REPORTS

REPORT OF THE COUNCIL FOR 1967

This report and the audited accounts relate to the calendar year 1967. Figures in brackets are those for 1966.

During the year 108 (122) new members joined the Society and we lost 90 (98) by reason of death, resignation and the operation of Rule 28. The total membership at the end of the year was 1,694 (1,676), representing a net gain of 18 (24). Although the growth of the Society thus continues, attention must be drawn to the fact that the annual rate of increase has been continuously declining now for four years. Unless this trend is reversed, the membership will shortly show an actual fall for the first time in the post-war period.

The accounts of the Society for the past year are appended. For several years members have been reminded that expenses were rising, and this tendency was particularly noticeable in 1967. Excluding the cost of printing our journals (on which we have again incurred less than the full cost of two parts each of *Watsonia* and *Proceedings*), total outgoings have increased, compared with the previous year, by more than £500, spread over almost every item. The cost of printing the programme of Field Meetings in a different format proved more expensive, while general printing included the cost of a new Prospectus, as well as reprints of the Rules, of lists of the Panel of Referees and of the Regional Organisation. During the latter part of the year the Society began to make use of the services of the Institute of Biology for certain secretarial purposes and the cost of this, which will be considerably greater in the coming year, has added to our outgoings.

Whilst the year has ended with a surplus of income over expenditure, this is entirely due to the savings caused by not maintaining our full programme in publishing our journals, and once we catch up in this respect we must anticipate a deficit on our Income and Expenditure Account. Members are therefore again asked to do all they can to encourage their botanically-minded friends to become members of the Society. It is clear that unless the increase in our membership can be greater than it has been during the more recent years, it will soon be necessary for the annual subscription to be raised.

The only expenditure out of Publications Fund has been certain pre-publication expenses in connection with 'British Sedges', which it is expected will be published in April 1968 (receipts from pre-publication orders began to be received in January 1968). A first payment was received in respect of royalties on Conference Report Number 9. As it is clear that by utilising the services of professional publishers, Conference Reports have a wider distribution than can be achieved by the Society alone, arrangements have now been made for Conference Report Number 10 to be published on behalf of the Society by Academic Press. By this means the Society is relieved of all costs of printing and distributing and can hope to receive, in due course, modest sums by way of royalties.

THE MEETINGS COMMITTEE had an extremely active year. In February, in conjunction with the Pharmaceutical Society of Great Britain, it arranged an evening meeting in London on the historical connections between botany and pharmacy. Despite the rather short notice given 67 persons attended and the innovation was judged a success. In April the Annual General Meeting was held at Monks Wood Experimental Station,

out in Huntingdonshire, by kind permission of the Director. The programme included a series of lectures on the theme of trees and woodlands, a tour of the Biological Records Centre and an excursion on the Sunday to Woodwalton Fen. Ninety (80) members and friends attended. The Committee also organised, as usual, the Annual Exhibition Meeting in November, held once again in the Department of Botany, British Museum (Natural History), by kind permission of the Keeper. Fifty-one (36) exhibits were staged, a most encouraging increase, and over 200 members and friends signed the attendance register. About 75 (70) were later present at the Reception held in the Conversazione Room. The number of field meetings in England was deliberately reduced this year as an experiment, only two being held: to Stour Wood and Wrabness, Essex, and to the Lune Valley, Lancs. The Welsh Regional Committee organised field meetings at Llandudno, Caern.; Llanbedr, Merioneth; Dulais Valley, Mont.; and at three different places in Carmarthenshire. The Welsh Autumn Meeting took place at Swansea, where the programme included lectures, an excursion and the judging of the Region's photographic competition. The Irish Regional Committee organised a week-long meeting in Connemara, while its autumn exhibition meeting was held this year in the North, in Belfast. Another Regional Meeting in the autumn, for the North East, was arranged at York, where a number of lectures were given and an excursion made to Askham Bog. The outstanding event of the year, however, was the Conference on 'Modern Methods in Taxonomy' held at Liverpool University in September in association with the Linnean Society of London. Without doubt this was the most impressive occasion for which the B.S.B.I. has ever been responsible, distinguished above all by the large number who attended from overseas, and the Society is much indebted to Professor V. H. Heywood and Dr C. D. K. Cook for all the hard work they put into this to make it such an enjoyable and successful event. In all 179 members and guests attended. A full programme for 1968 has also been planned, including, for the first time, a Presidential Address.

THE JUNIOR ACTIVITIES COMMITTEE enjoyed a revival during the year after a period of being without a Secretary. The Society is fortunate in having found Miss Ailsa Burns to fill this vacant post. The membership has been partly reconstituted and the decision taken to concentrate for the time being on organising field meetings, for which purpose the Committee will meet just once a year. In view of this more limited function it was considered more appropriate for it to become a sub-committee of the Meetings Committee, on which from now on its Secretary will automatically sit. Only two field meetings were arranged during the year: a day on Goss Moor, Cornwall, and a week in the Chilterns. A more extensive programme, including a meeting in the Alps, is planned for 1968.

THE DEVELOPMENT AND RULES COMMITTEE has had a somewhat quieter year than lately, but has continued to receive and consider a steady flow of suggestions for new developments. These have ranged from the adoption of postal voting for Council election to the choice of a new letterhead. A sub-committee has produced a revised version of the Society's Prospectus, while another has concluded two years' detailed planning of a programme of 'network research', which it is hoped to launch early in 1968.

THE PUBLICATIONS COMMITTEE has been responsible for the production during the year of one part of *Watsonia* and two parts of *Proceedings*, the second of the latter being brought out in a completely new format, which has been very well received. The Committee also helped to prepare for publication *British Sedges*, by A. C. Jermy and T. G. Tutin, and the *Index to Botanical Monographs*, by D. H. Kent.

THE CONSERVATION COMMITTEE has continued its active investigation of threats to the British Flora. Two of this year's crop were a new road across Kenfig Dunes and reservoir developments in Montgomeryshire. The Committee also gave special attention

to the matter of transplants and deliberate introductions. One liaison meeting with the Nature Conservancy took place during the year.

THE RECORDS COMMITTEE, in its first year in its new form (a result of the merging of the Local Floras and Maps Committees), carried out revisions of the lists of the Society's Recorders, Referees and Specialists; it also gave close attention—and, so far as it could, advice—to a number of local Flora projects. Another major activity was a critical overhaul of the Society's present system of collecting and publishing plant records. Requests for card-index drawers and cards, to be supplied by the Society, were received from 46 Recorders in respect of 71 vice counties in all; to help meet the cost of these, the Committee has applied to the Carnegie Trust for a grant.

THE COMMITTEE FOR THE STUDY OF THE SCOTTISH FLORA arranged its customary full and varied programme of field meetings, which this year totalled sixteen, several of these being joint meetings with local societies. It also arranged a very successful excursion to the Pyrenees, in which several English and Irish members also took part. The Annual Exhibition Meeting was held at the Royal Botanic Garden, Edinburgh, by kind permission of the Regius Keeper.

The Council thanks the many friends of the Society who have helped in various ways to further its progress and also all those members who have taken an active part in organising its affairs on committees, as representatives on other bodies and in other ways. In particular, thanks must be expressed to the authorities of the University of Liverpool, for allowing the Conference to be held there; of University College, London, the Nature Conservancy, the Linnean Society of London and the City of Perth Museum and Art Gallery, for allowing the use of their premises for committee meetings; of the Royal Botanic Garden, Edinburgh; University College of Wales, Swansea; and Queen's University, Belfast, for allowing Regional Meetings to take place there; and to the Trustees of the British Museum (Natural History), for the use of their Lecture Hall and Conversazione Room in connection with the Annual Exhibition Meeting. Finally we thank our Honorary Auditors, Messrs. Price, Waterhouse & Co., for their continued services.

J. G. DONY, *President.*
D. E. ALLEN, *Hon. General Secretary.*

6th March, 1968.

GENERAL INCOME AND EXPENDITURE ACCOUNT

for the year ended 31st December, 1967

1966				1966			
	Cost of Printing and Distributing: ...			£2,352	Subscriptions received ...		£2,371 12 11
	Proceedings, Vol. VI, Part 4 (balance), Vol. VII, Part 1 and provision for Part 2 ... £1,579 13 9			399	Interest received		426 9 5
	Watsonia, Provision for Vol. VI, Part 6, less over-provision for Part 5 ... ... 532 9 10				Proceeds from Sales:		
£1,846		£2,112 3 7			*Proceedings* ... £152 12 5		
193	Printing and Distributing Annual Report and Notices of Field and Indoor Meetings	274 8 0			*Watsonia* 315 1 2		
33	Expenses of Council and Committee Meetings	35 4 11			Old B.E.C. Reports 40 0 0		
40	Travelling Expenses of Officers, Secretaries and members attending Meetings	99 14 1		439		507 13 7	
178	General printing, stationery, postages, telephone and petty expenses	443 8 2					
16	Expenses of Regional Organisation, including Card Indexes for Recorders	136 12 3					
19	Field and Indoor Meetings, expenses less fees received ...	29 7 11					
—	Contribution to Wild Plant Protection Working Party ...	20 0 0					
865	Excess of income over expenditure credited to General Fund ...	154 17 0					
£3,190		£3,305 15 11		£3,190		£3,305 15 11	

PUBLICATIONS FUND

Transactions in 1967

1966				1966			
—	Payments to artists and other pre-publication expenses re *British Sedges*	£222 17 3		£3,279	Balance from 1966 Sales:	£3,414 14 9	
—	Printing price-list of publications...	8 10 0		45	Conference Reports £127 16 2		
£6	Preparation of Index for Conference Report No. 9	—		13	Other Publications ... 14 2 0		
	Balance to 1968:					141 18 2	
	General £1,718 19 4				Royalties received:		
	Atlas Royalties less outgoings ... 1,718 1 0			84	*Atlas of the British Flora* 94 18 6		
3,415		3,437 0 4			Conference Report No. 9 ... ... 16 16 2		
						111 14 8	
£3,421		£3,668 7 7		£3,421		£3,668 7 7	

BALANCE SHEET AS AT 31ST DECEMBER 1967

1966				1966			
	General Fund:				Investments:		
	Balance 1st January 1967 ... £4,058 6 10				4½% Defence Bonds ... £500 0 0		
	Add: Premium on conversion of Defence Bonds... 25 0 0				5% Defence Bonds 3,000 0 0		
	Excess of income over expenditure for year... ... 154 17 0				5% National Development Bonds 1,000 0 0		
		£4,238 3 10			5½% National Development Bonds 500 0 0		
£3,415	Publications Fund	3,437 0 4		£5,000		£5,000 0 0	
40	Benevolent Fund	39 11 0			Cash at Bank:		
1,049	Creditors for Printing and General Expenses	2,409 2 0			Deposit Account... 4,500 0 0		
95	Subscriptions Received in Advance	107 15 0			Current Account ... 731 12 2		
				3,657		5,231 12 2	
					J. C. GARDINER, Hon. Treasurer.		
£8,657		£10,231 12 2		£8,657		£10,231 12 2	

Audited and found correct.
6th March, 1968.

Price, Waterhouse & Co.,
Hon. Auditors.

TEESDALE DEFENCE COMMITTEE

REPORT AND ACCOUNTS

In May last a letter was sent to all subscribers to the Teesdale Defence Fund telling them of the final outcome of the long-drawn-out battle in defence of the Cow Green site in Upper Teesdale. They were reminded that, although it had not been possible to stop the construction of the reservoir, valuable concessions had been obtained and that the publicity given to the issue had been such that it was anticipated that, in future, 'second thoughts' would be given by promoters of projects of this kind before they sought to put their plans into action.

A statement of the Account of the Fund is set out below. It had been hoped that by now the Fund could have been closed and any remaining balance handed over to the Northumberland and Durham Naturalists' Trust for conservation work in Upper Teesdale, in accordance with the stated intentions of the Committee. This, however, has been delayed by the contentions of the Inland Revenue and the Charity Commissioners that the Fund cannot be accorded charitable status so that, inter alia, Income Tax must be paid on any bank or other interest received by the Fund. This argument appears to rest on the fact that the defence of the area necessitated opposing a Bill in the Houses of Parliament and the contention that to oppose legislation is a political purpose which cannot be charitable. It is felt that the issue involved is of importance to the conservation movement as a whole and it has, therefore, been decided that the opinion of learned counsel should be sought; if his advice is favourable, then further efforts should be made to persuade the Inland Revenue and the Charity Commissioners to reverse their views.

For the time being, therefore, the balance of the Fund is being retained, but it is hoped that it will not be long before it can be finally wound up.

J. C. GARDINER, *Hon. Treasurer.*

TEESDALE DEFENCE FUND

Summary of Receipts and Payments (to 31st December 1967)

Donations	£22,917 18 11	Legal and Parliamentary Agents' Fees and Disbursements	£11,173 4 0
Bank Deposit Interest	563 14 3	Expert Witnesses' Fees and Disbursements	6,754 17 6
		Printing and Dispatching Appeal Brochures and Circulars, Reply Postages and Acknowledgements	2,510 1 10
		Publicity	208 19 5
		Travelling Expenses	361 14 9
		Clerical Assistance	217 16 6
		Printing, Stationery, Telephones, Postages and Miscellaneous Expenses ...	401 4 2
			21,627 18 2
		Balance, subject to outstanding expenses, to be paid over to the Northumberland and Durham Naturalists' Trust for conservation work in Upper Teesdale	1,853 15 0
	£23,481 13 2		£23,481 13 2

In our opinion the above summary gives a true and fair view of the receipts and payments of the Teesdale Defence Fund for the period from 21st August 1965 to 21st December 1967.

6th March, 1968

Price, Waterhouse & Co.,
Chartered Accountants,
Honorary Auditors.

COMMITTEE FOR THE STUDY OF THE SCOTTISH FLORA:

THIRTEENTH ANNUAL REPORT TO 31ST DECEMBER 1967

The Committee met twice, each time in Perth, and an Exhibition meeting was held on Saturday, 11th November, at the Royal Botanic Garden, Edinburgh, by kind permission of the Regius Keeper.

Fifteen field meetings were held: fourteen were held in Scotland—Stranraer, 3rd and 4th June; Carriber Glen and Aberlady Bay, 10th and 11th June; Gordon Moss, 17th–18th June; Beinn Heasgarnich, 18th June; Isle of Coll 21st-28th June; Dumbarnie Links, 24th June; Hawick, 24th and 25th June; Tomintoul and Ben Avon, 24th-26th June; Peeblesshire, 29th July; Threipmuir Common, 5th August; Perth, 5th-7th August; Somewhere in Argyll, 12th and 13th August; Ferry Hills and Tynninghame, 19th and 20th August, and the Lammermuirs on 2nd September. A continental meeting to The Pyrenees was held from 8th to 22nd July. Most of the meetings were very well attended.

The exhibition meeting was attended by about fifty people. Mr Davidian of the Royal Botanic Garden, Edinburgh, gave a most interesting talk on 'The Genus *Rhododendron*'.

The following exhibits were shown:—

Sublittoral algae of the West of Scotland	E. CONWAY
Some Uncommon Seaweeds found in Scotland	,,
Six Plants from a carrot field in Angus (the carrot seed came from Spalding, Lincs.)	Miss U. K. DUNCAN
Isle of Coll—C.S.S.F. Field Meeting 1967	,,
Senecio × *ostenfeldii* Druce (*S. aquaticus* × *jacobaea*) from East Scotland, along with *Senecio aquaticus* and *S. jacobea*	,,
Examples of some early or first gatherings of Scottish Plants by Mr I. C. Hedge	I. C. HEDGE
Herbarium specimens	D. MCCLINTOCK

(a) *Aster schreberi* (2 sheets)

(b) *Philosella flagellaris*
subsp. *flagellaris* (1 sheet)
subsp. *bicapitata* (2 sheets)

(c) *Bamboos*
Arundinacea japonica (1 sheet), *A. disticha* (1 sheet), *A. falconeri* (1 sheet), *Sasa palmata* (1 sheet)

(d) *Geraniums*
G. ibericum (1 sheet), *G. platypetalum* (1 sheet), *G.* × *magnificum* (*G. ibericum* × *platypetalum* (1 sheet),
G. ibericum subsp. *jubatum*

Additions to the Census List of Wool Aliens from Galashiels V.C. 79 (Selkirk) 1967 — Miss M. MCCALLUM WEBSTER

Atriplex suberecta Verdoorn—Introduced with wool, Galashiels 1966
Lasiochloa echinata
Ehrhoorta longiflora

'Inchrory Marl' or 'Tufa' showing leaf fossils—Collected on the Tomintoul Field Meeting 1967

Plants of Arran	Mrs. A. H. Sommerville
Plants from the Pyrenees	A. Wegener
Herbarium of British Mosses collected by Thomas Lyle, Scottish poet (1792-1859)	Miss M. A. MacAree

During the evening slides were shown as follows:

The Pyrenees	B. W. Ribbons
Rhododendrons	Miss E. Logan-Home
A theme—the hymn 'All things bright and beautiful'	Miss M. MacCallum Webster
Austria	Mrs A. H. Sommerville
Alan Soutar's slides of The Pyrenees	R. Mackechnie
The Pyrenees	A. McG. Stirling
Scenery, Geology and Flora of Jura	J. Grant Roger

There have been two changes in the composition of the Committee. Miss A. Deans has been appointed by the B.S.E. to fill the vacancy created by Dr Denis Ratcliffe's resignation. Mr G. Smith has resigned because of his appointment to a post in Malaya.

Two field meetings each of a week's duration, three weekends, and five day meetings have been arranged for 1968.

It is a pleasure to express thanks to the officers of the B.S.B.I. and B.S.E. and to all those who have generously given of their free time to help the Committee to carry out its activities.—E. P. Beattie.

NORTH-EAST REGIONAL MEETING, YORK, 1967

Thirty members attended the N.E. Regional Meeting in York on Saturday, 7th October, 1967. The morning session was held at St William's College, by kind permission of the Dean and Chapter, under the Chairmanship of Dr F. H. Perring.

Dr G. A. Nelson, of the School of Medicine, University of Leeds gave an illuminating paper on the problematical *Symphytum* spp. in Britain, in which he described nine species and hybrids illustrating these with coloured slides. He also showed how every species could be identified using the chromatography method frequently used by pharmacognosists. Dr Nelson demonstrated a number of specimens and answered many questions on specific habitats during the following discussion. Dr M. Sheila Gosden and Dr D. D. Bartley from the Departments of Education and Botany, respectively, at the University of Leeds, who are carrying out an investigation of the peat of Askham Bog, gave papers on The History of the Bog since the last Ice Age, and the present vegetation of the area. Diagrams of the different types of peat present, and of past tree species percentages based on total tree pollen were shown, and Dr Gosden described the methods used in pollen analysis. Dr Bartley showed colour slides taken by Miss Day of the various habitats of the Reserve, and of her experiments on the regeneration of *Osmunda regalis*. These last papers formed a most useful introduction to the Field Meeting.

At the Regional Meeting Miss C. M. Rob was elected as Representative to Council for the North-East Region.

In the afternoon a field meeting to Askham Bog was led by Dr W. A. Sledge of the Department of Botany, University of Leeds. Dr Sledge showed the party round this interesting Yorkshire Naturalists' Trust Reserve and plants seen included *Osmunda regalis*, some of which were at least 8 feet high and of very large girth, and *Carex elongata* growing with vegetative clumps of *C. elata* and *C. appropinquata*.

—Mrs M. Briggs.

EXHIBITION MEETING, 1967

An Exhibition Meeting was held at the Department of Botany, British Museum (Natural History), London, S.W.7, on Saturday 25th November 1967 from 2 p.m. to 5.30 p.m. About 250 members and guests attended.

Neotinea intacta IN THE ISLE OF MAN

See *Proc. bot. Soc. Br. Isl.*, **7**, 165-168 (1968).—D. E. ALLEN.

SYNTHESISED *Juncus bulbosus* × *kochii*

There have long been differing views on the taxonomic rank of *Juncus kochii* F. W. Schultz. Thus in recent years it has been treated as a full species in the *Flora of the British Isles* and included in *J. bulbosus* L. in the *List of British Vascular Plants*.

To obtain some facts about the relationship of these plants, crossings were made using *J. bulbosus* as female and *J. kochii* as male parent. Seedlings were successfully raised and were morphologically intermediate between the parents, with a variable number of stamens (3-6). They produced normal pollen grains, capsules and seed.

This fertility might suggest that *J. bulbosus* and *J. kochii* are indeed not specifically distinct. Yet they seem taxonomically, if not genetically, satisfactory as species as (1) they are separated by characters of 'specific' degree, (2) they are readily recognisable over a large area of Europe, (3) they apparently seldom hybridise where they grow together in the wild, and (4) they differ somewhat in their ecology and distribution.

The two taxa are best distinguished by the following characters:

J. bulbosus. Perianth green, becoming pale pinkish-brown. Capsule narrow-oblong, obtuse or sub-acute, bluntly trigonous above, coloured like the perianth and equalling, less often exceeding it. Stamens 3, rarely 6. The commoner of the two in lowland England.

J. kochii. Perianth blackish-brown except in shade. Capsule obovate to broadly oblong, ± retuse, sharply trigonous above, pale-green often flushed with blackish-brown, exceeding the perianth. Stamens 6. The commoner of the two in the mountainous districts of the north and west.

Specimens of these taxa and the synthesised hybrid were exhibited. The exhibitors would be interested to see wild plants thought to be *J. bulbosus* × *kochii*.

—P. M. BENOIT & D. E. ALLEN.

THE ENGLISH BOX (*Buxus sempervirens*) AND ITS FORMS

Live specimens of various cultivated forms of Box.

—TH. P. BEYNES & C. R. LANCASTER.

PERSONALITIES AT THE LIVERPOOL CONFERENCE

Photographs of various persons attending the Conference (10th-12th September 1967).

—T. BOULOS.

FLORA OF BERKSHIRE

Specimen maps, etc. from Flora subsequently published in May 1968.

—H. J. M. BOWEN.

Centaurium portense IN IRELAND

Centaurium portense (Brot.) Butcher is a rare species with an Atlantic distribution, known in Britain from sea cliffs in Cornwall, North Devon and Pembrokeshire. In 1966 this plant was found growing in a lawn at Killarney, Kerry, and while it may be introduced here, it seems quite likely that it may occur in more natural habitats on the coast of West Ireland.—H. J. M. BOWEN.

Spartina pectinata LINK IN IRELAND

The exhibit illustrated the nature of the North American grass *Spartina pectinata* Link which has become naturalised on damp, peaty soil in a currently uncultivated part of the grounds of Costelloe Lodge, 20 miles west from Galway City (v.c. H. 16). It has formed an oval clump 12 metres long by 6 metres wide, which was first observed in September 1967 by Miss E. Booth of Co. Wexford. Specimens of the grass were identified provisionally as *S. cynosuroides* (L.) Roth by Miss M. Scannell, National Museum, Dublin, for exhibition at the B.S.B.I. Irish Region, Autumn Meeting. Subsequent identification as *S. pectinata* Link by the writer was confirmed by Dr C. E. Hubbard of Kew.

The habit of Irish *S. pectinata* corresponds to accounts of the species by Hitchcock (1950) and Mobberly (1956) with the addition that leaf-blades have a midrib and upper blades frequently overtop the inflorescence. Costelloe plants seem sterile; mature florets contain withering ovaries and anthers and there is no indication of spread by seed. Neither Hitchcock nor Mobberly refers to fruits or seeds.

Evidence suggests that *S. pectinata* was introduced at Costelloe about 40 years ago and that the presence in the area of North American *Eriocaulon aquaticum* (Perring/Walters, 1962) is co-incidental.

REFERENCES

HITCHCOCK, A. S. (1950). *Manual of the Grasses of the United States*, Ind. ed. Washington.
MOBBERLY, D. G. (1956). Taxonomy and Distribution of the Genus *Spartina*. *Iowa St. Coll. J. Sc.*, **30**, 471-574.
PERRING, F. H. & WALTERS, S. M., ed. (1962). *Atlas of the British Flora*. Cambridge.

—PATRICIA J. BOYLE.

MORE ABOUT MULL

Details of progress with the investigation of the botany of Mull (see *Proc. bot. Soc. Br. Isl.*, **7**, 72, 306-307 (1967, 1968)).—DEPARTMEN TOF BOTANY, BRITISH MUSEUM (NATURAL HISTORY).

STUDIES IN *Ranunculus acris* L. *sensu lato*

The *Ranunculus acris* complex has been examined within Europe to investigate the geographic variation.

Herbarium sheets and photographs were shown to illustrate the taxa recognised within the complex.

R. granatensis Boiss. and *R. strigulosus* Schur have a restricted distribution and are relatively uniform in appearance. *R. acris* L.*s.s.* occurs over most of Europe and is a very variable plant.

Maps were shown of the variational pattern as shown by leaf-shape and hair-types. *R. acris* subsp. *friesianus* (Jord.) Rouy & Fouc. does not form any part of the clinal variation pattern seen in the remainder of *R. acris* L.*s.s.* although its distribution is completely overlapped by that of subsp. *acris*. It is suggested that it must previously have been at least ecologically isolated from subsp. *acris*.

Examples of leaves were displayed to show the seasonal variation which occurs in leaf-shape. This variation has led in the past to much nomenclatural chaos, which has been especially prevalent in the classification of British material.—Miss S. M. Coles.

HYBRIDS OF *Dryopteris aemula*

Recent investigations into spore-coat (perispore) patterns, whilst studying the distribution of *Dryopteris assimilis* S. Walker, suggested that a plant collected by V.H.C. near Strome Ferry, Wester Ross, as an odd form of *D. assimilis*, may well be a hybrid between that species and *D. aemula* (Ait.) Kuntze. Stereoscan pictures of spores showing an intermediate pattern of perispore between the two species were shown to illustrate this. If this plant proves to be a hybrid it will appear that whatever causes the pattern of the perispore to be laid down, is controlled by the genetical inheritance from both parents.

Materials of the *D. assimilis/dilatata* complex sent to the British Museum by A.G.K. from Argyll, in 1967, suggested further hybridisation of *D. aemula* with *D. dilatata* (Hoffm.) A. Gray. A third hybrid exhibited was that collected on the British Museum Survey of the Isle of Mull by A. Eddy. On investigation of the plant and the site, at which were growing *D. aemula* and *D. abbreviata* (DC.) Newm., A.C.J. concluded this to be a hybrid between these species. Further notes on these hybrids will appear in the *British Fern Gazette* (**10** (1), (1968)). All the putative hybrids showed the *D. aemula* characters of (i) comarin (hay) smell, (ii) light yellow-green crispy frond, (iii) elongate, often fimbriate paleae on the stipe and rhachis and (iv) the purplish brown colouration of the lower part of the stipe.

—V. H. Corley, A. C. Jermy & A. G. Kenneth.

BOTANICAL PAINTINGS AND STAMP DESIGNS

Original paintings of British wild plants and designs submitted for the General Post Office's competition for the British Wild Flowers series of stamps.—Mrs B. Everard.

BRITAIN'S ENDEMIC FLOWERING PLANTS

A dozen of the generally accepted British endemic flowering plant species were shown comprising: *Rhynchosinapis monensis*, *R. wrightii*, *Fumaria occidentalis*, *F. purpurea*, *Ulmus plotii*, *U. coritana*, *Saxifraga hartii*, *Primula scotica*, *Narcissus obvallaris*, *Cochlearia scotica*, *Aconitum anglicum* and *Calamagrostis scotica*, together with a short note on the history of each. A comprehensive account of Britain's endemic flowering plant species by the exhibitor was published in *Gardener's Chronicle*, 8th November, 1967.—J. L. Gilbert.

Scrophularia peregrina IN BRITAIN

Scrophularia peregrina L., a native of Mediterranean Europe, was found in May, 1966, in a garden at Shapwick, Dorset, where it had been well established, but unrecognised, for at least six years.

Very little seems to be known about the species in Britain. The earliest record discovered, one for Timperley, Cheshire, appears in the *Report of the Botanical Exchange Club* for 1914, while in that for 1932 is another from Lewes, Sussex; this is also included, with one from Forest Farm, Mark Cross, in a list of Introductions in Wolley-Dod's *Flora of Sussex* (1937). It appears, though, that the species is now extinct at all these stations.

S. peregrina in Shapwick seems to be confined to this one site. Although in the course of gardening activities over a period of about seven years, an infinitely large

number of seeds must have been deposited on the waste ground on the other side of the garden wall—seed production per plant is enormous and the potential rate of germination has been found to be almost 100%—not one plant grew there in either 1966 or 1967. Moreover, while during the time in which it was observed at Shapwick, it behaved entirely as a vernal annual, flowering from mid-May to mid-July and then dying, plants raised from seed set since April, 1967, were growing luxuriantly, and flowering and fruiting, apparently normally, in the open in Kent in November, although it is not known if the seeds produced then are fertile.

The exhibit comprised living material from Kent, herbarium species from Dorset and from various localities on the Continent, the latter to show the range of variation in form, and certain Continental Floras, including Sibthorp's *Flora Graeca* (1806-40), containing illustrations and/or descriptions of the species.

—Miss N. M. HAMILTON.

A *Puccinellia* NEW TO BRITAIN

The genus *Puccinellia* includes several complexes which on account of their structural variability, the presence of hybrids, and probably of apomicts, have proved difficult to classify. Two such groups are represented in the British Isles, one being the very polymorphic *Puccinellia maritima* (Huds.) Parl., and the other the group of closely related species sometimes united under *Puccinellia distans* (L.) Parl. It is to the latter complex that the grass forming the subject of this exhibit belongs.

In his studies of the Scandinavian flora, the Swedish botanist, O. R. Holmberg, recognised two species of this group in his area, one being the widespread *Puccinellia distans* (*sensu stricto*). To the other he applied the name *P. retroflexa* (Curt.) Holmb., based on a British grass, *Poa retroflexa* Curt. The latter is so beautifully illustrated and so well described in W. Curtis's *Flora Londinensis* (vol. **2**, fasc. 6, tab. 10, (1792-98)) that one is left in no doubt that it has to be treated as a synonym of *Puccinellia distans*, a procedure followed by British botanists in general. Fortunately another name, *Festuca capillaris* Liljebl., based on Swedish material, is available for the grass incorrectly referred by Holmberg to *Puccinellia retroflexa;* it was transferred to *Puccinellia capillaris* (Liljebl.) by Jansen in his account of the grasses for *Flora Neerlandica* (vol. **1**, Afl. 2, p. 69, (1951)).

This is the grass which was first recognised as new to the flora of northern Scotland by W. H. Beeby who named it *Glyceria distans* var. *prostrata*. During the past fifteen years it has been collected in numerous localities on the coasts of Fife, Moray, Caithness, and Sutherland, and on various islands in Orkney and Shetland. It appears to be widespread in northern regions extending from N.E. America (Greenland), Iceland, Faeroes, to northern Scandinavia, southwards to the Baltic coast and Holland. Although it grows near the sea, it flourishes best in a well-drained habitat, such as on cliffs, walls, rock-crevices, among stones and on sandy soil among rocks by the sea.

Puccinellia capillaris may be distinguished from *P. distans* by the form of its panicle which is narrower, mostly contracted and often somewhat dense, both before and after flowering, with mostly ascending, rarely spreading or reflexed, branches, and by the relatively narrower less blunt and mostly slightly longer lemmas. *Puccinellia distans* is usually taller, with wider leaf-blades, broader and looser panicles, the branches in clusters, bare for up to half their length and becoming reflexed at maturity.

—C. E. HUBBARD & E. MILNE-REDHEAD.

THE ORIGIN OF THE LONDON PLANE

Specimens of the Western Plane (*Platanus occidentalis*), the Eastern Plane (*P. orientalis*) and their putative hybrid the London Plane (*P.* × *hybrida*) were exhibited. The geographical isolation of these species to the Eastern United States and to the Balkans and Turkey respectively, was shown on a map. These two groups of populations have

presumably been unable to inter-breed since the middle Tertiary period, but are assumed to have hybridized soon after their introduction to Britain in the 17th Century.

There are a number of curious inconsistencies in this supposed origin of the London Plane. Specimens showing the variation of distinct clones of the London Plane were exhibited. These have commonly been presumed to be back-crosses or segregates of the original hybrid, which is surprisingly pollen-fertile. As the Western Plane apparently never reaches reproductive maturity in the British Isles at the present time: it is hard to see how the original hybrid could have arisen. Most trees of the London Plane produce inviable fruits, despite their pollen fertility. On the other hand, regeneration from seed has been noted on several occasions, and the seedlings are reportedly diverse in morphology. Meiosis in the London Plane was shown to be regular despite the reasonable expectation that some structural chromosome rearrangements would have accumulated between populations so long isolated: meiosis of the F_1 hybrid would have manifested these differences.

The frequent absence of viable embryos in the fruits may be due to the plants being self-incompatible. Undoubtedly wild *Platanus orientalis* in the Anti-taurus Mountains are variable in leaf form. Chance selection from such viable populations was postulated to account for the limited number of vegetatively propagated types of London Plane in cultivation.—B. M. G. Jones.

WHAT IS A RARE SPECIES?

The purpose of this Exhibit was, first, to define graphically, as far as was possible, the concept 'rare species', and then, by means of maps, to show how the distribution within the British Isles of the species listed—those which, according to the *Atlas of the British Flora*, occur, post-1930, in 15 or fewer 10 km. squares of the National Grid,—may be correlated with the distribution of certain environmental factors, either singly or in combination, namely maximal winter temperature, high altitude and the presence of chalk or limestone deposits.

These results were derived from the basic data used in the production of the Atlas; this information is now housed in the Biological Records Centre of the Nature Conservancy at Monks Wood Experimental Station, Huntingdon.

—P. Joslin & Miss N. M. Hamilton.

THE EFFECTS OF ALTITUDE ON PLANT GROWTH

The demonstration reviewed some preliminary work on changes of communities, individual species and growth rates in relation to altitude. Ordination of *Dryas octopetala* communities shows an altitudinal basis which agrees with *Dryas* noda described by McVean and Ratcliffe. Collections of individual species from Scotland and Austria demonstrated decrease in production, total growth, fruit size, etc., with increase in altitude. The growth of species of *Melampyrum* and *Galium* was shown to correspond with temperature characteristics of a 5,000 ft. range in the Austrian Tyrol. Where there are overall differences in the lapse rates for the same altitudinal range, the growth of plants responds to lapse rates as shown by *Trichophorum caspitosum*. Using "Ymer" Barley grown on a standard soil in pots on three climatically differing sites—production over a 1,000 ft. range was found to be greater in Central Scotland (Grampians) than that on similar sites in the north of Sutherland over the same time period.—J. B. Kenworthy.

THE USE AND MISUSE OF MAP GRIDDING

An exhibit of a proof copy of an article on Map Gridding subsequently published in the January issue of the *Irish Naturalists' Journal* (vol. **16**, pp. 2-4, (1968)) explaining

the science of Map Gridding and the reasons why the distribution maps for Ireland, as shown on the *Atlas of the British Flora* published by the Botanical Society of the British Isles, are inaccurate in terms of the Ordnance Survey Department Maps and the Irish National Grid System.—Miss M. P. H. KERTLAND.

VARIATION IN THE BRITISH SUBSPECIES OF *Rhinanthus minor* L.

Herbarium specimens and distribution maps were exhibited of the six subspecies of *Rhinanthus minor* L. named according to the latest revision by P. D. Sell. (*Watsonia*, **6**(5), 298 (1967)).

Difficulty in identification is mainly due to the overlap of measurements given for the diagnostic characters, caused by the wide ranges of morphological variation and probably to inter-subspecific hybridization. Diagrams were shown to illustrate this overlap in the measurements given by the *Flora of the British Isles* by A. R. Clapham, T. G. Tutin & E. F. Warburg (1962) and by P. D. Sell (1967).

Examples of polygon diagrams based on the following characters were shown: height, leaf length, leaf breadth, leaf length/breadth ratio, number of intercalary leaves, and number of vegetative internodes. These have proved useful both for showing differences between the subspecies and also for comparing different populations and different gatherings of the same population.—Mrs A. L. LEAN.

Eriocaulon aquaticum (E. septangulare) IN ARDNAMURCHAN

The distribution of *Eriocaulon aquaticum* has certain affinities with that of *Spiranthes romanzoffiana*. Both were known only in Ireland and in the Western Isles of Scotland. In 1953, however, a small colony of the latter, which seems since to have increased considerably, was found on the mainland, in Ardnamurchan.

In 1967 *Eriocaulon* was similarly found in Ardnamurchan. Mr W. Dolling was with a party which climbed inland into the hills of Ardnamurchan, where he spotted a few plants by a lochan. The living exhibit was the voucher he brought home.

—D. MCCLINTOCK.

Symphytum leonhardtianum PUGSLEY AND *S. tuberosum* L.

Specimens were exhibited of presumed *S. leonhardtianum* from the two Co. Down localities given in the *Flora of the North-East of Ireland*, 2nd ed., by S. A. Stewart & T. H. Corry (1938) and from Newcastle in the same county. The only other reference to this species (apart of course from its original description in the *Journal of Botany*, **69**, 89-97, (1931)) is to a specimen from a road-side at Navan (see Praeger R. L., *Proc. R. Ir. Acad.*, **45**, 231-254 (1939)), which may or may not be representative of its population. Search in the folders of the British Museum (Natural History) failed to substantiate the distinctions between this species and *S. tuberosum*. Unless therefore further evidence is discovered, it seems best to treat *S. leonhardtianum* as a synonym of *S. tuberosum*.

A fuller note on this subject appeared in the *Irish Naturalists' Journal*, **16**, 21-22, (1968).—D. MCCLINTOCK.

Pilosella flagellaris (WILLDENOW) SELL & C. WEST SUBSP. *bicapitata* SELL & C. WEST

This exhibit illustrated the note published by W. Scott in *Proc. bot. Soc. Br. Isl.*, **7**, 192-193 (1968) on the first species of the genus ever recorded in Shetland, the first British records of a native *Pilosella* with branched scapes and indeed the first records in the world for this new taxon.

At a glance the Shetland plant resembles no other hawkweed, but study of it by Mr Sell and Dr West showed that it had close affinities with the variable *P. flagellaris* subsp. *flagellaris*. This is a native of Central Europe and as such does not come nearer than 1,000 miles to Shetland, but it is naturalised in a few places in Britain, notably around Edinburgh. Here therefore were two taxa widely separated in space but apparently closely related. It is fascinating to speculate how they diverged from their common ancestor. The two subspecies differ in size, indumentum and branching habit; the type has numerous, very long, ramping stolons, stems two or three times taller—to one foot, forked more often and higher up, and shorter less dense hairs, particularly on the stems.

Where else will it be found?—it is not immediately easy to distinguish from various other rosette plants for its short stolons may not appear at all, as was shown by the growing plants exhibited. Moreover plentiful grazing sheep are no encouragement to flowering. Herbarium specimens (from all three Shetland localities), living plants, and drawings by Miss K. Hollick of both taxa were shown, together with a photo by Mr J. Peterson of Lerwick and a painting by Miss Grierson of Kew of subsp. *bicapitata*.

—D. McCLINTOCK.

BAMBOO SEED

During the last year or two, some 14, among the 30-odd species of bamboo currently grown in the British Isles, have shown flower. Yet seed is usually rare, and seedlings even rarer; while on six of the species which have recently been in flower, no seed has been detected at all.

Samples of seed from six species were shown. In addition, herbarium sheets of *Arundinacea japonica* and *Sasa palmata* showed how this seed often (but not always e.g. in *Thamnocalamus falconeri* also exhibited together with two, living, seedlings,) stands out prominently like a shiny 'beetle' in the inflorescence; but the bulging seed drops readily when ripe, so does not often survive on to, or on, a herbarium sheet. The fourth sheet shown (there is a duplicate at Kew) was of apparently the first flowering of *A. disticha* in this country—on which seed was forming.

More details on the flowering of bamboos are in an article under that title in the December 1967 issue of the *Jl. R. hort. Soc.*, 521-6.—D. McCLINTOCK.

Aster macrophyllus L. AND *A. schreberi* NEES

A. macrophyllus has been recorded from Lochside Station, Renfrewshire v.c. 76 since 1931, an attribution repeated in various standard works. Examination of this still flourishing patch, however, shows that it should rather be referred to the closely allied, also N. American, species *A. schreberi*, an opinion confirmed by Dr Yeo at Cambridge and Mr Jeffrey at Kew. This differs in its whitish-grey florets and eglandular inflorescences. In so far, therefore, as this is considered a wild plant, it should be called *A. schreberi* and not *A. macrophyllus*.

True *A. macrophyllus* was collected at Swanley, W. Kent in 1946, but appears no longer to be there. Until it is rediscovered, this species hardly deserves a place in our lists.

A full note on the subject is appearing in the *Glasgow Naturalist*.—D. McCLINTOCK.

Veronica SECTION *Beccabungae*

Specimens of diploid and tetraploid species of the section were exhibited. *Veronica catenata* Pennel ($2n = 36$), *V. anagallis-aquatica* L. and the almost completely sterile hybrid formed between them were compared with the south-eastern European diploid

species *V. anagalloides* Guss. The diploid species *V. beccabunga* L. was exhibited along with the morphologically similar North American tetraploid species, *V. americana* (Rafin.) Schweinitz ex Benth.

Variation of leaf size in populations of *V. beccabunga* L. is being investigated using 'Xerox' leaf prints. Prints of a large-leaved and a small-leaved field collected material were shown and compared with cultivated material of the same collections. It was pointed out that variation in this species, at least in the populations investigated, appears to be environmentally controlled.—N. MARCHANT.

SOME NEW BRITISH *Taraxacum* SPECIES

Herbarium specimens were exhibited of 18 *Taraxacum* species new to the British Flora. The number of species now certainly known for Britain is about 100. The specimens were accompanied by notes on their identification and distribution, and maps showing the known British and continental distribution of these species were also displayed.—A. J. RICHARDS.

INTERESTING PLANTS RECENTLY COLLECTED IN IRELAND

Herbarium specimens were exhibited of two plants whose distribution in Ireland has become further known through determined seeking, *Eriophorum gracile* Roth (specimen from the 'Scraw Bog', N. of Mullingar, Co. Westmeath, H. 23, D. M. Synnott and M. J. P. Scannell) and *Deschampsia setacea* Hack., previously known only from Cregduff Lough, Roundstone, and other stations in Connemara, W. Galway, H. 16.

Herbarium specimens were also shown of an exceptionally long bracted *Carex diandra* Schrank from Ballyogan Lough, Burren, Co. Clare, and of *Juncus bufonius* L. subsp. *foliosus* (Desf.) Maine & Weiller from mainland N.E. of Slyne Head, W. Galway, H. 16, July 1967. The earliest specimen of this plant in Herb. DBN appears to be that labelled 'roadside, Laragh, Co. Wicklow, July 1894, R. Ll. Praeger'. The subspecies has now been recorded from eight Hibernian vice-counties.

—BOTANY SECTION, NATURAL HISTORY DIVISION, NATIONAL MUSEUM OF IRELAND.

Centaurea nigra L

See *Proc. bot. Soc. Br. Isl.*, 7(4) for an account based on material forming this exhibit.—D. J. OCKENDEN & T. WHIFFEN.

LEAVES FROM THE 'CRITICAL SUPPLEMENT'

Specimen pages from the *Critical Supplement to the Atlas of the British Flora.*

—F. H. PERRING & P. D. SELL.

NETWORK RESEARCH ON *Silene vulgaris* (MOENCH) GARKE AGG.

Descriptive material related to the new Network Research Scheme of the Society.

—J. P. SAVIDGE.

'*Dipsacus fullonum*'

This exhibit demonstrated a correlation of various school subjects centred on a study of the two subspecies of the Common Teasel. A more detailed account of the work on which the exhibit was based appears on page 337 of this part of *Proc. bot. Soc. Br. Isl.*—SHEPHALBURY SCHOOL, STEVENAGE.

CYTOLOGICAL AND PHYTOCHEMICAL STUDIES IN *Arenaria* AND RELATED GENERA

In addition to confirming previous chromosome counts (Favarger 1962) of several species (e.g. *Arenaria gypsophiloides* L., *A. orbicularis* Vis., *A. montana* L.) counts have been made of some species whose chromosome number has not previously been reported or for which another number has been recorded. The counts from *A. dianthoides* Sm. and *A. cucubaloides* Sm. (both $2n = 22$) are new and conform to the known base number of subgenus *Eremogone* but the high polyploidy found in the *A. procera* group ($2n = c.104, c.114$) is unexpected because Favarger (1962) records $2n = 44$ for *A. graminifolia* (= *A. procera* subsp. *glabra*). These high and apparently variable numbers suggest, along with other evidence, that agamospermy may occur in this species complex.

Detection of phenolic compounds by paper chromatography (Harborne 1959) reveals two chemical constituents of systematic interest, one an unidentified cinnamic acid ester and the other the glycosides of quercetin. The former is always found to be present in species of *Arenaria* subgenus *Eremogone* and to be absent from subgenus *Arenaria;* it also appears characteristic of *Minuartia* section *Spectabiles* but its exact distribution in the rest of the genus and in the Alsinoideae as a whole has not yet been established. The presence or absence of a particular glycoside may be characteristic of individual taxonomic groups, e.g. the absence from the genus *Moehringia* of the otherwise ubiquitous triglycoside of quercetin.

Fischer (1930) and Bouché (1955) have shown that saponin distribution may be of systematic value at generic level in the Caryophyllaceae. Saponins were detected using paper chromatography with additional use of spray reagent, and their distribution suggest that *Moehringia intricata* Willk. might be more correctly placed within *Arenaria*, a conclusion supported by chromosome data (cf. Merxmüller & Grau, 1967).

Fresh leaves and herbarium specimens were used for the detection of both phenolic compounds and saponins apparently with comparable results.

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—Miss SI SI.

PLANTS OF ARRAN

Arran is rich in plant life and several interesting species are to be found there, particularly in the vicinity of the coast. The island is situated in a sheltered position in the Firth of Clyde and enjoys the warming influence of the Gulf Stream. The climate is therefore mild and moist and well suited to plants.

Herbarium specimens of the rarer and interesting species were exhibited including two ferns, *Dryopteris aemula* and *Polypodium vulgare* subsp. *prionodes* Rothm. Among the higher plants were *Rhynchosinapis monensis* from the dunes at Blackwaterfoot,

Sorbus pseudofennica which is endemic in Glen Diomhan, *Circaea alpina* abundant in a few localities under bracken and *Oenanthe lachenalii* from Lamlash. Other species were *Mertensia maritima* local on the shore at Lagg, *Calystegia soldanella* among Marram on the dunes at Blackwaterfoot and *Blysmus rufus* from the shore at Imachair where it appears to be associated with the presence of fresh water.

Herbarium specimens of 6 new records for the island were also exhibited:—*Juniperus communis* subsp. *nana* from the bank of the Catacol Burn, *Potentilla reptans* near the shore at Kildonan, *Parietaria diffusa* on the walls of Brodick Castle, *Vaccinium macrocarpon* established near the shore south of Brodick, *Veronica montana* in small quantity north of Sannox Bay and *Lamium amplexicaule* from Lamlash.

Photographic studies in colour of the following species were also included:—*Asplenium trichomanes, Impatiens glandulifera, Rosa rugosa, Ligusticum scoticum, Mertensia maritima, Verbascum thapsus, Pinguicula lusitanica* and *Platanthera chlorantha.*—Mrs A. H. Sommerville.

Juncus ranarius IN BRITAIN?

Herbarium specimens of *Juncius bufonus* L. *sensu stricto* and of a segregate of it recognised as *J. ranarius* Song. & Perr. on the Continent were exhibited, together with a scatter diagram based on the six main characters which may be used to distinguish them.

There is a distinct correlation between the six characters used, but there are a number of plants which are intermediate between the usual conception of the two segregates. One may conclude that there are found in Britiain plants which are identical with those known on the Continent as *J. ranarius*, but that it is far from certain whether or not they should be recognised as a separate species. Such plants are more or less confined to maritime habitats on the west coasts.—C. A. Stace & J. E. Lions.

ANATOMICAL STRUCTURE OF AQUATIC MONOCOTYLEDONS

The exhibit was in the form of line drawings many of which will be published in a forthcoming volume of *Anatomy of the Monocotyledons* a reference book being produced at the Jodrell Laboratory at Kew. The particular drawings included in the exhibit showed the habits of the plants as well as histological details, and were all of aquatic Monocotyledons, represented by the following families, genera and species.

(1) Butomaceae —*Butomus umbellatus, Limnocharis flava, Hydrocleys nymphoides.*
(2) Scheuchzeriaceae —*Scheuchzeria palustris.*
(3) Lilaeaceae —*Lilaea subulata.*

The above species exhibit a number of common features which appear to be related to their aquatic environment. These are: (1) Specialized aerenchyma in the form of lacunate ground tissue, to be found in all plant organs. (2) Reduced vascular tissue, particularly the xylem which consists mainly of tracheids with vessels of a primitive type confined to the roots. (3) Reduction of mechanical tissue. (4) Absence of hairs. A diagram illustrating the taxonomic position of the plants in Hutchinson's *Families of Flowering Plants* (1926) was also included.

—Margaret Y. Stant (Jodrell Laboratory, Royal Botanic Gardens, Kew).

STUDIES IN BRITISH *Polygala* SPECIES

'*P. oxyptera*'

Pawlowski's (1958) clear separation of *P. oxyptera* Reichb. and *P. vulgaris* L. in Poland is shown not to be possible in Britain. Histograms of ratios of capsule length to wing-sepal length and wing-sepal breadth to capsule breadth derived from British

material do not reveal the discontinuity evident in Pawlowski's data. Wide variation exists in the relative breadths of the ripe capsule and the wing-sepal both within British populations and within individual plants.

P. serpyllifolia

Some morphological characters distinguishing *P. serpyllifolia* J. A. C. Hose from *P. vulgaris* were illustrated, and the distinction was reinforced by a chromatogram showing possible chemical differences between the two species. Alcohol extracts of *P. vulgaris* leaves contain a cinnamic acid ester apparently not present in similar extracts of *P. serpyllifolia* leaves.

Many characters often used in the diagnosis of *P. serpyllifolia* cannot be relied upon when taken alone. Specimens of *P. vulgaris* demonstrate the *P. serpyllifolia* characters of occasional opposite leaves and primary inflorescences overtopped by laterally produced inflorescences. Likewise, a specimen of *P. serpyllifolia* without clearly opposite leaves was also shown.

Confusion arises amongst authors concerning the relative dimensions of wing-sepal and capsule in *P. serpyllifolia*. Diagrams derived from British material show that wing to capsule ratios vary even more within *P. serpyllifolia* populations than within *P. vulgaris* populations.

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—I. C. TRUEMAN.

SOME TEMPERATE ZONE PTERIDOPHYTES

This exhibit was divided into two parts.—

(a) demonstrating the use of herbarium specimens in botany teaching viz. the value of labels, distribution maps and photographs attached to the herbarium sheet.

(b) a pupil's collection of ferns made in a single afternoon by the River Lyn in North Devon, being his first attempt at preparing herbarium material.

—A. S. WARDE & B. F. C. SENNITT.

A FLORISTIC SURVEY OF YARNER WOOD NATIONAL NATURE RESERVE

The exhibit showed the results of a preliminary investigation into the taxonomic status of Oakwoods in the South-West, and the numerical analysis of a floristic survey of one of these woods—Yarner Wood N.N.R.

A number of pictorialised scatter diagrams representing Devon oak populations were displayed. These diagrams suggested that the populations could be classified into four groups:—woods dominated by *Quercus robur*, woods dominated by *Quercus petraea*, mixed woods containing both species, and woods showing evidence of introgressive hybridisation between the two species. It was noted that the *Q. robur* woods grew on the acid soils of the Dartmoor granite—an unexpected soil type for this species. The introgressed woods occured on the metamorphic aureole between the granite and the surrounding country rocks. This can be accounted for by the fact that the soils of the aureole contribute to a 'disturbed habitat', generally considered a factor determining introgressive hybridisation.

The floristic survey of Yarner Wood used a series of existing transects which were used as a basis for a grid system of quadrats. The species were recorded as being either present or absent. The quadrats were four square metres. If no trunks of trees occured inside the quadrat, the species contributing to any canopy were recorded as present.

The data was analysed by Normal and Inverse Association Analysis and Information Analysis. The results were expressed as 'hierarchies' and as 'two-way' tables which are essentially rearrangements of the original presence-absence matrix according to the results of the numerical analysis. The analyses suggested that the population was remarkably homogeneous. A *Querceto-Vaccinietum* nodum, characteristic of a number of Devon oakwoods, formed the main element of the flora.

—D. L. WIGSTON.

See PLANT NOTES, pp. 387-393 for accounts based on material forming the following exhibits:

Geranium ibericum, G. platypetalum and G. × *magnificum* D. MCCLINTOCK & P. F. YEO
× *Asplenophyllitis microdon* (T. Moore) Alston .. .. D. MCCLINTOCK
Bromus (Sect. *Ceratochloa*) in Britain .. .. A. MELDERIS

Exhibits on the following were also shown:

Paintings from the Pyrenees and South Africa .. .. J. CODRINGTON
The evolution of *Cardamine flexuosa* .. .. R. P. ELLIS
Stereophotographs of white varieties of British Wild Flowers .. .. J. H. FREMLIN
Some botanical postage stamps .. .. Mrs A. N. GIBBY
Analytical flower drawings in pen and ink from life .. .. .. M. HICKEY
Anatomy of some aquatic monocotyledones .. ..
JODRELL LABORATORY, ROYAL BOTANIC GARDENS, KEW
Some recent botanical literature .. .. .. THE LINNEAN SOCIETY OF LONDON
Examples of specimens preserved in cold setting resin .. .. .. P. PARKINSON
Coloured drawings of alpine plants .. .. Mrs B. H. S. RUSSELL
Plant photographs from the Pyrenees .. .. Mrs P. SAUNDERS
Some plants from western Canada .. .. Miss D. E. DE VESIAN

From 4.15 p.m. the following members gave short lectures and showed colour slides in the Lecture Hall.

Some *Dactylorhiza* species and hybrids in East Yorkshire .. Miss E. CRACKLES
Development of the pappus in ligulate Compositae .. .. .. H. MEYER
British Alpines in Switzerland .. .. Miss G. TUCK
Alpine Spring for flower lovers .. .. R. M. BURTON
C.S.S.F. Field Meeting, Pyrenees, 1967, with slides taken by members of the expedition .. .. Mrs B. H. S. RUSSELL & R. M. MACKECHNIE