb.—see *Distributor's Report*. A paper on this will appear in *Watsonia*.

274 **ANGELICA.**1 **sylvestris**

- a. *vulgaris* Fisch., Meyer, & Avé-Lallemant—1842: *Index novus Sem. Hort. Petrop.*, 59.  
b. *decurrens* Fisch., Meyer, & Avé Lallemant—1842, l.c.

287 **SAMBUCUS.**

- 4 *canadensis* L.—1753: *Sp. Pl.*, 269.

288 **VIBURNUM**1 **Opulus**

- b. *xanthocarpum* Spaeth—[1913]: [“*Cat.*”] 1912-13, 137; Rehder, 1927: *Man. Cult. Trees and Shrubs*, 810; Bailey, 1939: *Stand. Cycl. Hort.*, 3463; [Endl., 1842: *Cat. Hort. Acad. Vindob.*, 1, 460, *nomen solum*]. V. *Opulus* var. *flavum* Horwood, 1933: *Fl. Leic. and Rutland*, 375—correction noted by N. Y. SANDWICH, see *Plant Notes*. Spaeth's triverbal name is that of a variety, as on p. 69 he has “*Verschiedene Rosenarten, Abarten und Bastarde,*” and it is only the triverbal names such as R. “*lucida alba*” that can correspond to his “*Abarten.*”



324 **FILAGO.**5 **minima**

- b. **supina** (DC.) Rouy—1903: *Fl. France*, 8, 176; collaboration with Camus ended at p. 130, see p. v. *Gnaphalium montanum* (var.) *β supina* DC., 1805: *Fl. France*, 136. From J. P. M. BRENNAN.

347 **HELIANTHUS.**

- [10 *lenticularis* Dougl. "is a synonym of *H. annuus* and should be deleted"—from J. E. LOUSLEY.]

378 **ARTEMISIA.**

- 21 *Verlotorum* Lamotte—1877: *Assoc. franç. Avanc. Sci.* (Clermont Ferrand, 1876), 511; *Fl. Plat. Centre Fr.*, 400. See *Plant Records*; an account of this species will be given later.

396 **CIRSIUM.**

- 3 **helenioides** (L.) Hill. For those who unite *C. helenioides* (L.) Hill and *C. heterophyllum* (L.) Hill, the citation of varieties is:—

- a. **integrifolium** (Gaud.) comb. nov.—*C. heterophyllum* var. *integrifolium* Gaud., 1836: *Syn. Fl. Helvet*, 715 [edited posthumously by Monnier].  
 b. **legitimum** (Gaud.) Sledge—in *Distributor's Report*. *C. heterophyllum* var. *legitimum* Gaud., 1836: *loc. cit.*

- 4 **acaulis** (L.) Scop.—*Carduus acaulos* L., 1755: *Fl. Suec.*, 281 (nr. 722). *Cnicus acaulis* L., 1763: *Sp. Pl.*, ed. 2, 1156.—It seems questionable whether or no "acaulos" should be treated as a typographic error, as Linnaeus uses "acaulis" in his definition in all his works. The variant "acaulos" is from "Carlina acaulos, minore purpureo flore. *Bauh. pin.*, 380," cited by Linnaeus in 1755, but it would appear that Linnaeus regarded it as an orthographic (or even possibly typographic) error. It may be conjectured that Linnaeus added the specific epithets after writing his accounts of his species, and here used the variant he had written last. In his other references he uses "acaulis."

405 **GENTAUREA.**

- 39 *moschata* L.—1753: *Sp. Pl.*, 909 (without initial capital).

422 **LEONTODON.**1 **hispidus**

- × **Leysseri**—see *Plant Notes*.

3 **Leysseri**

- b. **lasiolaena** (Bisch.) comb. nov. ?

**425 LACTUCA.**

- 8 *macrophylla* (Willd.) DC.—1837: *Prodr.*, 7, 248 (as to name only); Torrey & Gray., 1843: *Fl. N. Amer.*, 2, 499. *Sonchus macrophyllus* Willd., 1804: *Sp. Pl.*, 3, 1519.

**435 CAMPANULA.**

- 13 *alliarifolia* ("alliariaefolia") Willd.—see *Plant Notes*.

**511 CALYSTEGIA.**1 *sepium* (L.) R. Br.

- b. *americana* (Sims) Hylander—1941: *Bot. Not.*, 128. *Conv. sepium* var. *Americanus* Sims, 1804: *Bot. Mag.* 19, t. 732. *Conv. sepium* var. *incarnatus* Sweet, 1830: *Hort. brit.*, ed. 2, 370, sec. Tryon, 1939: *Rhodora*, 41. *Calystegia sepium* var. *rosea* Choisy in DC., 1845: *Prodr.*, 9, 433,—“nom illeg. (ob. cit. *Bot. Mag.*, t. 732)”. *Conv. sepium* var. *coloratus* J. Lange, 1864: *Haandb. danske Fl.*, ed. 3, 176. Hylander thinks it probable that in Europe this is nothing but an escape.
- 2 *sylvestris* (Willd.) R. & S.—see *Plant Notes*. *Convolvulus inflatus* Desf., 1804: *Tabl. Ecole Bot.* [noms des plantes cultivées dans le jardin et dans . . . Muséum d'Histoire naturelle], 74, *nomen nudum*. “*Hort. Paris*” ex Poiret, 1813-1814: *Encycl. Meth.* (Lamarck), *Botanique, Suppl.*, 3, 460, “ne me paroît être qu'une variété due *convolvulus sepium*, remarquable par son calice plus renflé; il croit dans l'Amérique septentrionale.” If this is regarded as adequate description, the name will be *Calystegia inflata* (Desf.) comb. nov., but no type could be found in Herb. Paris [Herbb. Lamarck or Desfontaines] for me to examine [Feb. 1947], and in view of the habitat indicated it is best left at present as *nomen dubium*.

**532 LINARIA.**

- 2 *purpurea* [for var. *rosea* see *Plant Notes*].

**543 VERONICA.**

- 18 *persica*—see Drabble & Little, 1931: *Journ. Bot.*, 69, 203-204.
- a. *Aschersoniana* (Lehm.) Drabble & Little—1931: 204. *V. Tournefortii* subsp. *Aschersoniana* Lehm., 1909: [*Zeits. indukt. Abst.*, 2, 167, *nomen nudum*]; *O.B.Z.*, 59, 249-256.
- b. *Corrensiana* (Lehm.) Drabble & Little—1931: 204. *V. Tournefortii* subsp. *Corrensiana* Lehm., 1909: *loc. cit.*
- c. *Kochiana* (Godr.) Drabble & Little—1931: 204. *V. Burbaumii* var. *Kochiana* Godr., 1843: *Fl. Lorr.*, 2, 164.

**545 EUPHRASIA.**18 *confusa*

- f. *albida* (Pugs.) comb. nov.—*E. confusa* forma *albida* Pugs., 1930: *J. Linn. Soc. Bot.*, 48, 511.

558 **MENTHA.**

5 *crispa* L.—1753: *Sp. Pl.*, 576; delete ( ).

596 **AMARANTHUS**—*vice* *Amarantus*, see Sprague, 1928: *Kew Bull.*, 287-288.

9(2) *blitoides* S. Wats.—see *Plant Notes*.

9(3) *acutifolius* Uline & Bray—see *Plant Notes*.

600 **CHENOPODIUM.**

26 *carinatum*

b. *holopterum* (Thell.) Asch.—see *Plant Notes* in note on the following.

26(2) *pumilio* R. Br.—see *Plant Notes*.

615 **POLYGONUM.**

15(2) *microspermum* Jord. ex Boreau—1857: *Fl. Centr. Fr.*, ed. 3, 2, 560. An account of this will be given later.

36 *pensylvanicum* L.—1753: *Sp. Pl.*, 359.

b. *laevigatum* Fernald—see *Plant Notes*, and *Distributor's Report* for 1946.

618 **RUMEX.**

2 *longifolius* DC.—see *Plant Notes*.

650 **SALIX.**

3 *alba*

c. *vitellina* Stokes—1812: *Bot. Mat. Med.*, 4, 506; Séringe, 1815: *Essai*, 83. The authority in *B.P.L.* is correct, but the later authority is often used.

10(2) *cinerea* L.—For differences between this and *S. atrocinnerea* Brot. see Guinier, 1911: *Bull. Soc. bot. Fr.*, 58, ix-xxi; and Bedford Excursion: An account of the differences from *S. atrocinnerea* Brot. will be given in *Watsonia*.

718 **JUNCUS.**

26 *pallidus* R. Br.—1810: *Prodr. Fl. Nov. Holl.*, 258. (Australasia). Confer Bedford Excursion; an account of these Australasian rushes is in preparation by Dr J. G. Dony.

745 **HELEOCHARIS.**

2 *uniglumis*

b. *Watsoni* (Bab.) Richter—1890: *Pl. Europ.*, 142. The reference given by Richter is erroneous.

**753 CAREX.**

17×23 × **Tornabeni** Chiov.—1927: *Ann. di Bot.*, 17, 83—see *Plant Notes*.

57×59 × **Kneuckeriana** Zahn—1890: *Oest. bot. Zeits.*, 40, 412 (“*nemorosa* × *remota*”)—*C. axillaris* Good., 1794: *Trans. Linn. Soc.*, 2, 151, t. 19, f. 1; non Linn., 1763: *Sp. Pl.*, ed. 2, 1382. ?*C. Crepini* [“*C. remota* × *vulpina*”] Torges, 1893: *Mitt. Thür. bot. Ver.*, N.F. 3/4, 62; see *B.E.C. 1938 Rep.*, 203-4 (1942).

**754 PANICUM**—[No native species].

2 *capillare*

b. *occidentale* Rydb.—see *Plant Notes*.

2(2) *dichotomiflorum* Mich.—see *Plant Notes*.

**794 AVENA.**

5(3) *byzantina* C. Koch—see *Plant Notes*.

**819 DACTYLIS.**

1 *glomerata*

a. *vulgaris* Schlechtendal—1823: *Fl. berol.*, 1, 69.

b. *collina* Schlechtendal—1823: *Fl. berol.*, 1, 69. Vice var. *abbreviata* (Bernh.) Drej., 1838: *Fl. exc. Hafn.*, 44 (“*abbreviata*”). *D. abbreviata* Bernh. ex Rchb., 1834: *Icon. Cent.* 11, 24, t. 1522; 1850: *Icon. Fl. Germ. (Agrostographia)*, ed. 2), 45, t. cxlvii (363).—Correction due to C. E. HUBBARD.

**820 DESMAZERIA.**

1 *marina* (L.) Druce—1912: *Scott. Bot. Review*, 1, 156. *Festuca marina* L., 1759: *Flora anglica*; *Amen. Acad.*, 4, 96. *Poa loliacea* Huds., 1762: *Fl. angl.*, 35—Correction due to C. E. HUBBARD.

**826 FESTUCA.**

18(2) *megalura* Nutt.—see *Plant Notes*.

**826 × 829 × FESTULOLIUM.** [Asch. & Graebn., 1902: *Syn. Mitteleur. Fl.*, 2 (1), 44, as synonym]; Fournier, 1928: *Fl. compl. Plaine Franc.*, 588.

4×1 *loliaceum* (Huds.) P. Fournier—1935: *Les Quatre Fl. France*, 81 [from the photographically reproduced ed. 2, 1946]. × *Festulolium adscendens* (Retz.) Fournier, *op. cit.*, 588; [Aschers. & Graebn., 1902: *Syn. Mitteleur. Fl.*, 2 (1), 768, as synonym]. *Festuca loliacea* Huds., 1762: *Fl. Angl.*, 38 [“Curtis, 1791, non Huds.” according to Aschers. & Graebn., *l.c.*].—delete entry under 826/4.

**827 BROMUS.**

- 17 **commutatus** Schrad.—1806: *Fl. Germ.*, 1, 353. *B. pratensis* Ehrh., 1791: *Beiträge*, 6, 84, *nomen nudum*; Ehrh. ex Hoffm., 1800: *Deutsch. Fl.*, ed. 2, 1, 53; non Lamarek, 1785: *Encycl.*, 1, 468 (see *Chron. Bot.*, 5, 439: 1939).
- c. **pubens** Wats.—1844: *Phytol.*, 1, 1062. *Vice* var. *pubescens* Wats., 1874: *Lond. Cat.*, ed. 7, 27, *nomen nudum*—corrections due to C. E. HUBBARD.
- 19(3) **Thominii** Hardouin—1833: *Congr. Sci. Franc.*, 1, (Caen), 59; (1848: *Cat. Pl. Calvados*, 310, under *B. mollis*)—delete 19 i.

**832 TRITICUM.**

- 3 **turgidum** L.—1753: *Sp. Pl.*, 86.
- b. **jodurum** (Alef.) Koern. & Wern., 1885: *Handb. Getr.*, 1, 58. *T. vulgare* ["var."] *jodura* Alef., 1866: *Landw. Fl.*, 326.
- 3(2) **compactum** Host—1809: *Gram. Austr.*, 4, 5, t. 7.
- b. **Humboldtii** (Koern.) Koern. & Wern., 1885: *Handb. Getr.*, 1, 52, t. I, f. 4. "*T. vulgare* [var.] 16, *Humboldtii* Koern., 1873: *Syst. Übers. landw. Cer. Poppelsd.*, 12".

**856 DRYOPTERIS.**

- 1(2) **Borreri** Newm.—1854: *Hist. Brit. Ferns*, ed. 3, 189, *vice* 1c —a cytological species.
- 1(3) **abbreviata** (DC.) C. Chr.—1905: *Index Filic.*, 250, or *comb. nov.*? *Polystichum abbreviatum* DC., 1805: *Fl. Fr.*, 2, 560. C. Christensen (1905) cites "Newm., 1851, app. XXI," but Newman there calls it "*Lophodium abbreviatum*" (DC.). The error is not corrected in either supplement to the *Index Filicum*. If for this reason the combination is regarded as invalidly published—for it is a book of references rather than a systematic work—the specific name appears to be *comb. nov.* Another cytological species.

**859 CETERACH.**1 **officinarium**

- b. **crenatum** Moore—1855: *Ferns Gt. Brit. and Ireland*, *Nature-printed* [folio edition], text to pl. XLIIIA; Milde, 1865 (as "var. *crenata* Milde"): *Die Höheren Sporenpflanzen Deutschl. u. Schw.*, 42.

## PLANT NOTES

(Including Systematic Abstracts)

[In the case of direct contributions the name of the author of the note is printed in small capitals. When the note is an abstract, the author's name is followed by the reference, either in full or by date referring to the Bibliography. The abstractor is indicated as under "Abstracts from Literature."

*Note to Contributors.* Will those sending in Plant Notes please keep to the form adopted in the recent Reports. If the note comes from a publication, and several notes are extracted from a single paper, first set down the "reference" in the same form as is adopted in the published "References" in the Reports, i.e., author's surname, comma, initials, semicolon, date of publication, colon, title of work (and, if from a serial publication) semicolon, followed by the name (abbreviated) of the serial, the volume, and pages (first and last). The Plant Note itself starts with the *B.P.L.* number and name of the genus or species concerned. If the note concerns one vice-county only, start the note with this information as is done with Plant Records. It would be a great convenience if all notes were prepared by different contributors on slips of the same size, that preferred being 8 inches by 5 inches, the long edge to be treated as the top of the page.—Ed.]

3/2. *ANEMONE NEMOROSA* L. DALLMAN, A. A. (1945; *N.W. Nat.*, 20, 273) gives notes on its altitudinal range.—[S.]

35/1(2). *Nasturtium uniseriatum* Howard & Manton. Howard, H. W., and Manton, I. (1946: Autopolyploid and Allopolyploid Watercress with the Description of a New Species. *Ann. Bot.*, n.s., 10, p. 1-14) have produced an autotetraploid from diploid watercress (*Nasturtium officinale* R. Br.) and have thus shown that the wild tetraploid watercress previously described by Manton is an allotetraploid. This latter plant for which the name *N. uniseriatum* is proposed is further shown to have derived half of its chromosomes from diploid *N. officinale*; the other half are suspected to have come from a species of *Cardamine*. Diagnoses of the new species and the other two wild forms of watercress are given as follows:—

*Nasturtium officinale* R. Br. sensu stricto. Perennial aquatic herb with glabrous pinnate leaves. Stem rooting at the nodes. Leaflets 3-6 pairs. Racemes short, flowers small with white petals which are twice as long as the sepals. Fruit with the double row of seeds very distinct. Seeds compressed, suborbicular with the testa having about 25 large depressions on each side. Mean stomatal index for lower epidermis of leaf 17.7. Chromosome number  $2n=32$ .

*Nasturtium uniseriatum* sp. nov. Differs from the former in having longer and narrower fruits in which the seeds are arranged in a single row. Also the testa of the seeds has about 100 small depressions in each side. Stomatal index for the lower epidermis of leaf 11.2. Chromosome number  $2n=64$ .—[H.A.H.]

35/1×1(2). *Nasturtium officinale* × *uniseriatum*. This hybrid may be recognized by its very short fruits which contain less than one good seed per fruit. Stomatal index of lower epidermis of leaf 15.1. Chromosome number  $2n=48$ .—[H.A.H.]

†39/8. *Cardamine latifolia* Vahl. 69, Westm.; naturalised in rocky streams in two spots near Ambleside, 1945, D. P. YOUNG, det. A. J. WILMOTT; bank of R. Rothay near the town rubbish dump, Ambleside, 1946, H. A. BAYLIS, det. and comm. A. J. WILMOTT; seen and collected from an island where the Rothay meets the Brathay, in May 1942; E. C. WALLACE.

A robust glabrous perennial with thick nodulose elongated, rootstock and stems 30-60 cm. long simple or branched at the top. Leaves large, with large orbicular terminal leaflet and (1)2-3 pairs of smaller oval (rounded) lateral ones. Flowers large, reddish-lilac; petals spreading, three times longer than the sepals; anthers yellow. Fruiting raceme rather dense; pedicels ascending, as long as the ascending winged siliques; style short, obtuse; seeds not winged. Native by springs, ditches and streams in southern France, and westward from the central Pyrenees through northern Spain to Galicia.—A. J. WILMOTT.

80/1d. *Raphanus Raphanistrum* L.  $\beta$  [apparently "forma"] *hispidus* Lge., Lange, 1866: Pug. Pl. Hisp., iv, in Kjoeb. Vidensk. Meddel., 1865, p. 81. *R. Raphanistrum* L. subsp. *segetum* (Baumg.) Clavaud, subvar. *arvensis* (Rchb.) Theell. forma *hispidus* (Lge.) Theell. in Hegi (1918), Ill. Fl. von Mittel-Europa, 4 (1), 278. *R. Raphanistrum* L. var. *hispidus* Lge. ex Willk. et Lge. (1880): Prodr. Fl. Hispan., 3, 4, p. 749; O. E. Schulz (1919) in Engler, Pflanzenreich, 4 (105), p. 200. *R. Raphanistrum* L. var. *scabrirostris* Opiz ex Celak. (1875), Prodr. Fl. Böhm., iii, 471. *R. Raphanistrum* L.  $\beta$  *hispidus* ["v. *hispidus*" in the Index on p. 906] Bergstedt ex Lge. (1886-8): Danske Fl., ed. 4, p. 625. *R. Raphanistrum* L. var. *dasycarpus* Boenn. ap. F. Wilms., jun., in Westfal. Prov.-Verein f. Wiss. Kunst, Jahresb. bot. Sekt., 1880, 10 (1881), fide Schulz. *Raphanistrum segetum* Baumg. var. *dasycarpum* Beckh. (1893), Fl. Westfal., 142, fide Schulz.

Attention is drawn to this form in which the fruit has stiff, ascending subconical hairs, especially on the beak. 17, Surrey; stubble field, Horsley, October 1946, N. Y. SANDWICH [Ref. No. 3160], petals white with dark purple-black veins, growing with other white-flowered plants with glabrous fruits. Quite probably common, although no specimens were detected in the large series of *R. Raphanistrum* in the Druce Herbarium. The hispidity is a matter of degree, while it is unlikely that

there is any correlation between this character and any given petal colour. There are specimens with hispid fruits in Herb. Kew. from Middlesex (Southgate, 1858, F. Y. Brocas), Oxon. (near Oxford, Dr G. Lloyd; Shotover Hill, C. E. Hubbard [Ref. No. 12,437]) and "near Edinburgh" (without collector's name), all of which apparently had yellow petals.

Lange described his plant as with the petals "pallida, venis atrofusca notata," from San Sebastian in N. Spain, while another specimen from Syria was said to be the same form. He gave certain other characters for distinguishing it, but these were ignored by Thellung and by Schulz in adopting his name. Rather curiously, in the fourth edition of his *Danske Flora*, Lange gave the same epithet to a similar form, attributing the authorship to Bergstedt, a correspondent, and describing it as with "skulperne stivhaarede" [stiffly hairy fruits]. It is not clear whether he had forgotten his Spanish and Syrian form, or intended to differentiate the Danish one but inadvertently gave it the same name. The application to British specimens of the name var. *scabrirostris* Opiz ex Čelak. is quite certain. An analogous variety of *R. sativus* L. was recorded and discussed by Mr Brenan (1942), in *B.E.C. 1939-40 Rep.*, pp. 251-2.—N. Y. SANDWICH.

88/4. *VIOLA RIVINIANA* Rehb. Abnormality with five flowers at the top of a single peduncle: 12, N. Hants.; Alice Holt Wood, near Farnham, 27th April 1946, Mrs Dudley Palmer (specimen brought to the Natural History Museum by C. de Worms). There is no mention of anything like this under any species of *Viola* in Penzig (*Pflanzen-Teratologie*, 2) but under *Viola canina* (p. 129) he notes a record by J. Camus in 1884 of a case where there was a sort of outer calyx, i.e., a whorl of bracteoid leaves under the normal calyx. He also refers to a record by Kirschleger (1844) of *Viola silvestris* where the flower was terminal (very unusual in *Violaceae*) consisting of calyx, two small petals and a new long-stalked peloric double flower from its centre lacking stamens, pistil and spur. Of the five flowers on the present specimen two were large, two small, and one fallen (the pedicel remains) before I received the specimen. The identification given is probably correct, but the specimen had been in water in a glass tube for three days and the best flower was not easy to examine without endangering the preservation of this unique curiosity.—A. J. WILMOTT.

†127/6. *GERANIUM ENDRESSI* Gay. An account of this plant and its occurrence in Britain is given by A. A. Dallman (1946: *N.W. Nat.*, 21, 36-39).—[S.]

†127/6. *GERANIUM ENDRESSI* J. Gay and *G. VERSICOLOR* L. (*G. striatum* L.). In discussing gatherings of *Geranium Endressi* J. Gay from Goonbell, West Cornwall (1928: *Journ. Bot.*, pp. 44-46), Dr Turrill pointed out that dried specimens of *G. Endressi* and *G. versicolor* are not easily separated without complete material and gave the distin-



guishing characters as follows:—"The elongated slender rhizomes and greater amount of lobing of the leaf in *G. Endressi* contrast with the shorter thick rhizomes and less lobed leaf of *G. striatum*. Since these characters separate plants of distinct geographical distribution, in the truly native state, I must consider there are two species involved."

For field purposes I think it may be added that the two species differ considerably in their growth. I do not remember to have seen any very extended growth of *G. versicolor*. As it occurs in Cornwall it is a woodland species, small clumps being "dotted about" on shady banks. I have only once seen it away from trees and in full sun. There, at Rejerrah (see Davey, *Flora of Cornwall*, p. 97), it grew on a grassy roadside waste over which it might easily have spread, but it persisted merely as a small circular clump.

*G. Endressi* behaves very differently. At Goonbell on a similar roadside strip it soon filled the space from end to end, though the amount of growth was later reduced by an invasion of brambles. About a dozen years ago I took a few roots from Goonbell and planted them in a small orchard and later put in some roots from the Isle of Wight, sent me by Mr J. W. Long, in another spot about fifty feet away. Both plantings flourished and in a few years grew to meet.

Archangeli in his *Flora Italiana* gives *G. versicolor* as a woodland plant. I do not know if the gatherings of *G. Endressi* made by Endress on Mt. Béhorléguay and Mt. Apanice in the Pyrenees were from open sunny spots or from woodland, but *G. Endressi* in Cornwall is perfectly at home in full sun, while *G. versicolor* seems less tolerant of such situations.—F. RILSTONE.

+129(2)/1. *Pelargonium capitatum* Soland. in Ait., 1824: *Hort. Kew*, ed. 1, ii, 425. 9, Dorset. A seedling found in a mangold field by Mrs Tracey, of Wimborne, and propagated in a greenhouse, was determined by Dr Turrill as this species, with unusually small petals. It is regarded as one of the ancestors of the Show *Pelargoniums*, but is now rarely seen in gardens (1946: *J. Roy. Hort. Soc.*, 71, xlvi).—[D.P.Y.]

155/18. *TRIFOLIUM SUFFOCATUM* L. Good, R. D'O. (1946: *Naturalist*, 819, 133-137) records this species from Yorkshire and discusses its distribution in Britain. A note on geocarpy in the *Leguminosae* is added.—[S.]

173. *ONOBRYCHIS* (L.) Mill. Fyfe, J. L. (1946: Polyploidy in sainfoin; *Nature*, 158, 418) shows that sainfoin (*Onobrychis sativa*), a tetraploid species with  $2n = 28$  chromosomes compared with  $2n = 14$  in *O. Caput-galli* Lam., is either an autotetraploid or an allotetraploid of the *Primula kewensis* type derived by chromosome doubling of a hybrid with a high degree of chromosome pairing; it is not an allotetraploid of the *Raphano-brassica* type derived by chromosome doubling of a hybrid with little or no pairing.—[H.A.H.]

185/86(2). **Rubus Daltrii** Eedes & Rilstone (1946: *N.W. Nat.*, 20, 161-163). From our usual *R. infestus* this differs in the stem prickles being mostly straight and patent, while from both it and the var. *virgultorum* it differs essentially in the much weaker prickles—not stout-based but quickly slender from a long compressed base, in the glabrous or nearly glabrous undersides of all leaflets both on stem and panicle, the absence of any but the slightest trace of felt on the panicle (except, of course, on the sepals) the star-like flowers with long narrow petals, and the long stamens far exceeding the styles. In appearance it resembles some of the forms which have been put under *R. hystrix*, but the armature is less uneven and the stalked glands are mostly short, those on the panicle often very short.—F. RILSTONE.

195×196. ×*CRATAEGOMESPILUS*, Jouin in *Le Jardin*, Jan., 1899; Rehder, *Man. Cult. Trees and Shrubs*, ed. 2, p. 359 (1940). Graft hybrids or sexual hybrids between *Crataegus* and *Mespilus germanica* L. Three have been described.—[N.Y.S.]

195×196/1. ×*CRATAEGOMESPILUS GRANDIFLORA* (Sm.), Bean, *Trees and Shrubs hardy in British Isles*, i, 418 (1914). *Mespilus grandiflora* Sm., *Exot. Bot.*, i, 33, t. 18 (1805). (*Crataegus oxyacanthoides* Thuill. × *Mespilus germanica* L.). A presumed natural hybrid, found wild in France and long known in cultivation in Britain. Deciduous tree up to 30 ft. high, resembling the Medlar but with the leaves unequally serrulate, often deeply lobed on young sterile shoots, and with smaller flowers and fruits, often in pairs or threes. Fruit yellowish-brown, globose-ovoid, up to 1.5 cm. diam., with mealy flesh and two hard stones. 17, Surrey; Bullswater Common, two large trees on roadside not near houses, Sept. 1946, R. GRAHAM and N. Y. SANDWICH. See also Horwood and Noel, *Fl. Leics.*, p. 227 (1933), for a record under the name *Crataemespilus grandiflora* Camus.—N. Y. SANDWICH—but see pages 249-250.—Ed.

196/11. *CRATAEGUS MONOGYNA* Jacq. var. **xanthocarpa** Lange, *Rev. Spec. Generis Crataegi*, 39 (1897) (vice var. *aurea* Loud. of B.P.L.). *Oxyacantha monogyna* (Jacq.) var. *xanthocarpa* Roem., *Fam. Nat. Regn. Veget. Synops. Monogr.*, 3 ("Rosiflorae"), 108 (1847). ?*Crataegus chlorocarpa* Gdgr. in *Bull. Soc. Bot. France*, 18, 451 (1871). *C. monogyna* Jacq. var. *aurea* (Hort. ex Loud.) Druce in *B.E.C. 1911 Rep.*, 20 (1912) (only as to the Tweedside specimens cited).

6, N. Somerset; one tree by the Cam Brook near Midford, 1946, Miss F. M. BARTON. Miss Barton kindly indicated the locality to Mr N. D. Simpson, who, after finding the tree himself, gave me most detailed directions, in the light of which I was enabled to visit it myself in September 1946. The tree was well laden with haws which turn from pale greenish to lemon-yellow when mature, with no suggestion of red; when dried they assume an odd brownish-yellow hue. Specimens of the Midford tree are in Herbb. Simpson, Brenan and Kew.

79, Selkirk; Tweedside, near Galashiels, 1911, Miss I. M. HAYWARD (Herb. Druce). The remark about the "berries ranging from lemon to crimson" made when this plant was distributed through the Exchange Section (as *C. Oxyacantha* L. var. *aurea* Hort.) seems an extraordinary one, suggesting either somatic mutation on the tree or else heterozygousness with imperfect dominance of the "red" or "yellow" factors.

A further record (or records) for Leicestershire, presumably referring to our plant, will be found in Horwood and Noel, *Fl. Leics. & Rutland*, 226 (1933), under the name "*C. monogyna* Jacq. var. *aurea* Loud."

The nomenclature and synonymy of this interesting variety of hawthorn are much confused, and require some explanation. The matter is further complicated by the fact that there are yellow-fruited vars. of both *C. monogyna* Jacq. and *C. oxyacanthoides* Thuill. to be considered. Both have been in cultivation for a long period, and one at least since before 1770. The striking fruit-colour has invited choice from a restricted number of obviously apt varietal epithets; these have been used and re-used apparently independently, not only by nurserymen and writers on horticulture but by botanists also, usually with scant endeavour either to trace their origins or to verify them when known.

The first use of a varietal epithet unequivocally indicating a yellow-fruited variety of *C. monogyna* appears to be *Oxyacantha monogyna* var. *xanthocarpa* Roem. (1847, see above). The same epithet was used under *Crataegus monogyna* by Lange in 1897, and this is adopted as the correct name for the variety; it should also be noted that Lange makes no reference to its earlier use by Roemer, so that, under *C. monogyna*, the var. *xanthocarpa* will be attributed to Lange, not "(Roem.) Lange." *C. monogyna* var. *xanthocarpa* is also given in all Spaeth's catalogues from 1912-13 onwards (e.g., *Cat. 154* (1912-13), p. 90, *Späth-Buch 1920-1930*, p. 219 (1930)), but the variety is there attributed to Zabel; the reason for this I have failed to discover.

*C. chlorocarpa* Gandoger, strangely unmentioned by Rouy and Foucaud in their *Fl. France*, is apparently a further synonym, although, according to his key, it comes into a group with leaves discolorous and whitish beneath, a feature certainly not shown by the Midford plant. Although Gandoger remarks that *C. chlorocarpa* approaches *C. Oxyacantha* L., it is clear that by the latter name he intends *C. monogyna* Jacq. The type-specimen of *C. chlorocarpa* was in Herb. P. Chabert (of Lyon), collected at Saint Consourc in the Rhône department.

There remains to be considered Druce's adoption of the epithet *aurea* for our plant. *C. monogyna* var. *aurea* Druce was based on *C. Oxyacantha* L. var. *aurea* Hort. ex Loud., *Arb. et Frut. Brit.*, 2, 829, 866 (fig. 610) (1838), but, from the description and figure of the latter it seems evident that a yellow-fruited var. of *C. oxyacanthoides* was intended, and not *C. monogyna*. This was also the opinion of Ascher-

son and Graebner who, *Syn. Mitteleur. Fl.*, 6 (2), 26 (1906), classify it as *Mespilus Oxyacantha* (L.) Crantz l. *aurea* (Loud.); they also mention (p. 29) a yellow-fruited form of *C. monogyna* but do not give it a name. Although there is no evidence of it in Loudon, it was acutely recognised by Rehder, *Man. Cult. Trees & Shrubs*, ed. 2, 370 (1940), that Loudon's name is a later homonym of *C. Oxyacantha* L. var. *aurea* Weston, *The Universal Botanist and Nurseryman . . .*, 1, 78 (1770). Rehder adopts this latter name for the yellow-fruited variety of *C. Oxyacantha* L. [i.e., *C. oxyacanthoides* Thuill.] although from Weston's description ("[Crataegus] virginiensis, baccis aureis") it is not clear why it should be taken to refer to *C. Oxyacantha* L. rather than *C. monogyna* Jacq.; the mention of Virginia is probably only a "red herring"! In any event it is clear that *C. monogyna* var. *aurea* Druce is invalid and should not be used. It is perhaps worth mentioning that "*Crataegus monogyna aurea* Hort." in *Späth-Buch 1720-1920*, p. 166 (1920), is used to designate a yellow-leaved variety of *C. monogyna*.

The name var. *fructu luteo* has sometimes been used in horticultural works for the yellow-fruited variety of *C. monogyna*, but it seems more in the nature of a descriptive phrase than an orthodox varietal name. The Kew *Hand-list of Trees and Shrubs*, ed. 3, 147-8 (1925) has, under *C. Oxyacantha* L. subsp. *monogyna* (Jacq.), both var. *aurea* Loud. and var. *fructu luteo*, perhaps indicating different shades of yellow.

I am indebted to Mr N. Y. Sandwith for several of the references in the preceding account.—J. P. M. BRENNAN.

+199/27(2)b. **Saxifraga Cymbalaria** L. var. **Huetiana** (Boiss.) Engl. et Irmsch. in Engler. A., *Pflanzenreich*, 4 (117), 1916. *S. Huetiana* Boiss., *Diagnoses plantarum orientalium novarum*, Ser. ii, 72 (1856). An account (with plate) of the occurrence of this plant in Britain is given by A. A. Dallman (*N.W. Nat.*, 21, 39-41, 1946). It is shown that it has been confused with *S. Sibthorpii* Boiss. and an examination of specimens in Herb. Kew by N. Y. Sandwith, whose help with this plant is acknowledged, confirms this.—ED.

+287/4. **Sambucus canadensis** L.—American Elder. 63, S.W. Yorks.; "covering an area of about 50 sq. ft. near the southern precinct wall of Upper Park House, Low Moor, 1946, L. R. A. GROVE. Like *S. nigra*, this has a flat, umbel-like inflorescence, with fruit normally purple-black, but differs in its foliage, the leaflets being usually 7, elliptic to lanceolate, acuminate, bright green, slightly puberulous on the veins beneath; ovary is usually 4-celled; fruit 4-5 mm. across.—A. J. WILMOTT.

288/1b. **VIBURNUM OPULUS** L. var. **xanthocarpum** Spaeth (var. **FLAVUM** Horwood). Fruit yellow, the pigment being in the flesh (the stone white). "The other diagnostic characters mentioned by Horwood, viz. the size of the fruits and seeds, and the outline of the leaf-lobes

[Horwood and Noel, *Fl. Leicestershire*, 275, 1933] are likely to prove illusory": N. Y. Sandwith (1946: *N.W. Nat.*, 20, 274). Apparently native in v.-cc. 17, 55, 57.—[Wi.]

314/1. *BELLIS PERENNIS* L. The anatomy and morphological development of the capitulum is described by Philipson, W. R. (1946: *Ann. Bot.*, N.S., 10, 257-270, pl. vii).—[Wi.]

380/1. *PETASITES HYBRIDUS* (L.) G.M. & S. Valentine, D. H. (1946: *The Naturalist*, 817, 45-46) discusses the range of the female plant in Britain and seeks further observations from botanists in Yorkshire and elsewhere.—[S.]

383/7×10. *SENECIO SQUALIDUS* L. × *SENECIO VULGARIS* L. var. *RADIATUS* Koch hybr. nov. Stephenson, T. (1946: *The Naturalist*, 819, 137-138) describes this new hybrid from Devon, with reference to ×*S. Baxteri* Druce.—[S.]

396/2. *CIRSIIUM VULGARE* (Savi) Ten. Arènes, J. (1945: le groupe spécifique linnéen du *Cirsium lanceolatum* (L.) Hill, *Nat. Syst.*, 12, 1 et 2, 16) gives a review of the general characters of the species, a detailed study of its geographical distribution and its subspecies and varieties; a review of the systematic arrangement and discusses the nomenclature and synonyms put forward by previous writers.—[Bibliog., *Bull. Soc. Bot. Fr.*, 92, 191 (1945)].—[Wa.]

422/1×3. *Leontodon hispidus* L. × *Leysseri* (Wallr.) Beck. Dr K. B. Blackburn, when recording *L. Leysseri* (Wallr.) Beck from Seaton Sluice, 87, Northumb. S., states that a plant was found which proved to be the above hybrid, and is receiving further cytological study (1945: *Vasc. Subst.*, 30, 54-55).—[Wi.]

423. *TARAXACUM*. Sorensen, Th. (1940: Experimental investigations on species formation in *Taraxacum* (the *Vulgaria* group). Preliminary Note; *Bot. Tidsskrift*, 45 (2), 161-165). Certain elementary species produce new biotypes. 1. Giant form, 2. dwarf forms, 3. normal biotypes well differentiated from the morphological viewpoint, 4. the "sector chimaerae", 5. plants "inharmoniques" from the morphological viewpoint.—[*Bull. Soc. Bot. Fr.*, 92, 190 (1945)].—[Wa.]

+435/13. *Campanula alliarifolia* ("alliarifolia") Willd., 1797: *Sp. Pl.*, 1, 910; Boissier, *Fl. Or.*, 3, 902, 1875; H. Clifford Crook, 1937: *Quart. Bull. Alpine Garden Soc.*, 5, 353, 361; L. H. Bailey, 1938: *Manual Cult. Pl.*, 741; Wilhelm Miller and L. H. Bailey in L. H. Bailey, 1939: *Standard Cyclop. Hort.*, 1, 644. *C. macrophylla* Sims, 1806: in *Curtis' Bot. Mag.*, t. 912 (radical leaf untypically hastate). *C. lamii-folia* M. Bieb., 1808: *Fl. Taur.-Cauc.*, 1, 154 (fide Boissier). Alien, native of Asia Minor and the Caucasus. 2, E. Cornwall; side of cutting,

Port Isaac Road railway station, Aug. 1943, Rev. N. E. G. CRUTTWELL (Ref. No. 43/97, in Herb. Cruttwell and Herb. Brennan), det. J. P. M. BRENNAN.

A characteristic photograph of *C. alliarifolia* is given by H. Clifford Crook (*op. cit.*, p. 353). There are various earlier printings and editions of the works by Bailey cited above; the dates are given only of those available to me.

This most striking and unusual-looking *Campanula* is a perennial, attaining a height of about 1.2 m. The long-petiolate radical leaves are ovate-cordate to reniform or even hastate, pubescent above and densely grey-tomentose beneath, with rather coarsely and irregularly crenate-dentate margins, somewhat suggestive of those of garlic-mustard, as the specific epithet implies; the cauline leaves are similar, but more shortly petiolate and becoming much smaller upwards. The flowers are shortly pedicellate, borne singly in the axils of more or less reduced bracts, pendent, and aggregated into long, terminal, conspicuously one-sided racemes. The calyx has between each lobe an obvious, reflexed, oblong to lanceolate appendage, equalling or only slightly exceeding the calyx-tube at the flowering stage. The corolla varies in length from about 2-5 cm., and is described by Cruttwell as "cream-white, flushed pink in bud." The stigmas are three, and the ovary trilobular. The capsules are pendulous and dehisce by basal pores to release the small, pale brown seeds, which have a pretty, iridescent sheen.

According to the division of the genus proposed by Boissier (*op. cit.*), this species comes into the Section *Medium* [Tournef.] A. DC. (on account of the basal dehiscence of the capsule), sub-sect. *Triloculares* Boiss. (on account of the trimerous gynaecium); under the subsection its position is further limited by the habit, inflorescence, pedicellate flowers and appendaged calyx.

A comparatively detailed note on this species is given, as Mr Cruttwell and myself also observed in 1943 what is almost certainly the same species at more than one spot, well away from stations or railway-bank gardens, by the main G.W.R. line between Par and Lostwithiel. These observations must be accepted with caution, as they were made from a train, and there has been no opportunity of checking them at closer quarters, but the habit, leaf-shape and drooping white flowers were noted and make a mistake improbable. The probable occurrence of this plant in an apparently naturalised condition at widely separated points, in each instance on a railway-bank, suggests that *C. alliarifolia* may be spreading in Cornwall in the way made familiar to us by *Senecio squalidus* elsewhere. H. Clifford Crook (*op. cit.*, p. 362) remarks about *C. alliarifolia* that "seed provides a ready (often too ready) means of increase." The specimens collected by Mr Cruttwell shed their seeds freely in the herbarium, and the seeds are small, light, and easily scattered by a gentle breath. The tall, rigid stems lift the infrutescences above most of the surrounding vegetation and set free their seeds. The powerful wind-currents in the wake of trains would provide

a convenient and efficient method of spreading the plant along the railway-banks. It is to be hoped that botanists in Cornwall will be able to make further and more precise observations on the range, maintenance and dispersal of this species.

*C. alliarifolia* has also been recorded as an adventive on the Continent "am Salève [Grand-Sarrot]", near the Swiss frontier (Schinz & Keller, 1914: *Fl. Schweiz*, ed. 3, 2, 333), and doubtless, there as here, it is of hortical origin.—J. P. M. BRENNAN. [The short note (*B.E.C. 1945 Rep.*, 61, 1947) was misplaced.—Ed.]

446/1. *ERICA CINEREA* L. (as var. ALBA). R. D. Trotter (1946: *J. Roy. Hort. Soc.*, 71, lxix) found a prostrate albino form in Scotland, which maintained its habit in cultivation.—[D.P.Y.]

478/5. *CENTAURIUM TENUIFLORUM* (H. & L.) Fritsch. Senay, Pierre (1943: Qu'est-ce que *Erythraea tenuiflora*?; *Bull. Soc. Bot. Fr.*, 90, 181-187) discusses the relationships of this species with *C. umbellatum* and *C. pulchellum* and the probability of its being a hybrid between them.—[Wa.] Its distribution and specific constancy shows that it is not a hybrid even if it may have had hybrid origin. I have seen it in thousands in Spain, where *C. umbellatum* did not grow, and it has a different habitat.—A. J. WILMOTT.

480/1. *GENTIANA PNEUMONANTHE* L. Simmonds, N. W. (1946: Biological Flora of the British Isles; *Journ. Ecol.*, 33, 295-307) gives a biological and ecological account. It is suggested that the markedly discontinuous distribution is due in part to lack of suitable habitats in central England, a region of basic soils and intensive agriculture. The failure of the species to occur north of Westmorland and west of Caernarvonshire and Anglesey is perhaps due to climatic limitations and the more mountainous nature of the ground. It is a lowland species with, mainly, a rather continental distribution. In Britain it is limited to one type of damp acid heathland.—[Wa.]

497/4. *SYMPHYTUM PEREGRINUM* Ledeb. Senay, Pierre (1940: *Symphytum peregrinum* Ledeb. et ses hybrides avec *S. officinale* L.; *Bull. Soc. Bot. Fr.*, 37, 313-322) discusses the confusion of this species with the related *S. asperum* Lep. The varieties of *S. officinale* and the hybrids between it and *S. peregrinum* are reviewed.—[Wa.]

†511/2. *Calystegia sylvestris* (Willd.) R. & S. During recent years botanists have become increasingly aware that we have in England a *Calystegia* allied to *C. sepium* (L.) R. Br. but most easily distinguished from it by the larger flowers (up to 7 cm. in corolla length as compared with 3.5-6 cm.), and the very broad inflated bracts which completely envelop the calyx segments and even overlap. This second plant is usually found on rubbish dumps and near gardens though it may sometimes occur in more remote places. Its distribution sug-

gests that it may be an alien and this in fact appears to be the case. The purpose of the present note is to record an interesting statement made by Mr B. T. Lowne, but in order to do so it has proved necessary to inquire into the botanical history and nomenclature of the species.

The plant was described as *Convolvulus sylvaticus* by Waldstein & Kitaibel, *Pl. rar. Hung.*, III, 290, t. 261. The plate is not a perfect representation of the plant which we have in England but there can be little doubt that, unless some very critical "split" has yet to be made, it illustrates the same species. The work appeared in parts and Stearn (ex Gilmour, *Kew Bulletin* for 1937, 498) has shown that Plates 251-260 (including the text to Plate 261) were probably issued late in 1809 or at least before July 1810, while according to a note by him in the Kew copy, Plates 261-270 were issued in 1810 or 1811.

In 1809 (probably between January and June, according to Mr Stearn) Willdenow, *Enum. hort. Berol.*, I, 202, had already published the name "*Convolvulus sylvestris* Waldst. et Kitaib., pl. rar. hung.," with a short description. The fact that he omitted the page and plate references, contrary to his usual practice, suggests that the Hungarian work was then not yet published, or had not yet reached him. It seems likely that he was giving an independent description of cultivated material, that the change of trivial was due to a misunderstanding or a slip, and that his work actually appeared before the Hungarian one. Ten years later Roemer & Schultes, *Syst.*, IV, 183, 1819, transferred the species to *Calystegia* as *C. sylvestris* using Willdenow's description, giving the single locality "ad thermas Herculis" of Waldstein and Kitaibel, and citing the earlier references. There can be no shadow of doubt that all three works had the same plant under consideration and it is quite inadmissible to attempt to separate the plants described by Waldstein & Kitaibel from those of Willdenow and Roemer & Schultes as has been done by Beck, *Fl. Nieder-Oest.*, 947, 1893, and Rouy, *Fl. Fr.*, X, 346, 1908. If there are indeed two plants involved separated by angled or terete peduncles and by the form of the lobes of the leaves, then the one with terete peduncles is the plant of Waldstein & Kitaibel. So far I am not convinced that such a separation can be made.

On the assumption that Willdenow's description appeared before Waldstein & Kitaibel's, the correct citation under *Calystegia* is *C. sylvestris* (Willd.) R. & S., with *C. sylvatica* (W. & K.) Griseb., *Spic. fl. rum. & bith.*, II, 74, 1844, falling into synonymy. Similarly under *Convolvulus* the correct name would seem to be *C. sylvestris* Willd.; the earlier *C. inflatus* Desf. appeared without a description (*Tabl.*, 74, 1804) and is therefore not a valid publication. Desfontaines may have had the right plant but if so there was confusion over its origin for which he cites America and there seems no evidence except the choice of trivial to link it with the plant under discussion. He made no mention of it in a descriptive work issued later (*Catalogus Plantarum*, ed. 3, 1829).



Waldstein & Kitaibel had their bindweed in cultivation and evidently distributed seeds or roots to Willdenow to grow at Berlin. Loudon in 1829 (*Encycl.*, 140) and 1830 (*Hort. brit.*, 64) states that the white flowered plant was introduced into this country in 1815 and its origin was Hungary. In the first work he cites it as of Willdenow, *Enum.*, and in the second as *sylvestris* of Roemer & Schultes. The probability is that it came to us via Germany. The same particulars of introduction have been repeated throughout our gardening reference books right up to Wright & Dewar's 1894 edition of *Johnson's Gardener's Dictionary*. Robinson (1883: *English Flower Garden*, 90, t. 79) illustrated the right plant and remarked how vigorously it grew and how it could take care of itself in the wild garden, "among bushes or hedges, or over railings, or on rough banks . . ." Nicholson (1884: *Ill. Dict.*, I, 249) confused the white flowered plant with "*C. sepium incarnata*" which Loudon had properly distinguished, and later in the "1900" *Supplement*, 188, 1900, he complicated matters by describing the right plant and adding "There is also a pink-flowered form, *incarnata*." Loudon had used the name for the "American Great Bindweed" which as illustrated in *Bot. Mag.*, t. 732, from material grown at the Botanic Garden, Brompton, is a variant of *C. sepium*.

The earliest British specimen of *Calystegia sylvestris* which I have seen is labelled "Anglia. Herb. Forsyth" and was in Herb. Hooker in 1854 (Hb. Kew). If it was collected by the younger William Forsyth (1772?-1835) it was probably a garden plant and might well agree with the date of introduction given by Loudon. If preserved by his father (1737-1804) it would be evidence that the plant was already in cultivation here, or found wild, before 1815. The earliest dated British material seen was gathered at Twickenham Park (Middlesex) by W. T. Thiselton-Dyer in August 1867 (Hb. Kew). This is labelled with the correct name but the habitat is one where a garden plant might well get established, and there is no evidence that it was wild. The record, without the date, has been noted in the annotated copy of Trimen and Dyer's *Flora of Middlesex* at South Kensington where it is also stated that James Britten found it in Ealing Lane, Brentford, in 1873. It was then said to be plentiful and D. H. Kent informs me that it still occurs in quantity in the same locality now known as Ealing Road. It has thus persisted in at least one British locality for 73 years! The other sheets at Kew from v.-cc. 1, 3, 21, 23, and 34 were all collected from 1921 onwards but the plant is now known to be common around London and in other places in the south of England and certainly goes as far north as v.-c. 39, Staffs. (Edees) and around Sheffield (Brown). Prior to 1921 it was probably overlooked.

Its occurrence in many habitats is strongly suggestive of a garden outcast but it has been difficult to believe that gardeners would deliberately grow such an aggressive species with only slight advantages in beauty over the native species which is known to be a difficult weed. Mr Lowne however informs me (*in litt.*, October 1946) that he remembers that "about 40 years ago it was advertised as a novelty 'lovely Ameri-

can Bell-bine grows 20 ft. in a season, etc.'." The roots were sold at a cheap rate and his mother sent for some, but as soon as it became established they did their best to get rid of it. "Probably hundreds of people threw it out as we did and so spread it about." The explanation seems a very likely one and the name "American Bell-bine" is not an unlikely choice for the trade anxious to sell the roots as a novelty when we bear in mind the use of Desfontaine's name in Floras and the confusion with the "American Great Bindweed" already mentioned.

In this country the form with rose coloured corollas is found occasionally, though the white flowers as illustrated by Waldstein & Kitaibel, and described by most of the gardening books, are more common. In Holland the nurserymen seem to have distributed only the rose-coloured form, for only this ("var. *roseus* Sims") is recorded as established (Heukels, 1933: *Schoolflora*, Ed. 8, 561). The question of whether some of the British records of *C. dahuricus* Sims belong here has not been investigated.

At Kew there is material of the species showing a range from South France, Italy and Sicily through Croatia, Bulgaria and Greece to the Caspian Sea (Lenkoran).—J. E. LOUSLEY.

532/2. *LINARIA PURPUREA* (L.) Mill. Stephenson, T. (1946; *Naturalist*, 819, 138) describes, pink-flowered plants, a new var. **rosea** from Devon.—[S.] The plant appears to be *L. purpurea* "Mrs Wentworth." Specimens of this, given me many years ago by Mr Lofthouse of Middlesbrough, seeded themselves in my garden. For one or two years only rose-coloured plants came up, but then a few normal purple plants appeared among them and in a year or two all the plants in the garden (where it became and still is a weed) were purple. It is clearly scarcely worthy of a name other than the horticultural one.—A. J. WILMOTT.

545. *EUPHRASIA*. Pugsley, H. W. (1946: *Naturalist*, 816, 11) records further species collected on Rhum in 1943 by Prof. J. W. Heslop Harrison and which were omitted from previous notes in *The Naturalist* for April-June 1945 (No. 813).—[S.]

550/10. *OROBANCHE MINOR* Sm. Malins Smith, A. (1946: *Naturalist*, 816, 13-15) records some observations on the spread of this species made over a period of nine years in a small area. A note on the weight of the seeds is included.—[S.]

558/5. *MENTHA CRISPA* L. In 1939 Mr A. L. Still reported that *M. crispa* L. in his garden had given a sport "with the characters of *M. lacerata* Opiz (= *M. spicata* Huds. var. *lacerata* (Opiz) Fraser)." I have recently examined a specimen of this sport, and, whilst confirming Mr Still's opinion, I would add more strongly that it is identical with the material in the Oxford Botanic Garden which Mr Fraser identified as his var. *lacerata* of *M. spicata* Huds. It would thereby seem that *M. crispa* L. and Mr Fraser's variety are two different growth-forms of the same mint.—R. GRAHAM.

558. *MENTHA* in Bermuda. A period of 1½ years garrison duty enabled me to study the mint flora on this archipelago. Only four different mints were seen—*M. rotundifolia* Huds., *M. spicata* Huds., ×*M. cordifolia* (Opiz) Fraser, and *M. citrata* Ehrh. All these were listed in the *Flora of Bermuda*, with *M. aquatica* L. and *M. arvensis* L., which I was unable to find, the former possibly being an error for *M. citrata* and the latter evidently a rare weed. Of the four that I saw, three grew apparently wild, but ×*M. cordifolia* was only in gardens. None of these showed noticeable differences from British material. Two points of interest arise. Firstly, in a damp area of ground, both *M. rotundifolia* and *M. spicata* grew luxuriantly together, but there was no sign of ×*M. cordifolia* with them, which might be expected if it were a hybrid of these two parents, as has been claimed. In this case a better opportunity for hybridisation can scarcely be imagined, and the question arises as to whether *M. cordifolia* is indeed such a hybrid. Secondly the claim of a *spicata-aquatica* parentage for *M. citrata* comes under question. My inability to find *M. aquatica*—there was splendid terrain for this species—led to my supposition of a mistaken identity. If this is true, and if *M. citrata* is indeed a hybrid of *M. spicata* and *M. aquatica*, we have a situation where a hybrid grows on an island, 600 miles from nearest land, where one of its parents does not—and perhaps has never—occurred.—R. GRAHAM, 1946.

588/2. *PLANTAGO MARITIMA* L. Gregor, J. W. (1946: Ecotypic differentiation. *New Phytol.*, 45, pp. 254-270) presents data relating to the European diploid population of *Plantago maritima* L.; among the characters whose variation has been studied along edaphic gradients are plant size, growth habit and reproductive capacity. He finds that as the ecotypic composition of sea-plantain populations is traced along an "improving" soil gradient the plants become hereditarily larger and taller and have larger seeds and a higher reproductive potential at the more advanced stages of plant succession. Ecotypic differentiation seems more often to be continuous than discontinuous and therefore difficult to classify along orthodox taxonomic lines, though for practical purposes particular ranges of ecoclimal variation may have to be recognized as *ecotypes*. Sometimes ecotypes bear the diagnostic characters of taxonomic units. A variational trend of geographical significance but for which no ecological explanation is apparent can be recorded as a *topocline*.—[H.A.H.]

†596/9(2). *Amaranthus blitoides* S. Wats, 1877: in *Proc. Amer. Acad. Arts and Sci.*, 12, 273.

6, N. Somerset; waste ground, Ashton Gate, Bristol, 1940, Mrs SANDWITH and J. P. M. BRENNAN (Herb. Sandwith, Herb. Brennan).

21, Middlesex; waste ground near Yiewsley, 1929, R. MELVILLE (Herb. Druce). This specimen was the basis of the erroneous record of *A. graecizans* L. (see *B.E.C. 1930 Rep.*, 279; 1931). According to Thel-

lung, in his account of the genus in Asch. et Graebn.; 1914: *Syn. Mitteleur. Fl.*, 5 (1), 285, *A. graecizans* L. is based partly on *A. albus* L. and partly on *A. angustifolius* Lam., and, on account of the confused way in which the name *A. graecizans* L. has been applied, Thellung proposes that it should be rejected as a *nomen confusum*.

34, W. Glos.; fowl run, Baptist Mills, Bristol, 1925, C. and N. SANDWICH (Herb. Sandwith), wrongly recorded as *A. Thunbergii* Moq. in "The Adventive Flora of the Port of Bristol," (see *B.E.C. 1932 Rep.*, 352: 1933).

Specimens from waste ground, Penarth Road, Cardiff, Glam., v.-c. 41, Sept. 29, 1933, coll. A. E. Wade, were distributed under the name *A. blitoides* S. Wats. through the B.E.C. Exchange Section, see *B.E.C. 1933 Rep.*, 769: 1934, and the identification was not questioned. The sheet of this gathering in the Kew Herbarium is, however, clearly referable to *A. angustifolius* Lam.

*A. blitoides* S. Wats. is a native of North America, and has occurred repeatedly as an alien in central and southern Europe (see Thellung, *op. cit.*, pp. 290-293). For a recent account of its occurrence in Paris and its neighbourhood, see P. Jovet, (1940: *Bull. Mus. Paris*, 2 Ser., 12, 369-371, figs. on p. 366).

Among the species of Amaranth recorded as adventives in Britain there are two to which *A. blitoides* is especially close both taxonomically and in general appearance—*A. angustifolius* Lam. and *A. Thunbergii* Moq. It differs from *A. angustifolius* in the longer (2-2.5 mm.) ♀ tepals equalling or exceeding the ripe fruit; in *A. angustifolius* the ♀ tepals are 1.3-1.9 mm. long and considerably shorter than the ripe fruit. The seeds of *A. blitoides* are usually somewhat larger than in *A. angustifolius*. The identity of the broader-leaved specimens in British herbaria labelled *A. angustifolius* requires re-checking, as *A. blitoides* may have been in the past very easily confused with it. The laminae of the broader-leaved forms of *A. angustifolius* are usually elliptic or rhombic-elliptic and are frequently acute in outline at the apex. But *A. blitoides* almost always has the leaves spatulate or spatulate-elliptic, rounded and mucronate at the apex. So does *A. Thunbergii*.

*A. Thunbergii* is, however, easier to distinguish from *A. blitoides* than is *A. angustifolius*. *A. Thunbergii* differs from *A. blitoides* in the ovate or ovate-lanceolate ♀ tepals, longer (about 4-4.5 mm.) and much broader towards the base (about 1.25-2 mm.), so that they overlap in their lower part and are not separated from each other to the base as in *A. blitoides*. The green midrib becomes colourless in the lower part of the tepals, and, the tepals being broader than in *A. blitoides*, the scarious margins are wider and more marked, giving a more stramineous appearance to the clusters of flowers or fruits. The spinule at the apex of the ♀ tepals of *A. Thunbergii* is much longer (about 0.75-1 mm.) than in *A. blitoides*. The fruits are longer (3 mm. as against 2 mm.) and are ovoid-ellipsoid rather than rotund-ellipsoid and (♀ always) less wrinkled towards base.

The arrangement of the genus *Amaranthus* in the *B.P.L.*, ed. 2, appears to be based on that of Thellung already referred to, so that *A. blitoides* will be inserted after *A. albus* L., from which it is very distinct in the shorter, non-spinescent bracteoles.—J. P. M. BREMAN and N. Y. SANDWICH.

†596/9(3). *Amaranthus acutilobus* Uline et Bray, 1894: *Bot. Gaz.*, 19, 320; Hegi, 1910: *Fl. Mittel-Europa*, 3, 263; Thellung, 1914: in *Aschers. et Graebn. Syn. Mittel-Europ. Fl.*, 5, 1, p. 282; Standley, 1917: in *N. Amer. Fl.*, 21, part 2, 117. *A. emarginatus* auct. et hort. bot., non Salzm.

Channel Isles; Jersey; St Helier's, casual not naturalised, Sept. 21st, 1929, Bro. LOUIS-ARSÈNE, distributed as *A. ascendens* Loisel. var. *polygonoides* (Moq.) Thell., see *B.E.C. 1929 Rep.*, 237; 1930.

This is a native of Southern Mexico which has occurred in botanic gardens of Europe since 1850, and as an adventive in Germany, Austria, Czechoslovakia and Southern Italy. The species is well characterised by being quite glabrous; by the remarkably small, obcordate and deeply emarginate leaves; the small axillary clusters of flowers; the spinous-tipped outer bracts which are up to twice as long as the female flowers; the 5 tepals of the male and the 4 tepals of the female flowers; and, finally, by the ellipsoid-subglobose utricles which are smooth and indehiscent. Owing to the latter character of the indehiscent fruit, *A. acutilobus* has been placed by some authors near *A. ascendens*, *A. lividus*, *A. viridis* (*A. gracilis*) and *A. deflexus*, species which it does not resemble in other characters of the inflorescence. For this reason also, no doubt, it was particularly confused with *A. lividus* race *polygonoides* (Moq.) Thell. (*A. emarginatus* Salzm.), which has small, deeply emarginate leaves; and this confusion was responsible for the name under which Brother Arsène distributed his specimens, adding *A. acutilobus* Uline et Bray in brackets as if it were a synonym. In the races of *A. lividus* the bracts are ovate, blunt, membranous,  $\frac{1}{3}$ - $\frac{1}{2}$  as long as the perigonium; and the flowers of both sexes are trimerous (except in race *oleraceus*).

*A. acutilobus* resembles more closely in general facies such species as *A. Thunbergii*, *A. blitoides* and *A. albus*. In Thellung's work it is placed next to *A. albus*, from which it differs in many obvious characters, especially the shape of the leaves, the 4-5-merous flowers, and the indehiscent fruit. It is evidently an outstandingly distinct species with a peculiar and interesting combination of characters, the kind of plant which prevents the division of the genus into well-defined sections. I suggest that *A. acutilobus* be placed in our list after *A. blitoides* S. Wats., discussed above.

Mr J. P. M. Breman has examined the seeds of Arsène's specimen in Herb. Druce under the compound microscope. He writes that the surface is minutely and densely muriculate-roughened, a character which immediately distinguishes this plant from *A. lividus* race *polygonoides*,

also from *A. Thunbergii* and *A. albus*, and again from *A. angustifolius* and *A. blitoides*. He finds that in all these species the seeds, under the compound microscope, are shining and smooth except for the very faintest of more or less polygonal honeycomb markings. Mr Brenan, who writes with the experience of microscopic study of the seeds of many species of *Chenopodium*, is impressed by this seed character, which does not appear to have been mentioned, and the validity of which I cannot check since I have found no other specimens of *A. acutilobus* in the New Herbarium.—N. Y. SANDWICH.

+600/26(2). *CHENOPODIUM PUMILIO* R. Br. (See *B.E.C. 1945 Rep.*, 166; 1947). Mr Ash's plant is not *C. carinatum* R. Br. but *C. pumilio* R. Br., 1810: *Prodr. Fl. Nov. Holl.*, 1, 407, likewise native of Australia. This is also Mr Sandwith's revised verdict. Our views on the adventive species of §*Orthosporum* R. Br. require considerable alteration in the light of Dr Aellen's revision of the Australian species of the section (1933: *Verhandl. Naturforsch. Gesellsch. Basel*, 44, 308-318, with figures, which are reproduced by Uibrich, 1934: in *Nat. Pflanzenfam.*, ed. 2, 16c, fig. 187 on p. 493. Dr Aellen's earlier determination-slips on specimens should be correlated with this revision, as his own views on the application and status of certain names became altered rather drastically. He separates the species mainly on the morphology of the perianth, more especially the presence or absence, and shape, of the keel or wing-like projection on the back of each tepal. Examination of the material in Herb. Druce shows that most of the British material hitherto named *C. carinatum* R. Br. has tepals which, although markedly convex on the back, are without any keel or wing, and are therefore to be referred to *C. pumilio* R. Br., the only species lacking these appendages. There are sheets of *C. pumilio* from Cardiff (1927, *G. C. Druce*) and Bradford (1917, 1921, *J. Cryer*), and I have also seen a specimen from Southampton (1936, *J. W. Long*). *C. carinatum* R. Br. proper has a well-marked wing-like keel to the tepals, and is divided by Aellen into two varieties. There is a single sheet of it in Herb. Druce (Tweedside, Galashiels, 1914, *G. C. Druce* and *Miss I. M. Hayward*) which was recorded in *B.E.C. 1928 Rep.*, 637: 1929, as *C. holopterum* (Thell.) Thell. et Aell.; it will now stand as *C. carinatum* R. Br. var. *holopterum* (Thell.) Aell. Two other specimens in Herb. Druce deserve mention here. Firstly, a poor specimen from Tweedside (1911, *Miss I. M. Hayward*) is certainly *C. pumilio*, but differs in the tepals in the fruiting stage being green, more connate than usual, scarcely convex on back, and more closely investing the fruit; it is probably *C. pumilio* f. *glandulosum* (Moq.) Aell., which is described as having these characters. Secondly, a remarkable specimen from Bradford (1921, *G. C. Druce*) having the tepals variably keeled, but much less markedly so than in *C. carinatum*; I expect that this is  $\times$ *C. Christii* Aell. var. *intermedium* Aell. (*C. carinatum* var. *holopterum*  $\times$  *pumilio*). It is desirable that Dr Aellen's confirmation both of this and *C. pumilio* f.

*glandulosum* should be obtained before they are admitted to the British List.—J. P. M. BRENNAN.

615/6-8. *Polygonum lapathifolium*, *P. persicaria* and *P. nodosum*—a remarkable colony. The extreme variability of *P. Persicaria* and its allied species was well illustrated in a field at Wroughton, North Wilts, v.c. 7, in the autumn of 1946. The field, which is on the clay, had been pasture-land for many years, but in 1946 it was planted with potatoes. The natural dampness of the soil, accentuated by the heavy rainfall of the summer, caused a complete failure of the crop. The field became dominated by a mass of varying forms of *Polygonum*, and the red coloration was visible from a considerable distance. In August many of the plants reached a height of about 75 cm., effectively excluding almost all other tall-growing species. There was, however, a very dense lower layer consisting chiefly of *Stellaria media* and *Polygonum heterophyllum*, presumably able to thrive because of the high-branching habit of the larger *Polygonum*.

Examination of the forms showed that they could be allocated to seven divisions, leaving a small residue of individuals, perhaps about 5%, which could not be satisfactorily classified. The divisions comprised four of *P. lapathifolium*, one of *P. nodosum* and two of *P. Persicaria*. All plants fruited abundantly, and the fruits appeared to be normal in every case. It was noted that the specimens of *P. nodosum* were remarkably uniform.

In the subjoined table only inconstant characters are given. *P. Persicaria* L. var. *elatum* Gren. & Godr., and var. *agreste* Meisn. are identified *sensu* Moss (*Camb. Br. Fl.*, 2, 116, 1914).

	Habit.	Stem.	Leaves.	Racemes.	Colour.	Approx. proportion of total.	
1.	<i>P. lapathifolium</i>	Branches sub-erect.	Unspotted.	Faintly spotted.	Stout.	Green.	5%
2.	<i>P. lapathifolium</i>	Branches slightly spreading.	Unspotted.	Faintly spotted.	Rather slender.	Green.	5%
3.	<i>P. lapathifolium</i>	Branches erect.	Unspotted.	Distinctly spotted.	Stout.	Greenish-pink.	5%
4.	<i>P. lapathifolium</i>	Branches widely spreading.	Spotted.	Conspicuously spotted.	Rather stout.	Greenish-pink.	30%
5.	<i>P. nodosum</i>	Branches spreading & drooping	Strongly spotted.	Lower only conspicuously spotted.	Slender	Bright pink.	40%
6.	<i>P. Persicaria</i> var. <i>elatum</i>	Branches erect.	Unspotted.	Faintly spotted.	Slender.	Pink.	5%
7.	<i>P. Persicaria</i> var. <i>agreste</i>	Branches erect.	Unspotted.	Distinctly spotted.	Rather stout, short.	Greenish-pink.	5%
	Unclassified.						5%

The paucity of the associated flora is demonstrated by the following census:

<i>Polygonum nodosum</i>	dominant.
<i>P. lapathifolium</i> (4)	abundant, locally dominant.
<i>P. lapathifolium</i> (3)	frequent.
<i>P. lapathifolium</i> (2)	frequent.
<i>P. lapathifolium</i> (1)	frequent.
<i>P. Persicaria</i> var. <i>elatum</i>	frequent.
<i>P. Persicaria</i> var. <i>agreste</i>	frequent.
<i>Stellaria media</i>	abundant.
<i>Polygonum heterophyllum</i>	abundant.
<i>Ranunculus repens</i>	occasional.
<i>Sonchus asper</i>	occasional.
<i>Stellaria aquatica</i>	rare.
<i>Trifolium dubium</i>	rare.
<i>Matricaria inodora</i>	rare.
<i>Cirsium arvense</i>	rare.
<i>Leontodon autumnalis</i>	rare.
<i>Chenopodium album</i>	rare.
<i>Atriplex patula</i>	rare.
<i>A. hastata</i>	rare.
<i>Rumex</i> sp. (leaves only)	rare.
<i>Holcus lanatus</i>	rare.
<i>Poa annua</i>	rare.

—J. D. GROSE.

615/36b. *Polygonum pensylvanicum* L. var. *laevigatum* Fernald, 1917: *Rhodora*, 19, 70-73. In September 1945 an immature *Polygonum* which seemed unlike any native British species was noticed outside the works of Soya Foods Ltd.; at Harefield, Middlesex, v.-c. 21. On the 22nd of that month and again on October 6th Mr D. H. Kent was able to collect rather better material from the same place. He also collected up some of the sweepings from outside the factory entrance and these we divided and planted in our gardens the following spring. Amongst the plants which appeared in both cultures were magnificent growths of *Polygonum pensylvanicum* L. var. *laevigatum* Fernald. The species was described by Linnaeus from material collected by Kalm in "Pennsylvania", 1763: *Sp. pl.*, 1, 362, and Fernald has shown (*l.c.*) that this spelling of the name of the colony was common at the time and therefore that of the trivial cannot be corrected as "a clearly unintentional orthographic error" (International Rules, *Cambridge*, 1930, Art. 70).

Important characters of the species are the erect racemes, the densely glandular peduncles, the close cylindric naked glabrous ochreae and the orbicular, flat, smooth, shining nuts. The general aspect of the Harefield plant recalls *P. lapathifolium* in leaves and habit and *P. Bistorta* in the racemes. *l.c.*: Britton & Brown, 1896: *Illustr. Fl.*, ed. 1, I, fig. 1325; 1913: ed. 2, I, fig. 1634.

Fernald has shown (*l.c.*) that the typical form of the species as described by Linnaeus has leaves copiously strigose beneath and is in North America a local plant apparently restricted to the coastal region from Massachusetts to Mississippi and northward through the Mississippi



basin to southern Ontario. The var. *laevigatum* has leaves glabrous or at most sparsely strigose on the midrib beneath, the ochreae usually all eciliate and the achenes mostly 2.5-3.5 mm. broad. It is the common form of the species and occurs from New Brunswick to South Dakota, Colorado and southward. Material collected by Fernald has been compared—*Pl. Exsicc. Grayanae*, 201 (Hb. Kew).

The species has been previously reported from Britain (*B.E.C. 1933 Rep.*, 481; 1934) but the variety appears to be an addition to the *British Plant List*. Material from my garden was sent to the annual Exchange.—J. E. LOUSLEY.

618/2. RUMEX LONGIFOLIUS DC. When I investigated the nomenclature of this species in 1938 it proved extremely difficult to decide on the correct name to be used. The choice rested between *R. domesticus* Hartman (1820: *Handb. Skand. Fl.*, ed. 1, 148), and the earlier *R. longifolius* DC. (1815: *Fl. France*, 5 (Suppl. 6), 368). The description given by De Candolle has several unsatisfactory features and cannot be said to apply with certainty to the dock which is common in many parts of Scotland and Northern England. It was based, however, on material sent by Coder from the "environs de Prades, en Roussillon," which is about 25 miles above Perpignan in the Pyrenees, and here the species under consideration still grows. In an attempt to clear up the matter once and for all the authorities at Kew kindly wrote on my behalf to Geneva with a view to borrowing De Candolle's type, but they replied that they had no material of "*Rumex longifolius* from France." With considerable reluctance I therefore adopted Hartman's name, which had the merit of freedom from ambiguity (*B.E.C. 1941/2 Rep.*, 550-551; 1944).

It was therefore with great delight that I received a letter from Dr K. H. Rechinger, then staying at Geneva, dated July 15, 1946, reporting that he had found the undoubted type specimen of *Rumex longifolius*. He wrote: "I just have before me the sheet of the DC.-Prodrome-herb., containing the type of *Rumex longifolius*!! It bears the label: 'No. 183 *Rumex*—M. Codere 1814. Pyr. orient.' There is a second label in the corner: '*Rumex longifolius* DC. Suppl., *R. aquaticus* Campd.' There can be no doubt that it is really the type of *R. longifolius* DC. and I can't imagine how they failed to find it as you mention in your paper. The specimen consists of a basal leaf and a panicle with not completely ripe fruits. It is exactly the plant which is common in the Pyrenées-orientales (where I gathered it again in 1944—I shall send you a specimen as soon as possible!) and cannot be distinguished from the common Scandinavian and Scotch plant (as already pointed out before). So finally this question is settled! . . ."

Dr Rechinger very kindly arranged for the sheet to be photographed and sent me the negative on loan. Copies have been deposited at Kew and South Kensington. From the material it is evident that De Candolle's description can be reconciled with Coder's specimen, which was

not entirely adequate for a last-minute addition to the *Supplement*, published only the year after it was gathered.

The *British Plant List* entry should therefore be altered back to *R. longifolius* DC. as printed and although it is with regret that another name change has proved necessary the solution of this very vexed question of nomenclature must cause considerable satisfaction.—J. E. LOUSLEY.

628. EUPHORBIA. Smith, L. (1946: *N.W. Nat.*, 21, 105-107) gives notes on an interesting Spurge found at the side of the old river Don, near Doncaster. The referees place it under *Euphorbia virgata* but suggest that there may be some hybrid influence in it.—[S.]

642/1. BETULA ALBA L. Johansson, Helge (1944: Triploidy in *Betula alba* L.; *Bot. Notiser*, 1, 85-96) describes triploid trees with 42 chromosomes, one representing the F<sup>1</sup> generation of the hybrid between *B. alba* and *B. pubescens*. the other an autotetraploid of *B. alba*.—[Wa.]

650. SALIX. Wilkinson, John (1946: Some Factors affecting the Distribution of the Capreae group of *Salix* in Gower; *Journ. Ecol.*, 33, 214-221) gives an account of the distribution in the Gower, Glamorgan, of *S. Caprea*, *S. aurita* and *S. atrocinerea* and the naturally occurring hybrids between them. The effects of the physical features, geology and soil are discussed. The adaptational value of rooting characteristics is also noted. *S. Caprea* develops a relatively deep and not particularly extensive root system in well-aerated sites, whilst *S. aurita* and *S. atrocinerea* develop comparatively shallow and widely spreading root systems in their normally damp habitats. The hybrids appear to develop more vigorous root systems than the parent species.—[Wa.]

650. SALIX. Gurney, R. (1946: *N.W. Nat.*, 21, 198-201, 2 plates) describes the witches' brooms observed on *Salix fragilis* L. and *Salix* [*alba* var.] *vitellina* L. He also gives his observations on the rosette galls of *Salix triandra* L. and abnormal catkins of *Salix cinerea* L. Their causation is discussed and further research into the physiology suggested.—[S.]

650/8. SALIX CAPREA Linn. Denton, M. E. (1945: *N.W. Nat.*, 20, 264-265) reports an example of fasciation from Fadmoor, near Kirby Moorside.—[S.]

668. EPIPACTIS. T. Stephenson (1946: *Trans. Torquay N.H. Soc.*, 9, 125-127) gives a brief account of the British species. Reference is made to the as yet unpublished *E. cambrensis* from near Kenfig, Glamorgan, which Mr C. Thomas will be describing shortly.—[Wa.]

668/2. EPIPACTIS HELLEBORINE (L.) Cr. Abercrombie, R. G. (1945: *N.W. Nat.*, 20, 226-228) describes two diminutive forms of this species (as *Helleborine Helleborine* (L.) Druce) observed in the Peak District, and discusses its fertilisation.—[S.]

669/9(3). *ORCHIS TRAUNSTEINERIOIDES* (Pugs.) Pugs. Pugsley, H. W. (1946: *Naturalist*, 817, 47) gives notes on this species from British localities.—[S.]

702/19. *ALLIUM PARADOXUM* G. Don. 23, Oxon.; abundant and well established in the shrubbery adjoining Adwell House, and in a small copse about 100 yards distant, Adwell. Discovered and reported to me as *A. triquetrum* L. by Mr W. B. Alexander, April 1946.

I visited the locality in May, 1946, and learned from Mr Holland, the bailiff of the Adwell estate, that in the latter part of the last century the occupants of Adwell House travelled extensively in Europe and were in the habit of bringing back and planting roots and seeds of plants collected on their travels. Mr Holland has known this "onion" at Adwell for the last 40-50 years and thinks, as seems probable, that *A. paradoxum* owes its origin at Adwell to this means of introduction.

It may be convenient to give here a brief description of *A. paradoxum*, which is a species native of the Caucasus and Iran, and to point out the main differences between it and *A. triquetrum* with which, apparently, it is sometimes confused—mainly, it is presumed, on account of both species having triquetrous stems and an early flowering period.

*A. paradoxum* G. Don. Flowering period April-early May. Bulb solitary (at time of flowering), egg-shaped or globular, small (about 1 cm. long). *Stem* triquetrous, naked, 2-3 dm. high. *Leaves* usually solitary (sometimes two), narrowly oblong-acute, up to 1.3 cm. broad, keeled, many-nerved, equalling or exceeding the stem. *Spathe* whitish, thin, with 2-3 lanceolate valves, shorter than the pedicels, caducous. *Pedicels* filamentous, very unequal, up to over 5 cm. long and 3-4 times as long as the flower, intermingled with greenish bulbils. *Flowers* bell-shaped, somewhat erect, normally 1-3 (sometimes 6, or more). *Perianth segments* connivent, oblong-elliptic, acute or obtuse, up to 1.3 cm. long, white with a single central green nerve reaching to the apex. *Style* filiform with a 3-fid linear-lobed stigma.

The main differences of *A. paradoxum* from *A. triquetrum* are its earlier flowering period; more slender habit; fewer (1-2) and narrower leaves; shorter and often 3-valved spathe; few (normally 1-3) small-flowered and irregular umbel, with flowers on long slender pedicels intermingled with bulbils.—J. F. G. CHAPPLE.

718. *JUNCUS*. Tweed, R. D., and Woodhead, N. (1946: A Consideration of *Juncus effusus* L. and *Juncus conglomeratus* L.; *Journ. Ecol.*, 33, 210-213) discuss the morphological differences between, and the distribution of, *J. effusus* and *J. conglomeratus*. The confusion between the latter and *J. effusus* var. *compactus* is discussed. In North Wales *Juncus conglomeratus* is a very rare plant and a lowland species whilst *J. effusus* and its var. *compactus* have an extensive distribution on the mountain slopes, on poor pasture retrogressive to moorland, and in the more open parts of woods. The association on higher ground is dominated by the variety.—[Wa.]

101. LEMNACEAE. Observations on Indian Duckweeds, McCann, C. (*Jnl. Bombay Nat. Hist. Soc.*, 43, 148-162, 1942) contains critical notes and illustrations of *Lemna polyrrhiza* and *Wolffia arrhiza* of interest to students of this group. *L. polyrrhiza* is treated as *Spirodela polyrrhiza* and sound reasons are given for maintaining this genus.—[E.C.W.]

738/2. RUPPIA MARITIMA L. McCann, C. (1945: Notes on the Genus *Ruppia*; *Jnl. Bombay Nat. Hist. Soc.*, 45, 396-402) gives field observations with special reference to pollination and seed dispersal.—[E.C.W.]

753. CAREX. Harrison, J. W. Heslop (1945: *Trans. Bot. Soc. Edinb.*, 34, 270-277) contributes ecological, phytogeographical and taxonomic notes on "Noteworthy Sedges from the Inner and Outer Hebrides, with an account of two species, *C. capitata* L. and *C. glacialis* Mackenzie, new to the British Isles."—[Wa.]

753/17×23. × *Carex Tornabeni* Chiov. (*C. distans* L. × *extensa* Good.). This hybrid, new to the British Isles, is recorded for Dorset and E. Kent by J. P. M. Brenan and N. D. Simpson (1946: *N.W. Nat.*, 20, 202-206). It differs from *C. extensa*, which it most resembles, in the smaller (3.1 × 1.4 mm.), laxer utricles, more ascending than usual in that species, and the more pronounced beak with an often deeper notch. The nut is intermediate in shape, with a surface as in *C. extensa*. A full description is given.—[Wi.]

754/2b. PANICUM CAPILLARE L. var. *occidentale* Rydb., 1895: *Contrib. U.S. Nat. Herb.*, 3, 186. (*Panicum barbipulvinatum* Nash, 1900: in Rydb., *Mem. N.Y. Bot. Gard.*, 1, 21, 21, Middx.; canal bank near Soya Foods Ltd., Springwell, near Harefield, 1945, det. C. E. HUBBARD. Alien, U.S.A. The variety differs from the typical plant in the blades being shorter, less pubescent, and crowded towards the base; spikelets usually about 3 mm. long, attenuate at tip; fruit 1.7 to 1.8 mm. long.—D. H. KENT. 30, Beds.; Sandy, 1946, J. G. DONY, det. C. E. HUBBARD.

754/2(2). *Panicum dichotomiflorum* Michx., 1803: *Fl. Bor. Amer.*, 1, 48. 21, Middx.; forecourt of Soya Foods Ltd., Springwell, near Harefield, 1945, B. WELCH, det. Mrs A. CHASE, United States National Museum. Alien, U.S.A., Hitchcock, 1935: *Manual of the Grasses of the United States*, p. 665, gives the following description:—Culms ascending or spreading from a geniculate base, 50 to 100 cm. long, or in robust specimens as much as 2 m. long; ligule a dense ring of white hairs 1 to 2 mm. long; blades sometimes sparsely pilose on the upper surface, 10 to 50 cm. long, 3 to 20 mm. wide, the white midrib usually prominent; panicles terminal and axillary, mostly included at base, 10 to 40 cm. long or more, the main branches ascending; spikelets narrowly oblong-ovate, usually about 2.5 mm. long, acute.—D. H. KENT.

†794/5(3). *Avena byzantina* C. Koch, 1848: *Linnaea*, 21, 392. *A. sterilis algeriensis* Trabut, 1918: "Observations sur l'origine des Avoines cultivées," IV<sup>me</sup> Conférence Internationale de Génétique. *A. sterilis* L. ssp. *culta* Marquand, 1922: "Varieties of oats in cultivation," *Welsh Plant Breeding Station's Bulletin*, Series C, no. 2, p. 35. 34, W. Glos.; rubbish tip, Portway, Bristol, August 1946, O. I. SANDWICH, det. C. E. HUBBARD. A cultigen, known as "Algerian" or "Mediterranean Oat," derived from *A. sterilis* and bearing the same relation to it as *A. sativa* does to *A. fatua*: that is to say, in Marquand's words, "it differs from the wild varieties of *A. sterilis* in the more or less complete solidification of the basal articulation of the lower grain."—N. Y. SANDWICH.

815. ERAGROSTIS. Chevalier, Aug. (1940: Revision des *Eragrostis* spontanés ou naturalisés en France; *Bull. Soc. Bot. Fr.* 87, 273-279) gives a revision of the species occurring as adventives in France. The following species are discussed and a key provided: *E. cilianensis* (All.) Vig.-Lut., *E. paezoides* (L.) Beauv. var. *pumila* Chevalier—a newly-described variety, *E. tef* (Zucc.) Trotter and *E. mexicana* (Hornem.) Link.—[Wa.]

825. GLYCERIA. Fitzpatrick, Jeanne M. (1946: *New Phyt.*, 45, 137-144) contributes "A Cytological and Ecological Study of some British species of *Glyceria*." The species dealt with are *G. declinata* Bréb., *G. plicata* Fries, *G. fluitans* R. Br., a possible hybrid between *G. plicata* and *G. fluitans*, and *G. maxima* (Hartm.) Holmb. *G. declinata* was found to be diploid ( $2n=20$ ), *G. plicata*, *G. fluitans* and their hybrid tetraploid ( $2n=40$ ) and *G. maxima* a possible hexaploid ( $2n=60$ ). The chromosome number could often be correlated with the size of the cells, in particular, the size of the guard cells of the stomata and of the pollen grains. *G. declinata* seems to be the most drought tolerant of the group, whilst *G. fluitans* occurs in wetter habitats, where there is usually standing water throughout the year. *G. plicata* and the hybrid appear to occupy habitats intermediate in wetness.—[Wa.]

825/1. GLYCERIA MAXIMA (Hartm.) Holmb. Lambert, J. M. (1946: *Journ. Ecol.*, 33, 230-267) discusses "The Distribution and Status of *Glyceria maxima* (Hartm.) Holmb. in the Region of Surlingham and Rockland Broads, Norfolk." The biotic and physical factors of its relationship with the fen communities are fully described.—[Wa.]

826/18(2). *Vulpia megalura* (Nutt.) Rydb. in *Bull. Torr. Bot. Cl.*, 36, 538 (1909). *Festuca megalura* Nutt. N. and S. America, introduced into Europe. Differs from *V. Myuros* chiefly in the presence of cilia on the upper half of the lemma. Maintained as a species by Hitchcock.—C. E. HUBBARD. 30, Beds.; railway embankment, East Hyde.—J. G. DONY. [Distributed from Norfolk this year.]

827/19(2). *BROMUS LEPIDUS* Holmb. Aimée Camus (1940: Sur quelques Graminées; *Bull. Soc. Bot. Fr.*, 87, 82-84) refers to the probable occurrence of this species in France and gives a description indicating the characters distinguishing it from *B. mollis*.—[Wa.]

847/1. *PTERIDIUM AQUILINUM* (L.) Kuhn. Lousley, J. E. (1946: *School Nature Study*, 41, 6-7), deals with the occurrence of "Bracken on Bombed sites" in the London area. Young bracken was seen in 1943 in some of the basements of buildings destroyed in 1940 and 1941: in the following year plants were to be seen in almost every basement in some parts. The late summer of 1945 saw the sudden production of immense numbers of young sporelings. The occurrence of bracken on the sites and in such numbers is due to the great number of introductions by wind-borne spores. It is suggested that the exceptionally high temperature developed by the brick work under moist conditions and the reduction of evaporation by protection from wind favours the germination of the spores.—[Wa.]

872-876. CHARACEAE. Reappearance of Charophytes in Frensham Great Pond, Surrey. After being drained during the war, this pond gradually began to fill again in the autumn of 1945. By mid October on ground that had been uncovered six weeks or so earlier there appeared at the north-western corner in six to eighteen inches of water a quantity of *Nitella opaca* Ag. in splendid fruiting condition although so late in the season. There were also a few plants of it on the northern sandy stretch but with very much longer branchlets. A search for *Chara aspera* Willd. which has been known from here for over sixty years was unsuccessful.

In April 1946 the *N. opaca* was still in evidence. By the middle of July there appeared round the north corner in about nine inches of water a fine growth of a very short form of this species with small round whorls smothered in gametangia, very similar to the form found in Hayle Kembra at the Lizard. A month later this small form was mainly over but was replaced by clumps of *C. delicatula* Ag. in beautiful condition; and at the same time the first piece of *C. aspera* was found.

Not long afterwards drastic dragging operations to remove the extensive sheet of *Polygonum* that interfered with sailing put an end to the Charophytes for the time being.—G. O. ALLEN.

## PLANT RECORDS

Thanks are due to those who sent in records on cards and gave all the relevant data. The sending of voucher specimens improved, and it is hoped that members who wish expert determinations of any plant they find difficult to identify will collect an extra specimen where possible which the expert may retain. Please consult the announcement concerning the Panel of Specialists for guidance.

The following signs are used in connection with *Plant Records*:—

- § before the *B.P.L.* number: to indicate that the paragraph contains information necessitating a correction in the annotated copy of *Comital Flora*.
  - † before the *B.P.L.* number: to indicate that the plant is not a native species in the British Isles.
  - † before the record: to indicate a native species which is not native in the locality recorded.
  - \* before the record: to indicate new vice-county records, not published previous to the year of the Report.
  - ‡ before the record: to indicate records additional to the annotated copy of *Comital Flora*, published previous to the year of the Report.
  - [ ] enclosing a record: to indicate doubt as to the validity of the record, either of identification or locality.
- A number or letter in brackets between name of county and locality indicates the botanical district, for details of which see local flora.
- For other records from v.-cc. 22, 23, 30, 42, 88, 89, see Excursions, pp. 211-232.

2/5. *THALICTRUM ALPINUM* L. 109, Caithn.; swamp by Mill Dam, Newlands of Forse, alt. 300 ft., E. C. WALLACE.

3/2. *ANEMONE NEMOROSA* L. 88, M. Perth; at 3100 ft. on An Stuc above Lochan nan Chat (Ben Lawers), 1944, W. Ramsden (A. A. Dallman; 1946: *N.W. Nat.*, 20, 273). It grows in the "crater" on Ben Lawers, i.e., at some 3900 ft.—M. S. CAMPBELL.

6/3j. *RANUNCULUS ACERIS* L. var. *MINUTIFLORUS* DRUCE. 23, Oxon.; damp meadow at Otmoor, J. P. M. BRENNAN and R. GRAHAM.

§6/6. *RANUNCULUS LINGUA* L. ‡21, Middx.; abundant on verges of a pond near Stanmore Common, D. H. KENT. See *W.B.E.C. Rep.*, 1926-7, 371 (1927) for earlier record, add to *C.F.*—ED.

§6/20. *RANUNCULUS FLUITANS* Lam. \*90, Angus. The wet summer of 1946 had a disastrous effect on the flowering of *Ranunculus fluitans* Lam. Plants observed throughout the season in two localities did not

produce a single flower although many abortive buds were formed. On the other hand *Ranunculus pseudo-fruitans* (Syme) Baker & Foggitt had a normal flowering season, U. K. DUNCAN.

6/21. *RANUNCULUS CIRCINATUS* Sibth. 17, Surrey; pond in Hampton Park near Seale, C. D. PIGOTT.

6/23. *RANUNCULUS DROUETHI* F. Schultz. 41, Glam.; near freshwater spring on dunes, Newton, Miss M. THOMAS, det. R. W. BUTCHER, comm. E. VACHELL, who adds: "Several old records for the county are probably erroneous." 64, M.W. Yorks.; on alluvial mud in riverside ditches in the valley of the Wharfe above Kettlewell, J. N. FRANKLAND, det. R. W. BUTCHER.

6/33e. *RANUNCULUS FIGARIA* L. var. *BULBIFERA* Marsden-Jones. 22, Berks.; four small colonies at west end of Bagley Wood: in great profusion in a ditch beside the Godstow-Wytham road, J. H. BURNETT.

9/2. *HELLEBORUS FOETIDUS* L. 17, Surrey; Marden Park near Godstone, C. D. PIGOTT.

+10/1. *ERANTHIS HYEMALIS* (L.) Salisb. 21, Middx.; wood by Thames, Laleham, B. WELCH, comm. D. H. KENT.

11/1. *AQUILEGIA VULGARIS* L. 57, Derbs. (L.); Deepdale, Taddington, Pnative, 1943 (pink flowers); 64, M.W. Yorks. (W.); Grass Wood, 1945 (pink flowers); 97, Westernness; above Ft. William (blue flowers), D. P. YOUNG.

17/1. *BERBERIS VULGARIS* L. 109, Caithn.; hedge in lane near Bower, and near Watten, E. C. WALLACE.

+17/2. *BERBERIS AQUIFOLIUM* Pursh. 17, Surrey (8); Croham Hurst, since 1934, D. P. YOUNG. 41, Glam.; Penrice; Penmaen, etc., J. A. WEBB, comm. E. VACHELL.

§22/1. *MECONOPSIS CAMBRICA* (L.) Vig. +69, Westm.; on shingle beside the Grisedale Beck, Glenridding (4), well established but near market gardens, denizen, A. J. FARMER. \*+88, Mid-Perth; edge of island in the Tay, Ballinluig, M. S. CAMPBELL.

23/1. *GLAUCIUM FLAVUM* Crantz. +21, Middx.; a single plant on a rubbish tip, Hanwell, D. H. KENT.

§32/1. *FUMARIA CAPREOLATA* L. \*15, E. Kent; Abbey garden, Northbourne, 1946, J. H. P. SANKEY, det. H. W. PUGSLEY, comm. D. H. KENT.

32/4. *FUMARIA PURPUREA* Pugsf. 71, Man; base of clay cliffs N. of Ramsey, appearing indigenous, J. A. WHELLAN, det. H. W. PUGSLEY.



32/9b. *FUMARIA BASTARDII* Bor. var. *HIBERNICA* Pugsl. 71, Man; cliffs at Laxey, appearing indigenous, J. A. WHEELLAN, det. H. W. PUGSLEY.

32/10b. *FUMARIA OFFICINALIS* L. var. *ELEGANS* Pugsl. 3, S. Devon; Preston Down, Paignton, 1944: S. C. Patterson, det. H. W. PUGSLEY—new to v.-c. 3 (Day and Brokenshire, 1945: 64).

32/10d. *FUMARIA OFFICINALIS* L. var. *WIRTGENI* Hausskn. 3, S. Devon; Wanberry Hill, Torquay, 1944, S. C. Patterson, det. H. W. PUGSLEY, new to v.-c. 3 (Day and Brokenshire, 1945: 64).

35/1. *NASTURTIUM OFFICINALE* R. Br. *sens. str.* 9, Dorset; Wyke Regis, 1925, R. MELVILLE, as var. *siifolium*; 10, Wight; Alverstone, 1925, R. MELVILLE; 37, Worcs.; Malvern Wells, 1889, R. F. TOWNDROW, as var. *siifolium* (Reichb.) Koch; 41, Glam.; Ystrad, 1877, A. LANGLEY; 43, Radnor; Bottledock, Bach Howey, 1929, A. E. WADE, as var. *parvifolium* Peterm.; 44, Carm.; near Kidwelly, 1930, A. E. WADE; 47, Mont.; Newtown, 1939, J. A. WEBB; 48, Mer.; near Nannan, 1941, J. A. WEBB.

\*35/1(2). *NASTURTIUM UNISEBIATUM* Howard et Manton. 6, N. Som.; dyke below Brean Down, 1921, Mrs C. I. SANDWICH; canal, Limpley Stoke, 1899, C. Bucknall, specimen in his herbarium in Herb. Univ. Bristol (this locality may be just in Wilts.). Comm. and det. N. Y. SANDWICH. 9, Dorset; near Wimborne, 1892, E. F. LINTON. 17, Surrey; Sheen Common, 1912, JOHN DIVERS; Lower Morden, 1911, C. E. BRETTON, as *N. officinale* var. *microphyllum*. 30, Beds.; it seems as common as *N. officinale*, J. G. DONY. 32, Northants; Thornhaugh, 1903, H. H. SLATER. 35, Mor.; Mounton, 1891, W. A. SHOOLBRED; Rumney, 1922, A. E. WADE. 37, Worcs.; near Burford Tenbury, 1878, JOHN FRASER, as *N. officinale* var. *siifolium*. 41, Glam.; Fairwater, 1920, A. E. WADE. 42, Brec.; Llangorse Lake, 1925, A. E. WADE. 45, Pemb.; Dowrog Moor, 1937, H. A. HYDE and A. E. WADE, as *N. officinale* var. *microphyllum*. 49, Caern.; near Bangor, 1882, J. E. GRIFFITH; between Bangor and Caernarvon, 1876, J. T. CHESWICK WILLIAMS. 50, Denb.; near Eglwysbach, 1928, A. WILSON. 52, Angl.; Cors Bodeilio, 1930, A. WILSON. 55, Leics.; Anstey Lane, 1915, A. E. WADE. 106, E. Ross; near Tain, 1897, W. A. SHOOLBRED.

§36/5. *BARBAREA INTERMEDIA* Boreau. \*88, M. Perth; sandy spit north side of Loch Rannoch, M. S. CAMPBELL; near Ballinluig, M. S. CAMPBELL and A. J. WILMOTT.

37/6. *ARABIS GLABRA* (L.) Bernh. 16, W. Kent; Larkfield Heath, D. McCLINTOCK, comm. F. ROSE.

†37/9. *ARABIS ROSEA* DC. 4, N. Devon; Northam, Milner, 1944 (Day and Brokenshire, 1945: 58).

†37/12. *ARABIS CAUCASICA* Willd. 57, Derbs.; (L.), limestone rocks and walls, Cromford; Crich, 1945, D. P. YOUNG.

39/2. *CARDAMINE AMARA* L. 40, Salop; wet wood, foot of Ercall Hill, Wellington, E. C. WALLACE.

39/7. *CARDAMINE BULBIFERA* (L.) Crantz. 21, Middx.; still abundant at Garret Wood, Springwell, where it was first recorded in 1855: Harefield Grove, where it was first recorded in 1853: wood close to Jack's Lock, Harefield, all records 1945, D. H. KENT. 39, Staffs.; Yoxall, plentiful in a wood near Yoxall Lodge, 1945, C. CLARKE, comm. E. S. EDEES.

†41/1. *AUBRIETA DELTOIDEA* DC. 57, Derbs.; limestone cliff, Cromford, 1943, D. P. YOUNG.

§44/1. *EROPHILA VERNA* (L.) E. Meyer. \*73, Kirkc.; track by Carlingwark Loch near Castle Douglas, H. MILNE-REDHEAD.

§45/7. *COCHLEARIA DANICA* L. †\*38, Warw.; abundant on railway track outside Rugby station, E. C. WALLACE.

49/2. *SISYMBRIUM SOPHIA* L. †3, S. Devon; established in Portland Avenue, Exmouth, J. J. STUART EDWARDS.

49/6b. *SISYMBRIUM OFFICINALE* (L.) Scop. var. *LEIOCARPUM* DC. 33, E. Glos.; Flour Mills, Tewkesbury, plentiful, C. W. BANNISTER, comm. W. R. PRICE.

§49/7. *SISYMBRIUM THALIANA* (L.) Gay. \*110, O. Hebr.; Hellisdale, S. Uist, W. A. CLARK (1946: *Vasc. Subst.*, 31, 24).

60/1. *CORONOPUS DIDYMUS* (L.) Sm. 23, Oxon.; (5), abundant in a small patch of cultivated ground at Radcot Bridge, T. R. DAVEY.

§61/2. *LEPIDIUM LATIFOLIUM* L. \*†21, Middx.; banks of the Colne near Drayton Ford, 1939, D. H. KENT: canal bank in several places near Harefield, 1945, B. WELCH, comm. D. H. KENT. \*†24, Bucks.; bank of the Colne, Denham, D. H. KENT.

†61/24. *LEPIDIUM NEGLECTUM* Thell. 21, Middx.; rubbish tip, Hanwell, N. Y. SANDWICH and D. H. KENT, det. N. Y. SANDWICH.

†74/1. *BUNIAS ERUCAGO* L. 30, Beds.; waste ground, Luton, H. B. SOUSTER, det. A. J. WILMOTT, comm. J. G. DONY.

†74/2. *BUNIAS ORIENTALIS* L. 60, W. Lancs.; established in some quantity at Fleetwood Docks, J. A. WHELLAN.

K | 75/1. *CRAMBE MARITIMA* L. 14, E. Suss.; abundant on the S. coast, viz.:—at Cuckmere Haven: from the Crumbles to Cooden; and from Cliff End right to the Kent border, F. ROSE and W. J. L. SLADEN. 15,

E. Kent; abundant on the S. coast, from the Sussex border eastwards to N. of Dungeness; also below Abbotscliff: and N. of Kingsdown:— shows apparently, a great increase since 1939, as pre-war recorders speak of it as becoming rarer in v.cc. 14 and 15, F. ROSE. 71, Man; sparingly on the beach at Dhoon and Poyll Vaaish, J. A. WHELLAN.

80/2. *RAPHANUS MARITIMUS* Sm. 15, E. Kent; near the Wicks, Dungeness, 1946, W. J. L. SLADEN, collm. F. ROSE.

†85/1. *RESEDA ALBA* L. 21, Middx.; waste ground in Chelsea Square, S.W.3, R. GRAHAM.

88/6b. x4. *VIOLA CANINA* L. var. *ERICETORUM* (Hayne) Rehb. x *RIVINIANA* Rehb. 60, W. Lancs.; two patches, on sand-dunes at Ansdell where *V. canina* is abundant, but *V. Riviniana* is very rare though it grows about 30 yards from the hybrid, J. A. WHELLAN and H. E. BUNKER, det. A. J. WILMOTT.

88/8h. *VIOLA ODORATA* L. var. *SUBCARNEA* (Jord.) Parlat. 15, E. Kent; several patches on road banks, Old Wives Lees, 1945, D. H. KENT.

§88/23. *VIOLA SEGETALIS* Jord. \*89, E. Perth; near Pitlochry, Mrs EVETTS, det. A. J. WILMOTT.

§88/30. *VIOLA DERELICTA* Jord. \*39, Staffs.; Mavesyn Ridware, near Bentley Farm in a field of ripening corn, 1945, E. S. EDDES (3900), det. Mrs E. DRABBLE, who wrote "good *derelicta*."

92/2. *DIANTHUS DELTOIDES* L. 52, Anglesea; rocks near the Warren, Newborough, 1941, D. P. YOUNG (1391).

†95/1. *SAPONARIA OFFICINALIS* L. 49, Caern.; Llanfairfechan, 1938, D. P. YOUNG.

†95/1b. *SAPONARIA OFFICINALIS* L. var. *HIRSUTA* Wierzb. 28, W. Norfolk; a fair-sized patch on the sand-dunes between Holme House and Gore Point, Holme-next-the-Sea, Dr J. N. MILLS and J. P. M. BRENNAN (7404).

§96/1. *SILENE MARITIMA* (Hornem.) With. †\*17, Surrey; rubbish dump, Wimbledon Common, J. E. LOUSLEY and J. E. WOODHEAD.

96/3. *SILENE CONICA* L. 25, E. Suff.; in two spots at Sizewell, E. C. E. LEADBETTER.

98/9. *LYCHNIS GITHAGO* (L.) Scop. 17, Surrey; field between Oxted and Godstone, C. D. PIGOTT.

100/2. *CERASTIUM ARVENSE* L. 56 and 57, Notts. and Derbs.; by the R. Trent on the Notts. and Derbs. border, R. H. HALL.

100/4. *CERASTIUM ARCTICUM* Lange. 49, Caern.; stream débris, Cwm Brwynog, 1250 ft., in great quantity, doubtless washed down from Clogwyn Du'r Arddu, 1943, D. P. YOUNG.

K | 100/9. *CERASTIUM TETRANDRUM* Curt. 15, E. Kent; 8 miles from the sea, at Brabourne Lees, with *Festuca ambigua*, F. ROSE.

+100/12. *CERASTIUM TOMENTOSUM* L. 21, Middx.; several large well-established patches on waste land near the Thames at Chiswick, D. H. KENT.

101/7. *STELLARIA GRAMINEA* L. 109, Caithn.; "with light purple stamens giving the effect of pale-lilac coloured flowers, from banks of the Thurso river", Mrs J. V. PHELPS, det. J. F. G. CHAPPLE. Similar to the plant from Sussex referred to in *B.E.C. 1907 Rep.*, 280; 1908. [Dissection of flower of this Thurso plant shows abortion of petals, and stamens infected by a smut fungus.—Ed.] [Doubtless the common smut on Caryophyllaceae, *Ustilago violacea* (Pers.) Rous.—H.K.A.S.]

102/8. *ARENARIA TENUIFOLIA* L. 6, N. Som.; near summit of Crooks Peak, Compton Bishop, J. E. LOUSLEY and C. WEST.

102/12. *ARENARIA SEDOIDES* (L.) Druce. 106, E. Ross; very abundant on quartzite, Meall Diamhain and Creag Liath, head of Glen Oyke, E. C. WALLACE.

+102/14. *ARENARIA BALEARICA* L. 47, Mont.; near waterfall, south side of Lake Vyrnwy, no houses on that side of lake, Miss D. CADBURY, comm. C. M. ROB.

K | §103/10. *SAGINA MARITIMA* Sm. \*16, W. Kent; near Upnor, J. E. LOUSLEY, comm. F. ROSE.

§106/1. *POLYCARPON TETRAPHYLLUM* (L.) L. +\*17, Surrey; for second year in garden at Hindhead, Miss MARION WHITELAW per Mrs B. WELCH, comm. J. E. LOUSLEY.

+108/2. *CLAYTONIA PERFOLIATA* Donn. 22, Berks.; (2) Foxcombe Hill, A. F. TWIST. 21, Middx.; established as a flower bed weed in Hanger Hill Park, Ealing, F. P. D. BOUCHER and D. H. KENT.

K | §112/7. *HYPERICUM MONTANUM* L. 16, W. Kent; in three localities about Darenth Wood, 1946, whence it was recorded about 1700 (Doody), F. ROSE. 39, Staffs.; Wetton, on high ground above Thor's Cave, 1945, T. J. WALLACE, comm. E. S. EDEES (4175).

K | §112/12×14. *HYPERICUM DUBIUM* Leers × *PERFORATUM* L. (×H. *DESETANGSII* Lamotte). 16, W. Kent; on gravelly ground by the R. Medway near Cannon Bridge, Tonbridge, 1936, J. P. M. BRENNAN (3062); \*24, Bucks.; lane between Cadmore End and Fingest, *H. perforatum* nearby but no *H. dubium* seen, N. Y. SANDWITH.

look on this probably a var of *perforatum* but the plant suggests *dubium* by itself.

§112/16. *HYPERICUM LINARIIFOLIUM* Vahl. \*43, Radnor; on rocks at 1400 ft. within a few miles of Llandrindod Wells, July 1945, N. Y. SANDWICH.

117/2. *MALVA SYLVESTRIS* L. 3, S. Devon; one plant with white flowers (except for a faintest pink tinge in bud) in a grass field on top of the cliffs between Branscombe Mouth and Beer Head, J. P. M. BRENNAN.

†118/1. *SIDA SPINOSA* L. 21, Middx.; forecourt of flourmill belonging to Soya Foods Ltd., Springwell Lock, near Harefield, 1945, D. H. KENT.

†120/1. *ABUTILON THEOPHRASTI* Med. 21, Middx.; a single plant by the canal near Springwell Lock, 1945, B. WELCH, comm. D. H. KENT: several plants in the grounds of Soya Foods Ltd., Springwell Lock, 1946, J. E. LOUSLEY, J. P. M. BRENNAN, J. G. DONY, J. E. WOODHEAD and D. H. KENT: rubbish tip, Hanwell, 1946, D. H. Kent.

†122/1. *HIBISCUS TRIONUM* L. 21, Middx.; a single plant by the canal near Springwell Lock, 1945, D. H. KENT.

†127/2. *GERANIUM VERSICOLOR* L. 21, Middx.; hedgebank near Elstree, D. H. KENT.

†127/5. *GERANIUM PHAEUM* L. 17, Surrey (3b); Friday Street, 1943, J. A. YOUNG, comm. D. P. YOUNG (1612).

127/7b. *GERANIUM PYRENAICUM* Burm. f., var. *PALLIDUM* (Druce) Wilmott. 29, Cambs.; churchyard of Little St Mary's, Cambridge, 1946, Dr J. N. MILLS and J. P. M. BRENNAN (7407) as f. *pallidum*. It was evidently overlooked that *G. pyrenaicum* f. *pallidum* Stearn et Gilmour, 1932: *Journ. Bot.*, 70, Suppl. p. 6, is a later homonym of *G. pyrenaicum* f. *pallidum* ["pallida"] Druce, 1921: *B.E.C. 1920 Rep.*, 17; and doubtless the two names are synonymous also.—J.P.M.B.

127/10b. *GERANIUM MOLLE* L. var. *AEGUALE* Bab. 35, Mon.; Llandegfedd, 1946, A. E. WADE, comm. NAT. MUS. WALES.

127/13. *GERANIUM LUCIDUM* L. 66, Durham; recorded as flowering twice in 1945, J. W. H. HARRISON (1945: *Vasc. Subst.*, 30, 53).

127/15. *GERANIUM PURPUREUM* Vill. 2, E. Cornw.; base of sea-cliffs, Veryan Bay, R. C. L. BURGESS and L. T. MEDLIN.

128/2. *ERODIUM MOSCHATUM* (L.) L'Hérit. †30, Beds.; Sandy; Flitwick; Sheffield, J. G. DONY.

128/3f. *ERODIUM CICUTARIUM* (L.) L'Hérit. var. *PIMPINELLIFOLIUM* (Sibth.) DC. 59, S. Lancs.; on peaty soil, field, edge of Simonswood Moss, near Rainford, A. J. FARMER.

‡133/2. *IMPATIENS CAPENSIS* Meerb. \*56, Notts.; River Leen at Papplewick (Sept. 1946), R. H. HALL.

†133/3. *IMPATIENS PARVIFLOBA* DC. 22, Berks.; (2) waste ground near Folly Bridge (Oxford), A. F. TWIST. 57, Derbs.; banks of R. Derwent near Wilne, R. H. HALL.

†142/3. *ACER PLATANOIDES* L. 17, Surrey; (2) Woodmansterne, seeding freely from planted trees in a coppice, 1940, D. P. YOUNG (1161).

†147/4. *GENISTA HISPANICA* L. 34, W. Glos.; Clifton Downs, top of St Vincent's Rocks, Bristol, 1921, A. E. ELLIS, det. J. F. G. CHAPPEL, 1938.

149/2. *ULEX GALLII* Planch. 73, Kirke.; abundant on sea cliffs, Portowarren, R. MACKECHNIE and E. C. WALLACE.

151/3. *ONONIS SPINOSA* L. 39, Staffs.; Thorpe Constantine, a small patch by the side of a path through a ploughed field, E. S. EDEES (5057).

152/1. *TRIGONELLA ORNITHOPOPOIODES* (L.) DC. 41, Glam.; cliffs, Horton, Gower, Miss P. SIMONS, det. and comm. E. VACHELL.

†152/2. *TRIGONELLA FOENUM-GRÆCUM* L. 39, Staffs.; allotments, Bass's Brewery, Burton-on-Trent, R. C. L. BURGESS, det. J. P. M. BRENNAN.

153/1. *MEDICAGO FALCATA* L. †90, Angus; Ninewells near Dundee, J. SINCLAIR and U. K. DUNCAN, comm. U. K. DUNCAN.

153/6f. *MEDICAGO MINIMA* (L.) Bartal. var. *VISCIDA* Koch. 26, W. Suff.; sandy, grassy ground near Tuddenham, Dr J. N. MILLS and J. P. M. BRENNAN (7392). Previously only recorded as an alien, and so printed in *B.P.L.*, Ed. 2, but, although close to a village, we had no reason to doubt its nativity in the above locality, growing as it was with a typical Breckland flora.

†154/3. *MELILOTUS ARVENSIS* Wallr. 59, S. Lancs.; waste ground, near shore, Aigburth, Liverpool, A. J. FARMER.

†154/4. *MELILOTUS INDICA* (L.) All. 60, W. Lancs.; waste land, Warton near Lytham, E. C. WALLACE. 90, Angus; Ninewells near Dundee, U. K. DUNCAN.

155/11. *TRIFOLIUM STRIATUM* L. 57, Derbs.; banks of Trent, near Thrumpton, R. H. HALL.

155/12. *TRIFOLIUM SUBTERRANEUM* L. †30, Beds.; gravel pit, Eaton Socon, E. MILNE-REDHEAD and P. TAYLOR. 57, Derbs.; banks of Trent, near Trumpton, R. H. HALL.

§155/17. *TRIFOLIUM GLOMERATUM* L. \*30, Beds.; Eaton Socon, E. MILNE-REDHEAD.

§155/18. *TRIFOLIUM SUFFOCATUM* L. 14, E. Suss.; on shingle, Langrey Point near Eastbourne, Aug. 1946, J. E. LOUSLEY, R. J. LIBBEY, and W. J. L. SLADEN. \*61, S.E. Yorks.; Kilnsea Warren, R. D'O. Good (1946: *Nat.*, 819, pp. 133-136, 155).

156/1. *ANTHYLLIS VULNERARIA* L. 21, Middx.; waste land adjoining A.E.C. Works, Windmill Lane, Southall, 1942, D. H. KENT.

160/6. *LOTUS TENUIS* Waldst. & Kit. 17, Surrey; (8) Addington, 1940, D. P. YOUNG (1225).

†166/5. *ASTRAGALUS HAMOSUS* L. 39, Staffs.; allotments, Worthington's maltings, Burton-on-Trent, R. C. L. BURGESS, det. J. P. M. BRENNAN.

176/1. *VICIA SYLVATICA* L. 15, E. Kent; still at Aldington Knowle (first seen here by G. E. Smith about 1820): Swanton Banks, Lydden (teste Miss D. LONG); still abundant in Covert Wood, Kingston: F. ROSE. | K

†176/5. *VICIA VILLOSA* Roth. 21, Middx.; rubbish tip, Hanwell, D. H. KENT, det. N. Y. SANDWICH.

†176/6. *VICIA DASYCARPA* Ten. 17, Surrey; Holmwood, in a rick-yard, 1945, J. E. Lousley (1946: 14, as *V. villosa* ssp.); a single plant by roadside between Puttenham and Cutt Mill, 1946, W. E. WARREN, det. A. J. WILMOTT.

176/7. *VICIA BITHYNICA* (L.) L. 15, E. Kent; cliffs at Minster-in-Sheppey, F. ROSE. | K

176/8b. *VICIA SEPIUM* L. var. *ochroleuca* Bast. 66, Durham; roadside between Bowburn and Quarrington Hill, 1945, J. W. H. HARRISON (*Vasc. Subst.*, 30, 48).

†177/1a. *LENS CULINARIS* Medik. subsp. *esculenta* (Moench) Briq. 30, Beds.; rubbish dump, Sundon, J. G. DONY, det. N. Y. SANDWICH.

§178/3. *LATHYRUS TUBEROSUS* L. †\*30, Beds.; near Luton and Dunstable Hospital, F. L. CHESHAM: Barton, HERTS. NAT. HIST. SOC. EXCURSION: Amptill, Miss OLDFIELD, comm. J. G. DONY. †\*73, Kirke.; hedgebank, Sandyhills, Portowarren, E. C. WALLACE.

178/8. *LATHYRUS NISSOLIA* L. 22, Berks.; (2) stone quarry, Rockley, CUMROR, SUSAN CHAPPLE, comm. J. F. G. CHAPPLE.

178/9. *LATHYRUS APHACA* L. 3, S. Devon; within a mile of Exmouth, J. J. STUART EDWARDS. 29, Cambs.; abundant by a track through cornfields near Toft, Dr J. N. MILLS and J. P. M. BRENNAN (7394).

†183/1. *PRUNUS LAURO-CERASUS* L. 41, Glam.; bird-sown at Clyne, Gower, and elsewhere, J. A. WEBB, comm. E. VACHELL.

K |  
183/2. *PRUNUS PADUS* L. †15, E. Kent; Brotherhood Wood, N. of Canterbury, looking native and seeding freely, Miss D. LONG, comm. F. ROSE. 29, Cambs.; several trees scattered in damp fen woodland, Chippenham Fen, Dr J. N. MILLS and J. P. M. BRENNAN—the presence of bird-cherry here seems hardly to be covered by A. H. EVANS' brief comment (1939: *Fl. Cambs.*, 69) that it "occurs as a garden escape or where planted," and suggests that there may be something to be said in favour of its nativity in the county.

183/4. *PRUNUS CERASUS* L. 71, Man; in hedges at several places, Dreemsberry, Graeve, Baldbon, Ballaglas, J. A. WHELLAN.

†§184/10. *SPIRAEA SALICIFOLIA* L. \*41, Glam.; Swansea area, rare, J. A. WEBB, comm. E. VACHELL.

\* 186/1. *DRYAS OCTOPETALA* L. 49, Caern.; Cowlyd district, a new locality, EVAN ROBERTS, comm. A. WILSON.

\* 189/4. *POTENTILLA ARGENTEA* L. 17, Surrey; towpath near Ham, 1945, Mrs B. Welch, 1945 (Lousley); 1946: 13).

\* 189/5. *POTENTILLA CRANTZII* Beck. 69, Westm.; still in good quantity on rocks by the Maize Beck; 70, Cumb.; sparingly on limestone rocks by the Crowdundle Beck, R. M. PAYNE and J. A. WHELLAN.

189/8. *POTENTILLA PROCUMBENS* Sibth. 104, N. Eubudes; Canna (J. W. H. HARRISON, 1939E: 100); Kinloch, Rhum (1946: *Vasc. Subst.*, 31, 24, 31).

†189/11. *POTENTILLA NORVEGICA* L. 21, Middx.; waste ground in Chelsea Square, S.W.3, R. GRAHAM.

†189/13. *POTENTILLA RECTA* L. 29, Cambs.; plentiful on waste ground at the back of a college, Cambridge (said to have been grown in an adjacent garden), Dr J. N. MILLS and J. P. M. BRENNAN (7378).

190/5. *ALCHEMILLA PASTORALIS* Buser. 66, Durham; in another locality more than a mile to the east of Langdon Beck, C. I. and N. Y. SANDWITH, confirmed by S. M. WALTERS.

194/2a. *ROSA ARVENSIENSIS* Huds. var. *VULGARIS* Ser. f. *HISPIDA* Lej. & Court. 9, Dorset; area of Callow Farm, Corfe Castle, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 151).



194/2g. *ROSA ARVENSIS* Huds. var. *LAEVIPES* Grem. 9, Dorset; Corfe Castle, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 152) [as var. *vulgaris* forma].

194/5d. *ROSA STYLOSA* Desv. var. *SYSTYLA* (Bast.) Baker. 16, W. Kent; by R. Medway near Hartlake Bridge, N.E. of Tudeley Hale, 1939: Trench Wood near Tonbridge, 1939, J. P. M. BRENNAN. 1 K

194/6j. *ROSA CANINA* L. var. *SENTICOSA* (Ach.) Baker f. *MUCRONULATA* (Déségl.) W.-Dod. 9, Dorset; Callow Farm area, Corfe Castle, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 154).

194/6r. *ROSA CANINA* L. var. *RAMOSISSIMA* Rau. 9, Dorset; Corfe Castle, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 154).

194/7b. *ROSA CANINA* L. var. *DUMALIS* (Bechst.) Dum. f. *GLADOLELA* (Rip.) W.-Dod. 9, Dorset; Corfe Common, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 154).

194/7c. *ROSA CANINA* L. var. *STENOCARPA* (Déségl.) Rouy. 9, Dorset; Callow Farm Area, Corfe Castle, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 154).

194/7h. *ROSA CANINA* L. var. *DUMALIS* (Bechst.) Dum. f. *VIRIDICATA* (Pug.) Rouy. 9, Dorset; Corfe Castle, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 154).

194/7m. *ROSA CANINA* L. var. *SYLVULARUM* (Rip.) W.-Dod. 16, W. Kent; by a backwater of R. Medway below Tonbridge, 1938, J. P. M. BRENNAN. 1 K

194/8e. *ROSA CANINA* L. var. *VERTICILLACANTHA* (Mér.) Baker. 16, W. Kent; waste, grassy ground near the pottery works, Tonbridge, 1936, J. P. M. BRENNAN. 1 K

194/9b. *ROSA CANINA* L. var. *BLONDAEANA* (Rip.) Rouy f. *VINACEA* (Baker) Rouy. 9, Dorset; near Corfe Castle, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 155).

194/10f. *ROSA DUMETORUM* Thuill. var. *GABRIELIS* (F. Gér.) R. Kell. 9, Dorset; between the Stoborough-Arne road and the River Frome, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1946: 143).

194/10g. *ROSA DUMETORUM* Thuill. var. *CALOPHYLLA* Rouy. 9, Dorset; Corfe Castle, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 155).

194/14e. *ROSA MICRANTHA* Sm. var. *SEPTICOLA* (Déségl.) Gren. 41, Glam.; lime quarry, Newton Nottage, 1944, Miss M. THOMAS; det. R. MELVILLE.

K | 194/15. *ROSA RUBIGINOSA* L. var. *TYPICA* W.-Dod. 15, E. Kent; shingle between the Hope and Anchor inn and the ponds, Dungeness, 1936, N. Y. SANDWICH and J. P. M. BRENNAN (3049).

K | 194/15. *ROSA RUBIGINOSA* L. var. *TYPICA* W.-Dod. 16, W. Kent; roadside not far from Port Victoria, 1937, J. P. M. BRENNAN (3547).

K | 194/15f. *ROSA RUBIGINOSA* L. var. *ECHINOCARPA* (Rip.) Gren. 9, Dorset; Stoborough Heath, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 156). 16, W. Kent; thicket on railway bank between the Old Barn and the Flying Dutchman inn, near Hildenborough, 1934, J. P. M. BRENNAN (721a): chalk downs near Upper Halling, 1939, J. P. M. BRENNAN (6126).

194/19a. *ROSA TOMENTOSA* Sm. var. *TYPICA* Chr. 41, Glam.; hedge, Duffryn, near Cardiff, 1943, E. VACHELL, det. R. MELVILLE: Kenfig Hill, and Cornelly, 1944, Miss M. THOMAS.

194/19f. *ROSA TOMENTOSA* Sm. var. *SCABRIUSCULA* Sm. 41, Glam.; Nash Point, E. VACHELL, det. R. MELVILLE.

194/19f. *ROSA TOMENTOSA* Sm. var. *SCABRIUSCULA* (Winch) f. *MORETONENSIS* W.-Dod. 41, Glam.; lime quarry, near Newton Nottage, 1944, Miss M. THOMAS, det. R. MELVILLE.

194/20e. *ROSA SHERARDI* Davies var. *PSEUDO-MOLLIS* (E. G. Baker). 41, Glam.; Kenfig Hill, and Cornelly, 1943, Miss M. THOMAS, det. R. MELVILLE.

194/23b. *ROSA SPINOSISSIMA* L. var. *PIMPINELLIFOLIA* (L.) Druce. 41, Glam.; dunes, Kenfig, 1936, E. VACHELL, det. Col. WOLLEY-DOD.

194/23c. *ROSA SPINOSISSIMA* L. var. *ROSEA* (Koch.) W.-Dod. 9, Dorset; off the Corfe Castle-Wareham road, A. E. A. Dunston, det. E. B. Bishop (Dunston, 1945: 153, as var. *pimpinellifolia* forma).

†194/26b. *ROSA RUGOSA* Thunb. var. *ALBA* W. Robins (var. *ALBIFLORA* Koidz.). 60, W. Lanes.; in plenty, with the typical form, and fully naturalised in one place on dunes at St Annes, J. A. WHELLAN, det. N. Y. SANDWICH.

§195/8. *SORBUS MOUGEOTI* Soy.-Will. et Godr. var. *ANGLICA* Hedl. \*4, N. Devon; sea cliffs near Sandabay, Berrynarbor, 1944, H. W. PUGSLEY.

§†197/2. *COTONEASTER MICROPHYLLUS* Wallich. \*9, Dorset; Portland, Miss E. MORSE, det. J. F. G. CHAPPLE.

†197/3. *COTONEASTER SIMONSI* Baker. 49, Caern.; Haulfre, Llan-dudno, 1941, D. P. YOUNG.

199/1. *SAXIFRAGA ALZOIDES* L. 98, M. Argyll; Ben Douvan, a form with orange petals and deep red centre locally frequent, JOHN RAVEN, comm. J. E. LOUSLEY.

199/17. *SAXIFRAGA GRANULATA* L. 20, Herts.; Chorley Common, 1941, D. H. KENT.

§199/22. *SAXIFRAGA HIRCULUS* L. †91, King.; †109, Caithn.; see *Top. Bot. Suppl.*, II, and A. Bennett, 1912: *Scottish Bot. Rev.*, 205-208.

214/1. *HIPPURIS VULGARIS* L. 56, Notts.; pond near Felley Mill, R. H. HALL.

217/6. *CALLITRICHE AUTUMNALIS* L. 69, Westm.; in the Lancaster and Kendal Canal at Hincaster, H. BLACKLER (1946: *N.W. Nat.*, 21, 257).

217/7b. *CALLITRICHE TRUNCATA* Guss. var. *occidentalis* (Rouy) Druce. 16, W. Kent; extremely abundant, but neither flowering nor fruiting, in the R. Darenth for a considerable distance W. of the road from Dunton Green to Riverhead; none seen E. of the road, 1946, J. P. M. BRENNAN (7466). K

220/1. *EPILOBIUM ANGUSTIFOLIUM* L. 17, Surrey; several patches of white-flowered plants on Wisley Common, 1945 and 1946, M. BELL, comm. E. C. WALLACE.

220/4×8. ×*EPILOBIUM PERSICINUM* Rehb. 30, Beds.; Yelden, J. G. DONY, det. G. M. ASH (as *E. parviflorum* × *roseum*).

§220/6. *EPILOBIUM LAMYI* F. Schultz. \*28, W. Norf.; abundant in sand-dune slacks between Hunstanton and Holme-next-the-sea, Dr J. N. MILLS and J. P. M. BRENNAN (7398), confirmed by G. M. ASH.

220/6×4. ×*EPILOBIUM PALATINUM* F. Schultz. 28, W. Norf.; one large plant with the parent species in sand-dune slacks between Hunstanton and Holme-next-the-sea, 1946, Dr J. N. MILLS and J. P. M. BRENNAN (7399), confirmed by G. M. ASH (as *E. Lamyi* × *parviflorum*).

§+220/7(2). *EPILOBIUM ADENOCALON* Haussk. 16, W. Kent; by a large, water-filled gravel-pit W. of the road between Dunton Green and Riverhead, J. P. M. BRENNAN. \*24, Bucks; lane and wood-border between Chalfont and Chorley Wood, June 1946, N. Y. SANDWICH, confirmed by G. M. ASH. \*29, Cambs.; waste ground by the river in centre of town, Cambridge, J. P. M. BRENNAN and Dr J. N. MILLS, confirmed by G. M. ASH. \*35, Monmouth; wall of railway bridge between Monmouth and Raglan, June 1946, N. Y. SANDWICH, confirmed by G. M. ASH. 14

220/7(2)×3. *EPILOBIUM ADENOCAULON* Haussk. × *HIRSUTUM* L. 30, Beds; brick-pit pool, Eaton Socon, N. Y. SANDWICH, confirmed by G. M. ASH.

220/7(2)×10. *EPILOBIUM ADENOCAULON* Haussk. × *MONTANUM* L. 12, N. Hants.; clearing in wood with abundance of *E. adenocaulon* and a little *E. montanum*, Upping Copse in S.W. part of Harewood Forest, R. BURN and J. P. M. BRENNAN (7418), confirmed by G. M. ASH.

220/7(2)×14. *EPILOBIUM ADENOCAULON* Haussk. × *PALUSTRE* L. 12, N. Hants.; one large plant by a boggy stream, The Chase, E. of Broad Laying, near Highclere, R. BURN and J. P. M. BRENNAN (7415), confirmed by G. M. ASH.

§220/9. *EPILOBIUM LANCEOLATUM* Seb. et Maur. \*24, Bucks; gravelly roadside bank near Chalfont, N. Y. SANDWICH, confirmed by G. M. ASH. Excluded by Druce, *Fl. Bucks*, p. 146, as requiring confirmation.

220/9×10. *EPILOBIUM LANCEOLATUM* Seb. & Maur. × *MONTANUM* L. 24, Bucks.; gravelly roadside bank near Chalfont, N. Y. SANDWICH, confirmed by G. M. ASH.

220/9×1. *EPILOBIUM LANCEOLATUM* Seb. & Maur. × *OBSCURUM* Schreb. 3, S. Devon; wall at Lustleigh, 1941, J. P. M. BRENNAN (6607), det. G. M. ASH.

220/10×4. *EPILOBIUM MONTANUM* L. × *PARVIFLORUM* Schreb. 30, Beds.; Aspley Woods; J. G. DONY, det. G. M. ASH.

220/12. *EPILOBIUM ALSINIFOLIUM* Vill. 64, M.W. Yorks.; spring-head amongst moss, Buckden, Upper Wharfedale, J. N. FRANKLAND, confirmed by G. M. ASH.

+220/17. *EPILOBIUM PEDUNCULARE* A. Cunn. 69, N. Lancs.; between Furness Abbey and Dalton, G. M. BROWN, det. W. R. PHILIPSON. 70, Cumb.; in a steep, semi-filled gully, Thirlmere side of Helvellyn, at 2000 feet, on a damp rock, associated with *Chrysosplenium oppositifolium* L. and *Cochlearia alpina* Wats., A. J. FARMER. 88, M. Perth; roadside near Pass of Glenlyon, R. D. GRAHAM, det. A. J. WILMOTT and J. P. M. BRENNAN.

§+223/2. *OENOTHERA LAMARCKIANA* De Vries. \*41, Glam.; sand-dunes near Horton, Gower, very abundant, origin, garden escape, 1945, J. A. WEBB, E. VACHELL, and P. SIMONS.

225/3. *CYRCAEA ALPINA* L. 70, Cumb.; moist, rocky place in Johnny's Wood, Borrowdale, J. A. WHELLAN, confirmed by J. E. LOUSLEY.

†239/1. *ERYNGIUM CAMPESTRE* L. 12, N. Hants.; Mapledurwell, 1945, W. BOYD WATT.

244/1. *SMYRNIUM OLUSATRUM* L. 52, Anglesey; Priestholm ("Puffin Island"), "running wild all over the island except below c. 50 feet: the island is now uninhabited but there was a telegraph station there about 40 years ago, and monks in the old days," Col. G. C. HILL, comm. A. J. WILMOTT.

245/3. *BUPLEURUM ROTUNDFOLIUM* L. 12, N. Hants.; Mapledurwell, 1945, W. BOYD WATT.

247/5. *APIUM INUNDATUM* (L.) Rehb. f. 30, Beds.; Tempsford, Miss I. J. ALLISON, comm. J. G. DONY. 57, Derbs.; pool near Trent rifle range, R. H. HALL.

†250/1. *CARUM CARVI* L. 21, Middx.; bombed site, Northfields Avenue, West Ealing, 1945, D. H. KENT.

250/4. *CARUM SEGETUM* (L.) Benth. & Hook. f. 29, Cambs.; high grassy bank by roadside in Caldecote village, J. P. M. BRENNAN and Dr J. N. MILLS.

251/1. *SISON AMOMUM* L. 39, Staffs.; Clifton Campville, frequent in hedgerows near Haunton, E. S. EDEES (5477).

§253/2. *SIUM ERECTUM* Huds. \*104, N. Eubudes; (Skye) stream at Camas Mór near Kilmuir; 1945, C. D. PIGOTT.

255/1. *PIMPINELLA MAJOR* Huds. 56, Notts.; near Annesley, R. H. HALL.

257/1. *MYRRHIS ODORATA* (L.) Scop. †41, Glam.; field by cottage near Stormy Down, Pyle, Miss M. THOMAS and Mr WILLAN, 1945, comm. E. VACHELL.

§265/2. *OENANTHE ELUVIATILIS* Coleman. \*64, M.W. Yorks.; River Cock, between Stutton and Tadcaster, Mrs J. APPELYARD, confirmed by W. A. SLEDGE (see *Nat.*, 133, 1946).

274/1b. *ANGELICA SYLVESTRIS* L. var. *DECURRENS* Lallemand. 9, Dorset; hedgerow bank near Chamberlain's Farm, Bere Regis, 1946, N. DOUGLAS SIMPSON (46007)—the leaves shortly pubescent, but the ordinary form here has the leaves glabrous.

†276/4. *ANETHUM GRAVEOLENS* L. 21, Middx.; rubbish tip, Hanwell, 1946, D. H. KENT.

†276/5. *PEUCEDANUM OSTRUTHIUM* Koch. 70, Cumb.; Aira Beck, Douthwaite Head at 1250 ft., W. ATKINSON, comm. CARLISLE MUSEUM.

283/4. *CAUCALIS ARVENSIS* Huds. 17, Surrey; gravel pit, Eastby End, Thorpe, 1945, J. E. LOUSLEY.

+285/3. *CORNUS STOLONIFERA* Michx. 41, Glam.; Mayals, Margam, etc., J. A. WEBB, comm. E. VACHELL.

‡+287/3. *SAMBUCUS EBULUS* L. \*60, W. Lancs.; naturalised by the docks at Fleetwood, J. A. WHELLAN.

288/1. *VIBURNUM OPULUS* L. 108, W. Suth.; one bush, Amhuinn a' Ghlinne Dhuibh, Loch Glendhu, Miss C. W. GUIRHEAD, comm. CARLISLE MUS.

288/1b. *VIBURNUM OPULUS* L. var. *XANTHOCARPUM* Spaeth. 17, Surrey; with the typical form in a thicket above Gomshall, Sept. 1945, N. Y. SANDWITH (see 1946: *N.W. Nat.*, 1945, 274, and Plant Notes).

+292/1. *LEYCESTERIA FORMOSA* Wallich. 49, Caern.; Llanfairfechan, 1938, D. P. YOUNG (864). 71, Man; fully established in some quantity on cliffs near Laxey, 1945-6, J. A. WHELLAN, det. A. B. JACKSON.

296/5. *GALIUM PUMILUM* Murray. 24, Bucks.; chalk slope near Loudwater, R. GRAHAM and N. Y. SANDWITH: Druce, *Fl. Bucks.*, p. 170, gives only one locality, in the Thames District.

296/2×9. *GALIUM MOLLUGO* L. × *VERUM* L. 6, N. Som.; Lansdowne, Bath, F. M. BARTON.

‡+296/12b. *GALIUM SPURIUM* L. var. *VAILLANTII* DC. \*16, W. Kent; East Malling, C. WEST, comm. F. ROSE (as *G. Vaillantii* DC.).

+301/4. *VALERIANA PYRENAICA* L. 70, Cumb.; banks of the Carwinley Burn on the Netherby road, R. MARTINDALE and T. L. JOHNSTON, comm. CARLISLE MUSEUM. 71, Man; naturalised in great quantity by the stream in Glen Poy, J. A. WHELLAN.

304/3. *VALERIANELLA DENTATA* (L.) Poll. 41, Glam.; amongst corn near Nottage, Porthcawl, 1945, Miss M. THOMAS.

304/3b. *VALERIANELLA DENTATA* (L.) Poll. var. *MIXTA* (L.) DuRoi. 49, Caern.; limestone scree above Happy Valley, Great Orme, 1942, D. P. & J. A. YOUNG (1485)—recorded by Griffiths (1895: *Fl. Angl. and Caern.*) as "disappearing fast."

308/4. *SCABIOSA SUCCISA* L. 109, Caithn.; a pink-flowered plant somewhat abundant with the normal plant in pasture about Altmarloch, Wick, E. C. WALLACE (5603).

+318/11. *ASTER VERSICOLOR* Willd. 23, Oxon.; Shotover Hill near Oxford, 1924, A. E. ELLIS, det. C. E. BRITTON, 1939.

324/5b. *FILAGO MINIMA* PERS. var. *SUPINA* (DC.) ROUY. 26, W. Suffolk; locally plentiful on open sandy ground near Pilgrim's Path N.N.E. of Icklingham, 1946, Dr J. N. MILLS and J. P. M. BRENNAN (7390).

‡333/1. *INULA HELENTUM* L. \*109, Caithn.; several plants on low cliff, Ackergill Tower, Wick, E. C. WALLACE.

+339/3. *AMBROSIA ARTEMISIFOLIA* L. 21, Middx.; abundant about Soya Foods Ltd. flour mill, Springwell Lock, 1945, B. WELCH and D. H. KENT, a few plants there 1946: rubbish tip, Hanwell, J. E. LOUSLEY, J. G. DONY, J. E. WOODHEAD, and D. H. KENT.

+339/4. *AMBROSIA TRIFIDA* L. 21, Middx.; frequent about Soya Foods Ltd. flour mill, Springwell Lock, 1945, D. H. KENT, a few plants there 1946.

+339/4b. *AMBROSIA TRIFIDA* L. var. *INTEGRIFOLIA* (Willd.) Torr. & Gray. 21, Middx.; canal bank near Springwell Lock, 1945, D. H. KENT, det. J. E. LOUSLEY.

353/2b. *BIDENS TRIPARTITA* L. var. *INTEGRA* Koch. 41, Glam.; damp ground by Morfa Pools, E. VACHELL.

+354/1. *GALINSOGA PARVIFLORA* Cav. 17, Surrey; has now appeared in quantity in some parts of the R.H.S. gardens, Wisley, J. S. L. Gilmour (1946: *J. Roy. Hort. Soc.*, 71, lxvii). 55, Leics.; as a weed at Ansty Nurseries, 1945 and 1946, W. S. LACEY, comm. F. A. SOWTER.

+354/2b. *GALINSOGA QUADRIRADIATA* Ruiz et Pavon var. *HISPIDA* (DC.) Thell. 17, Surrey; Kew; 21, Middx.; City of London: Brentford; 1945, L. G. Payne (Lousley; 1946: 14). [Kew and Brentford plants not seen by J.E.L. and recorded as *G. quadriradiata*.—Ed.] Abundant in abandoned front garden of 225 Euston Road, N.W.1, 1944, D. H. KENT: waste land, Great Chertsey Road, Chiswick, 1946, D. H. KENT.

+355/3. *MADIA CAPITATA* Nutt. H.12, Wexford; wheatfield on Balinastraw side of S. Slaney  $\frac{1}{2}$  mile from Newtownbarry, August 1946, Miss E. BOOTH, det. N. Y. SANDWICH—"The owner sowed the field from seed bought two years ago from Hunters of Dublin. There was nothing else in the field of interest except cornflowers." First Irish record.

365/11. *ACHILLEA PTARMICA* L. 109, Caithn.; plants "galled" by the midge *Rhopalomyia ptarmicae* Vallot on an island on Loch Scye, Mrs J. V. PHELPS, det. J. F. G. CHAPPLE.

+368/10. *ANTHEMIS WIEDEMANNIANA* F. et M. 6, N. Som.; waste ground, Ashton Gate, Bristol, May 1939, C. I. SANDWICH. The speci-

mens fit descriptions and match those of J. W. White's 1911 gathering at Bristol which were named by Thellung and are now in the Druce Herbarium. Unfortunately, this gathering, which was distributed through the Exchange Club (*B.E.C. 1917 Rep.*, p. 229 (1918)), was a mixed one, including specimens of an *Anthemis* with larger leaves and heads, probably *A. Cota* or an allied species. Thus the sheets both in Mr White's herbarium at Bristol University and at Kew bear specimens of both species. The sheet in Herb. Druce also has both species on it, but there is a second label, not annotated and probably not seen by Thellung, beneath the plant of the larger species, whereas the label beneath the specimens of *A. Wiedemanniana* has Thellung's identification on it in his own handwriting, N. Y. SANDWICH.

†371/5. *MATRICARIA DECIPIENS* (Fisch. & Mey.) C. Koch. 54, N. Lincs.; Grimsby, 1937, Mrs SANDWICH and J. P. M. BRENNAN, det. N. Y. SANDWICH and J. P. M. BRENNAN (3927, 4048).

†378/12. *ARTEMISIA TOURNEFORTIANA* Rechb. 33, E. Glos.; Deerhurst, among *Bidens tripartita* at edge of horse-pond, Mrs J. FARQUHARSON, det. A. J. WILMOTT.

†378/21. *ARTEMISIA VERLATORUM* Lam. 21, Middx.; Brentford and Hartington Road, Chiswick, 1945, B. WELCH, comm. D. H. KENT: between Brockley Hill and Elstree, Ealing Common, abundant by the Thames near Chertsey Bridge and rubbish tip, Hanwell, D. H. KENT: very abundant on waste land, Windmill Lane, Hanwell, B. WELCH and D. H. KENT.

380/1. *PETASITES HYBRIDUS* (L.) G., M. & S. emend. Fritsch. 70, Cumb.; the female plant, banks of the R. Irthing at Gilsland, Rev. G. A. K. HERVEY, comm. CARLISLE MUSEUM.

‡380/2. *PETASITES ALBUS* (L.) Gaertn. \*60, W. Lancs.; plentifully in a copse at Wrea Green, J. A. WHELLAN.

†380/3. *PETASITES FRAGRANS* Presl. 60, W. Lancs.; roadside S. of Lancaster, 1942: roadside near Mowbreck Hall, Kirkham, J. A. WHELLAN.

†380/4. *PETASITES JAPONICUS* Maxim. 4, N. Devon; Berry Harbor, A. E. Mahood, previously reported as *P. albus* (Day and Brokenshire: 1945, 58).

†381/1. *DORONICUM PARDALIANCHES* L. 19, N. Essex; casual at St Osyth, 1945; 50, Denbigh; abundant in a wood near Pont-y-Trap, 1936: in a wood near Pwll Glas, 1936; 60, W. Lancs.; roadside W. of Longridge, 1942: roadside between Longridge and Chipping, 1942: in a copse near Great Plumpton, 1946, J. A. WHELLAN.



‡383/1. *SENECIO SARRACENICUS* L. \*52, Anglesey; near Bodedera, 1945, E. G. WILLIAMS (1946: *N.W. Nat.*, 20, 264).

‡383/7. *SENECIO SQUALIDUS* L. 40, Salop; frequent about R.A.F. Hospital, Cosford, E. C. WALLACE. \*60, W. Lancs.; railway sidings at Preston, J. A. WHELLAN and H. E. BUNKER: railway bridge at Squires Gate, Blackpool, J. A. WHELLAN.

383/7×8. ×*SENECIO LONDINENSIS* Lousley. 3, S. Devon; waste ground adjoining Goodrington goods-yard, two plants, rather nearer *S. squalidus* than the London type, J. E. RAVEN, det. J. E. LOUSLEY. 21, Middx.; waste ground in Chelsea Square, S.W.3, R. GRAHAM.

383/7×10. ×*SENECIO BAXTERII* Druce. 14, E. Suss.; Eastbourne Railway Station, J. W. L. SLADEN, comm. J. E. LOUSLEY.

383/8. *SENECIO VISCOSUS* L. 2, E. Cornw.; railway track, Par, Aug. 4, 1946, R. C. L. BURGESS. "One doubtfully recorded from West Cornwall, Charleston, 1921, Tresidder, extinct"—Thurston (1928: in *J. Roy. Instit. of Cornwall*, 76, 167), J. E. LOUSLEY.

383/10e. *SENECIO VULGARIS* L. var. *RADIATUS* Koch. 51, Flint; Holywell (1725): Greenfield, 1944, H. O. WILLIAMS, comm. D. P. YOUNG. 57, Derbs. (T.1); Spondon, since 1941 (1696): Ford Lane, Breadsall, 1944 (1698): D. P. YOUNG.

‡389/2. *ECHINOPS RITRO* L. 17, Surrey (S); waste ground, Sanderstead, 1938 to 1945, D. P. YOUNG (916).

396/1. *CIRSIUM ERIOPHORUM* (L.) Scop. 15, E. Kent; still at Postling Downs—the only locality known in the county recently, F. ROSE. 12

‡399/1. *SILYBUM MARIANUM* (L.) Gaertn. 23, Oxon.; Garsington Rectory, 1944, Rev. P. J. J. FEAR, comm. and det. N. POLUNIN.

405/15. *CENTAUREA CALCITRAPA* L. 16, W. Kent; near Plough Inn, Northfleet, 1945, F. ROSE (not nearly so plentiful nowadays.—ED.), and apparently not to be found in 1947. 14

‡405/31. *CENTAUREA SOLSTITIALIS* L. 3, S. Devon; Exmouth, J. J. STUART EDWARDS.

‡405/39. *CENTAUREA MOSCHATA* L. 21, Middx.; rubbish tip, Hanwell, N. Y. SANDWICH and D. H. KENT, det. N. Y. SANDWICH.

416/3. *CREPIS BIENNIS* L. 35, Mon.; in plenty in two lanes near Raglan Castle, J. W. GOUGH and N. Y. SANDWICH.

‡419/8. *HIERACIUM BRUNNEO-CROCEUM* Pugsl. 21, Middx.; abundant on a grassy roadside, Syon Lane, Osterley, D. H. KENT. 39,

Staffs.; Bass's maltings, Burton-on-Trent, 1937, J. F. G. CHAPPLE and J. P. M. BRENNAN (3996). \*89, E. Perth; in grass near church, Pitlochry, A. J. WILMOTT—See *B.E.C. 1924 Rep.*, 579 (1925), for earlier record (as *H. aurantiacum* L.) for v.-c. 88.—Ed.

419/55. *HIERACIUM LASIOPHYLLUM* Koch. 70, Cumb.; shaly rocks on Barf Fell, J. A. WHELLAN, confirmed by H. W. PUGSLEY.

419/69. *HIERACIUM ARGENTEUM* Fr. 49, Caern.; rocks on Moel Hebog, 1942, J. A. WHELLAN and H. F. DOVASTON, det. H. W. PUGSLEY.

419/74. *HIERACIUM HYPOCHAEROIDES* Gibs. 50, Denb.; abundant on limestone rocks near World's End, Llangollen, 1935, J. A. WHELLAN; 64, M.W. Yorks.; on rocks above Malham Cove, J. A. WHELLAN—both confirmed by H. W. PUGSLEY.

419/80(2). *HIERACIUM CARNEDDORUM* Pugsl. 49, Caern.; on rocks on Moel Hebog, near Og of Owain Glyndwr, 1942, J. A. WHELLAN and H. F. DOVASTON, det. H. W. PUGSLEY.

419/83. *HIERACIUM PELLUCIDUM* Jaest. 64, M.W. Yorks.; stream bank by Thornton Force, Ingleton, 1942; 66, Durham; High Force Woods, J. A. WHELLAN—both det. H. W. PUGSLEY.

419/129. *HIERACIUM ANGLORUM* (Ley) Pugsl. 49, Caern.; on a wall in Bangor, J. E. RAVEN and J. A. WHELLAN, confirmed by H. W. PUGSLEY.

419/145. *HIERACIUM VULGATUM* (Fr.) Almq. 59, S. Lancs.; streamside near Catlow, Nelson, 1943, A. TURNER and J. A. WHELLAN; 63, W. Yorks.; on a wall near Gargrave, 1943, J. A. WHELLAN—both confirmed by H. W. PUGSLEY.

419/249. *HIERACIUM SUBCROCATUM* (Lint.) Zahn. 65, N.W. Yorks.; by Tees above Winch Bridge, R. M. PAYNE and J. A. WHELLAN, det. H. W. PUGSLEY.

419/256. *HIERACIUM VAGUM* Jord. 71, Man; banks of electric railway from South Cape to Minorca and on cliffs below—very abundant and appearing native but absence of previous records may mean it is introduced, J. A. WHELLAN, det. H. W. PUGSLEY.

421/3c. *HYPOCHAERIS GLABRA* L. var. *ROSTRATA* C. & G. 3, S. Devon; Goodrington ballast pit, Paignton, 1944, S. C. PATTERSON (Day and Brokenshire, 1945: 65 as var. *Balbisi* Lois.)

422/3b. *LEONTODON LEYSSERT* (Wallr.) Beck. var. *LASTOLAENUS* (Bisch.) Druce. 33, E. Glos.; Ashchurch, almost as common as type, C. W. BANNISTER, comm W. R. PRICE.

†425/8. *LACTUCA MACROPHYLLA* (Willd.) A. Gray. 4, N. Devon; roadside wall, Brayford, A. C. LARKE, comm. et det. J. P. M. BRENNAN. 89, E. Perth; bank of river Tummel near Pitlochry, Mrs J. V. PHELPS, det. J. F. G. CHAPPLE.

†425/9. *LACTUCA TATARICA* L. 58, Ches.; gravel pits near Rossett, 1945, E. G. Williams (1946: *N.W. Nat.*, 20, 263).

427/3e. *SONCHUS ASPER* Hill. var. *INTEGRIFOLIUS* Lej. 33, E. Glos.; Ashchurch, C. W. BANNISTER, comm. W. R. PRICE.

428/2. *TRAGOPOGON PRATENSIS* L. 39, Staffs.; Kinver, roadside near Kingswinford, flowers  $1\frac{3}{8}$  inches in diameter, E. S. EDEES (5499).

†435/6. *CAMPANULA PERSICIFOLIA* L. 17, Surrey; large patch in dense scrub on face of Gravelly Hill, Caterham, C. D. PIGOTT.

§440/1. *ARBUTUS UNEDO* L. †41, Glam.; "naturalising itself on the limestone screes at Caswell," J. A. WEBB (*Swansea Scientific Society's Proceedings*, 1, 7, 1927).

453/1. *PYROLA ROTUNDIFOLIA* L. 15, E. Kent; near Brook, C. N. POPE: Waltham, and Chartham, both teste Miss D. LONG: 1946, comm. F. ROSE.

453/2. *PYROLA MEDIA* Sw. 90, Forfar; side of path through Scots Pine plantation, Kinnordy, Kirriemuir, Miss K. D. WHYTE, comm. J. S. WHYTE.

§456/1. *MONOTROPA HYPOPHYTIS* L. \*68, Northumb. N.; Rothbury Forest, 1945, M. F. Adams (1946: *Vasc. Subst.*, 31, 1 and 9). Bracketted as doubtful for 67 in *Top. Bot.*, ed. ii, now refound in Northumberland after 170 years.

†457/9. *LEMONIUM SUWOROWII* (Regel) O. Kuntze. 30, Beds.; rubbish dump, Sundon, J. G. DONY, det. E. MILNE-REDHEAD.

§458/4. *STATICE MARITIMA* Mill. \*41, Glam.; cliffs near Rhossili, 1945, growing with *S. pubescens* (Sm.) Dr. There seems to be some confusion in all Floras and Lists of Glamorgan plants regarding the occurrence of these two species in the county and it seems well that it should be definitely put on record that both species occur in the county, *S. pubescens* being apparently by far the commoner of the two. H. J. Riddelsdell (1907: *Flora of Glamorgan, Journ. Bot., Suppl.*) describes only *Statice Armeria* L., from many localities, stating "All, I believe, in the form *A. pubescens* Link." A. H. Trow (1911: *Flora of Glamorgan*) describes only *Armeria maritima* L., as common "but for the fact that there are no records for the coast from Swansea to the mouth of the Kenfig River." Hyde and Wade (1934: *Welsh Flowering Plants*).

describe (for Glamorgan) only *Statice maritima*. Vachell (*List of Glamorgan Plants*) gives *Statice pubescens* (Sm.) as locally common. *S. maritima* Mill. agg. All records probably refer to *S. pubescens*, *Journ. Bot.*, 1911, 90, see also *Journ. Bot., Suppl.*, 1907, 43. Up to last year I suppose no one had found the true *S. maritima* Mill. in the county and in gathering it I did not realise that it was a first definite record and therefore only have one specimen. E. VACHELL.

465/1. *TRIENTALIS EUROPAEA* L. 62, N.E. Yorks.; Troutdale, H. B. WILLOUGHBY SMITH.

467/3. *ANAGALLIS FOEMINA* Mill. 21, Middx.; arable land near Heath Row, 1945, B. WELCH and D. H. KENT.

469/1. *SAMOLUS VALERANDI* L. 23, Oxon.; (5) marshy ground between Ducklington and Witney, 1938, T. R. DAVEY. (Not seen there since.)

†470/1. *SYRINGA VULGARIS* L. 41, Glam.; frequent as a hedgerow plant, often far from houses in Swarsea area, J. A. WEBB, comm. E. VACHELL.

480/4c. *GENTIANA AMARELLA* L. var. *PALLIDA* (Pugsley) Wilmott. 88, M. Perth; Dull, near Loch Kinardochy, on old roadway, 1946, M. S. CAMPBELL, det. H. W. PUGSLEY.

480/4x8. *G. AMARELLA* L. × *GERMANICA* Willd. (× *G. Pamplinii* Druce). 30, Beds.; a single plant with corolla constricted, intermediate in colour, i.e. less "blue" than *germanica* and with segments less acute and smaller than in that species, chalk pit, Sundon, 1946, J. E. LOUSLEY, P. TAYLOR and J. E. WOODHEAD.

480/5. *GENTIANA SEPTENTRIONALIS* Druce. 105, W. Ross; Cnochan Rocks, on turfy limestone cliffs; 108, W. Suth.; pasture at Elphin; 109, Caithn.; grassy roadsides inland from Latheron and Lybster; heathy ground near Loch Winless, E. C. WALLACE.

§480/6. *GENTIANA ANGLICA* Pugsley. \*16, W. Kent; Kemsing Downs—only three plants seen, D. McCLINTOCK and F. ROSE.

§480/7. *GENTIANA ULIGINOSA* Willd. \*41, Glam.; Gower Peninsula, Aug. 1927, Miss V. PEEL, teste H. W. PUGSLEY, comm. J. E. LOUSLEY; Llanmadoc, Gower, 1934, A. L. STILL, comm. E. C. WALLACE.

†486/1. *POLEMONIUM CAERULEUM* L. 24, Bucks.; North End Common, 1943, D. H. KENT.

†497/3. *SYMPHYTUM ORIENTALE* L. 30, Beds.; well established in churchyard, Pertenhall, Miss G. H. DAY and J. G. DONY, det. E. MILNE-REDHEAD.

†497/4. *SYMPHYTUM PEREGRINUM* Ledeb. 69, Westm.; roadside between Knock and Milburn, 1921, A. J. WILMOTT (1136).

†498/1. *BORAGO OFFICINALIS* L. 71, Man; sparingly by the harbour at Laxey, J. A. WHELLAN.

†500/2. *ANCHUSA OFFICINALIS* L. 25, E. Suff.; Slaughton, E. C. E. LEADBITTER.

†500/6. *ANCHUSA HYBRIDA* Ten. 6, N. Som.; rubbish tip, Ashton Gate, Bristol, 1939-40, C. I. SANDWICH—new to the Bristol adventive flora.

†506/1. *MYOSOTIS SCOPIOIDES* L. em. Hill. 106, E. Ross; ditch with running water east of L. Ussie, by road, near Dingwall, 1931—add to *C.F.*, but recorded in *Top. Bot. Suppl., I.*—A. J. WILMOTT (3780).

506/10e. *MYOSOTIS VERSICOLOR* Sm. var. *DUBIA* (Arrandean) Drabble. 9, Dorset; roadside between Wareham and Bere Regis, A. H. G. ALSTON and N. D. SIMPSON (46009).

507/1. *LITHOSPERMUM OFFICINALE* L. 73, Kirke.; bushy hedgebank, looking native, Sandyhills, Portowarren, E. C. WALLACE.

507/3. *LITHOSPERMUM ARVENSE* L. 41, Glam.; cornfield near Nottage, Porthcawl, Miss N. THOMAS. First record as cornfield weed. Before recorded only as casual. Remove \* from *List of Glamorgan Plants*, E. VACHELL.

†511/2. *CALYSTEGIA SYLVESTRIS* (Willd.) Roem. & Schult. 13, W. Suss.; hedgebank in lane, Botolphs, far from houses; 17, Surrey; by the Mole at Burford Bridge, E. C. WALLACE. 41, Glam.; garden weed at Cogan Pill, Penarth, in very great abundance, E. VACHELL.

†512/1. *IPOMOEA PURPUREA* (L.) Lam. 15, E. Kent; climbing over hedges at Cheriton, near Folkestone, 1944, D. H. KENT, det. A. B. JACKSON. 21, Middx.; under wall of Soya Foods Ltd., Flour Mill, Springwell Lock, 1945, B. WELCH, comm. D. H. KENT, also in 1946, N. Y. SANDWICH, B. WELCH, and D. H. KENT.

†512/2. *IPOMOEA HEDERACEA* Jacq. 21, Middx.; under the wall of Soya Foods Ltd., flour mill, Springwell Lock, 1945, J. E. LOUSLEY and D. H. KENT, det. J. E. LOUSLEY, and again in 1946, N. Y. SANDWICH, B. WELCH and D. H. KENT.

517/2d. *SOLANUM NIGRUM* L. var. *ATRIPLICIFOLIUM* Dur. 18, S. Essex; very well marked on waste ground by Rainham Station, C. I. and N. Y. SANDWICH.

†519/1. *NICANDRA PHYSALOIDES* Gaertn. 21, Middx.; a single large plant on a rubbish tip, Hanwell, D. H. KENT.

†527/1. *VERBASCUM PHLOMOIDES* L. 41, Glam.; weed in nursery garden, not originally planted according to statement made by nurseryman, Llandaff North, 1944, E. VACHELL, det. A. E. WADE: weed, Roath, Cardiff, A. E. WADE.

‡527/4 *VERBASCUM VIRGATUM* Stokes. \*29, Cambs.; numerous plants on waste ground at back of a college, Cambridge, Dr J. N. MILLS and J. P. M. BRENNAN.

527/6×3. *VERBASCUM PULVERULENTUM* Vill. × *THAPSUS* L. 28, W. Norf.; with parents in lane about two miles east of Hillington Station, 1945, J. E. LOUSLEY, R. C. L. BURGESS, R. J. LIBBEY and E. L. SWANN.

†528/1. *CELSIA CRETICA* L. 39, Staffs.; Shobnall Maltings, Burton-on-Trent, D. P. YOUNG (2212).

532/1×3. *LINARIA RIPIENS* (L.) Mill. × *VULGARIS* Mill. 46, Card.; lane from Llandoc to Wallog near Aberystwyth, R. B. ABELL.

†532/28. *LINARIA PALLIDA* Tenore. 60, W. Lancs.; naturalised plentifully on church wall at Elswick, J. A. WHELLAN, confirmed by N. Y. SANDWICH: 69, Westm.; on walls at Arnside, 1942-6, J. A. WHELLAN.

†537/1. *MIMULUS GUTTATUS* DC. 109, Caithn.; wholly brown flowered plants occurred with normal ones on shore at Lower Dounreay, E. C. WALLACE.

†537/2. *MIMULUS MOSCHATUS* Dougl. 39, Staffs.; Brindley Heath, by the side of a stream near the water works, 1945, E. S. EDEES (4204).

‡539/1. *LIMOSELLA AQUATICA* L. \*52, Anglesey; Llyn Dinam, 1910, F. M. DALLMAN (1946: *N.W. Nat.*, 21, 254). 55, Leics. (5); Groby Pool, 1944, D. P. YOUNG (1788), not seen there previously.

543/12. *VERONICA HUMIFUSA* Dickson. 108, W. Suth.; Ceahn Garbh, Foinaven, J. SINCLAIR.

†543/18c. *VERONICA PERSICA* Poir. var. *KOCHIANA* (Godr.). 33, E. Glos.; Ashchurch, common, C. W. BANNISTER, comm. W. R. PRICE.

543/19. *VERONICA AGRESTIS* L. 3, S. Devon; "cultivated land, Plymouth, Devon," July 1876, W. B. WATERFALL (Herb. Kew.)—the existence of a Plymouth specimen is reported in view of the remarks in Martin and Fraser, *Fl. Devon*, p. 485, who regard *V. agrestis* as very local and rare throughout the county, N. Y. SANDWICH.

+543/41. *VERONICA FILIFORMIS* Sm. 3, S. Devon.; Torquay, 1944, Rev. T. STEPHENSON (Day and Brokenshire, 1945, 65). 19, N. Essex; in stubble fields near Mile End, Colchester, 1944, J. A. WHELLAN. 21, Middx.; garden pest, 36 Gayton Road, Harrow, G. H. LOCKETT, det. N. POLUNIN. 41, Glam.; an increasing garden weed, etc., Cogan, etc., E. VACHELL: Mumbles Cemetery, and grass verges, Sketty Green, etc., J. A. WEBB. 62, N.E. Yorks.; Lastingham, probably garden escape, H. B. WILLOUGHBY SMITH. 71, Man; plentiful by the entrance to Glen Mona, 1946, J. A. WHELLAN. 88, M. Perth; waste ground, Perth, 1944, M. S. CAMPBELL and A. J. WILMOTT.

§545/2. *EUPHRASIA BOREALIS* Wettst. \*35, Monmouth; with *E. Rostkoviana* Hayne in a hayfield in the valley below Llanthony Abbey, J. W. GOUGH and N. Y. SANDWICH, both confirmed by H. W. PUGSLEY.

§545/2d. *EUPHRASIA BOREALIS* Towns. ex Wettst. var. *ZETLANDICA* Pugs. \*109, Caithn.; Keiss and Dunnet Links, E. C. WALLACE.

§545/9. *EUPHRASIA CURTA* (Fr.) Wettst. \*109, Caithn.; bank by Wick river, Altimarloch, E. C. WALLACE.

545/16. *EUPHRASIA SCOTICA* Wettst. 49, Caern.; Cwm Brwynog, Snowdon, 1942, J. A. WHELLAN and H. F. DOVASTON, confirmed by H. W. PUGSLEY.

§545/18. *EUPHRASIA CONFUSA* Pugs. 64, M.W. Yorks.; pasture above Ingleton; 70, Cumb.; hillside near Scale Beck, Borrowdale; \*50, Denb.; Moel Morfydd, 1942: base of Eglwyseg Cliffs, 1942; \*60, W. Lancs.; Warton Crag, 1942; all J. A. WHELLAN, det. or confirmed by H. W. PUGSLEY [all as forma *albida*].

545/19c. *EUPHRASIA ROSTKOVIANA* Hayne var. *OBSCURA* Pugs. 48, Mer.; roadside near Trawsfynydd, 1942, J. A. WHELLAN, det. H. W. PUGSLEY; 49, Caern.; foot of Moel Hebog, 1942, J. A. WHELLAN and H. F. DOVASTON, det. H. W. PUGSLEY.

545/19(3). *EUPHRASIA RIVULARIS* Pugs. 70, Cumb.; roadside at top of Gatscarth Pass, J. A. WHELLAN, det. H. W. PUGSLEY.

545/19(3). *EUPHRASIA RIVULARIS* Pugs. 49, Caern.; foot of Moel Hebog, 1942, J. A. WHELLAN and H. F. DOVASTON, det. H. W. PUGSLEY (as forma *compacta* Pugs.).

545/19(4). *EUPHRASIA ANGLICA* Pugs. 71, Man; roadside in Glen Roy, J. A. WHELLAN, confirmed by H. W. PUGSLEY.

548/1. *RHINANTHUS MAJOR* Ehrh. 90, Angus; near Carnoustie, U. K. DUNCAN.

548/5. RHINANTHUS STENOPHYLLUS Schur. 100, Clyde Isles; Ard-maleish, Bute, salt-marsh, 1928, A. E. ELLIS, det. A. J. WILMOTT.

548/6. RHINANTHUS SPADICEUS Wilmott. 96, Easternness; Glen Feshie, 1933, A. E. ELLIS, det. A. J. WILMOTT.

550/10e. OROBANCHE MINOR Sm. var. COMPOSITARUM Pugsf. 17, Surrey; on *Leontodon hispidus* in rough chalk pasture between Headley and Epsom, N. Y. SANDWICH, confirmed by H. W. PUGSLEY.

†551/2. LATHRAEA CLANDESTINA L. 33, E. Glos.; in stone duct in bank in town, Cheltenham, in quantity, nettles, willow and small elm grow near, W. B. HORNBY, comm. W. R. PRICE.

552/5. UTRICULARIA MINOR L. 41, Glam.; marsh near Cefn Bryn, Gower, in abundance, 1945, E. VACHELL.

558/1. MENTHA ROTUNDIFOLIA L. 15, E. Kent; 3 miles W. of Chilham, F. ROSE.

558/2. MENTHA ALOPECUROIDES Hull. 15, E. Kent; Hothfield Heath: S.W. of Lenham, F. ROSE. 109, Caithn.; Aikerness, Wick, not uncommon near crofts in the district, E. C. WALLACE.

558/3. MENTHA LONGIFOLIA (L.) Huds. 15, E. Kent; south of Lenham, F. ROSE—abnormal in having included stamens, which is not unusual for *longifolia*: I can see no definite evidence of hybridity with *rotundifolia* in the spikes, R. GRAHAM. 21, Middx.; waste ground by the Welsh Harp reservoir, R. GRAHAM.

558/6. MENTHA PIPERITA L. 109, Caithn.; shore of St John's Loch, Dunnet, E. C. WALLACE.

§558/12. ×MENTHA RUBRA Huds. 15, E. Kent; north of Willesbro' Lees; 16, W. Kent; Morant's Court Hill, F. ROSE. 21, Middx.; in a ditch by Northwick Park golf course: by the Brent Reservoir, R. GRAHAM. \*109, Caithn.; ditch in lane from Wick to Noss, far from houses, E. C. WALLACE.

†558/15. MENTHA REQUIENI Benth. 16, W. Kent; woodland ride N. of Penshurst, 1945, F. ROSE.

§558/13. MENTHA ARVENSIS L. †71, Man; (Paton, C. I.; 1933: *N.W. Nat. Suppl.*, 40).

566/1. SALVIA PRATENSIS L. 22, Berks.; meadow near Arlington, 4 m. north of Newbury, H. WHEELER, comm. A. J. WILMOTT.

†566/6. SALVIA SCLAREA L. 23, Oxon; Quarries Hill, Milton-under-Wychwood (on base of stone wall by roadside), 1943, HENRY MORSE, comm. Miss HODGMAN, det. N. POLUNIN.



573/1. *PRUNELLA VULGARIS* L. 24, Bucks.; several white-flowered plants found on the chalk escarpment at Wendover, J. M. LAMBERT.

§573/2. *PRUNELLA LACINIATA* L. \*16, W. Kent; Birling Downs, very scarce in Kent, F. ROSE. \*34, W. Glos.; limestone down south of the Camp, Tytherington, in some quantity, looking perfectly native with thyme on a stony piece of down where the turf is very short, Dr F. B. A. WELCH, comm. W. R. PRICE. IK

§577/4. ×*STACHYS AMBIGUA* Sm. †109, Caithn.; abundant in willow thicket, Forse, Lybster, and frequent near crofts between there and Wick, but *S. sylvatica* not seen, E. C. WALLACE (see *Top. Bot.*, ed. 2, for earlier record).

590/1. *ILLECEBRUM VERTICILLATUM* L. 11, S. Hants.; Burnley, E. C. E. LEADBITTER.

§600/4. *CHENOPodium HYBRIDUM* L. \*39, Staffs.; Sudley and Miles Green, G. J. V. BEMROSE, comm. E. S. EDEES.

600/6. *CHENOPodium MURALE* L. 19, N. Essex; kitchen garden weed, Layer Marney Hall, 1945, M. S. CAMPBELL.

600/13. *CHENOPodium GLAUCUM* L. 16, W. Kent; Kemsing Station Yard, D. McCLINTOCK and F. ROSE. IK

†600/36. *CHENOPodium CAPITATUM* (L.) Asch. 26, W. Suff.; weed on garden path, Mundford, Brandon Heath, Sept. 1946, Dr VIOLET TEWSON, per Hon. Mrs ADEANE, comm. E. VACHELL.

†606/9. *ATRIPLEX NITENS* Schkuhr. 30, Beds.; Aspham: Silsoe, J. G. DONY, det. A. J. WILMOTT.

612/1. *SUAEDA FRUTICOSA* Forsk. 15, [E. Sussex]; on the shingly border of a saltwater pond, Midrips (W. of Dungeness), plentiful: 1946, J. H. LAVENDER and F. ROSE—given for 15 in *C.F.* (source unknown); not in *Top. Bot.* or *Suppl.*, nor in Hanbury and Marshall *Fl. Kent.* IK

†613/3. *SALSOLA PESTIFERA* A. Nels. 30, Beds.; waste ground, Luton, 1944, E. MILNE-REDHEAD and J. G. DONY.

615/5b. *POLYGONUM AMPHIBIUM* L. var. *TERRESTRE* Leers. 33, E. Glos.; Ashchurch, common, C. W. BANNISTER, comm. W. R. PRICE.

†616/1. *FAGOPYRUM SAGITTATUM* Gilib. 3, S. Devon; Yettington, near Exmouth, J. J. STUART EDWARDS.

618/6×7b. *RUMEX OBTUSIFOLIUS* L. × *SANGUINEUS* L. var. *VIRIDIS* Sibth. 40, Salop; laneside, Boscobel, E. C. WALLACE.

618/6a×11a. *RUMEX OBTUSIFOLIUS* L. subsp. *AGRESTIS* (Fries) Danser × *PULCHER* L. subsp. *EU-PULCHER* Rech. f. 3, S. Devon.; one large plant among concrete blocks on beach, Branscombe Mouth, J. P. M. BREXAN (7304), det. J. E. LOUSLEY.

618/11a×7b. *RUMEX PULCHER* L. subsp. *EU-PULCHER* Rech. f. × *SANGUINEUS* L. var. *VIRIDIS* Sibth. 29, Cambs.; with parent species in rough grassy ground, The Backs, Cambridge, Dr J. N. MILLS and J. P. M. BREXAN (7375), confirmed by J. E. LOUSLEY.

K | 618/13. *RUMEX MARITIMUS* L. 16, W. Kent; Egypt Bay, High Halstow, before 1939, J. BRAYBROOKE MARSHALL; abundant in 1946. with hybrids with *R. conglomeratus*, F. ROSE. 39, Staffs.; Enville, abundant on the caked mud of a dried-up pool south of Highgate Common, E. S. EDEES (5322).

+618/20. *RUMEX PATIENTIA* L. 21, Middx.; Isle of Dogs, 1945, J. A. Whellan (Lousley; 1946, 15).

K | 627/1. *THESCIUM HUMIFUSUM* DC. 15, E. Kent; on downs S.W. of Bishopsbourne, probably the same station as that of the Rev. E. Ellman of about 40 years ago, and that of Mrs Assheton (*B.E.C.*, 1917 *Rep.*, 126); these two are the only previous records for Kent, F. ROSE. 33, E. Glos.; near Withington, Miss L. ABELL.

628/5. *EUPHORBIA PLATYPHYLLOS* L. 17, Surrey; cornfield, Holmwood, 1945, L. G. PAYNE (Lousley; 1946: 14).

§628/9. *EUPHORBIA VIRGATA* W. & K. \*21, Middx.; abundant on a bank by the canal at North Hyde near Southall, 1945, D. H. KENT, det. A. J. WILMOTT. \*33, E. Glos.; lane between Northway and Bredon's Hardwicke (in Glos.), a large colony, C. W. BANNISTER, comm. W. R. PRICE. \*59, S. Lancs.; lane leading from the railway station to the River Alt, Hightown, near Formby, 1946, N. F. ELLISON (1946: *N.W. Nat.*, 21, 256).

§628/11. *EUPHORBIA CYPARISSIAS* L. †17, Surrey (8); Selsdon Wood, on chalk and very possibly native, 1939, D. P. YOUNG (940). †24, Bucks.; chalk slope near Loudwater, 1946, R. GRAHAM and N. Y. SANDWITH, looking native: Druce, *Fh. Bucks*, p. 296, gives only one locality, at Tyler's Green in the Thames District.

§632/2. *MERCURIALIS ANNUA* L. \*38, Warw.; bombed site, Birmingham, R. C. L. BURGESS.

+636/1. *FIGUS CARICA* L. 17, Surrey (8); railway banks, Mitcham: Norwood; 1940, D. P. YOUNG.

+639/1. *HELIXINE SOLEIROLII* Req. 41, Glam.; increasing greatly on walls, paths, lawns, etc., near Llanday, E. VACHELL: one of the most abundant wayside escapes in Oystermouth and Brynon parishes, J. A. WEBB.

643/1b. *ALNUS GLUTINOSA* (L.) Gaertn. var. *LACINIATA* Willd. 16, W. Kent; one tree on Tumbidge Wells Common, 1938, J. P. M. BRENNAN (5216). | K

650/1. *SALIX PENTANDRA* L. 100, Clyde Isles; Rhutlan, Bute, 1928, A. E. ELLIS, det. A. J. WILMOTT, 1938.

651/3b. *POPULUS NIGRA* L. var. *BETULIFOLIA* Torr. 42, Brecon; Crickhowell and Brecon, possibly native, E. MILNE-REDHEAD.

+651/11. *POPULUS TRICHOCARPA* Torr. & Gray ex Hook. 15, E. Kent; sand-pit by R. Medway at Aylesford, 1935, J. P. M. BRENNAN (1225), det. P. G. BEAK—this record replaces the erroneous one of *P. Tacamahacca* Mill. in *B.E.C. 1935 Rep.*, 41 (1936). 35, Monmouth; streamside between Tintern and Trelleck, 1936, Mrs SANDWICH, N. Y. SANDWICH and J. P. M. BRENNAN (3030), confirmed by P. G. BEAK. | K

662/1. *NEOTIA NIDUS-AVIS* (L.) Rich. 22, Berks.; Wolverley Wood, Kintbury, H. WHEELER, comm. A. J. WILMOTT.

§663/1. *LISTERIA OVATA* (L.) R. Br. \*71, Man; given by Paton in his list of Manks plants (1933: *N.W. Nat., Suppl.*, 48). *Top. Bot.* and *Suppls.* give all except 71 and 112; so delete 73 from exceptions in *C.F.*, which should have read "throughout Britain save 71, 112." Dr H. Milne-Redhead has seen *L. ovata* in v.-c. 73 recently.

665/1. *GOODYERA REPENS* (L.) R. Br. 70, Cumb.; abundant under pines in Ashbridge Plantation, Stoneraise, near Carlisle (wood felled in 1946), E. BLEZARD, comm. CARLISLE MUSEUM. 107, E. Suth.; wood at Invershin, Miss C. W. MUIRHEAD, comm. CARLISLE MUSEUM.

668/1. *EPIPACTIS PALUSTRIS* (L.) Crantz. 16, W. Kent; about 16 plants, from two to six inches high, in a disused chalkpit near Greenhithe: the ground was quite dry at the time of flowering, and a fine series of hybrids of *Orchis praetermissa* × *O. Fuchsii* accompanied the above species, together with some *Ophioglossum* eight inches high, F. ROSE. | K

669/1. *ORCHIS PURPUREA* Huds. 17, Surrey; Coulsdon, a fine specimen in natural grass beside a drive; first seen two years previously, A. J. WILMOTT. \*

669/5. *ORCHIS MORIO* L. 20, Herts.; Cassiobury Park, near Watford, 1944, D. H. KENT.

§669/9. *ORCHIS PURPURELLA* T. & T. A. Steph. \*39, Staffs.; Moss Carr, R. H. HALL, confirmed by Dr T. STEPHENSON. \*59, S. Lancs.; in railway cutting, Cop Lane station, Penwortham, Preston, 1942, E. BUNKER, det. Dr T. STEPHENSON. 69, Westm.; near Windermere: Tebay (with some var. *pulchella* (Dr.)): Caiston Beck, 1945; \*97, W.-ness.; Ft. William; 98, M. Argyll; Ganavan and Lochan Dubh, near Oban, 1946, D. P. YOUNG, all confirmed by A. J. WILMOTT.

669/10. *ORCHIS ERICETORUM* (Linton) E. S. Marshall. 39, Staffs.; Moss Carr, R. H. HALL.

669/10×9. *ORCHIS ERICETORUM* (Linton) E. S. Marshall × *PURPURELLA* T. & T. A. Steph. = × *O. FORMOSA* Steph. 39, Staffs.; Moss Carr, R. H. HALL, confirmed by Dr T. STEPHENSON.

669/11×8. *ORCHIS PRAETERMISSA* Druce × *FUCHSII* Druce. 21, Middx.; abundant near Harefield, with both parents, 1944, D. H. KENT, confirmed by H. W. PUGSLEY.

§672/3. *OPHYS APIFERA* Huds. 55, Leicester; Breedon Cloud, R. H. HALL. \*60, W. Lancs.; sparingly in at least three places on the dunes at St Annes—first seen by J. B. POOLE in 1943, then in 1946 by Mrs S. P. ROWLANDS in a different place where I subsequently saw it, and later seen by me in a third place, J. A. WHELLAN.

673/1. *HERMINIUM MONORCHIS* (L.) R. Br. in Ait. 15, E. Kent; near East Malling, 1943, O. V. POLUNIN.

674(1)/1. *GYMNADENIA CONOPSEA* (L.) R. Br. 21, Middx.; a single plant, Garrett Wood, Springwell, D. H. KENT.

676/2. *IRIS FOETIDISSIMA* L. 22, Berks.; Radley Wood, A. F. TWIST.

684/1. *NARCISSUS PSEUDO-NARCISSUS* L. 35, Monm.; in wood, eastern side of New Hill, near Grosmont, at an altitude of approximately 1000 feet, R. LEWIS and E. W. JONES.

694/1. *CONVALLARIA MAJALIS* L. †41, Glam.; wood on limestone ridge near Porthcawl, looking native but originally planted, Miss M. THOMAS; probably extinct as a native in the county, E. VACHELL.

702/3. *ALLIUM SCORODOPRASUM* L. 69, Westm.; (4) on the three main Islands in Ullswater, A. J. FARMER.

702/4b. *ALLIUM VINEALE* L. var. *BULBIFERUM* Syme. 52, Angl.; Newborough, 1941, D. P. YOUNG (1402).

702/4c. *ALLIUM VINEALE* L. var. *COMPACTUM* (Thuill.). 52, Angl.; Newborough, 1941, D. P. YOUNG (1403). 60, W. Lancs.; several places on the dunes at Ansdell, J. A. WHELLAN.

702/9. *ALLIUM OLERACEUM* L. 58, Ches.; Denhall Wirral (1947: *N.W. Nat.*, 21, 105). 70, Cumb.; edge of Wedholme Flow, Lessonhall, near Wigton, Mrs J. S. MURHEAD, comm. CARLISLE MUSEUM.

706/3b. *SCILLA NON-SCRIPTA* H. & L. var. *BRACTEATA* Druce. 5, S. Somerset; Ilminster (1946: *J. Roy. Hort. Soc.*, 71, xlix).

707/1. *ORNITHOGALUM PYBENAICUM* L. †17, Surrey; Langshott Wood, Horley, B. M. C. MORGAN.

§714/1. *NARTHECIUM OSSIFRAGUM* (L.) Huds. †61, S.E. Yorks.; Houghton Woods, 1888, J. F. Robinson, 1902: *Flora E. Riding*, p. 187.

§718/4×5. ×*JUNCUS DIFFUSUS* Hoppe. †13, W. Suss.; Northchapel, 1925, R. J. BURDON, comm. E. C. WALLACE (and see *Top. Bot.*, ed. 2, 430). †15, E. Kent; marsh ditch, Ham, near Sandwich, 1936, E. C. WALLACE (and see Hanb. & Marshall, 1899, *Fl. Kent*, 351). \*39, Staffs.; Great Barr, growing with both parents, E. S. EDEES. \*66, Durham; Butterby near Durham, D. H. VALENTINE (1946: *Vasc. Subst.*, 31, 29).

718/5. *JUNCUS INFLEXUS* L. 76, Renfrew; Braidbar Quarry, Giffnock, 1945, a scarce plant in Clydesdale, R. MACKECHNIE.

718/6. *JUNCUS BALTICUS* Willd. 60, W. Lancs.; still abundant, 1946, in one damp spot in the dunes at Ansdell, where it was found by Rev. E. S. Marshall in 1914 (*Lancs. and Ches. Nat.*, 1925), J. A. WHELLAN.

718/13. *JUNCUS SQUARROSUS* L. 24, [Beds.]; New Wavendon Heath, J. G. DONY.

§718/16. *JUNCUS TENUIS* Willd. †21, Middx.; Hounslow Heath, 1945, B. WELCH and D. H. KENT. †39, Staffs.; Bobbington, a single clump on the grass verge of a war-time airfield, E. S. EDEES (5358). †47, Mont.; in a cart rut, Llanwrig, Llanidloes, 1945, Mrs G. FOGGITT. \*†105, W. Ross; Strome Ferry, 1945, R. MACKECHNIE.

†718/26. *JUNCUS PALLIDUS* R. Br. 21, Middx.; gravel pit, E. Bedford, 1945, Mrs H. R. Davies (Lousley; 1946: 13).

719/3×2. *LUZULA FORSTERI* (Sm.) DC. × *PILOSA* (L.) Willd. (×*L. BOBBERI* Bromf.). 16, W. Kent; with parent species on a shady roadside bank at Speldhurst, 1937, J. P. M. BRENNAN (3216).

722/4. *SPARGANIUM ANGUSTIFOLIUM* Michx. 109, Caithn.; Loch of Killinster, E. C. WALLACE.

722/5. *SPARGANIUM MINIMUM* Fries. 41, Glam.; in canal at Swansea, abundant, 1937, Miss M. THOMAS, a confirmation of old record—remove "(?)" from *Glamorgan Plant List*, E. VACHELL.

723/2. *ARUM MACULATUM* L. 29, Camb.; a form with rich reddish-purple spathe, J. E. LOUSLEY and JOHN RAVEN. Similar plants of this most striking variation were later seen at 16, W. Kent; Darenth Churchyard, and 17, Surrey; lane near Banstead, and it seems interesting that three such plants should be seen in widely separated localities in the same year, J. E. LOUSLEY.

724/1. *ACORUS CALAMUS* L. 40, Salop; in disused canal, Tong, E. C. WALLACE.

§727/3. *LEMNA TRISULCA* L. \*76, Renfrew; Braidbar Quarry, Giffnock, 1945, R. MACKECHNIE—Lee (1933: *Fl. Clyde Area*) says "frequent," but I find it very rare. \*109, Caithn.; pond at Upper Gillock, Wick, E. C. WALLACE.

729/2. *ALISMA LANCEOLATUM* With. 15, E. Kent; east of Stile Bridge, in R. Beult south of Linton, 1945, F. ROSE.

730/1. *BALDELIA RANUNCULOIDES* (L.) Parl. 16, W. Kent; still on Chislehurst Common, the only station known to me in v.-c. 16, F. ROSE. 23, Oxon; (5) on marshy ground between Ducklington and Witney, one plant in 1941, not seen since, T. R. DAVEY. 30, Beds.; Tempsford, Miss I. J. ALLISON, comm. J. G. DONY.

737/4. *POTAMOGETON COLORATUS* Hornem. 15, E. Kent; Wingham Fen: Hacklinge: Worth Minnis, F. ROSE, det. DANDY and TAYLOR.

737/5. *POTAMOGETON ALPINUS* Balb. 109, Caithn.; Loch of Yarrows, E. C. WALLACE, confirmed by DANDY and TAYLOR.

737/9×13. ×*POTAMOGETON ZIZII* Koch ex Roth. 90, Angus; Long Loch, Lundie, near Dundee, J. SINCLAIR and U. K. DUNCAN, comm. U. K. DUNCAN, det. G. TAYLOR.

§737/15. *POTAMOGETON PRAELONGUS* Wulf. †109, Caithn.; Loch of Yarrows, Loch Watten, E. C. WALLACE, confirmed by DANDY and TAYLOR (see *Top. Bot.*, ed. 2, for previous record).

737/16. *POTAMOGETON PERFOLIATUS* L. 109, Caithn.; Loch of Yarrows, Loch Watten, mill dam at Forse, E. C. WALLACE.

737/23. *POTAMOGETON BERCHTOLDII* Fieb. 109, Caithn.; Loch of Yarrows, Loch Watten, mill dam, Newlands of Forse; pond at Upper Gillock, Wick, E. C. WALLACE, det. DANDY and TAYLOR.

737/25. *POTAMOGETON PUSILLUS* L. 15, E. Kent; ditches W. of Sandwich, F. ROSE, det. DANDY and TAYLOR.

737/28. *POTAMOGETON PECTINATUS* L. 71, Man; abundant in a pool at Castletown, J. A. WHELLAN.

737/30. *POTAMOGETON FILIFORMIS* Pers. 109, Caithn.; mill dam, Newlands of Forse, E. C. WALLACE, det. DANDY and TAYLOR.

§738/1. *RUPPIA SPIRALIS* L. ex Dumort. \*60, W. Lancs.; so abundant in the artificial lake at Fairhaven that it was carted away by lorry, and a month or so later it filled one end of the lake again, J. A. WHELLAN and H. E. BUNKER (as *R. maritima* L.).

§739/3. *ZANNICHELLIA GIBBEROSA* Rehb. \*6, N. Som.; in a water bunker on the golf links, Berrow dunes, 1945, N. Y. Sandwith (1946: *N.W. Nat.*, 20, 275).

§740/1(2). *ZOSTERA HORNEMANNIANA* Tutin. \*Jersey, St Catherine's Bay, 1887, Richards (Herb Piquet). \*10, Wight; Norton, Freshwater, 1868, King's Quay, 1869, F. Stratton. \*13, W. Suss.; Chichester Harbour, 1875, H. E. Fox; Prinstead, 1933, P. M. Hall [No. 998]. \*66, Durham; Tees estuary, Seaton Carew, 1869, M. A. Lawson. \*69b, N. Lancs.; coast of Fulney and Roa Islands, 1913, W. H. Pearsall. \*105, W. Ross.; Loch Carron, 1893, H. E. Fox. \*(?H.9, 15, 16 or 17); Galway Bay, 1875, G. C. Druce. New to Ireland.

§744/1. *CYPERUS LONGUS* L. \*49, Caern.; ditch near Conway estuary, E. PRICE EVANS, comm. A. WILSON.

§745/2. *HELEOCHARIS UNIGLUMIS* (Link.) Schultes. \*Jersey; Samaus Miles, 1851, J. Piquet; \*2, E. Cornw.; Pill, Saltash, 1886, J. Vaughan; both det. J. F. G. CHAPPLE (in Herb. Druce). 15, E. Kent; locally dominant in Hacklinge "Fen," F. Rose. \*66, Durham; water meadows between Billingham and Norton, 1945, K. B. Blackburn (1945: *Vasc. Subst.*, 30, 47). 96, Easternness; salt marsh, Beaully, 1943, U. K. DUNCAN, confirmed by J. P. M. BRENNAN.

745/2b. *HELEOCHARIS UNIGLUMIS* (Link) Schultes var. *WATSONI* (Bab.). 100, Clyde Isles; Ardmaleish, Bute, salt marsh, 1928, A. E. ELLIS, det. J. F. G. CHAPPLE, 1938.

745/4. *HELEOCHARIS ACICULARIS* (L.) R. Br. 17, Surrey; Pen Ponds, Richmond Park, 1945, Mrs B. Welch (Lousley; 1946: 13).

746/7. *SCIROPUS CAESPITOSUS* L. 6, N. Som.; Beacon Batch, Blackdown, Mendips, 1938, A. E. ELLIS; "instead of a single, terminal spike there are several, and the male and female organs have been replaced by scales (glumes). This gives the plant a different appearance, but the glumes are typical in shape and size, and the base of the plant is normal with its bladeless sheaths and tufted habit" (E. NEEMES, 1947). [23, Oxon; Headington Wick Bog, 18th June 1860, H. Boswell.] While recently going through the British Herbarium of the University Department of Botany, Oxford, I came across a sheet from Henry Boswell's Herbarium labelled "*Scirpus pauciflorus*, Headington

Wick Bog, near Oxford, 18th June 1860, H. Boswell." The sheet consisted of five good fruiting specimens of *S. pauciflorus* Lightfoot (which is well known from and still grows at Headington Wick) and six specimens of *Scirpus caespitosus* L. which has not been recorded, or even doubtfully recorded, for Oxon (v.-c. 23). It should be stated that although all the specimens of the two species on Boswell's sheet appear to have been "mounted" (gummed down) at the same time, the specimens of the two species are not intermixed but separate with no clear line of division where they meet in the centre of the sheet. Headington Wick bog is basic, the basic content being obtained from the wash from the calcareous ground surrounding it and, although not impossible, it is highly improbable that such a strong calcifuge as *S. caespitosus* would grow there. Furthermore, it is a piece of ground which has been visited and worked over by generations of Oxford botanists and, being comparatively small in area, it is hardly conceivable that such a plant would have escaped notice. I think the probable explanation is that Boswell got his plants mixed in mounting, and until *S. caespitosus* is refound the record of this species for v.-c. 23 should be treated as an error. Boswell's plant is the var. b. *germanicus* (Palla) Asch. et Graeb. of the *British Pl. List*, ed. 2, which I, in common with Scandinavian botanists, prefer to treat as a species—*S. germanicus* (Palla) W. Christiansen.—J. F. G. CHAPPLE.

\* 746/8. *SCIRPUS PAUCIFLORUS* Lightf. 54, N. Lincs.; between the limestone ridge and the valley of the Ancholme, about 15 miles N. of Lincoln, E. JOAN COLLINS, det. A. J. WILMOTT.

746/11. *SCIRPUS SETACEUS* L. 17, Surrey; bank of pond on Burgh Heath, E. C. WALLACE.

§746/12. *SCIRPUS CERNUUS* Vahl. †"S"—see Marquand, *Fl. Guernsey*, and Lester-Garland, *Fl. Jersey* (specimens from both Guernsey and Jersey in Herb. Druce), J. F. G. CHAPPLE. \*24, Bucks; Lane End, 1904, G. C. DRUCE (sp. in Herb. Druce). The specimen mounted on a sheet labelled *S. setaceus* L., among other specimens of that species, is clearly labelled (in Druce's hand) as "Lane End, 1904," and, is presumably the plant on which the record for *S. setaceus* is based in *Fl. Bucks*, 362, 1926. This appears to be the furthest inland that *S. cernuus*—an atlantic and predominantly coastal plant—has been found in Britain (excluding Eire) and it should be sought for again at Lane End to ascertain its association, J. F. G. CHAPPLE.

K | 746/14. *SCIRPUS COMPRESSUS* (L.) Pers. 15, E. Kent; Brook, in a small fen, 1946, F. ROSE—only two other localities known now in Kent.

§748/2. *RHYNCHOSPORA ALBA* (L.) Vahl. 73, Kirke.; not given in *C.F.* for this county. Dr H. Milne-Redhead vouches for its occurrence, and reference to *Top. Bot.* shows that the entry in *C.F.* of 72, 77, should be corrected to 72-77.



750/1. *CLADIUM MARISCUS* (L.) R. Br. 15, E. Kent; refound at Ham Ponds, the only native locality in S.E. England, in abundance and in fine fruit, with *Salix repens* and *Thelypteris palustris*, after having been "lost" for many years through the approaches having become overgrown, F. ROSE.

§753/4. *CAREX VESICARIA* L. \*6, N. Som.; in moor ditches, Axbridge, 1877, W. B. WATERFALL, several fine fruiting specimens in his herbarium (now at Kew)—confirmed by E. NELMES, comm. N. Y. SANDWICH—[rediscovered in small quantity along two reens, May 31st, 1947, C.I. and N.Y.S.] 17, Surrey; Fishpond Wood below Wimbledon Common, 1945, Mrs B. Welch (Lousley; 1946: 13).

§753/8. *CAREX LASIOCARPA* Ehrh. \*111, Orkney; marsh at Bain, north of Sandwick South Public School, 1939, J. SINCLAIR.

§753/11. *CAREX SYLVATICA* Huds. \*78, Peebles; Glen, Innerleithen, 1945, J. C. R. McCUBBIN, comm. R. MACKECHNIE.

753/12. *CAREX STRIGOSA* Huds. 40, Salop; wet wood, foot of Ercall Hill, Wellington, E. C. WALLACE.

§753/14. *CAREX CAPILLARIS* L. \*49, Caern.; Cowlyd district, E. PRICE EVANS, comm. A. WILSON.

§753/15. *CAREX BINERVIS* Sm. \*61, S.E. Yorks.; Brighton and Allertorpe Commons, J. M. TAYLOR (see 1946; *Nat.*, 28).

§753/18. *CAREX PUNCTATA* Gaud. 71, Man; in wet rocks by the beach at Onchan: also less plentifully in two localities near Laxey, J. A. WHELLAN, confirmed by E. NELMES. \*H.16, Galway West; Dogs Bay Roundstone, 1925, T. J. FOGGITT, det. E. NELMES, comm. C. M. ROB.

753/20. *CAREX FLAVA* L. 64, N.W. Yorks.; Tarn Moss, Malham, G. A. SHAW, det. E. NELMES (see Shaw (1946; *Nat.*, 138); *B.E.C. 1945 Rep.*, 96 (1947)).

753/20(2). *CAREX TUMIDICARPA* Anderss. in Herb. Druce, det. E. Nelmes, 1946, from Jersey, Guernsey, 1, 3, 6, 7, 9, 10, 12, 14, 16, 17, 20, 22, 24, 28, 29, 31, 32, 35, 39, 40, 41, 42, 43, 52, 57, 59, 60, 62, 64, 69, 70, 74, 85, 88, 90, 92, 94, 96, 97, 98, 100, 104, 105, 106, 108, 109, 110, 111, 112, H.1, H.9, H.15.

§753/21. *CAREX LEPIDOCARPA* Tausch in Herb. Druce, det. E. Nelmes, 1946. S, Jersey; Quenvais, 1851, J. Piquet; \*20, Herts.; Ashwell Common, 1846, W. Ansell; 32, Northants.; Withering and Foxhall, 1878, G. C. Druce; Hornstock, 1913, G. C. Druce; 62, N.E. Yorks.; Bickdale, Helmsley, 1872, R. Moreton Middleton (earlier than record in *B.E.C. 1931 Rep.*, 165 (1932)); \*67, Northumb.; Bavington, 1879, H. E. Fox; \*95, Elgin; Findhorn, 1888, G. C. Druce; \*97, Wes-

terness; Aonach Mor (no date), G. C. Druce; \*106, E. Ross; Rosehaugh, 1882, Corrie Li, 1902, Strathpeffer, 1925, G. C. Druce; 109, Caithness; Loch Watten, 1907, G. C. Druce; \*110, O. Hebr.; Loch Langavar, 1928, G. C. Druce; 111, Orkney; Hoy, 1920, G. C. Druce; Glims Moss, Bressay, 1922, H. H. Johnston [No. 2183]. H.9, Clare; Blackhead, 1930, G. C. Druce; H.15, S.E. Galw.; Rossmore, Lough Derg, 1907, G. C. Druce.

69, Westm.; High Cup Nick, 1946; 88, M. Perth; north shore of Loch Tummel, 1945, J. A. WHELLAN, confirmed by E. NELMES.

§753/22. *CAREX SEROTINA* Mérat. 4, N. Devon; Braunton Burrows, 1917, C. P. HURST (earlier than record in *B.E.C. 1932 Rep.*, 548 (1933)). \*23, Oxon.; S. end of Port Meadow, B.E.C. Oxford Excursion; \*68, Cheviot; Ross Links, 1886, H. E. FOX—in Herb. Druce, det. E. NELMES, comm. J. F. G. CHAPPLE.

K /  
753/23. *CAREX EXTENSA* L. 15, E. Kent; abundant in dune slacks at Shellness, Sandwich, F. ROSE—the only recent Kent locality.

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753/25. *CAREX DIGITATA* L. 69b, N. Lancs.; limestone rocks in Roudsea Wood, J. A. WHELLAN, confirmed by E. NELMES.

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§753/29. *CAREX ERICETORUM* Poll. 63, S.W. Yorks.; sparingly on old grass-covered spoil heaps, Jackdaw Crag Quarry, near Tadcaster, G. A. SHAW, confirmed by W. A. SLEDGE. \*69, Westm.; frequent in turf beside *Helianthemum canum*, Scout Scar near Kendal, May 1944, T. G. TUTIN.

753/32b. *CAREX PILULIFERA* L. var. *LONGIBRACTEATA* Lange. 11, S. Hants.; Brockenhurst, N. D. SIMPSON (46002).

753/58b. *CAREX CANESCENS* L. var. *FALLAX* F. KURTZ. 90, Angus; Burn of Fialzioch, Clova, 1946, U. K. DUNCAN.

§753/59. *CAREX OTRUBAE* Podp. \*42, Brecon; Penderyn, E. MILNE-REDHEAD and H. K. AIRY SHAW.

§753/59(2). *CAREX VULPINA* L. \*10, Wight; Eaton Marsh, Freshwater, 1899, C. E. PALMER in Herb. Druce. \*22, Berks.; Coleshill, 1891, G. C. Druce in Herb. Druce. \*23, Oxon; wet oak wood on Otmoor, J. P. M. BRENNAN, J. F. G. CHAPPLE and R. A. GRAHAM.

753/60. *CAREX SPICATA* Huds. 52, Anglesey; roadside near Holyhead, 1940, J. A. WHELLAN; 59, S. Lancs.; railway bank near Penwortham, H. E. BUNKER; 60, W. Lancs.; canal bank near Garstang, 1942, J. A. WHELLAN—all confirmed by E. NELMES.

§753/61. *CAREX PAIRAEI* F. Schultz. 19, N. Essex; Castle Hedingham, 1904, G. C. Druce (earlier record than that given in *B.E.C. 1943-44*

*Rep.*, 769 (1946)); \*27, E. Norf.; Horsford, 1899, W. Wright Mason; 45, Pemb.; Newport, 1919, G. C. Druce (earlier record than those given in *Journ. Bot.*, 238, 1932, or *B.E.C. 1937 Rep.*, 515, 1938); Pitlochry, G. C. Druce; \*48, Mer.; Towyn, 1931, C. E. Britton [No. 3820] (see *B.E.C. 1931 Rep.*, 844 (1932)); 88, M.-Perth; near Kinnaird Castle, near Ballinluig, 1912, G. C. Druce.

\*35, Monm.; dry hedgebank above Abergavenny, on ascent of the "Sugar Loaf," J. W. GOUGH and N. Y. SANDWICH, confirmed by E. NELMES. \*40, Salop; sandy hedgebank, Neachley near Tong, E. C. WALLACE. 48, Merioneth; near Barmouth, 1940; 51, Flint; roadside near Northop, 1940, J. A. WHELLAN, det. E. NELMES. \*72, Dumfries; Thornhill, towards Morton Castle, D. CUNNINGHAM, comm. E. C. WALLACE.

§753/61(2). *CAREX POLYPHYLLA* Kar. et Kir. To vice-county records in *B.E.C. 1945 Rep.*, 102, add 10 (*B.E.C. 1933 Rep.*, 564). Additional records from Herb. Druce, det. E. NELMES—\*S, Sark, 1906, G. C. Druce; 11, S. Hants.; Alton, 1885, J. Vaughan; \*13, W. Suss.; Chichester, 1917, G. C. Druce; 17, Surrey; Thames Ditton, 1866, H. E. Fox; \*23, Oxon.; near Goring, 1860, H. Boswell; \*24, Bucks.; High Wycombe, 1867, H. E. Fox; Little Marlow, 1903, G. C. Druce; Hambleton, 1909, G. C. Druce; \*29, Cambs.; Chatteris, 1879, A. Fryer; \*34, W. Glos.; Dursley, 1914, Miss E. S. Todd; \*37, Worcs.; Malvern Links, 1885, R. F. Towndrow ["probably this"—E. Nelm] (see *B.E.C. 1885 Rep.*, 138 (1886)); \*41, Glam.; Swansea, 1888 (cult., Shirley, S. Derbysh.), W. R. Linton.

6, N. Som.; roadside bank near Axbridge, 1936, E. NELMES (211). \*21, Middx.; above Harefield Quarry, 1945, D. H. KENT, det. E. NELMES. \*50, Denb.; hedge bank near Gyffyllog, 1934, J. A. WHELLAN, det. E. NELMES. 63, S.W. Yorks.; rail bank, Healey Lane, Bingley, G. A. SHAW, det. E. NELMES (recorded as *C. divulsa* Stokes in Cheetham and Sledge, 1941: *Suppl. Yorks. Floras*, 116).

753/62. *CAREX DIVULSA* Stokes. 39, Staffs.; Anslow, 1945, E. S. EDEES (4639), det. E. NELMES.

§753/63. *CAREX PANICULATA* L. \*76, Renfrew; Loch Libo, 1940, R. MACRECHNIE.

753/66. *CAREX DISTICHA* Huds. 64, M.W. York.; plentiful in drying-up carr between Healaugh and Askham Richard, with *C. paniculata*, 1944, E. C. WALLACE—*C. appropinquata (paradoxa)* recorded thence by Lees, 1888: *Fl. W. Yorks.*, 461, could not be found.

§753/70. *CAREX INCURVA* Lightf. 71, Man; correction: J. A. Whellan writes (from Rhodesia) that the specimen in the Manks Museum on which the record in Paton's List is based is not *C. incurva*, but probably *C. ovalis*—see *B.E.C. 1945 Rep.*, 51, 1947.

+754/10. *PANICUM SANGUINALE* L. 21, Middx.; forecourt of Soya Foods Ltd., flour mill, Springwell Lock, D. H. KENT, det. C. E. HUBBARD (as *Digitaria sanguinalis* (L.) Scop.).

+756/2b. *SETARIA VIRIDIS* (L.) Beauv. var. *MAJUS* (Gaud.) Koch. 30, Beds.; Sandy, J. G. DONY, det. C. E. HUBBARD.

758/3. *SPARTINA TOWNSENDII* H. & J. Groves. 51, Flint; side of R. Dee, a large patch at Talacre: 58, Ches.; between Garton and Parkgate, in early stage of colonisation; both 1945, Nora F. McMillan (1946: *N.W. Nat.*, 20, 265-266).

§+765/1. *PHALARIS MINOR* Retz. \*30, Beds.; gravel pit, Eaton Socon, P. TAYLOR and J. G. DONY, railway siding, Flitwick, J. G. DONY, det. C. E. HUBBARD.

§767/1. *HIEROCHLOE ODORATA* (L.) Wahl. \*H.39, Antrim; shore of Lough Neagh, R. D. MEIKLE and E. N. CARROTHERS.

§780/2(2). *AGROSTIS GIGANTEA* Roth. \*21, Middx.; waste land, Willesden, 1945, rubbish tip, Hounslow and meadow, Hanwell, D. H. KENT, det. C. E. HUBBARD.

780/6k. *AGROSTIS CANINA* L. var. *FASCICULARIS* Sincl. 106, E. Ross; S. Sutor near Cromarty, 1943, U. K. DUNCAN, det. C. E. HUBBARD.

783/1. *CALAMAGROSTIS EPIGEJOS* (L.) Roth. 17, Surrey; Ham gravel pits, 1945, Mrs B. Welch (Lousley; 1946: 13).

le | 785/1. *APERA SPICA-VENTI* (L.) Beauv. †16, W. Kent; Greenhithe, 1933, Dr A. R. M. and R. A. F. BRENNAN: waste ground, Sevenoaks, 1936: waste ground, Tonbridge, 1937: waste ground, Green Street Green, 1939, J. P. M. BRENNAN.

le | 787/1. *AMMOPHILA ARENARIA* (L.) Link. 15, E. Kent; Lydd Common, abundant, with *Carex arenaria*, F. ROSE—this area, 2½ miles from the present sea coast, was a belt of coastal dunes in pre-Roman times (Lewis, 1932: *Geogr. Journ.*, 80, 309).

§789/1. *AIRA CARYOPHYLLEA* L. \*61, S.E. Yorks.; Market Weighton, J. J. Marshall (Robinson, 1902: *Fl. E. Riding Yorks.*, 208).

791/1c. *DESCHAMPSIA CAESPITOSA* (L.) Beauv. var. *ARGENTEA* S. F. Gray. 33, E. Glos.; osier bed near Tewkesbury, C. W. BANNISTER, comm. W. R. PRICE.

791/1f. *DESCHAMPSIA CAESPITOSA* (L.) Beauv. var. *PARVIFLORA* (Thuill.) Dum. 30, Beds.; Cockayne Hatley Wood, J. G. DONY, det. C. E. HUBBARD.

†794/5(2). *AVENA LUDOVICIANA* Durieu. 15, E. Kent; cornfield near Godmersham, D. H. KENT. 21, Middx.; rubbish tip, Hanwell, D. H. KENT. 20, [Beds.]; Studham, C. E. HUBBARD.

†794/6. *AVENA STRIGOSA* Schreb. 71, Man; sparingly in a field at Castletown, J. A. WHELLAN, confirmed by C. E. HUBBARD.

795/1c. *ARRHENATHERUM ELATIUS* (L.) J. & C. Presl var. *PAUCIFLORUM* (Baenitz) Druce. 106, E. Ross; Ethie Burn near Cromarty, 1943, U. K. DUNCAN, confirmed by C. E. HUBBARD.

§804/1. *SESLERIA CAERULEA* (L.) Ard. \*59, S. Lancs.; north-east side of a limestone knoll near Clitheroe, A. TURNER, comm. A. J. WILMOTT.

†808/1. *CYNOSURUS ECHINATUS* L. \*60, W. Lancs.; naturalised quite plentifully at base of sea wall at Ansdell, J. A. WHELLAN, confirmed by C. E. HUBBARD. 96, E.-Ness.; roadside near Coylum Bridge, Aviemore, 1944, R. MACKECHNIE.

809/1. *KOELERIA GRACILIS* Pers. 106, E. Ross; sea-shore, Rosemarkie, 1943, U. K. DUNCAN, det. C. E. HUBBARD.

§814/1. *CATABROSA AQUATICA* (L.) Beauv. \*42, Brecon; Cathedine, W. of Wern-ddu, in marsh with *Iris*, *Sparganium*, etc., E. MILNE-REDHEAD and H. K. AIRY SHAW, det. C. E. HUBBARD.

819/1b. *DACTYLIS GLOMERATA* L. var. *COLLINA* Schlechtendal. 95, Moray; sand-dunes, Hopeman, 1943, U. K. DUNCAN (as var. *abbreviata* Drej.).

820/1. *DESMAZERIA MARINA* (L.) Druce. 60, W. Lancs.; plentiful on shore at Ansdell, J. A. WHELLAN, confirmed by C. E. HUBBARD.

§†824/1. *POA CHAIXII* Vill. \*35, Monm.; bank of lane by Pen-y-clawdd church, only one plant seen, N. Y. SANDWICH, confirmed by C. E. HUBBARD. \*89, E. Perth; in three places about Pitlochry, N. D. SIMPSON.

824/6b. *POA TRIVIALIS* L. var. *GLABRA* Döll. 35, Mon.; Llandegfedd, A. E. WADE, comm. NAT. MUS. WALES.

824/10. *POA COMPRESSA* L. 17, Surrey; Hamsey Green, Warlingham, 1943, C. E. BRITTON, comm. E. C. WALLACE. 60, W. Lancs.; on the bridge at St Michaels on Wyre, S. P. ROWLANDS; on the sea wall at Ansdell, S. P. ROWLANDS and J. A. WHELLAN.

§825/3(2). *GLYCERIA DECLINATA* Bréb.—In Herb. Druce, det. C. E. HUBBARD: S.; Jersey; St Ouen's, 1906, G. C. DRUCE; 18, S. Essex; S.W. of Epping by main London Road, H. K. AIRY SHAW and F. W.

SIMPSON (*Gram. Brit. Exsicc.* ex Herb. Kew. Distrib., No. 104); \*21, Middx.; near Hampstead, 1844, THOMAS MOORE: near Barnet, 1867, F. STRATTON; 32, Northants; Castlethorpe, 1909, G. C. DRUCE; 39, Staffs.; Hopedale, Alstonfield, 1890, W. H. PAINTER; \*40, Salop; Madeley Court, 1894, W. H. PAINTER; \*49, Caernarv.; Trefriw, 1885, W. PAMPLIN; \*62, E. Yorks.; Gornire, 1933, J. F. G. CHAPPLE, T. J. FOGGITT and C. M. ROB; \*74, Wigtown; Stranraer, 1899, G. C. DRUCE; 92, S. Aberdeen; Aberdeen (coll. I. A. Williams) cult. Kew 1938 (*Gram. Brit. Exsicc.* ex Herb. Kew. Distrib., No. 103); 100, Clyde Is.; Arran; Blackwaterfoot, 1904, A. SOMERVILLE.

826/1. *FESTUCA RIGIDA* L. 22, Berks.; (2), a patch about 3 sq. metres on ground disturbed by war operations on top of White Horse Hill, T. G. B. OSBORN, comm. J. F. G. CHAPPLE (as *Scleropoa rigida* (L.) Griseb.).

826/4×829/1. *FESTULOLIUM LOLIACEUM* (Huds.) P. Fournier. 21, Middx.; locally abundant in a grassy place on Hampstead Heath, 1945, J. A. WHELLAN, det. C. E. HUBBARD; 60, W. Lancs.; plentiful on roadside bank at Ballam near Lytham, J. A. WHELLAN, confirmed by C. E. HUBBARD.

§826/5. *FESTUCA SYLVATICA* Vill. 70, Cumb.; by the Liddell Water, Penton Linns, Miss C. W. MUIRHEAD, comm. CARLISLE MUSEUM (as *F. sylvatica* Vill.): by Scale Beck Force; \*71, Man; locally abundant in Glen Dhoon, J. A. WHELLAN, confirmed by C. E. HUBBARD.

†826/6. *FESTUCA HETEROPHYLLA* Lam. 17, Surrey; Littleton near Guildford, 1937, Lady DAVY and C. M. ROB, det. W. O. HOWARTH.

826/7f. *FESTUCA RUBRA* L. var. *ARENARIA* (Osb.) Fries. 106, E. Ross; sand-dunes, Rosemarkie, 1943, U. K. DUNCAN, confirmed by C. E. HUBBARD.

826/11. *FESTUCA LONGIFOLIA* Thuill. 30, Beds.; East Hyde; Soul-drop, J. G. DONY; Caddington, P. TAYLOR, det. C. E. HUBBARD.

K/ 826/16b. *FESTUCA AMBIGUA* Le Gall. 16, W. Kent; Chalk gravel-pit, F. ROSE (as *Vulpia ambigua* (Le Gall) A. G. More).

§826/18. *FESTUCA MYUROS* L. \*66, Durham; Urpeth, J. W. H. HARRISON (1946: *Vasc. Subst.*, §1, 24)—remove from brackets in C.F.—ED.

†827/9. *BROMUS INERMIS* Leyss. 60, W. Lancs.; naturalised in great abundance at Ansdell and still flowering in November, J. A. WHELLAN, confirmed by C. E. HUBBARD.

827/17. *BROMUS COMMUTATUS* Schrad. 29, Cambs.; rough grassy ground, The Backs, Cambridge, 1946, Dr J. N. MILLS and J. P. M. BRENNAN. 96, Easternness; waste ground, Allanfearn, near Inverness, 1943, U. K. DUNCAN.

827/17c. *BROMUS COMMUTATUS* Schrad. var. *PUBENS* Wats. 33, E. Glos.; Ashchurch and adjacent districts, common locally, C. W. BANNISTER, comm. W. R. PRICE.

827/18. *BROMUS RACEMOSUS* L. 30, Beds.; Tempsford, P. TAYLOR and J. G. DONY, det. C. E. HUBBARD.

827/19b. *BROMUS HORDACEUS* L. var. *GLABRATUS* (Döll) Druce. 33, E. Glos.; Fiddington and Ashchurch district, not uncommon, C. W. BANNISTER, comm. W. R. PRICE.

§827/19(2). *BROMUS LEPIDUS* Holmb. 3, S. Devon; roadside, Sidbury, J. P. M. BRENNAN. \*89, E. Perth; Glen Tilt, N. D. SIMPSON. \*96, Easternness; hayfield, Allanfearn, near Inverness, 1943, U. K. DUNCAN, det. C. E. HUBBARD.

827/19(3). *BROMUS THOMINII* Hard. 95, Elgin; sand-dunes, Hope-man, 1943, U. K. DUNCAN, det. C. E. HUBBARD.

§+827/20. *BROMUS MOLLIFORMIS* Lloyd. \*30, Beds.; railway siding, Flitwick, J. G. DONY, det. C. E. HUBBARD.

829/1b. *LOLIUM PERENNE* L. var. *TENUIS* (L.) Syme. 96, Easternness; "the Islands," Inverness, 1943, U. K. DUNCAN, det. C. E. HUBBARD (as f. *tenuis*).

839/1. *JUNIPERUS COMMUNIS* L. 109, Caithn.; prostrate in heather on Dwarwick Head, Durnet, E. C. WALLACE.

839/2. *JUNIPERUS SIBIRICA* Burgd. 108, W. Suth.; Meall Diamhain, head of Glen Oykeil, alt. 2000 ft., E. C. WALLACE.

844/3. *EQUISETUM SYLVATICUM* L. 108, W. Suth.; foot of quartzite cliffs, Loch Glendhu; Gleann Ardbhair, between Drumbeg and Kylesku, Miss C. W. MUIRHEAD, comm. CARLISLE MUSEUM: swampy moorland, Luban Croma, Altnacealgach, E. C. WALLACE.

844/9. *EQUISETUM VARIEGATUM* (Schleich.) Weber. 41, Glam.; Kenfig Dunes, in slacks associated with procumbent forms of *E. palustre*, E. VACHELL, 1932, det. A. H. G. ALSTON—(see *B.E.C. 1935 Rep.*, 48): the plant is scarce and was then evidently overlooked, for I have known it for some time in this locality and also on dunes near Porthcawl, etc., E. VACHELL.

851/1. *ASPLENIUM MARINUM* L. 108, W. Suth.; rocks by the sea, near Kylesku, Loch Cairnbawh, Miss C. W. MUIRHEAD, comm. CARLISLE MUS.

853/2. *ATHYRIUM ALPESTRE* (Hoppe) Rylands. 106, E. Ross; Coire Ban, Creag Liath, head of Glen Oykell, E. C. WALLACE.

856/1c. *DRYOPTERIS BORRERI* Newm. 30, Beds.; Hosther's Wood; Chiltern Green, 1945; Kidney Wood, Luton Hoo; King's Wood, Heath and Reach, P. TAYLOR.

§856/5. *DRYOPTERIS AEMULA* (Brackenr.) Kuntze. \*66, Durham; Quarrington Hill, J. W. H. HARRISON (1945: *Vasc. Subst.*, 30 39).

856/7. *THELYPTERIS OREOPTERIS* (Ehrh.) C. Chr. 24, [Beds.]; New Wavendon Heath, P. TAYLOR.

\* 856/10. *DRYOPTERIS LINNABANA* C. Chr. \*26, W. Suff.; Ash Plantation, Cavenham Heath, apparently quite native, one patch only, 1941, E. F. WARBURG.

858/1. *POLYPODIUM VULGARE* L. 28, W. Norf.; one patch a yard or so in extent among coarse grasses and *Carices* on sand-dunes between Holme House and Gore Point, Holme-next-the-Sea, Dr J. N. MILLS and J. P. M. BRENNAN—this record is made on account of the habitat, to us extraordinary and unprecedented for this species. The fronds were rather leathery in texture, narrow and somewhat twisted, but in other respects the plants appear quite normal.

§859/1. *CETERACH OFFICINARUM* DC. 21, Middx.; brick tombs in Perivale Churchyard, 1945, D. H. KENT. \*30, Beds.; Stevington, P. TAYLOR.

863/2. *HYMENOPHYLLUM PELTATUM* (Poir.) Desv. 71, Man; on wet rocks in Sulby Glen near Tholt y Will, J. A. WHELLAN. 108, W. Suth.; frequent in wooded inlets near Kylesku, Loch Cairnbawh, Miss C. W. MUIRHEAD, comm. CARLISLE MUSEUM.

K | 865/1. *BOTRYCHIUM LUNARIA* (L.) Sw. 15, E. Kent; in clayey pasture on summit of Detling Hill, J. BRAYBROOKE MARSHALL, c. 1930; (one plant in 1946, F. ROSE).

869/1. *ISOETES LACUSTRIS* L. 108, W. Suth.; Loch Drumbeg, between Lochinver and Kylesku, Miss C. W. MUIRHEAD, comm. CARLISLE MUSEUM.

\* 870/6. *LYCOPodium INUNDATUM* L. 24 [Beds.]; New Wavendon Heath, P. TAYLOR.



872/2. *NITELLA OPACA* Ag. 17, Surrey; Frensham Great Pond, L. C. LYON and G. O. ALLEN (388)—as f. *conglobata* Mig. 30, Beds.; Millbrook, J. G. DONY, det. G. O. ALLEN. 69b, N. Lancs.; Lost Tarn near Outgate and Brathay Quarries, J. W. G. LUND, det. G. O. ALLEN (f. *conglobata* Mig.). 108, W. Suth.; lochan near Kylesku Hotel, Loch Cairnbawn: Loch Drumbeg, between Kylesku and Lochinver: C. W. MUIRHEAD, comm. CARLISLE MUSEUM, det. J. SINCLAIR.

§872/5. *NITELLA TRANSLUCENS* Ag. 169, Westm.; Crook Reservoir, T. T. MACAN, comm. J. W. G. LUND, det. G. O. ALLEN—(see Wilson, 1938: *Flora Westm.*, 275, for earlier records). \*108, W. Suth.; Lochan near Kylesku Hotel, Loch Cairnbawn, C. W. MUIRHEAD, comm. CARLISLE MUSEUM.

873/1. *TOLYPELLA INTRICATA* Leonh. 30, Beds.; Henwick Lodge, 1945, J. G. DONY, det. G. O. ALLEN.

876/2. *CHARA CANESCENS* Lois. 15, E. Kent; Birchington Marshes, near R. Wantsum railway crossing, G. O. ALLEN.

§876/10. *CHARA BALTICA* BRUZ. \*15, E. Kent; Birchington Marshes, near R. Wantsum railway crossing, G. O. ALLEN.

876/12. *CHARA ASPERA* Willd. 108, W. Suth.; ditch near Skaig Bridge, Loch Assynt, C. W. MUIRHEAD, comm. CARLISLE MUSEUM.

876/16b. *CHARA GLOBULARIS* Thuill. 30, Beds.; Pertenhall, 1945, J. G. DONY, det. G. O. ALLEN.

§876/17. *CHARA DELICATULA* Ag. \*59, S. Lancs.; Otterspool Park, Liverpool, 1945, PAMELA A. JONES, comm. A. G. FARMER, det. G. O. ALLEN: drainage ditch, dune slack, Freshfield sand-dunes, A. J. FARMER, det. G. O. ALLEN.

\*876/17c. *CHARA DELICATULA* Ag. var. *ANNULATA* (Wallm.) Gr. & B.-W. \*69b, N. Lancs.; one of the Brathay Quarries between Ambleside and Hawkeshead, J. W. G. LUND, det. G. O. ALLEN.

**NOTE ON SAGINA PROCUMBENS VAR. DAVIESII (DRUCE)  
DRUCE\***

F. R. ELLISTON WRIGHT.

*Sagina procumbens* var. *Daviesii* (Druce) Druce is a rare plant, and not well known to British botanists.

The plant was first described from material found by the Rev. Hugh Davies over one hundred years ago at Beaumaris, in Anglesey. It has been noted also from Barcombe, Sussex; Leith Hill, Surrey; Littlestone-on-Sea, Kent; and Rugeley, Staffs. I have received material of the plant through the kindness of Lady Davy from some unremembered locality, and she has found it herself at Littlestone. It was found by N. D. Simpson in S.Hants., 1942. A small typical plant from a wall, Marlborough College, 1943, is still growing in my garden. Dr Lloyd Praeger informs me that there is an old record 126 years ago for a double flowering *Sagina*, which was probably this plant, in Co. Down; otherwise I can find no records for Scotland or Ireland. Those interested may refer to *Baater's Brit. Phaen. Bot.*, 3, t. 199, f. 8 (1837) (the date 1817 in this should be 1815); 1912: *Journ. Bot.*, p. 288; 1913: *Journ. Bot.*, p. 103 and p. 336; *B.E.C. 1919 Rep.*, p. 279; *B.E.C. 1926 Rep.*, p. 867.

The plant differs in no way in its vegetative parts and growth from *Sagina procumbens* L., except that it is far more subject to the destructive attack of *Puccinia Saginae*, with, I think, aphides as frequent vectors.

The large and conspicuous double flowers are distinctive. They are freely produced throughout the summer, they are very persistent and may endure for fourteen days before shrivelling, making no movements for closure or deflexion of peduncle during wet weather or at night. Well formed flowers may be 4 mm. in diameter, the outer petals well exceeding the four sepals, which in no way differ from the sepals of *S. procumbens* and are not spread when the flower withers.

The petals gradually decrease in size towards the centre of the flower until they become too minute to count. If a conversion into petals of all members or parts of the flower stem above the normal sepals, even counting the stamens as ten, is considered, the number of petals in var. *Daviesii* would far exceed this requirement, unless ovules are included. Instances of transformation of ovules into leafy structures have been found in cases of antholysis.

There is no trace of reproductive organs; the plant is completely sterile and can only be propagated by vegetative methods.

There is no indication of infection or injury by gall-producing agencies. Most plants growing under equal and favourable conditions tend to constancy of form and, if vegetable reproduction is aimed at for any special reason, then petal suppression is more usual.

\*See Plate 1.

In studying various forms of double flowers and other monstrous flowers, it becomes evident that there is a class of what may be termed truly double flowers, which is quite distinct from those examples of what is known as antholysis, which include cases of petaloidy and many other forms where numerous petals and other structures are formed, replacing stamens and other flower parts in these abnormal flowers. Although all the flower parts may be altered, they are variously altered, not only in different flowers on the same plant, but frequently as petals, leafy structures, etc., with different grades of doubling of these varying structures; also these abnormal flowers may be produced by the influence of external conditions. The best known are the productions by mites and by climatic conditions.

Henslow considered petaloidy to result from a weakened reproductive energy with factors of dryness and lack of soil nutrition as aiding influences. Brenchley considered that lack of available phosphates, though not affecting vegetative growth, causes suppression of fruiting parts.

In the other distinct class of truly double flowers, the flowers are all uniform without variation, and they are not produced by the influence of external conditions. In most of these truly double flowers, which are completely sterile, the influence of heredity would seem on first thoughts to be precluded, but the work of Miss E. R. Saunders has definitely shown that, in the case of stocks, etc., although the doubles are incapable of seed production, the influence of heredity is all important, some singles possessing the quality, others not. That is, some singles can only give rise to singles, others carry in their genes some factor enabling them to produce a certain proportion of doubles. Miss Saunders has clearly shown that by selection of seed from these "ever sporting" singles, a definite proportion of doubles can be obtained, apart from any influence of external cultural factors. Similarly, then, it is quite likely that there do exist among the population of *S. procumbens* some single-flowering plants possessing the factor for throwing doubles.

*S. procumbens* var. *Daviesii* seemingly belongs to the class of truly double flowers and wherever the plant occurs it has been found in the same unchangeable form. We may reasonably hold the theory that the plant is a recessive mutant; how such mutation for doubleness first arose will probably remain unknown. Short-wave radiations have produced experimental mutations, and in nature external factors as extreme heat and cold have caused duplication of chromosomes.

The claim that the etiology of the combination of doubleness and sterility is due to the presence of a lethal gene is more than doubtful.

That this exuberant petal production should occur in a plant which, in the area of Britain where it has been found, is normally of a form with abortive or absent petals and suppression of the epipetalous stamens, as in the other oligomerous Pearlworts, seems remarkable. The large size of the petals is deserving of notice. Though many double flowers grown by horticulturists have increased size of petal, this must chiefly be due to artificial selection.

*S. procumbens* is descended from a fully petaloid, pentamerous plant, and, on high ground in Scotland, is quite commonly seen pentamerous with well-formed petals, which does not support the theory that the character of petal abortion in *S. procumbens* must be carried in a gene, the loss or fragmentation of which gene in one parent may lead to a different balancing of genes, causing variation in character or number of petals.

## THE UNRAVELLING OF BRITISH "RUBUS LEUCANDRUS FOCKE"

WM. WATSON

It will help to clarify matters if the development of the ideas of British botanists about *Rubus leucandrus* Focke is briefly traced and summarised.

After visiting Britain in 1889 Focke wrote (1890: *J. Bot.*, 129), "Under *R. leucandrus* Focke I put a bramble which I saw near West Moors and Daggons, Dorset."

In his "Essay" W. M. Rogers (1892-3: *J. Bot.*) published a description of No. 21, *R. leucandrus* Focke, which apparently is Focke's description of the German *R. leucandrus* modified to embrace the British brambles, next to be enumerated here, which Rogers considered to belong also to *R. leucandrus*. At the same time he remarks, "Quite the typical plant does not seem to have been yet found in Britain,"—and then describes that typical plant (No. 1). He next refers to "a frequent Herefordshire form growing in marshy thickets" which he says "comes rather near it" (No. 2). He goes on to speak of and describe "the form referred to by Dr Focke, which is abundant . . . in Hants. and Dorset" (No. 3). After this comes a description of "No. 22. *R. ? hirtifolius* Muell. & Wirtg.", found in "Woods (Corn., Dev. and Dors.)" and seen by Dr Focke "growing near Plymouth in 1889"; which Rogers says he considers to be nearer *R. leucandrus* [meaning No. 3] than to *R. pyramidalis* Kalt. (No. 4.) It was presumably this bramble No. 4 to which Focke was already referring when he said (1877: *Syn. Rub. Germ.*, 212) he believed he had recognised *R. leucandrus* among the brambles sent to him by Archer Briggs from the Plymouth neighbourhood.

Now in Hants. and Dorset, around Bournemouth, there was not one form only that Rogers looked upon as *R. leucandrus*, as, in addition to No. 3 there was a bramble which Rogers called *R. leucandrus*, but which was afterwards described and named as a new species, *R. purbeckensis*, by Barton and Riddelsdell. (No. 5.)

In the *Set of British Rubi* issued by E. F. Linton, W. R. Linton, R. P. Murray, and W. M. Rogers two of the above forms were included; viz., No. 3 and No. 2. The latter is said by Rogers in his *Handbook*, p. 27, to be "with great difficulty separated from *R. carpiniifolius*."

In my opinion only the first of these brambles Nos. 1 to 5 is *R. leucandrus* Focke. No. 1, it will be noted, was believed by Rogers not to have been found in Britain. Probably such was the case at that time, but I have this year (1946) sent a supply of specimens of this, the genuine *R. leucandrus* Focke, No. 1 above, to the Club's Distributor for distribution. They came from a bush that appeared spontaneously two

years ago at Bickley, W. Kent, but I would mention that I collected the true *R. leucandrus* Focke in 1936 in W. Sussex at (i) Cocking Causeway, at (ii) Iping Common, and previously (iii) near West Lavington Church. I have not seen this species at or from any other British station. I saw it around Malmédy, Belgium, in 1937.

Nos. 2, 3, 4 and 5, the four spurious British "*leucandrus*," I assign as follows:—

No. 2 is *R. carpinifolius* Wh. & N. I have seen this dissected-leaved state of the plant in saturated soil in Coughton Marsh, Herefordshire, the normal state growing close at hand on firm ground.

No. 3. I can find no name applying to this bramble. Sudre identifies it as *R. Muenteri* Marss., but I consider that in this instance he was mistaken. The bramble has not the sulcate stem, the very long-stalked terminal leaflet, and the greatly-branched umbrella-shaped build which Marsson describes. (See below.)

No. 4 is *R. danicus* Focke ex Frid. & Gel. I have a specimen of the Plymouth bramble collected by Briggs in 1881 and labelled by him as *R. hirtifolius* Muell.; and I have seen a specimen of the same bramble collected by R. P. Murray in 1890 at Bailey Gate, Dorset, and labelled by him as *R. leucandrus* Focke.

No. 5 also is *R. danicus* Focke ex Frid. & Gel. I have a Bournemouth specimen collected by Rogers, and named by him *R. leucandrus* Focke. I may mention that I have found the same bramble in W. Sussex and in various other counties in England, and also in Belgium. I have also seen specimens, Scottish and German, named *R. danicus* by Focke. Whilst on the subject of *R. danicus* I may perhaps add that *R. hesperius* Rogers also is, I consider, *R. danicus* Focke ex Frid. & Gel.

No. 3, being thus left without a name or description, is described here and named as a new species, as follows:—

***Rubus pullifolius* sp. nov.** [Sect. *SILVATICI*, subsect. *Virescentes* Genev.].

Eglandulosus. Turio obtusangulus glabrescens purpurascens mox aliquantum pruinosis; aculei multi haud magni sat inaequales graciles reclinati; folia quinata digitata, supra saturate viridia, subtus dilutiora, primo pubescentia dein glabrescentia atque adeo nequaquam mollia, stipulae lineari-lanceolatae; foliola omnia imbricata plicata, terminale suborbiculare ovatum vel ellipticum breviter acuminatum vel cuspidatum argute serratum, petiolulo fere triplo longius. Panicula omni in parte tomentosa lata fere pyramidalis, rhachis flexuosa glandulas sessiles gerens, aculei breviusculi subulati reclinati brunnei, foliola terminalia elliptica cuneata breviter acuminata, quorum suprema subtus incana. Flores magni; sepala cinereo-viridia margine albo ovata cuspidata, inermia, deflorata reflexa, petala ovata breviter unguiculata, alabastro dilute roseola expansa candida, subtus tomentella, supra prope em ungu pilosula; stamina alba longa; styli albidii; germina pilosa; fructus subglobosus.

Type in Hb. Wm. Watson, collected 8 September 1936 at Southampton Common, S. Hants.

*Distribution.* S. Hants., 11 (frequent); Dorset, 9. First found by H. Groves at Shirley, S. Hants., 1879, specimen in Hb. Babington. as "*imbricatus*."

Eglandular. Stem obtuse angled, glabrescent, green to purplish, subpruinose. Prickles many, moderate, slender, declining. Leaves quinate, digitate, deep green above, paler, pubescent, glabrescent (not soft) beneath, stipules linear-lanceolate; leaflets imbricate, plicate, terminal leaflet roundish ovate or elliptical, short-pointed, sharply, simply or rather doubly serrate. Panicle closely felted, broad, subpyramidal, branches spreading; rachis flexuose, bearing crowded sessile glandules, prickles rather short, subulate, declining, brownish; terminal leaflets elliptical-cuneate, shortly pointed; the upper simple leaves grey beneath. Sepals greyish green, white-bordered, ovate subcuspidate, unarmed, reflexed. Flowers large; petals ovate, pinkish in bud, then white, downy beneath, slightly pilose above in the region of the claw, stamens white, long, styles pallid, young carpels pilose, fruit subglobose.

## FICUS CARICA L. IN BRITAIN

J. EDWARD LOUSLEY

One of the most surprising features of the flora of the London bombed sites in 1945 and 1946 has been the appearance of the fig in a number of places where its source of introduction is difficult to explain. I first noticed it in the City, Middlesex, v.-c. 21, in June 1945 in a fire-place of a blitzed building about 100 yards from the famous old church of St Olave, Hart St. The plant was a large one and since it was growing in a former room in the centre of a block of buildings there could be very little doubt that it had appeared there since the bombing. I considered the possibility that it might have been dragged up from the churchyard and thrown down alive in the fireplace, but apart from the improbability of survival after such treatment, the distance from the churchyard made it unlikely, and the rapid additional growth during the following year was compatible with its introduction from seed.

The discovery of another plant in a basement in the Temple shortly afterwards provided no additional evidence, but one growing out of a vertical wall near Water Lane near Ludgate Hill was in a situation where planting would be impossible. Similarly a large plant on the site of Wallis', Holborn Circus, would seem to be in a place where origin from seed offered the only solution. All four of these City plants were about a metre in height when first observed, but their subsequent growth suggests that they probably germinated about 1943 if they grew from seed in their present situations.

At the Middlesex Hospital Bicentenary Exhibition on May 25th 1946 a plant of *Ficus Carica* pulled up by the root in Old Gloucester St. (S. of Queen Sq.) was exhibited by Dr John Rivers. It was about 35-40 cm. tall and the stem showed clearly where the previous season's growth had ended. Its condition was compatible with having grown from seed which germinated early in 1945, or perhaps in the autumn of 1944. A plant only a little larger was shown to me on July 8, 1946, by Mr D. McClintock on a site in Ebury St., Victoria, but it was mutilated and growing with shrubs which were probably there before the war.

This is not the first time that figs have appeared on cleared sites in London. In 1910 Shenstone found cultivated forms of *Ficus Carica* on a site in Faringdon Street, formerly occupied by works and cleared about two years earlier. He later found one on a site behind the British Museum, Bloomsbury (1912: *Journ. Bot.*, 50, 119 and 121).

The fig is known to stand the smoky atmosphere of London well, and there are a good many sizeable planted trees in the churchyards and parks. Le Sueur, writing in the *Evening News*, April 16, 1929, states that there was then one in St Paul's Churchyard more than 20 feet in height, while Webster (1920: *London Trees*, 59) records one at Whitefriars fully twice as tall. In the City, however, the fig is not really common in the churchyards, being largely replaced by *Aralia* spp.



Horticultural works generally recommend planting the fig in plenty of brickbats, porous stones and lime rubble which are precisely the conditions offered on bombed sites. It is said to stand 10-20° of frost under favourable conditions, and when grown from cuttings, which is the usual practice, fruit may be expected in 2 to 4 years. Since it is obvious that the London adventive plants can seldom if ever have come from cuttings, and since caprification is impossible in this country in the absence of the gall-wasp, it would seem that our figs must have originated from seed of fruits brought from abroad. Such seed would require a habitat such as brickwork raised to a high temperature by the sun before they could germinate, and comparison of the following records would suggest that the fig only occurs in this country in places where it might come from seed under such conditions:—

- v.-c. 6, N. Somerset; Wharf-wall at Highbridge, Miss Roper; coast rocks near Clevedon, Rev. E. Ellman; both ex White (1918: *Journ. Bot.*, 56, 79).
- v.-c. 9, Dorset; Chesil Beach, a fair sized plant, Druce & Van de Weyer, *B.E.C. 1923 Rep.*, 211, 1924. (Specimen in Hb. Druce).
- v.-c. 17, Surrey; Several bushes on the river-wall by the Thames between Kew and Mortlake, R. N. Parker and J. P. M. Brenan, *B.E.C. 1935 Rep.*, 41, 1936. Still there, 1946.
- v.-c. 21, Middlesex; Faringdon St and Bloomsbury, Shenstone (1912: *Journ. Bot.*, 50, 119 & 121); various places in the City and West End, Lousley, Rivers & McClintock as above.
- v.-c. 22, Berks.; "A self-sown plant grew to a considerable size near the reservoir at Didcot. It was eventually removed to a garden," Druce, *B.E.C. 1918 Rep. (Suppl. Fl. Berks.)*, 472, 1919.
- v.-c. 34, W. Gloucester; "Dwarf trees of many years' growth have sprung from a wall of the Floating Harbour near Bristol Bridge, in the centre of the city," White (1918: *Journ. Bot.*, 56, 79); Avonmouth Docks, established before 1928, Mrs C. I. Sandwith, *B.E.C. 1932 Rep.*, 357, 1933.
- v.-c. 41, Glamorgan; Near Mumbles Head, Webb, *B.E.C. 1923 Rep.*, 211, 1924; On the cliffs at Mumbles, far out of reach, Webb, *B.E.C. 1927 Rep.*, 417, 1928.
- v.-c. 44, Carmarthen; Stony dykes, Pwll Marsh, near Pembrey, 1944, J. A. Webb, *B.E.C. 1943/4 Rep.*, 754, 1946.
- v.-c. 63, S.-W. Yorks.; Stone embankment by canal, Sowerby Bridge, 1946.

The fig-seeds from which the plants spring are probably in most cases those sold in fruiterers' shops. Such a shop occupied the site immediately behind the wall near Water Lane, City of London, where the plant now grows, and it is at least possible that figs in stock at the time of the

damage got scattered. The plants growing by water at Highbridge, Kew, Bristol, Pembrey, and Sowerby Bridge may have originated from fruits which floated down. Those on the London bombed sites presumably came from figs thrown away, but this seems surprising in view of the scarcity of the fruit during the recent war.

The usual means of dispersal of the tree would seem to be by birds (Ridley, 1930: *The Dispersal of Plants throughout the World, passim*), and at least one bird which visits Britain, the Golden Oriole, *Oriolus oriolus oriolus* (L.), is said to feed on figs. It is of interest that in Coward's work this bird is depicted perched on this tree (Coward, *The Birds of the British Isles and their Eggs, Series I*, ed. 2, tab. 16). The Golden Oriole visits our islands in late April or the beginning of May on its northern migration from Africa where it spends the winter. In the course of the journey it passes through districts of the Mediterranean where the fig is abundantly cultivated. Although the Golden Oriole is too rare in this country to have much influence, the possibility of some fruit-eating bird being responsible for some of the occurrences in Britain should be borne in mind, though from the evidence known to me it does not seem very likely.

The cultivated fig varies greatly in the shape of its leaves and this is reflected in the adventive plants in this country. Those from the embankment between Kew and Mortlake have all, in my experience, very narrow lobes. The terminal lobe is about 5 times as long as the width at the base, spatulate, and incised towards the apex. Those from Water Lane are very similar. The St Olave's plant on the other hand is 5- rather than 7-lobed and the terminal lobes are barely twice as long as broad at the narrowest part. Moreover, the Kew plant has a conspicuous rusty-coloured indumentum on the nerves below, whereas the St Olave's fig has a less dense white indumentum, and the texture of the leaves is thinner and they are of a darker green. The Ebury St. fig is intermediate.

Similar differences occur in the *Ficus Carica* of the Mediterranean and S. Asia, and attempts have been made to assign varietal names. In a genus which is well-known for heterophylly on individual plants it seems doubtful whether such varieties can be of much value in dealing with a cultivated species. In the growing examples which have come under my observation the differences in leaf-shape appear to be those one would expect from the habitat—those growing out of walls have the tougher, more divided leaves, while those like the St Olave's plant, which grow in less exposed places, have larger leaf-surfaces of thinner texture.

Since writing the above account towards the end of 1946, I have been surprised to find how common the fig is in Central London. On bombed sites north of Holborn it is particularly plentiful. Between Holborn and Fleet Street there are a number of plants, while others are scattered about the West End. Having regard to the restricted import of the fruit during the war years, it is more difficult than ever to suggest any convincing explanation of such widespread distribution. The survival of all the plants in the City after the exceptionally hard winter of 1946-47 shows

that once established the fig can maintain itself in suitable places in this country.

In 1931 Debray and Senay recorded two plants from Le Havre and another from the former British camp at Honfleur (*Bull. Soc. Linn. Seine mar.*, 1932, No. 1, p. 24) and suggested, as I have done, that they probably originated from seeds rejected with the edible fruits. The same writers state that when part of Le Havre was left uninhabited in 1943 figs appeared and persisted in September 1944 after bombing had destroyed the buildings (*Bull. Soc. bot. Fr.*, 92, 229, 1945).

In September 1947 I saw a fine plant of *Ficus Carica* some 2 metres tall on a rubbish dump at Northolt, Middlesex. In such a place the method of introduction might be endoanthropochoric and the same is possible indirectly on river and harbour walls. But I am convinced that most of the bombed site stations cannot have such an origin, and further observations are required. In addition, figs are sometimes to be seen by railways—such as near Peckham and Mitcham Junction, Surrey. If these, indeed, originate from parts of fruits thrown out of carriage windows then the feeding habits of the British public must be more varied than I had supposed! There can be no doubt that *Ficus Carica* is becoming increasingly frequent in Britain.

## NOTES ON BRITISH CARICES — VII\*

E. NELMES

## CAREX LEPORINA L.

The name *Carex leporina* L. (*Sp. Pl.*, 973, 1753) was published with the following diagnostic phrase and synonymy:—

6. *Carex spica composita*, spiculis ovatis sessilibus approximatis alternis androgynis nudis. *Fl. suec.*, 751. *Gmel sib.*; 1, p. 147.

*Carex spicis ternis sessilibus confertis androgynis. Fl. lapp.*, 322.

Gramen cyperoides, spica e pluribus spicis mollibus composita. *Scheuch. gräm.*, 456.

Gramen cyperoides palustre majus, spica divisa. *Bauh. pin.*,

6. *Moris. hist.*, 3, p. 244, s. 3, t. 12, f. 29.

*Habitat in Europae pratis udis.* L.

## DIAGNOSTIC PHRASE.

The diagnostic phrase describes equally well each of the two species to which the name *C. leporina* L. has been applied: *C. Lachenalii* Schkuhr (to take the best known of its several epithets) and *C. ovalis* Good., and both occur in Sweden and Siberia.

## TYPE SPECIMENS.

Two specimens, one of each of these two species, on separate sheets, are pinned together in the Linnaean Herbarium, the first being *C. Lachenalii* and the second *C. ovalis*. A third attached sheet, of *C. praecox* Schreb., is not annotated by Linnaeus and does not come under discussion here.

At the top of the first sheet Linnaeus has written the number "322," which corresponds with the number of this species in the *Flora Lapponica*, and thus it seems extremely likely that he collected this specimen on his expedition to Lapland and from it drew up his description for the *Flora*. Specimen and description agree precisely. It was no doubt an enthusiastic young Linnaeus who set off on the expedition to Lapland, and he would be justly proud of its results and for this reason almost certain to preserve the plants, apart from the purpose of describing them in his *Flora*. On this sheet, in addition to the number "322," Linnaeus has written "6 leporina," and as this species is no. 6 in the *Species Plantarum*, ed. 1 (1753), it is reasonable to assume that the specimen which had pride of place in his herbarium and in the citations in the *Species Plantarum* was an important element in his conception of his *C. leporina*. It should, however, be noted that Lin-

\*Continued from 1942: *Journ. Bot.*, 80, 105-112.

naeus made three enumerations of the contents of his herbarium, in 1753-54, 1755, and 1767 respectively, and *C. leporina* does not occur, according to Jackson's *Index to the Linnaean Herbarium*, until the enumeration of 1767. On this evidence this species was not added to Linnaeus's herbarium until some time between 1755 and 1767, which seems contrary to the suggestion that the first specimen was collected by him in Lapland many years before, unless, of course, Linnaeus for a long time kept his Lapland plants separate from his main herbarium, incorporating them at some date between 1755 and 1767. Possibly its omission from the first enumeration was merely a clerical error. The annotation "6 leporina" is almost certain to have been added before the publication of the second edition of *Sp. Pl.* (1763), because in this work *C. leporina* is species no. 8.

On the second sheet, that of *C. ovalis*, which bears Hudson's label, Linnaeus has written "leporina," which, with its attachment to the other sheet and its inclusion in Linnaeus's treatment of *C. leporina*, indicates that this common European plant is part of his species. This view is strengthened by the fact that there is a specimen of this species in Burser's herbarium determined by Linnaeus as *C. leporina*.

#### CITATIONS.

The citations which follow the diagnosis also cover the same two species, the plant of the *Flora Lapponica*, as explained above, being *C. Lachenalii* (in spite of references to Scheuchzer, Ray, and Morison, who were describing *C. ovalis*), while that of the other authors is mainly or wholly *C. ovalis*. It is natural that there should be more references to *C. ovalis* than to *C. Lachenalii* as the former is the commoner plant in Scandinavia and much the commoner in more southern parts of Europe.

The treatment under no. 751 in the *Flora Suecica* is similar to that of *C. leporina* in the *Species Plantarum*. The citations below the diagnosis are the same in each work, except that references to Haller and Micheli in the *Fl. Suec.* are omitted from the *Sp. Pl.* The same two species, therefore, are covered in both works. Finally, in the *Fl. Suec.* below the habitat, Linnaeus has the following: "Obs. Spicae tres vel plures valde crassae, approximatae, constantes capsulis acuminatis cum bractea singulo germini subjecta longitudine capsulae, ferruginea." This, on the whole, stresses the *C. ovalis* element, which Linnaeus may thus be indicating as the commoner one in Sweden, though probably "ferruginea" and certainly "tres" apply better to the other plant: normal inflorescences of *C. ovalis* do not consist of fewer than four spikes.

In the second edition of the *Species Plantarum*, 1381 (1763), Linnaeus adds the following to his synonyms: "Carex angustifolia, caule triquetro, spicis pluribus elegantibus parum inter se distantibus. *Segu. ver.*, 1, p. 124, t. I, f. 2." This figure is undoubtedly of *C. ovalis* though Seguiet's diagnosis applies to fig. 3 of the same plate, a very different species. Linnaeus also has this note in ed. 2: "Spica e spiculis 5 s. 6, ap-

proximatis. Paleis flosculos distinguentibus, griseis, seminibus ipsis longioribus. Styli incurvi." This points to *C. ovalis*, as the inflorescence of *C. Lachenalii* usually bears but three spikes, though there are up to six in var. *pleiostachya* Drejer, which occurs in Scandinavia and other parts of Europe.

By his note in the second edition of the *Species Plantarum* Linnaeus gives the impression that his conception of *C. leporina* has gradually changed from *C. Lachenalii* to *C. ovalis*. This change of view, if such it is, on the part of Linnaeus, is not sufficiently definitely expressed to constitute choice of type, seeing that twelve years had elapsed since the publication of *C. leporina*, covering by joint treatment the two elements, *C. Lachenalii* and *C. ovalis*. Furthermore, the same diagnosis and the same citations, including the *C. Lachenalii* reference, are retained, and the specimen of *C. Lachenalii* is not removed from its premier place in the herbarium nor are its number and identification changed.

#### VIEWS OF LINNAEUS'S CONTEMPORARIES.

Smith's opinion as to the true *C. leporina* of Linnaeus was very strong, as indicated by his annotations on the Linnaean sheets (on the first he wrote "vera" and on the second "Fl. Angl. non Linn."), and a quotation from his *English Flora*, 4, 83 (1828), may be worth giving here: "The real *C. leporina*, certainly, by an original specimen, n. 322 of the Linnaean *Fl. Lapponica*, is an alpine species, but half the size of this [*C. ovalis* Gooden.] with 3 or 4 nearly globular spikelets, and an ovate smooth-edged corolla, longer than the scales. It is *C. Lachenalii* of Schkuhr, t. Y. f. 79. Linnaeus undoubtedly confounded both together under n. 837, of *Fl. Suec. ed. 2*, where the description answers to the alpine plant; which therefore I cannot but consider as *C. leporina*, though very sorry to differ from Dr Wahlenberg, who zealously contends for a contrary opinion, and calls my *leporina* by the name of *lagopina*. Willdenow, Schkuhr, and *Fl. Dan.*, t. 294, agree with me; as did the late Mr. Davall, from a comparison of Swiss specimens with the Linnaean characters. The question is indeed a matter of fact rather than of opinion."

Smith's friend, Goodenough, concurred in this point of view. Following his description of *C. ovalis* in *Trans. Linn. Soc.*, ii, 149 (1794), he says: "It has been lately discovered, that we have all along been mistaken in this very common plant. The error perhaps rests with Linnaeus himself, who joined the plant, he originally named *leporina*, with this we are now treating of. The mistake took place even so early as the publication of *Fl. Lapponica*, as appears from his quoting Morison's figures. The original *leporina*, now preserved in Dr Smith's (the Linnean) herbarium, has only three spikelets, is a plant much smaller, and differs in many respects."

Wahlenberg, a leading Swedish botanist at the beginning of last century, was, as mentioned above (by Smith), of "a contrary opinion," being convinced that the true *C. leporina* L. was the species described by Goodenough as *C. ovalis*.

He says in his *Fl. Lapp.*, 228-229 (1812), that *C. ovalis* grows in the wooded region where Linnaeus himself collected his *C. leporina*, but that his own species, *C. lagopina* (*C. Lachenalii* Schkuhr), on the other hand, occurs only in alpine soils where Linnaeus said that he never saw *C. leporina*. Wahlenberg goes on to contend that from these considerations and from the certain evidence of the Burser herbarium *C. ovalis* is the real *C. leporina* of Linnaeus. But, he adds, even if it is not, there seems no reason for rejecting the definitely known plant of the *Flora Suecica*, and looking for an uncertain one from the *Flora Lapponica*. Is not this, he says, to chase a mere phantom? His concluding argument runs like this: Surely Linnaeus did not have his species irrevocably fixed in his boyhood? It would be better to accept as final determinations those of his mature manhood, especially plants of Sweden, rejecting the confusions of his old age. Wahlenberg is apparently alluding to Linnaeus's possibly fluctuating conceptions of *C. leporina* in the *Flora Lapponica*, *Flora Suecica*, and *Species Plantarum*, published when their author was 30, 38, and 46 years of age respectively! It may be noted that Wahlenberg probably never saw Linnaeus's herbarium, as this came to England from Sweden in 1784, when Wahlenberg was four years old. If he had seen the first of the two specimens in the Linnæan herbarium he would scarcely have considered it an "uncertain" plant. Further, as shown earlier in this paper, the treatment of *C. leporina* in *Flora Suecica* covers both the species under discussion. Both occur in Sweden but apparently Linnaeus knew the lowland one better than the other, though this does not affect the identity of *C. leporina*.

Hudson includes *C. leporina* in his *Flora Anglica* (1762). His diagnosis and citations are almost an exact copy of those of Linnaeus. There is no attempt at division into two elements, and probably the common English plant, *C. ovalis*, was the only part of the composite *C. leporina* L. known to him. Continental authors such as Schreber (1771), Leers (1775) and Roth (1788) did much the same thing, while others appear to have followed Wahlenberg in a more critical method of accepting *C. ovalis* as the Linnaean species. *C. mollis* Gilib. (1792) and *C. nuda* Lam. (1793) are names chosen by their authors to replace *C. leporina* L., and they are therefore superfluous. Moreover, there was no recognition by Gilbert and Lamarck that Linnaeus covered more than the one species, *C. ovalis* Gooden., by his *C. leporina*.

Goodenough, in his treatment of *C. leporina* L., was in anticipatory accord with Art. 52 of the Rules of Botanical Nomenclature, ed. III (1935). He divided the Linnaean species into two, retaining the original epithet *leporina* for one of them, and giving a new one, *ovalis*, to the other. Although Linnaeus did not indicate a type, it would appear certain that the Lapland specimen in his herbarium should be regarded as such, as was done by Goodenough, who appears to have been the first author to deal critically with *C. leporina* L.

## A SYNOPSIS OF THE BRITISH FESCUES

W. O. HOWARTH, D.Sc., F.L.S.

Terms used: rachilla = spikelet axis; glumes = sterile glumes; G I = lower sterile glume, G II = upper sterile glume, G III, G IV, etc. = lemmas = flowering glumes = paleae inferior "pale" = palea superior; length of spikelet measured from base of G I to apex of G IV (excluding awn); length of lemma, measure G IV (excluding awn); radical leaves = those of a vegetative (sterile) shoot; vernation, conduplicate = folded longitudinally on midrib, upper surface within, convolute = rolled, seen in transverse sections of shoot; diameter of radical leaf, when conduplicate measured at about  $\frac{1}{3}$ rd distance from ligule, margins to keel, choosing highest complete leaf of sterile shoot. Height of plant (culm) includes panicle;  $\pm$  = more or less; leaf auricles are extensions of the base of the leaf-blade, sheath auricles are extensions of the free upper margins of the sheath, usually in the form of lobes appressed to the shoot within; c. = about.

## FESTUCA L. (17, a).

Spikelets in a 1-sided panicle, pedicellate, 2 or more flowered, somewhat flattened laterally. Sterile glumes 2, usually keeled, the lower (G I) usually 1-nerved, the upper (G II) 3-nerved, shorter than the contiguous lemma (G IV). Lemmas  $\pm$  lanceolate, awned or muticous, feebly keeled in upper half, 5-nerved.

Perennial, rhizomatous or caespitose, branches vegetative in their first year, flowering in their second; sheaths of radical leaves entire or split, of culm leaves split: laminae flat or conduplicate or convolute,  $\pm$  costate about the nerves, "bulliform" cells ("motor-cells") often present in upper epidermis between costae.

Of the six sections distinguished by Hackel (9, p. 79) three are represented in the British Isles.

I. OVINAE. Laminae either all conduplicate or the culm ones  $\pm$  plane, often biauriculate about the ligule ("sheath" and "blade" auricles); ligules short, truncate. Caryopsis ventrally deeply furrowed, furrow containing a hilum almost its length; lemma and pale tightly adherent.

II. BOVINAE. Ligule short, truncate, no "blade" auricles, "sheath" auricles often falcate; laminae usually flat, vernation convolute. Lemmas with broad scarious margin in upper  $\frac{1}{4}$ - $\frac{1}{3}$ . Styles sub-terminal. Furrow of caryopsis shallow, hilum linear nearly its length, husks adherent.



III. MONTANAE. Ligules truncate, no auricles. Laminae all flat, veneration convolute. Lemmas loosely involute in fruit, narrow scarious margin; ovary hispidulous apex, styles subterminal; caryopsis free or nearly so, hilum linear, about half its length, ventral furrow slight or absent.

## Section OVINAE Fr. (4).

## §1. INTRAVAGINALES.

All branches intravaginal with a somewhat elongated dorsal prophyll succeeded immediately by normal leaves. Leaves with laminae all similarly conduplicate, sheaths all split to the base, biauriculate about the ligules.

- a. Laminae capillary or setaceous, 0.3-0.6 mm. diam.
  - α. Lemmas muticous ..... *F. tenuifolia*.
  - β. Lemmas aristate ..... *F. ovina*.
- b. Laminae stouter, stiffer, 0.7-1.0 mm. diam.
  - α. Laminae green or glaucescent, not pruinose ... *F. longifolia*.
  - β. Whole plant distinctly pruinose, even when dried (the waxy-layer can be scratched with a needle) ..... *F. glauca*.

Species 1. *F. tenuifolia* Sibth. (26, p. 44),  $2n = 14$ , diploid.

Laminae 0.3-0.4 (-0.6) mm., ± cylindrical, 5-nerved, 3-costate, long and lax. Culms 40 cm. high, 2 nodes near base. Spikelets small, 4.5-6.0 (-7.0) mm. lg., elliptical, 3-8 frs., lemma c. 3 mm. lg., apex acute, muticous or mucronulate, anthers 1.5-1.75 mm. lg.

Var. 1. *paludosa* (Gaud.) Howarth *comb. nov.* (6, p. 276). The typical species. Plant, including spikelets, glabrous.

Var. 2. *hirtula* (Hack.) Howarth (2c, p. 512). A fine pubescence on spikelets and lower leaves.

Grasslands of lowland heaths (sands and gravels) and at higher altitudes in rocky ground. Common. Proliferated forms of both vars. occur in mountainous districts.

Species 2. *F. ovina* L. (17b, p. 73),  $2n = 14$  (28, 42, 56)

Laminae 0.4-0.5 (-0.6) mm. diam., 5 (-7)-nerved, 3-costate, somewhat laterally compressed, distinctly keeled when dry, dark-green, grey-green or glaucescent (not pruinose), rarely quite glabrous. Culms 20-30 (-70) cm. high, 2-nodes, often roughish below panicle. Panicle ± contracted except at anthesis, varied length (2-12 cm.) usually 2-8 cm. Spikelets 4.5-8.0 mm. lg., 3-8-frd. Lemma 3.5-5.0 mm. lg. awned, awn 1.0 mm. or more.

Var. 1. *genuina* Gren. & Godr. (8, p. 570). The typical species. Common sheep's fescue grass of chalk downs and limestone grassland.

Var. 2. *hispidula* (Hack.) Richt. (21, p. 93). Lemmas hispid. Sheaths puberulous. Occurs with var. 1 but usually in more exposed situations.

Var. 3. *firmula* (Hack.) Richt. (21, p. 93). A more robust form with rather stouter (c. 0.6 mm.) leaves, more rigid, 7-nerved, 3-costate. Spikelets larger (6.0-7.5 mm.). Lemmas 4.0-5.0 mm., roughish backs.

Rare.

Proliferated forms of all three vars. occur.

Species 3. *F. longifolia* Thunb. (29b, p. 50),  $2n = 42$  (hexaploid).

More robust than var. 3 above. Laminae 0.6-0.8 mm., 7-9-nerved, 3-costate, green or glaucescent, smooth or scabrous. Spikelets c. 8-0 mm. lg., 4-9 fld. Lemmas 4.0-5.0 mm., awn 3.0 mm.

Var. 1. *genuina* (Godr.) Howarth (13, p. 34). The typical species: known to continental authors as "*F. duriuscula* L." Plant practically glabrous.

Forma *longiaristata* Hack. (9, p. 90). Awn longer than half lemma.

Forma *curvula* (Gaud.) How. (13, p. 34). Laminae rigid, curved, rough along the infolded margins.

Proliferated forms occur.

Var. 2. *villosa* (Schrud.) Howarth *comb. nov.* (24, p. 320). Spikelets  $\pm$  villose.

Var. 3. *trachyphylla* (Hack.) Howarth (13, p. 35). Laminae distinctly rough. A more robust plant with larger panicle and spikelets.

Rare.

It is doubtful if any of these forms are indigenous.

Species 4. *F. glauca* Lam. (16b, p. 459),  $2n = 28$  (tetraploid).

Entire plant with distinct waxy "bloom." Laminae stiff,  $\pm$  cylindrical, smooth, 0.7 mm. or more diam., 7 (-9)-nerved. Spikelets—8 mm. lg., 4-7 fld. Lemmas 5.5 mm. lg. awned.

Var. 1. *genuina* (Hack.) Howarth (13, p. 35). A robust plant—4 dm. high with stout leaves. Grown as an ornamental grass, naturalised in few localities.

Var. 2. *caesia* (Sm.) Richt. (21, p. 95). A smaller plant with thinner wiry leaves and shorter culms. In the type specimens the spikelets are about 6 mm. lg., lemmas c. 4.5 mm., awns c. 1.4 mm., anthers c. 2.4 mm. The type locality is on the heaths around Bury St Edmonds, but it occurs generally in Breckland. The plant similarly named by continental authors appears to be quite distinct.

## §2. EXTRAVAGINALES.

Some or all of the branches extravaginal, i.e., breaking through the base of the subtending sheath, producing first a short prophyll followed by leaves showing transition to normal foliage leaves.

A. Ovary hispidulous at apex. Branches mostly intravaginal, their leaves capillary, culm leaves flat

*F. heterophylla.*



Forma *littoralis* Hack. (31, p. 368) is a coastal form with longer stolons but with fewer spikelets per panicle, otherwise as var. 2.

A useful pasture grass, widely distributed on more fertile soils.

Var. 3. *tenuifolia* Howarth (10, p. 267).

Readily distinguished from var. 2 when in fresh condition by its dark, glaucous green leaves (not pruinose). Spikelets as in var. 2 but fewer per panicle and the latter more compact.

Coasts of S.W. England, especially Severn Estuary, on higher zones of salt marsh.

Var. 4. *glaucescens* (Hegets. and Heer) Richt. (21, p. 99).

Readily distinguished from vars. 1, 2, and 3 when living by its glaucescent (yellow-green) leaves. Panicle and spikelets as var. 1 or 2 but the latter possess a distinct wavy "bloom" visible also in the dried plant (it can be scratched with a needle). Lemmas typically rough about the tips and upper margins, green to dark purple.

Coasts, estuaries of W. and S. England, W. Scotland. Where the shore is flat and sandy but with some admixture of organic matter, it may form an extensive turf slightly above the *Glyceria* zone and distinguishable at a glance by its colour. "Cumberland" turf on the Solway Firth, "sea washed turf" used for lawns, etc.

Viviparous in the Hebrides.

Forma *pubescens* Howarth. New lemmas coarsely hairy as well as with a "bloom." Otherwise as above.

Few localities on coast of N.W. England—Morecambe Bay.

Var. 5. *pruinosa* (Hack.) Howarth (see Howarth, 12, p. 318).

Entire plant with distinct wavy "bloom," recognisable also on dried material. Plant light grey-green.

A few localities on our coasts.

Var. 6. *juncea* (Hack.) Richt. (21, p. 99).

Extensively creeping with long stolons, plant light grey-green as var. 5 but more robust and comparable with var. 2. Leaves—1.2 mm. diam.

Coastal sands, S.E. England.

Var. 7. *arenaria* (Osborn.) Fr. (4a).

Extensively creeping by long stolons. Rad. leaves stiff, green (not pruinose), c. 1.0 mm. diam., not sharp pointed. Pan. and spikelets commonly as var. 1, sometimes larger, approaching state in var. 2. Lemmas densely hispid or villose (coarse hairs), occasionally also having a "bloom" (s. var. *Magnellii* R. Lit., 18, p. 3, Belgian coast).

Forms with sub-glabrous or almost glabrous lemmas occur (e.g. forma *glabrispicula* St Yves et R. Lit., 18, p. 24).

Frequent on the sheltered slopes of *Ammophila* dunes.

Var. 8. *oraria* (Dum.) Howarth *comb. nov.* (see 12, p. 329).

Chars. of var. 7 but much more robust and intermediate between it and Sp. 7. Rad. leaf 7-9-costate, 7-9-nerved, not rounded in t.s. and possessing separate bundles of sclerenchyma below the veins. Spikelets c. 13 mm. lg., lemmas c. 7.5 mm. lg.,  $\pm$  elliptical then tapering to an awned tip, densely villose.

A few localities on dunes, E. Coast, possibly introduced from Belgian coast whence Dumortier's type.

Var. 9. *dumetorum* (L.) Gaud. (6, p. 686),  $2n = 42$  (hexaploid).

Chars. of var. 1 but lemmas shortly pubescent. On drier sandy and gravelly soils among brushwood and scrub, and occasionally on maritime sands, where it may be confused with var. 7. It is the subvar. *barbata* Hack. (9, p. 139). The hairs are not so coarse as in var. 7. Apparent long stolons on coastal sands are merely vegetative shoots whose internodes have elongated and the radical leaf-sheaths persist but become fibrous.

?Var. 10. *planifolia* Hack. (9, p. 140).

Rad. leaves 3.0 mm. broad, flat. Long stolons. Few localities.

II. Subsp. *FALLAX* (Thuill.) Howarth (12, p. 320).

Caespitose. Extravaginal branches fewer than intravaginal and  $\pm$  erect.

Var. 11. *commutata* Gaud. (6, p. 287).

Cf. I. 1. More readily recognised in spring by its vegetative habit. Distinguished from *F. ovina* vars. by the entire sheath of the radical leaf, t.s. lamina, and  $\pm$  flat culm leaf; from *F. heterophylla* by leaf chars. and glabrous ovary.

A constituent of *F. ovina* grassland in moister calcareous soils.

It is the "Chewing's Fescue" of New Zealand.

Var. 12. *barbata* (Hack.) Howarth (12, 320, given as a subvar. in error).

Spikelets pubescent.

Occasional, in drier situations.

Species 7. *F. juncifolia* St Am. (22, p. 40).

Extensively creeping. Leaves stout (-14 mm.), stiff, pungent apex, sub-cylindrical, t.s. 7-11-nerved, 7-9-costate, dorsal layer of sclerenchyma, costae with short, stiff hairs. Pan. large, spikelets large, lemmas 7.0 mm. or more lg., linear-lanceolate, tapering from below middle to a short awn, villose.

Forma *planifolia* Hack (2b, p. 38), leaves permanently flat.

On sand-dunes of E. and S. Coasts in several localities only. Distinct from *F. rubra* vars. *arenaria* and *oraria* in leaf characters and shape of lemma.

## Section BOVINAE Fr.

Species 8. *F. elatior* L. (17b, p. 75).

- I. Radical sheaths decaying into irregular dark-brown fibres. Paired basal branches of panicle with few spikelets (4-6 and 1-3 respectively). Spikelets narrow cylindrical, loose.  
Subsp. *F. pratensis*.
- II. Radical sheaths not becoming fibrous. Paired basal branches of panicle multispiculate. Spikelets broader, dorsally flattened, compact. .... Subsp. *F. arundinacea*.

Subsp. I. PRATENSIS (Huds.) Hack. (9, p. 150),  $2n = 14$  (diploid).

Laminae of rad. leaves flaccid, costae  $\pm$  distant (by 2-3 times their width), basal margin rough, rarely distinctly auriculate. Culm laminae distinctly auriculate. Spikelets loosely c. 7-8 fld., 9-11 mm. lg., usually pale green. Lemmas indistinctly ribbed, upper margin broadly scarious.

Var. I. *eu-pratensis* St Y. (23, p. 142 = var. *genuina* Hack., 9, p. 150).

Plant 30-70 cm. high. Lea. 3-5 mm. broad, dark green. Lemma muticous, obovate-lanceolate.

Subvar.  $\alpha$ . *typica*, Hack. (9, p. 150). Spikelets c. 11 mm. lg.Forma *mucronulata* Belli (1, p. 20). Lemma with slight mucron.Forma *sub-aristata* Lit. (18, p. 6). Lemma with slight awn.Forma *aristata* Jans. en Wacht. (15, p. 205). Lemma distinctly awned, awn c.  $\frac{1}{2}$  lemma.Subvar.  $\beta$ . *pseudololiacea* (Fr.) Hack (9, p. 151).

Panicle linear, one basal pair each with one spikelet, remainder solitary. Distinguished from *F. loliacea* by presence of G I, but feeble and 1-nerved; radical sheath split, lamina convolute vernation.

Intermediates between  $\alpha$  and  $\beta$  occur.

Damp meadows, pastures, grass verges.

Subsp. II. ARUNDINACEA (Schreb.) Hack. (9, p. 152),  $2n = 42$   
(hexaploid).

Rad. laminae broad,  $\pm$  stiff, multicostate, costae  $\pm$  near (separated by not more than twice their width), base prolonged into 2 falcate auricles. Pan. large, paired basal branches each with more spikelets than in I. Spikelets more densely fld. Lemmas lanceolate, usually distinctly nerved.

Var. I. *genuina* Syme emend Hack. (28, p. 151, and 9, p. 154).

Plant 70-110 cm. tall. Laminae c. 4 or more mm. broad, flat, light-green or sub-glaucous. Pan. c. 20 cm. lg., branches not closely contracted, lower pair  $\frac{1}{2}$  to  $\frac{1}{3}$  length of panicle, weaker with 3-8 spikelets, stronger multispiculate, spikelets c. 10 mm. lg. Lemmas lanceolate, apex muticous to aristate, faintly 3-5-nerved, carinate from middle to tip.

A facultative halophyte. Banks of tidal rivers.

Subvar. *a. vulgaris* Hack. (9, 153). Laminae 5-10 mm. broad. Spikelets 10-12 mm. lg., 4-6-flrd. Lemma c. 7 mm. lg.

(=*F. elatior*  $\beta$  *arundinacea* Syme, 28, p. 151).

Subvar. *\beta. strictior* Hack. (9, p. 154): Really a weaker state of *a*, frequently in the same habitat with it but in panicle chars. approximating to subsp. I and sometimes confused with it. Distinct, however, in its vegetative chars.

(=*F. elatior a genuina* Syme (28, p. 151) and *F. elatior* of some English botanists).

Subvar. *f. mediterranea* Hack. (9, p. 154). Leaves rather narrower, stiff, glaucescent,  $\pm$  acute, convolute when dry. Pan. not so open as *a* and the branches with fewer spikelets. Lemmas distinctly awned, awn 2-3 mm. lg.

Occasional.

*F. ELATIOR*  $\times$  *LOLIUM PERENNE* (= *F. LOLIACEA* Huds., 14, p. 38),  $2n=21$ .

Loosely tufted. Rad. sheaths entire, young lea. conduplicate, adult flat, auriculate, many nerved, many costate. Pan. various—simple racemiform, spikelets solitary, or with basal branches. Lower spikelets semi-transverse, upper median (as in *Lolium*), 5-12 flrd., 12-15 mm. lg. G I rarely absent. G II to 8 mm. lg. Lemma 8-9 mm. lg., mucous, not clearly nerved. Pollen not fertile.

Occurs naturally where parents grow in proximity.

Species 9. *F. gigantea* (L.) Vill. (30, p. 110),  $2n = 42$  (hexaploid).

A tall, loosely tufted plant with large panicle. Leaves all similar, adult flat 5-15 mm. broad, bases prolonged into falcate dark brown auricles, multicostate, costae not prominent, widely separated. Pan. 10-40 cm. lg., lax. Paired basal branches naked  $\frac{1}{3}$ - $\frac{1}{2}$  way, then 1-10 and 4-20 spikelets respectively. Spikelets pedicellate, 3-7 flrd. Lemma 7-9 mm. lg., lanceolate, acute, 5-ribbed, apex sub-entire or shortly 2-toothed and awn sub-apical, about twice length of lemma. Anthers c. 2 mm. lg.

(=*Bromus giganteus* L., 17b, p. 77). Woods and shady banks.

*F. triflora* Sm. (27, T. 1918) is a weak state. Spikelets 3-flrd. on a smaller, less open panicle.

Section MONTANAE Hack. (9, p. 195).

Species 10. *F. sylvatica* (Poll.) Vill. (30, p. 105),  $2n = 42$  (hexaploid).

Densely caespitose. Plant 70-110 cm. tall. All sheaths split, persistent without disintegrating into fibres. Ligules short, truncate, 1-3 mm. lg., margins ciliate. Branches at first apogeotropic bearing 4-5 sheathing scale leaves, then normal leaves. Laminae 6-14 mm. broad, adult flat, dark green, many-nerved, many-costate; upper surface

rough, lower smooth. Spikelets usually 3-fld., 6-7 mm. lg. Glumes 1-nerved. Lemma subulate,  $\pm$  acute, keel prickly. Caryopsis free from husk, almost or quite flat.

Woods. Few localities.

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### ABSTRACTS FROM LITERATURE

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Note to Contributors: It would be a great convenience to the Editors if contributors would send in their Abstracts, and any necessary References for the Bibliography, on slips of uniform size, the size desired being 8 inches by 5 inches, the long edge to be treated as the top of the page. A separate slip for each item permits the easy sorting of the MS. without the transcription which is otherwise too often necessary in the preparation of copy for the printer. The uniform slips can be easily filed and will be available for future reference, thus enabling the Editors to avoid repetition and to make helpful references to previous notes.—Ed.

#### (A) TOPOGRAPHICAL

3, SOUTH DEVON.—S. C. Paterson (1946: *Trans. Torquay N.H. Soc.*, 9, 119-124) gives "Notes on Four Years' Botanical work in South Devon.—[Wa.]

3, 4, DEVONSHIRE.—Day and Brokenshire (1945: 57-67) give the "Thirty-seventh Report on the Botany of Devon." The Report enumerates the records of flowering plants and cryptogams additional to those in *Flora of Devon*.—[Wa.]

4, N. DEVON; COMBE MARTIN.—Pugsley, H. W. (1945: *Trans. Devon Assoc.*, 78, 193-206) gives a list of plants from the parishes of Combe Martin and Berrynarbor, mostly observed by himself, and which were not included for the area in Martin & Fraser, 1939: *Flora of Devon*.

5, 6, SOMERSET.—The Report of the Botanical Section in the *Proceedings of the Somersetshire Archaeological and Natural History Society*, 91, 105-108, 1946, gives a list of the more important records made during 1945.—[Wa.]

7, 8, WILTSHIRE.—J. D. Grose (1946: *Wiltshire Plant Notes; Wilts. Arch. and N.H. Mag.*, 51, 247-255) gives a large number of records of which *Arum italicum* and *Teucrium Botrys* are new to the county. Some attention has been given to the colour forms of common plants. (See *Plant Records*).—[Wa.]

7, 8, WILTSHIRE.—The Report for 1946 of the Marlborough College *Natural History Society* contains (pp. 16-18) its usual "Flower List" including phenological data. The Society adds *Oenothera Lamarekiana*, "*Eryngium maritimum*" from Clyffe Pypard churchyard, and *Potamogeton praelongus* (all v.-c. 7) to the Marlborough list, and *Vicia lutea* (7), *Valerianella eriocarpa* (8), *Coeloglossum viride* × *Orchis Fuchsii* (8), *Orchis pardalina* (7), and *Bromus Thominii* (7) have been contributed by J. D. Grose, the last four new to Wiltshire. A revised edition of the Handlist of Flowering Plants of the Marlborough District is promised for the next Report.—[Wi.]

9, DORSETSHIRE.—A. E. A. Dunston (1945; 1946) gives an account of the roses of the Isle of Purbeck. Several varieties and forms are recorded for the first time.—[Wa.]

14, EAST SUSSEX.—*The Hastings and East Sussex Naturalist*, 7, 35-36, 1946, contains a few records from several contributors.

14, 16, EAST SUSSEX AND WEST KENT.—1946: F. Rose; *The Vegetation of the Weald with special reference to the Tunbridge Wells district (S.E. Nat. and Antiq., 51, 32-37)*, gives a general account of the flora of the various geological formations exposed in the area, with a note on the different geographical types of plants occurring in the area.

21 (etc.), LONDON.—Lousley, J. E. (1946) brings together many interesting records for the London area, some of which are interesting survivals and others novelties mentioned in *Plant Records*. Additions to the flora of bombed sites are also given.—[Wi.]

18, SOUTH ESSEX.—G. Lister (1946: *Essex Nat.*, 27, 293-296) gives "Additions to the List of Flowering Plants found in the Bushwood area of the Wanstead Park District since 1941." The presence of a barrage balloon site during the war and a much used underground shelter has resulted in the introduction of a number of plants foreign to the Forest.—[Wa.]

27 & 28, NORFOLK.—Ellis, E. A. (1945: *Trans. Norf. Norw. Nat. Soc.*, 16, 172-3) has compiled a list of plant notes from Norfolk for 1945, and gives habitats for the following:—*Camelina sativa* Crantz; *Trifolium resupinatum* L. (apparently a new-comer to Norfolk and probably introduced with farm seed); *Lotus tenuis* W. & K.; *Poterium officinale* A. Gray; *Pyrola minor* L. and *P. rotundifolia* L.; *Herniaria hirsuta* L. (probably another recently introduced species); *Scrophularia alata* Gilib.; *Aristolochia clematidis* L.; and *Cuscuta trifolii* Bab. on red clover.—[J.M.L.]

28, W. NORFOLK.—Petch, C. P. (1945: *Trans. Norf. Norw. Nat. Soc.*, 17, 106-9) gives a short account of vegetational changes accompanying reclamation of land along the eastern shores of the Wash.—[D.P.Y.]

34, 6, WEST GLOUCESTERSHIRE AND NORTH SOMERSET.—Sandwith, Cecil I. (1946) reports on the progress of floristic botany in the Bristol district.

39, STAFFORDSHIRE.—E. S. Edees (1946: *Trans. North Staffs. Field Club*, 1945-6) gives many records of local interest; a few are given in *Plant Records*.

43, RADNORSHIRE.—Wade, A. E., and Webb, J. A. (1945: *N.W. Nat.*, 20, 156-160) contribute a list of records of plants, many of which have not been previously recorded for the county.

49, CAERNARVONSHIRE.—Wilson, A. (1946: *N.W. Nat.*, 21, 202-223, Map and 2 plates) contributes a paper on the Flora of a Portion of North-East Caernarvonshire. It is compiled from the author's notes made between 1924 and 1946 together with records found in John William's *Faunula Grustensis*, Griffiths' *Flora of Anglesey and Carnarvonshire* and Leighton's *British Lichen Flora*. The area surveyed is

bounded on the east by the River Conway from Conway to Bettws-y-Coed and on the west by the summit ridges of the Carnedd Llewelyn range of mountains. There are notes on the climate, the floral features and some altitudinal records of plants. The list of species ends with the *Valerianaceae* and is to be continued.—[F.A.S.]

57, DERBYSHIRE.—Hollick, K. M. (1946: *Derbysh. Arch. Nat. Hist. Soc. Jnl.*, 136-143) gives collected field notes and records of plants seen in 1946.

59, SOUTH LANCASHIRE.—Gresswell, R. Kay (1946: *Rep. Southport Sci. Soc.*, 5, 12-17) publishes a list of "Interesting Plants found within the County Borough of Southport, 1936-1938" compiled from notes made by W. Waddington.—[Wa.]

61-65, YORKSHIRE.—Sledge, W. A. (1946: Botanical Records Committee Report; *Yorkshire Naturalists Union: Annual Report, 1945: The Naturalist*, 816, 26-28) gives new vice-county records for 61, 63, and 65 and new locality records for 61, 62, 63, 64, and 65.—[F.A.S.]

#### (B) TAXONOMY AND CLASSIFICATION

TURRELL, W. B. (1946: The ecotype concept—A consideration with appreciation and criticism, especially of recent trends; *New Phytol.*, 45, 34-43) discusses Turesson's classificatory units which are based mainly on degrees of inter-fertility of the groups concerned (as determined often by artificial experiment) and concludes that taxonomy must give greater weight to the results of the ecological and geographical barriers existing in nature.—[H.A.H.]

#### (D) GENETICS

NUTMAN, DR P. S. (1946: Genetical factors concerned in the symbiosis of clover and nodule bacteria; *Nature*, 157, 463-465) selected plants of red clover (*Trifolium pratense*) according to their modes of behaviour after inoculation with a pure line strain of bacteria and investigated the inheritance of the said criteria. He found that variations in respect of several criteria were associated with genetic differences in the clover plant itself. Two factors viz. those producing complete resistance to infection and those that alter the effectivity of the plant response (i.e. the degree to which the plants are able to obtain their nitrogen supply from the nodules alone) show strong dominance.—[H.A.H.]

#### (F) BIOLOGY AND MORPHOLOGY

VOIGT, G. K. W. (1945: *Trans. Norf. Norw. Nat. Soc.*, 16, 169-71) notes the preservation of chlorophyll "islands" in dying leaves contaminated by birds' droppings, and reviews briefly earlier work on the preservation of chlorophyll in autumnal leaves by the action of leaf-mining insect larvae and parasitic fungi.—[D.P.Y.]

PERCIVAL, M. S. (1946: Observations on the flowering and nectar secretion of *Rubus fruticosus* (agg.); *New Phytol.*, 45, 111-123) observed the biology and nectar secretion of flowers of *Rubus fruticosus*;

rate of cane sugar secretion in individual flowers was found to be correlated with floral development and other factors and to show a diurnal rhythm, but was not obviously affected by weather.—[H.A.H.]

HYDE, H. A., & WILLIAMS, D. A. (1946: Studies in Atmospheric Pollen III. *New Phytol.*, 45, pp. 271-277). Simultaneous observations were made on flowering and atmospheric pollen concentration (as measured by the catch on slides exposed continuously and changed 2-hourly) in a dense stand of *Plantago lanceolata* and related to the weather conditions experienced. Normally anthesis took place at 06.00 hr., pollen was released immediately and the atmospheric pollen concentration rose and fell correspondingly. Flowering was delayed or almost completely inhibited by cold weather but was unaffected by duration of bright sunshine recently experienced. The pollen productivity of individual flowers and heads and of unit area of the stand was determined and it was concluded that a very high proportion becomes air borne.—[H.A.H.]

ABRAHAM, E. P., CROWFOOT, D. M., JOSEPH, A. E., OSBORN, E. M. (1946: An antibacterial substance from *Arctium minus* and *Onopordon tauricum*; *Nature*, 158, 744) have isolated an antibacterial substance from *Arctium minus* Bernh. and have also obtained the same substance from first year plants of *Onopordon tauricum* Willd., a southern European species belonging to the same section of Compositae as *Arctium*.—[H.A.H.]

HARRIS, T. M. (1946: *New Phytol.*, 45, 50-55) observed that certain plants, especially mosses and *Cladonia*, were poisoned by zinc from galvanized wire netting used to enclose experimental quadrats at 500 m. on Cader Idris, North Wales. He observed that rain water used for various plants in a greenhouse contained more than enough zinc to kill certain plants in water cultures and suggests that this may explain the observed difficulty in cultivating wild plants from mountain and other habitats with the minimum of nutrients.—[H.A.H.]

ALBINO FLOWERS.—ARMITAGE, E. (1945: *J. Roy. Hort. Soc.*, 70, 146, 362) lists numerous species in which albinism has been observed. Some yellow flowers are occasionally cream- or lemon-coloured, e.g., *Ranunculus Ficaria*, *R. acris*, *Sonchus oleraceus*, *S. asper*, *Tragopogon pratensis*, *Leontodon autumnalis*, and *Lapsana communis*; a specimen of the last was also seen with pale silvery straw-coloured fruiting involucre on light green stems. *Dactylis glomerata* sometimes occurs without purple coloration in the glumes and anthers.—[D.P.Y.]

#### (G) ECOLOGY

(For regional papers see "Topographical" section)

BOMBED AREAS.—Debray and Senay (1946: La flore des ruines du Havre; *Bull. Soc. bot. Fr.*, 92 (1945), 229-235) examined in June, September and October 1945 the flora of *Ville St-François*, a district of Le Havre where three-quarters of the buildings had been totally or partially destroyed in September 1944. The first part of the paper deals

with the floristics of 8 localities, with notes on the edaphic conditions, and, in two instances (with the longest lists) statements of the extent of earlier damage in 1940, and in another, mention of bombing in 1942 or 1943. Most of the species which occur most frequently in these lists are those we are familiar with on British bombed sites, and *Erigeron canadense* L., *Epilobium angustifolium* L., *Buddleja* ("probably *B. variabilis* Hemsley"), *Tussilago Farfara* L., *Senecio viscosus* L., *Solanum Lycopersicum* L., *Alopecurus agrestis* L., *Sisymbrium orientale* L. (var. *stenocarpus* Ry.), *Erysimum Cheiranthoides* L., *Salix Caprea* L. and *S. atrocinerea* Brot., are amongst the species included. "*Pteris aquilina* L." is given as present but apparently not at that time plentiful. The vegetation evolved through very much the same stages according to the stabilisation of the soil as have been familiar to workers in this country, but Debray and Senay make the important observation that the very diverse chemical nature of the soil appeared to have hardly any influence on the floristics. In spite of the dry summer of 1945 willows became established. The introductions included *Chenopodium Vulvaria* L., *Plantago altissima* L., and *Erigeron crispus* Pourr., of which the last two are new and the first almost new to the district. Tomato is known to be an "endoanthropochore" and it is suggested that this explains its mode of introduction [but from the exposed positions in which it occurs in the City of London there is likely to be some additional explanation.—J.E.L.]. The paper concludes with an appreciation of the brilliance of the flowers in contrast with their desolate surroundings.—J. E. LOUSLEY.

By way of comment it may be pointed out that this list from France is of extreme interest in comparison with the flora of bombed sites in other countries. Thus of the 11 most abundant species found on the ruins of Hamburg according to a list supplied to me by Herr Schriever and including *Poa annua*, *P. trivialis*, *Lolium perenne*, *Chenopodium album*, *Stellaria media*, *Capsella bursa-pastoris*, *Epilobium angustifolium*, *Erigeron canadensis*, *Tussilago Farfara*, *Senecio vulgaris* and *S. viscosus*, all are found at Le Havre and also on nearly all the bombed sites of British towns as noted in my own lists or those of correspondents. Comparison of all these lists clearly indicates that the special ecological conditions provided by the debris produces a well-defined flora of a type which is remarkably uniform. From my own work in London supported by experiments with horse-droppings it seems that the horse has been instrumental in introducing a much larger number of species than hitherto supposed. Debray and Senay's paper includes a considerable number of plants associated with farmyards and known to germinate from seed which has passed through the horse.—J.E.L.)

OAK WOODS.—The Presidential Address by E. Wyllie Fenton to the Botanical Society of Edinburgh on "Some Factors affecting the natural regeneration of Oak in certain parts of south-east Scotland" has been published (1945: *Trans. Bot. Soc. Edin.*, 34, 214-232).

CHALK.—Locket, G. H. (1946: *Journ. Ecol.*, 33, 205-209) contributes "Observations on the Colonisation of Bare Chalk." The observations were made between 1933 and 1943 on the floor and slopes of an oblong chalk pit, 150 × 100 m., at Harefield, Middlesex, which was abandoned in 1929. Full lists of the species observed are given with a record of the fluctuation in frequency. Amongst woody plants on the floor *Salix Caprea* and *S. atrocinerea* with *Betula alba* were the precursors, followed by *Acer Pseudoplatanus*, *Crataegus monogyna*, *Fraxinus excelsior* and *Quercus Robur*. *Salix* spp. and *Betula* spread and grew rapidly on the screes. The domination of the whole floor by *Melilotus officinalis* in 1933 followed by fluctuating frequency and almost total disappearance by 1942 is commented upon.—[Wa.]

WOODLAND COMMUNITIES.—Blackman, G. E., & Rutter, A. J. (1946: *Physiological and Ecological Studies in the Analysis of Plant Environment*. I. The Light Factor and the Distribution of the Bluebell (*Scilla non-scripta*) in Woodland Communities; *Ann. Bot.*, N.S. 10, No. 40, p. 361-390) have studied the density of bluebell (*Scilla non-scripta*) distribution in larch, beech and mixed deciduous and beech woods respectively and have made corresponding observations on light intensity. They show by appropriate statistical means that in the larch wood the shade factor accounted for above one-third of the variations in the plant's distribution; in a beech wood half of the density fluctuations could be expressed in terms of light intensity ruling between 31st March and 30th June; in a mixed deciduous wood with an understorey of scattered hollies the corresponding figure was three-quarters; the absence or scarcity of bluebell beneath the hollies was solely due to the deeper shade. The authors conclude that bluebell is intolerant of deep shade and that in most closed woodland communities light is the main environmental factor controlling distribution. In spite of its prevalence in woodland bluebell is not an obligate shade plant: open woodland nevertheless is its most favourable habitat because of the absence of unfavourable factors such as trampling by animals, waterlogging and a very shallow depth of soil.—[H.A.H.]

CANADIAN FOREST.—A second paper by Pierre Dansereau on the Laurentian Maple Forest (dominated by *Acer Saccharophorum*), dealing with the various successions and their plant indicators, appears as no. 60 of the *Contributions de l'Institut Botanique de l'Université de Montréal* (1946: 235-291). Few British species figure in the lists, but the methods of presenting the results in diagrams and tables are interesting. The climax is reached by five main lines of development. On some lines a subclimax may result from the checking of further development by topographic or micro-climatic influences. The modifications due to the intervention of man are also described. The French text is followed by a short English summary and a bibliography of 55 entries.—[Wi.]

## (H) DISTRIBUTION

## (b) HISTORY OF THE BRITISH AND NEIGHBOURING FLORAS

ORIGIN AND DISTRIBUTION OF BRITISH FLORA.—Prof. J. R. Matthews, in the Masters Memorial Lectures (1946: *J. Roy. Hort. Soc.*, 71, 215-239, 259-273), discusses the history of our native vegetation. Such discussion must be largely devoted to a consideration of the geographical sources of the species, since their evolutionary history is little known; most British natives, however, certainly date back to a remote past. The emergence in Pliocene times of a flora in the British area, which eventually comprised a large proportion of the present-day species, is looked upon as arising from a southward migration, consequent upon the cooling of the climate in the higher latitudes. Its later history was complicated by the four periods of glaciation during Pleistocene times, the first 600,000 years ago, the last ending about 15,000 years ago. Some of these plants from more northern regions may have reached the British area prior to the first glaciation, and palaeobotanical evidence suggests an interchange during Pleistocene times between the circum-polar and S. European floras. However, the development of the Scandinavian ice-sheet appears to have blocked the southward migration of many Arctic species. Prof. Matthews inclines to the view that an important part of our modern flora survived through the glacial periods, providing a stock for later recolonisation. The vegetation during the ice age must have been dynamic, keeping pace with the alternating glaciation and more genial climatic conditions.

The general character and existing distribution of British vegetation has been attained since the last glacial phase, by immigration (or re-immigration) from the Continent. Whether any trees survived the last glacial epoch is doubtful, but in post-glacial times trees spread over large areas of the country, bringing corresponding changes in the rest of the flora. The main post-glacial changes have probably been brought about principally by changes in climate, but also by topographic change and natural ecological successions. Ecological study of existing plant communities is of importance here, as it casts light upon the conditions under which similar communities grew in earlier times.

The paths by which various plants reached Britain can sometimes be traced from their centres of distribution. The remainder of the lecture is devoted to a survey of various types of plant association and the origin of their more important members.

Man has wrought a considerable influence on vegetation in recent times, and although remarkably few species have disappeared owing to his interference with the native flora, an enormous number have been introduced. Probably most of our agrestal weeds have been derived from the semi-desert communities of S. Europe, the Mediterranean, and the Orient, although a few (*Stellaria media*, *Lapsana communis*, *Polygonum aviculare*, *Rumex Acetosella*) were members of our pre-glacial flora. These semi-desert plants also establish themselves well on

sand-dunes. A small group of our maritime and littoral plants are circumpolar, but the majority have come from S. or S.W. Europe. Many of our aquatic plants are boreal and known from pre-, inter-, and post-glacial deposits, others came from S. or W. Europe. *Eriocaulon*, *Lobelia Dortmanna*, and *Najas flexilis* are amphi-Atlantic and may have come from the American side. Our marsh plants have a preponderance of boreal species which may have survived from pre-glacial times, and also include southern types which probably have not done so. The plants of British grasslands are largely Eurasian; in particular, the "steppe flora" of the Brecklands and other dry soil communities are derived from central Europe and probably arrived in the Boreal period of post-glacial times. Of our heath and moorland vegetation, many plants, especially *Ericae*, are characteristically W. or S.W. European Atlantic species, but an important part is boreal; the latter may have migrated south before the advancing ice-sheet, but it is doubtful if the Atlantic plants had reached Britain in Pleistocene times. Most British woodland is of the N.W. European deciduous forest type, but the pine and birch forests (and heathy oak-woods) of the Highlands belong to the N. European coniferous forest belt. The ground flora of the latter is boreal; our numerous other woodland plants are in the majority Eurasian—of varied origin, but some are Asiatic, others southern—with some Continental and Oceanic European types. A few of the members of our alpine flora, which reach their southern limit in Scotland, are purely Arctic, but the majority are Arctic-alpine and fairly widely distributed; a few are purely Alpine and do not occur in the Arctic, although most are found in Scandinavia. Many Alpine and Arctic plants are centred on N.E. Asia; they probably spread by two lines of migration, one circumpolar, the other via the Caucasus and European Alps, and some or all of the Arctic-alpine type may have travelled northwards to the Arctic via the latter route.

Summing up, in our flora are over 300 species of the S. European element, 350 boreal species, and 800 of more general distribution. Probably the majority of the boreal species survived the glacial period in Britain, so that in this era our flora was as rich as that of Greenland to-day.—[D.P.Y.]

PRAEGER, R. LLOYD. (1946: The Irish Sea as a plant barrier; *New Phytol.*, 45, pp. 280-1). The Irish flowering plants offer no direct evidence of actual present trans-marine migrational movement but certain ferns appear to be in process of establishing themselves in Ireland, as the result of colonization by air-borne spores carried from Britain. Thus about twenty to twenty-five plants of *Cryptogramme crispa*, mostly "isolated starvelings," have been seen in 150 years and *Dryopteris Phegopteris* has been recorded—in each case as a single plant or clump—from five counties; both these species have been observed in artificial and therefore atypical habitats such as roadsides. *Dryopteris Robertiana* was found a few years ago in Ireland (forming strong colonies in limestone crevices in Co. Mayo): such ground covers hundreds of square



miles not far away but the species has as yet been seen only in the one locality.—[H.A.H.]

ALIEN PLANTS IN BRITAIN. Dallman, A. A. (1946: *N.W. Nat.*, 21, 36-43, 2 pl.) commences a series of papers on alien plants and the first one includes the following species:—*Geranium Endressi* J. Gay and *Saxifraga Cymbalaria* L. var. *Huetiana* (Boiss.) Engl. et Irmsch. A comprehensive bibliography is appended.—[S.] See Plant Notes.—Ed.

BLACKBURN, K. B. (1946: On a peat from the island of Barra, Outer Hebrides. Data for the study of post-glacial history; *New Phytol.* 45, 44-49). Pollen analyses of a 4 ft. blanket peat from the island of Barra, Outer Hebrides, show that peat formation began near the beginning of the Boreal period and has continued almost to the present day. The relative proportions of non-tree and tree pollens and spores suggest that at no time during the period concerned was there a very extensive forest cover on the island.—[H.A.H.]

HARRISON, J. W. HESLOP, and BLACKBURN, K. B. (1946: *New Phytol.*, 45, 124-131) pollen-analysed peat from a nut of *Trapa natans* washed up on the shores of a brackish loch on South Uist, Outer Hebrides; comparison of the counts with those obtained from peat profiles situated 1 mile south-east and 2 miles north-east respectively suggest that in the Atlantic period *Trapa* grew in the lowlands to the west of the island.—[H.A.H.]

VON POST, LENNART (1946: The prospect for pollen analysis in the study of the earth's climatic history; *New Phytol.*, 45, 193-217) describes the results of applying pollen statistics during the past 30 years to the study of peat bogs and shows that reversion (the re-establishment of what he calls *terminocratic* elements in vegetation after an interval dominated by warmth-loving *mediocratic* ones) has occurred in both northern and southern hemispheres during the postglacial period. We are travelling toward a new ice age.—[H.A.H.]

#### (K) BIOGRAPHY

BERRY, ELIHU (1812-1869). An account of this little-known Yorkshire botanist, his publications and records, is given by Bayford, E. G. (1946: *Naturalist*, 113-114).

WILLIAM CURTIS (1746-1799). Lousley, J. E. (1946: *J. Roy. Hort. Soc.*, 71, 98-100, 124-130) gives an account of Curtis's life and work.—[D.P.Y.] See also *B.E.C. 1945 Rep.*, 126, 1947.

#### (M) MISCELLANEOUS

LOCAL PLANT NAMES. The following names not mentioned by Britten and Holland, in their *Dictionary of English Plant Names*, are given by A. W. Boyd (1946: *N.W. Nat.*, 20, 262):—

*Polygonum Persicaria* L.; "Red-Knee," "Red Legs" (or "Red Leg") in Cheshire. Also "Red-Nest" in Lancs. (Formby). See *N.W. Nat.*, 19, 64 and 301.

*Senecio Jacobaea* L.; "Flea-Nut"; "Flea-Nits" and "Keedle-Dock" in Cheshire.

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