

Reports

ANNUAL GENERAL MEETING, MAY 8TH, 1971

The Annual General Meeting of the Society was held at the Department of Biology of the University of York, by kind permission of Professor M. H. Williamson, on Saturday 8th May, 1971 at 12 noon.

Mr E. Milne-Redhead (President) was in the Chair and 56 members were present.

The President opened the meeting by expressing thanks on behalf of the Society to Professor Williamson for making the facilities of his Department available for the meeting and to Mr D. H. Adams for organising the programme.

The Minutes of the last Annual General Meeting as published in *Watsonia*, Volume 8, Part 3, pages 329-331, were adopted.

REPORT OF COUNCIL

The Report together with the Accounts for the year 1970 had been circulated to all members. There being no queries, the Report was adopted on the motion of Professor D. H. Valentine, seconded by Dr F. H. Perring and carried unanimously.

ELECTION OF PRESIDENT

Mr D. McClintock had been nominated by Council. Mr Milne-Redhead said that Mr McClintock was so well known and had done so much for British botany that he needed no further introduction. The Chairman proposed that Mr McClintock be elected and the proposal was carried unanimously. At this point Mr McClintock took the Chair. Having thanked the Meeting, he said Mr Milne-Redhead had made a very good President and done much for the Society, particularly in the field of conservation, during his term in office and Mr McClintock hoped that he could live up to the standard set by the retiring president.

ELECTION OF OFFICERS

The President said how fortunate the Society was that Professor J. Heslop-Harrison had agreed to be nominated as a vice-president. Professor Heslop-Harrison was shortly to become the new director of Kew and it was most important that the close association between the Society and the Royal Botanic Gardens should be maintained. This election together with the re-election of Mr J. E. Lousley and Dr F. H. Perring was carried unanimously.

Dr I. K. Ferguson was unanimously re-elected as General Secretary.

The President said that Mr J. C. Gardiner wished to retire after serving for the remarkably long and valuable period of 13 years as Honorary Treasurer. The Society had been fortunate in finding a very able successor, Mr M. Walpole, and proposed his election which was carried unanimously.

Mr Milne-Redhead then spoke from the floor thanking Mr Gardiner for his long and valuable service mentioning especially the great energy and enthusiasm Mr Gardiner had put into the defence of Teesdale, raising the immense sum of almost £25,000. He took great pleasure in presenting a small Address containing the signatures of many of the members as a token of the Society's appreciation for all Mr Gardiner had done.

Mr Gardiner in replying thanked everybody for their kindness and said how much he had enjoyed serving the Society and expressed his willingness to help in any way he could in the future.

Mr E. F. Greenwood, Dr G. Halliday and Dr N. K. B. Robson were unanimously re-elected as Honorary Editors. Dr M. C. F. Proctor had expressed a wish to retire as an Honorary Editor. Dr C. A. Stace had been nominated by Council as the fourth Honorary Editor and Dr Stace's election was carried. The President on behalf of the Society thanked the Editors for their hard work during the year.

The Council had nominated Mrs M. Briggs for re-election as Honorary Meetings Secretary. In proposing Mrs Briggs's re-election the Chairman said how very important Mrs Briggs's work is in organising meetings and how fortunate the Society was in having such an able person. Mrs Briggs's re-election was carried unanimously.

Mrs J. G. Dony had been nominated for re-election as Honorary Membership Secretary and the Chairman spoke of Mrs Dony's sterling work carried out with complete accuracy which was such a great financial saving to the Society. Mrs Dony's re-election was carried unanimously.

ELECTION OF NEW MEMBERS TO COUNCIL

In accordance with Rule 10 Mrs B. H. S. Russell, Dr H. J. M. Bowen and Mr J. F. M. Cannon retired. Mr D. McClintock had been elected President thereby leaving an additional vacancy on Council. Four nominations had been received: Mr P. C. Hall, Professor V. H. Heywood, Dr C. T. Prime and Miss D. W. Fawdry and these were elected.

ELECTION OF HONORARY MEMBERS

The election of Mr E. Milne-Redhead, Mr J. C. Gardiner and Dr M. C. F. Proctor as Honorary Members was proposed by Council. Mr McClintock in proposing that the Meeting approve these nominations said that all three had done invaluable service for the Society over a large number of years far more than he could enumerate at a short meeting. The election of all three as Honorary Members was unanimously carried.

ELECTION OF HONORARY AUDITORS

In proposing Council's recommendation to re-elect Messrs Price, Waterhouse & Co., the President said how fortunate the Society was to have such a distinguished firm of auditors and expressed the Society's gratitude for their services. Their election was duly carried.

ANY OTHER BUSINESS

Dr M. E. Bradshaw made two proposals:

1. That a letter be sent to the Tees Valley and Cleveland Water Board recognising the efforts made by the Water Board, the Consulting Engineers and the Contractors to keep to a minimum damage to the vegetation and rare species on Widdybank Fell during the construction of the Cow Green Reservoir; also thanking them for their helpfulness to botanists working in the area and for their assistance in the provision of amenity facilities for all visitors.
2. That a letter be sent to Mr T. Buffey, the Site Research Officer, in appreciation of all his work in looking after the interests of the botanists and the conservation of the Teesdale vegetation and flora during the construction of the Cow Green Reservoir.

Mr E. Milne-Redhead seconded these proposals and the Meeting gave them its approval. The President instructed the General Secretary to write to the persons mentioned above.

There being no further business, the Meeting closed at 12.35 p.m.

I. K. FERGUSON

REPORT OF THE NORTH-EAST REGIONAL MEETING

A meeting of members resident in the North-East Region was held at the Department of Biology of the University of York, immediately following the Annual General Meeting. There were 21 members present. Dr M. E. Bradshaw proposed that the President take the Chair and this was seconded by Miss C. M. Rob.

One nomination had been received for North-East Regional representative on Council and that was Dr G. A. Swan. The President proposed the election of Dr Swan and this was carried.

There being no further business the meeting closed.

I. K. FERGUSON

COMMITTEE FOR THE STUDY OF THE
SCOTTISH FLORA

SIXTEENTH ANNUAL REPORT TO 31ST DECEMBER 1970

The Committee met twice in Perth and twice in Edinburgh and arranged an Exhibition Meeting at the University of Glasgow (by kind permission of the Regius Professor of Botany). Ten field meetings were included in the Scottish programme for the year.

The Exhibition Meeting was held on Saturday 7th November, 1970 and about sixty people were present. The following exhibits were shown: rare plants survey (Biological Records Centre, The Nature Conservancy); Scottish nitrogen-fixing plants (Professor G. Bond); the C.S.S.F. Inverness-shire survey (C.S.S.F. Organising Committee); a puzzling *Ulex* from Scotland (Miss E. R. T. Conacher); *Cryptothallus mirabilis* (Dr J. H. Dickson); leaf and stem characters in *Rhododendron* (A. G. Kenneth); some west of Scotland *Taraxacum* species (A. G. Kenneth and A. McG. Stirling); plants from the Tirol with Scottish associations (R. Mackechnie); two alien mosses from the plant houses, Glasgow Botanic Gardens (F. G. Rodway); aliens from imported seeds and grain (F. G. Rodway and A. McG. Stirling); coprophilous ascomycetes of Scotland (I. Roy); Kindrogan Field Studies Centre (Scottish Field Studies Association); *Rhynchosinapis monensis* from Linlithgow (Mrs O. M. Stewart); plants from the Tirol (A. McG. Stirling); a hybrid *Senecio*—*S. × londinensis*—new to Scotland (A. McG. Stirling); wool aliens from the Tweed valley (Miss M. McC. Webster). After tea Mr R. Mackechnie described the planned five-year C.S.S.F. survey of Inverness-shire; Miss E. P. Beattie and Mr A. A. P. Slack indicated the detailed programmes to be carried out in the vice-counties 96 and 97 respectively during the next two or three years and Mr R. Goodier, Regional Officer, East Scotland, Nature Conservancy discussed conservation aspects of botanical recording in Inverness-shire. Following a buffet supper in the University Refectory colour transparencies of C.S.S.F. field meetings held during 1970 were shown by Miss E. R. T. Conacher, B. W. Ribbons, F. G. Rodway, J. Grant Roger, A. A. P. Slack, Mrs A. H. Somerville, A. McG. Stirling and Dr R. Thomas.

Of the ten field meetings in the programme, three were cancelled (Bennane Head, Ayrshire, Arrochar and the B.S.E. Cryptogamic meeting to Lawers); one to Meall Gheordie, Perthshire was arranged by the Alpine Botanical Secretary of the B.S.E. (for report see *Trans. Proc. bot. Soc. Edinb.*, 41 (2)). The other meetings were held in the Isle of Bute (23–25 May) led by Miss D. N. Marshall (17); at Glendaruel, Argyll (14 June) led by H. A. McAllister (8); at Easter Inch and Tailend Mosses, West Lothian (5 July) led by Miss E. P. Beattie (4); at Fort William (11–18 July) led by A. A. P. Slack (10); in the Tirol (3–13 August) led by B. W. Ribbons (17) and at Kindrogan Field Centre (5–12 August) led by A. C. Jermy (3) (junior meeting). The attendance figures are given in brackets. Reports of these meetings will appear in *Watsonia* and in the publications of the Botanical Society of Edinburgh.

The Council of the B.S.E. elected Mr J. Grant Roger to replace Miss Ann W. Deans as a member of the Committee. The eight elected members appointed Miss E. R. T.

Conacher, Dr H. A. P. Ingram and Mr A. W. Robson to serve as members for the calendar year 1971. Mr R. Mackechnie was appointed Chairman, Mr B. W. Ribbons, Honorary Secretary; Mrs A. H. Sommerville, Honorary Treasurer; Mr A. McG. Stirling, Honorary Field Secretary, and the Chairman, a member of the B.S.B.I. Records Committee for 1971. The Chairman was represented at B.S.B.I. Records Committee by Mr Ribbons on 10th March, 2nd June and 29th September and, as Regional Representative, at B.S.B.I. Council by Mr Ribbons on 3rd March and 17th November and by Mrs Sommerville on 9th May. The Honorary Secretary attended a meeting to consider lists of plants 'not to be interfered with' on 3rd November.

Proposals for the exploration of the flora of Inverness-shire were accepted and an Organising Committee was appointed. This met once and afterwards a five-year survey of the flora of Inverness-shire was launched. A field meeting was held in the Fort William area. The Survey was brought to the notice of a large number of people through the agency of society news letters and specific offers of assistance were received from organisations and individuals. Plans were made for searching appropriate publications for Inverness-shire records, and for the examination of public and private herbaria. Further offers of help either in the field or otherwise will be welcomed by the Convener of the Organising Committee, Mr R. Mackechnie, 9 Skirving Street, Glasgow, S.1.

The list of Recorders for Scottish vice-counties was kept under review and recommendations were made to the B.S.B.I. Comments were sent to the working party preparing the Wild Plants Protection Bill and it was learnt with regret that the Working Party had decided to omit Scotland from the Bill. The Committee co-operated with the B.S.B.I. in organising the Conference for Recorders in Edinburgh on 5th-6th September. Detailed comments were prepared on the proposed list of English names of plants and at the request of the B.S.B.I. the Committee began the preparation of lists of rare Scottish plants and of 'plants not to be interfered with'. Information on Scottish Floras in preparation was compiled. Numerous administrative and other matters including the misspelling of Scottish place names in publications have been discussed with the officers and councils of the two societies.

The accounts showed a deficit of £31.71 (£31.14.2d.) and this amount has been refunded in equal sums by the two sponsoring societies.

The Committee wishes to express thanks to Miss Beattie for her work as Honorary Field Secretary during the year, to Dr F. H. Perring, Honorary Secretary of the B.S.B.I. Records Committee, who attended one of the meetings of the Committee, to the officers of the sponsoring societies, to the leaders of the field meetings and to other members and friends who helped the Committee during the year.

B. W. RIBBONS

EXHIBITION MEETING, 1970

The annual Exhibition Meeting was held at the Department of Botany, British Museum (Natural History), London, S.W.7, on Saturday 28th November from 12 noon to 5.30 p.m.

VERONICA HEDERIFOLIA AGG. IN WALES

Dried specimens and vice-county distribution maps were exhibited to illustrate the occurrence in Wales of two of the segregates of *Veronica hederifolia*—the common pale-lilac-flowered tetraploid *V. sublobata* M. Fischer and the more local blue-flowered hexaploid *V. hederifolia* L. *sensu stricto*. This is the subject of a Short Note which has already been published (*Watsonia*, 8: 399 (1971)).

P. M. BENOIT

MULL — FROM FLORA TO FLORA

The first stage of the British Museum (Natural History) Department of Botany Mull Survey Project's five years of fieldwork was completed this autumn (1970). The exhibit illustrated the way in which data collected from the field, the herbarium and the literature are being processed. From the consolidated record files a data sheet is prepared for each species. This consists of a digest of all known information relevant to its occurrence in our area. The data sheets are then circulated to colleagues and to collaborators outside the Museum for criticism and further comments. At the present time, sheets have been prepared and are in circulation for three-quarters of the vascular plant species. By this means we hope to make the best possible use of all available knowledge and experience, both from our own staff members and also from our many helpers elsewhere. An example was shown of a possible format for the final manuscript, which in due course will be prepared from the data sheets. Progress in the account of the vascular plants is paralleled by work on the other plant groups and will lead to a published account of the total flora of Mull.

BRITISH MUSEUM (NATURAL HISTORY), DEPARTMENT OF BOTANY

SCANNING ELECTRON MICROSCOPE PHOTOGRAPHS OF
SAXIFRAGE SEEDS

Scanning electron microscope photographs were exhibited of seeds of ten *Saxifraga* species to show characters of the entire seed and seed-surface at a range of low and high magnifications. The latter reveal features not previously seen, the taxonomic value of which has yet to be fully assessed.

Saxifraga stellaris L. has uniform seeds closely similar within any one collection and with only minor variation in fine detail among seeds of different provenance.

S. oppositifolia L. and *S. rivularis* L. seeds vary considerably. There is variation over a single seed-surface and from seed to seed, both within any one collection and especially from different regions; collections of *S. oppositifolia* from the Pyrenees are quite distinct.

Surface protuberances on seeds of *S. aizoides* L. range from spines to low domes; the extremes show some geographical localization.

Seeds of *S. rosacea* Moench, *S. hypnoides* L. and *S. cespitosa* L., also those of *S. granulata* L. and *S. tridactylites* L., are tuberculate. Newly-seen detail apparently distinguishing these species needs to be confirmed from further samples. Fossil seed of *S. granulata* L. corresponds very closely with modern material.

A. P. CONOLLY

JUNCUS ALPINOARTICULATUS CHAIX IN SOUTHERN SCOTLAND

This species is now known from many localities in Roxburghshire (v.c. 80) and Selkirkshire (v.c. 79), being recorded from 8 contiguous 10 km grid squares. The record from Loch Grennoch in Kirkcudbrightshire (v.c. 73) is considered dubious. *J. alpinoarticulatus* is found in strongly basic habitats from 625–1150 ft above sea-level. A list of associated species was given and it was noted that *Equisetum variegatum* and *Tofieldia pusilla* were absent. Specimens of *J. alpinoarticulatus* and *J. articulatus* were shown to demonstrate the differences between them.

The Hawick and Selkirk districts must now be considered as one of the headquarters for *J. alpinoarticulatus* in the British Isles.

R. W. M. CORNER

CORNUS POLLEN

The genus *Cornus* has been delimited in different ways by various workers, some accepting the genus in a broad sense and dividing it into subgenera and sections,

others segregating these groups as distinct genera as E. F. Warburg in Clapham, Tutin & Warburg and in Dandy's *Check List*.

Chao (*Taiwania*, 5: 93-106 (1954)) suggests that the pollen morphology of *Cornus* 'reveals that they form a homogenous group of plants'.

Scanning electron micrographs of the pollen of the three British representatives of the segregate genera from *Cornus sensu lato* (*Cornus mas* L., *Swida sanguinea* (L.) Opiz and *Chamaepericlymenum suecicum* (L.) Graebner) and three other representatives from outside the British Isles (*Afrocrania volkensisii* (Harms) Hutchinson, *Bothrocaryum alternifolium* (L.) Pojarkova and *Benthamidia nuttallii* (Audubon) Moldenke) were exhibited. This revealed that the genus *Cornus sensu lato* can be divided into groups on the basis of pollen characters and these groups correspond quite closely with the sections, subgenera or segregate genera already recognised. Pollen morphology thus provides an additional character to support the existing classification.

I. K. FERGUSON

ERIOCAULON AQUATICUM ON ARDNAMURCHAN

The exhibit is the subject of a Short Note which has already been published (*Watsonia*, 8: 400-401 (1971)).

I. K. & L. F. FERGUSON & G. HALLIDAY

PROGRESS IN RECORDING THE FLORA OF NORTHAMPTONSHIRE

This exhibit showed by a coloured map the number of species recorded in each of the 5 × 5km squares in the last three years in the county and the Soke of Peterborough. There was also an example of the special recording sheet filled in for one of the squares.

J. GENT & A. ROBINSON

THE DISTRIBUTION OF CHROMOSOME RACES OF RANUNCULUS FICARIA L. IN THE BRITISH ISLES

Photographs of mitotic metaphase chromosome preparations of diploid (with and without B-chromosomes), triploid and tetraploid *Ranunculus ficaria* were exhibited. The distribution of these chromosome types, based on a cytological examination of 873 individuals drawn from 237 populations in the British Isles was exhibited. The maps showed that: the diploids occur throughout the British Isles; the tetraploids are commoner in the East; the triploids are scattered and uncommon (except perhaps in Ireland); the diploids with B-chromosomes are common only in southern England. Regions from which more chromosome counts are required include the Midlands, northern England, Scotland and Ireland. The exhibit cautioned against the casual identification of these chromosome races on field or herbarium material. Correct determination of ploidy from morphological features requires considerable care and experience. The help was acknowledged of numerous professional and amateur botanists without whose assistance the survey would have been even more incomplete.

J. J. B. GILL, B. M. G. JONES, C. J. MARCHANT, J. McLEISH & D. J. OCKENDON

OAK WOODLAND IN THE ISLE OF MAN

The Field Section of the Isle of Man Natural History and Antiquarian Society displayed data connected with their research on the possibility of the survival of native woodland in the Isle of Man. These included a map showing the distribution of isolated trees, and groups of trees, likely to be descended from native stock, a study of the Santon Gorge area and a graph demonstrating that, as in Scottish material, the trees

showed a petiole-length intermediate between *Quercus robur* and *Q. petraea*. The exhibit was completed with herbarium sheets (or Xerox copies of these) of samples from the gathering made for the study of leaves. This research is continuing.

L. S. GARRAD

SPORE FORMS IN THE *CYSTOPTERIS FRAGILIS* COMPLEX

A spore survey of all the British *Cystopteris fragilis* specimens in the British Museum Herbarium showed an oval non-spiny spore form to be present in two localities in Westernness, v.c. 97 (Ardgour, Strontian River valley, *Cannon & Kendrick* 66; Glen Loy, *E. K. Horwood* s.n.) and one in Forfar, v.c. 91 (Den of Bargarvies, *Agnes Carnegie* s.n.).

Scanning electron micrographs of these spores were shown together with those of typical spiny-spored *C. fragilis* and rugose *C. dickieana* from near Aberdeen and *C. dickieana* (*C. baenitzii* Dörfler) from Norway. Fine surface structure seen at 5000 magnifications showed a granular texture on the oval and rugose spores suggesting that the former spore type lacked the shrinkage, and therefore rugose appearance, of typical *C. dickieana*.

Further work is continuing and living material (or viable spores) of any non-spiny form will be welcome. The survey was carried out by one of us (L.H.) during the tenure of a Vacation Studentship at the Museum.

A. C. JERMY & L. HARPER

GAUDINIA FRAGILIS

This exhibit listed the known records in Britain for this Mediterranean grass. The exhibit was particularly concerned with its rediscovery in the Grande Mare area of Guernsey and also in native turf in the north of the island. A fuller account will be appearing shortly.

D. McCLINTOCK

NEW ZEALAND *EPILOBIUM* SPECIES IN THE BRITISH ISLES

Pressed and living specimens were exhibited of five *Epilobium* taxa naturalised in the British Isles from New Zealand. A fuller account will be appearing shortly.

D. McCLINTOCK

HOW MANY SEEDS?

Verbascum virgatum is a weed in my garden at Bracken Hill, Platt, Kent. One plant in 1970 had a total length of stem and branches of 71 ft and at least 1352 fertile capsules. These contained between 18 and 380 seeds each. The total seed production must therefore have been at least a quarter of a million.

D. McCLINTOCK

THE GUERNSEY FLORA 1970

The exhibit consisted of 30-40 sheets of noteworthy records for the Guernsey flora in 1970. The majority came from the Society's visit in June 1970 (*Watsonia*, 8: 428-429 (1971)). Several were added subsequently by residents or visitors, ending with a special trip in mid-November primarily to map *Arum italicum*. Depending on assessments of status, some 15 species were added to the island's tally during the year, following an equally successful crop in 1969. In addition, some old written records, of varying

value, were unearthed; several corrections and additions were made from a reconsideration of specimens in the Herbarium at St Peter Port and other specimens discovered elsewhere. The riches of the island's flora seem by no means to be yet fully known.

D. McCLINTOCK

EXPERIMENTAL SYNTHESIS OF THE ALLOPOLYPLOID *POTENTILLA ANGLICA* LAICH

The theory that *Potentilla anglica* arose as the allopolyploid between *P. erecta* (L.) Räusch. and *P. reptans* L. is not new, but confirmation has been very difficult to obtain due to the repeated failure of crosses between the putative parents. The exhibit demonstrated the experimental synthesis of the allopolyploid which was finally achieved in 1970.

Herbarium specimens were shown of the parental species *P. erecta* and *P. reptans* (both tetraploid, $2n = 28$) and wild *P. anglica* (octoploid, $2n = 56$). A chart demonstrated the colchicine-induced chromosome doubling of the tetraploids followed by hybridization which gave a progeny of experimental allopolyploids ($2n = c56$). A herbarium specimen of one of these was shown, together with a photograph of a root-tip mitosis. The plant was hypo-octoploid ($2n = 53$) and closely resembled wild *P. anglica*. Photographs of pollen showed that 'synthetic *P. anglica*' was similar to the wild species in pollen grain size and stainability. Its fertility and self compatibility were demonstrated by herbarium specimens of four offspring from a progeny resulting from controlled self-pollination.

B. MATFIELD

TETRAD MAPPING OF THE KENT FLORA

The Kent Field Club is to map the vascular plants of the county on a tetrad basis during the period 1971–1975 inclusive. This exhibit showed what preparations have been made in readiness for this scheme. A booklet containing instructions and keys to critical groups has been prepared and this together with a provisional list of the vascular plants recorded from Kent is to be sent to each helper. Special recording cards have been prepared specifically for the Kentish flora. Helpers will send in their recording cards once a year to Maidstone Museum, where the records will be transferred to a master set of cards. From here the records will be plotted on species maps, an example of which was also displayed. The eventual form of publication has as yet not been decided.

The exhibit also contained examples of some of the more rare and interesting plants to be found in Kent.

E. G. PHILP

CHROMATOGRAPHY OF *LIMONIUM* SPP. (THE SEA LAVENDERS)

The methods by which certain substances (flavonoids) are extracted by chromatography of leaf material of *L. vulgare*, *L. humile* and *L. binervosum* were demonstrated. Specimen chromatograms of the three species, treated with developer, and illuminated with ultra-violet light, were displayed.

Studies of several populations of each of the three species revealed that there were in all 42 spots which could reliably be used for species comparisons. Of these 42 spots, 23 are common to each of the three species, 9 more are found in *L. binervosum* only, and the remaining 10 are common to both *L. vulgare* and *L. humile*, but absent in *L. binervosum*. There were no spots found which reliably separated all populations of *vulgare* from all populations of *L. humile*. The results so far therefore indicate that in

terms of flavonoids, *L. vulgare* and *L. humile* populations are chromatographically indistinguishable as far as strong, reliable spots are concerned.

At Keele, the methods demonstrated are being used to investigate any genetic variation that may arise within and between populations of the three *Limonium* species as a result of the different reproductive method adopted by each species.

L. R. STAINES

IS *STACHYS* × *AMBIGUA* SM. ALWAYS DISTINGUISHABLE?

Stachys ambigua Sm. is considered to be a hybrid between *S. palustris* L. and *S. sylvatica* L. Comparisons of herbarium material reveal an overlap in leaf morphology between *S. ambigua* and *S. palustris*, while *S. sylvatica* appears to be distinct.

Scatter diagrams, using lamina breadth/length and petiole/total leaf-length as axes, were prepared from four localities in Britain and presented for comparison. In three populations it was possible to detect the presence of three distinct taxa but at the fourth locality—Billown Mooar in the Isle of Man—there was an overlap between *S. palustris* and *S. ambigua*. In many localities, plants referable to *S.* × *ambigua* occur in the absence of one or both parents.

Photographs of pollen were exhibited to show that pollen inviability is an unreliable character for identification. Some plants with the morphological range of *S. palustris* were shown to have a high percentage of inviable pollen while others in the morphological range of *S. ambigua* exhibit a high percentage of viable pollen.

C. C. WILCOCK

The following also exhibited.

- | | |
|---|---|
| P. J. BOYLE | <i>Spartina</i> M 9 |
| M. BRADSHAW | Research in Upper Teesdale |
| BRITISH MUSEUM (N.H.) | DEPARTMENT OF BOTANY Publications of interest to members |
| B. S. BROOKES | Kindrogan Field Centre |
| R. M. BURTON & E. J. CLEMENT | Plants of south-west Spain |
| E. J. CLEMENT | Some alien grasses |
| COMMITTEE FOR THE STUDY OF THE SCOTTISH FLORA | C.S.S.F. Inverness-shire project |
| Mrs R. DUDLEY-SMITH | North Gloucestershire Naturalists' Society—botanical recording |
| Mrs B. EVERARD | (a) Original paintings (Europe) for <i>Wild Flowers of the World</i> , Ebury Press and Michael Joseph |
| | (b) Botanical paintings 1970 |
| Mrs A. N. GIBBY | Some botanical postage stamps |
| N. HAMILTON | British rare species survey |
| F. N. HEPPEL | Drawings of plants of Bible lands |
| P. R. KNIPE | Progress on the new Buckinghamshire Flora |
| Y. MOSCATI | Stamps in European Conservation Year 1970 |
| F. H. PERRING | Mistletoe Survey |
| G. F. PETERKEN | Holly Survey |
| H. E. W. SELBY | Experimental conservation mounting |
| F. M. TAYLER | False colour photography—toy or tool? |
| P. J. O. TRIST | (a) Vegetative proliferation of grasses |
| | (b) <i>Arrhenatherum elatius</i> vars. |
| S. M. WALTERS & P. F. YEO | The role of Botanic Gardens in Nature Conservation |
| E. D. WIGGINS | Some British rarities or near relatives growing abroad |
| Mrs L. WISHART <i>et alia</i> | Conservation 1970 |

From 4.30 p.m. the following members gave short lectures and showed colour slides in the Lecture Hall.

J. E. LOUSLEY	Some flowers of a London common
M. H. MANNERING	Studies of dodder on gorse and ling
R. MAYCOCK	Selected plants from the Buckinghamshire flora
P. G. SHEARSBY	Some North American wild flowers
F. M. TAYLER	Guernsey plants, B.S.B.I. field meeting 1970
G. TUCK	B.S.B.I. field meeting in Switzerland 1970

FIELD MEETING, 1970

ITALY AND AUSTRIA

TIROL. 2ND - 14TH AUGUST

This, the third overseas meeting organised by the C.S.S.F., occupied five days of glorious weather in Italy followed by five days in Austria where the weather was not quite so good. The party was drawn from England and Scotland; it numbered 14 in Italy and 15 in Austria and was accompanied throughout by Dr Helmut Gams, Professor of Botany in the University of Innsbruck. Professor Gams was a guide, philosopher and friend in the truest sense to each member present and the leader is especially deeply in his debt for advice freely given before and during the meeting.

A short meeting was held in Corvara-in-Badia, in the midst of the Dolomites, where members had found accommodation in various hotels and guest houses, on the evening of Sunday 2nd August. Professor Gams proposed setting off at 8 o'clock the following day for a short canter (or a chair lift) to Col Alt, a small eminence standing at 1983 m above Corvara. On Monday morning the party eventually met together on the southern, mainly acid, slopes of Col Alt where those new to the Alps saw, when they were able to deflect their eyes from the magnificence of the mountain scenery, many of the common species, among the most conspicuous of which were *Aster alpinus*, *Alnus viridis*, *Horminum pyrenaicum*, *Hypochaeris uniflora*, *Cirsium spinosissimum*, *Tofieldia calyculata*, *Adenostyles alliariae*, *Orobanche reticulata*, *Allium schoenoprasum*, *Nigritella nigra* and the leaves of *Anemone* (*Pulsatilla*) *alpina* subsp. *sulphurea* and *Colchicum alpinum*. It was thrilling to see, so far from home, such British species as *Botrychium lunaria*, *Minuartia verna*, *Moneses uniflora*, *Pyrola rotundifolia* and *P. minor*, *Kobresia simpliciuscula*, *Gentiana nivalis*, *Melampyrum sylvaticum*, *Veronica fruticans*, *Homogyne alpina*, *Rubus saxatilis*, *Ajuga pyramidalis*, *Helianthemum chamaecistus* and, now extinct in Britain, *Trichophorum alpinum*.

Tuesday 4th August was devoted, in superb weather, to a circular tour in the cars with stops at four road summits. At Passo di Campolongo (1875 m) a brief halt showed *Saxifraga squarrosa*, *Epilobium alpinum*, *Thalictrum aquilegifolium* and *Heliosperma quadrifidum* at the foot of a roadside cliff. After descending to Arabba and climbing to 2242 m at Passo Pordoi, Professor Gams immediately set off over the rocks on the eastern side of Sass Bece, pointing out in rapid succession and among many others, *Poa alpina* var. *vivipara*, *Globularia cordifolia*, *Potentilla nitida*, *Geum montanum*, *Leontopodium alpinum*, *Saxifraga moschata* and, hiding deeply in a rock crevice, the rare *Asplenium seelosii*. The road from Pordoi zig-zags down and up again to 2218 m at Passo di Sella, where below the fantastic Funfänger Spitzen members lunched and then examined the grey-white rocks (a triassic marine loam with volcanic ash), interspersed with dark green bushy trees of *Pinus cembra*. Among the species seen for the first time during the meeting were *Rhododendron intermedium* (*ferrugineum* × *hirsutum*), *Linaria alpina*, *Valeriana elongata*, *Ligusticum mutellinoides* and *L. mutellina*, *Euphrasia minima*, *Carex mucronata* and *C. firma*, *Viola biflora* and the familiar *Astrantia major*.

and *Bartsia alpina*. The final sortie was at Passo Gardena where, in the continuing heat, not all the members of the party were fit enough to follow Professor Gams up a steep path northwards. Those who did were rewarded by their first sight of the woody *Senecio abrotanifolius* (much better specimens of which were to be seen later in the Austrian Tirol), *Trisetum distichophyllum*, *Papaver rhaeticum* and *Gymnadenia odoratissima*, as well as the familiar *Potentilla crantzii*.

A circular tour eastwards of Corvara with most of the time spent near Passo Falzarego occupied Wednesday. The roadside cliffs below Falzarego had *Campanula linifolia*, *Dianthus sylvestris* and the somewhat grotesque Devil's Claw, *Phyteuma comosum*, in a rock crevice rather uncomfortably high up for photography. From Falzarego Professor Gams conducted a scramble along the species-rich lower slopes of Sasso di Stria, ending near a large patch of unmelted snow at an altitude of about 2150 m. Here grew *Soldanella alpina* in blue and white forms, *Pinguicula alpina*, *Gentiana bavarica*, *Anemone baldensis*, *Doronicum cordatum*, *Woodsia alpina*, *Primula auricula* and *Arabis pumila*. On the way up to the snow, flowering specimens of *Clematis alpina*, *Lilium martagon*, *Rhodothamnus chamaecistus*, *Primula farinosa* and *Viola biflora* were among those which gave enjoyment to the photographers. Lunch was taken after a short journey by road, beside the quiet Lago di Valparola. The descent to S. Cassiano was broken at Eisenofen, where *Juniperus intermedia*, *Salix elaeagnos*, *Prunella grandiflora* and *Thesium alpinum* were among the woodland and bog species noticed. The excursion ended with a walk up into the woodland above Corvara where *Cirsium erisithales*, *Festuca heterophylla*, *Polygonatum verticillatum*, *Campanula trachelium* and the tall, beautiful *Ranunculus platanifolius* were much admired.

On Thursday, after a short drive along a boulder-studded track following the Rio Rutor, Professor Gams led a number of members eastwards by way of Pralongia some 5 km to the rocky lower slopes of Settsass, a mountain of seven peaks rising to 2561 m. As at Sella, the landscape was of *Pinus cembra* trees, growing here at one of their highest altitudes in the central Alps (2400m), scattered over the white dolomite boulders which were surprisingly cool to the touch considering the heat of the sun. Between Pralongia and Settsass, bushes of the grey *Salix glaucocensis* (closely related to the northern *glauca*), flowering heads of the orange *Crepis aurea* in the acid flushes, numerous plants of the yellow crucifer *Biscutella laevigata* among the rocks, the by now familiar *Homogyne alpina* and *Aster alpinus*, and a wonderful display of the poisonous lichen *Letharia vulpina* on a larch trunk, were some of the plants admired, as was also the wonderful view of the snow-covered ski-slopes of the Marmolada to the south. *Adenostyles alliariae* covered some extensive damp areas not far from where the cars were left. Of the hot trek in error down almost to S. Cassiano, up again to Pralongia and down the Rio Rutor to find the cars, nothing shall be said! Four members spent the day driving to the south-west through Canazei, Campitello and Vigo di Fassa to Karersee where several species, not seen elsewhere, were noted: *Paris quadrifolia*, *Cystopteris montana* and *Lycopodium annotinum*.

Six members accompanied Professor Gams on the Friday in an ascent from Colfosco, north of Corvara to the Forc di Ciampi (2388 m), passing immediately below the fantastic pinnacles of Sass Songher which dominated Corvara. The physical effort was botanically well rewarded. There were scree slopes covered with dwarf *Valeriana supina*, *Dryas octopetala*, *Achillea oxyloba*, *Veronica aphylla*, *Papaver rhaeticum*, *Saxifraga aphylla*, *S. aizoides* and *S. androsacea*. Rocks at the Forc showed magnificent *Potentilla nitida*, and also *Daphne striata*, *Gentiana clusii* and *Ranunculus alpestris*. The descent was made to Pescosta through the larch woods from which views to Corvara and southwards were obtained. Two members spent this day seeking and admiring *Eritrichium nanum* above Pordoi.

Thus the first part of the meeting ended and on Saturday 8th August the members of the party journeyed from the Dolomites into the head of the Ötztal in the Austrian northern Tirol where the headquarters was to be at Sölden. Towards the end of the day the weather deteriorated and the leader, having been delayed earlier *en route*, was storm-

bound overnight on the Italian side of the Timmelsjoch. The weather remained bad and serious botanizing became rather too homelike until Tuesday. However, members made visits in small groups on Sunday and Monday to the University of Innsbruck's field station at Obergurgl, the Stuibenfälle at Umhausen and the woods and riversides of the Ötztaler Ache a few miles north of Sölden, where *Myricaria germanica*, *Epilobium fleischeri*, *E. collinum*, *Linnaea borealis*, *Euphorbia cyparissias*, *Artemisia absinthium*, *Juniperus sabina*, *Calamagrostis pseudophragmites*, *Athyrium alpestre*, *Asplenium septentrionale*, *Carex contigua* and *C. pallescens* were among the species noted.

Tuesday 11th August was spent ascending the Ventertal, first by car along the time-regulated road to Vent and afterwards on foot up to the Hochjoch Hospiz at 2412 m from which the first glimpse of a glacier, the Hintereisferner, was obtained. At first the valley was green and even a little wooded but later the aspect became wilder with bare gravel, grey rocks and rushing torrents of muddy glacial water. Although not really rare in the Tirol (more than a thousand sheep come from the southern Tirol over passes into the Ötztal every year), the only sheep seen in the whole of the Tirol were in this valley and at the Hospiz a herd of goats roamed. Many familiar species were noticed and a long list was compiled. The yellow *Euphrasia minima* was common, *Androsace septentrionale* was strikingly in fruit and the conspicuous pale yellow dandelion-like *Hieracium intybaceum* was abundant on one gravelly slope beside the path. The handsome orange-flowered *Senecio abrotanifolius* (one plant of which was seen in the Dolomites, at Gardena) was quite common among the rocks in the higher part of the valley above the narrow gorge. On the way back Professor Gams noticed *Botrychium lanceolatum* which he had not seen before in the area.

Tuesday's quite good weather became really good on Wednesday and Thursday. On the first of these two days the upper chair lift was taken from Unt-Bruggboden to the Hohe Mutt at 2659 m from which a breathtaking view of the two valleys, Rotmoostal and Gaisbergtal, each containing a glacier, was apparent. Nearby, the blue *Primula glutinosa* was prominent in the turf and among other species examined were *Potentilla frigida*, *P. aurea*, *Cerastium uniflorum*, *C. cerastoides*, *Soldanella pusilla*, *Lloydia serotina*, *Kobresia myosuroides* and *Artemisia mutellina*. The party followed Professor Gams down into the Rotmoostal, up to the glacier and across its edge; returning along the south-west side of the valley and continuing down to Obergurgl. A long species list was made and included in it were *Artemisia genipi*, *Gentiana tenella*, *G. nivalis*, *Carex bicolor*, *Homo-gyne alpina*, *Trisetum spicatum*, *Pedicularis kernerii*, *Ranunculus glacialis*, *Epilobium fleischeri*, *Androsace alpina*, *Geum montanum*, *Doronicum clusii* and *Bellidiastrum michelii*.

On the final day Professor Gams permitted both ascent and descent by chairlift, first a ride of two kilometres to Hochsölden and then a shorter lift followed by a walk (during which fine specimens of *Senecio incanus* subsp. *carniolicus* and *Primula glutinosa* were passed) up to the Schwarz-see at 2796 m, apparently the highest fish-inhabited lake in the Alps. This lake was swathed in ice and snow and its blue, not black, water glittering between the floating icebergs presented a sight of such beauty that botany was temporarily forgotten. A few members trudged on up over the snow to the summit of Schwarzkogel at 3060 m, where they saw *Ranunculus glacialis*, *Primula glutinosa* and *Androsace alpina* in flower being visited by insects, and also *Sesleria disticha*. It was satisfying, at least for members of the C.S.S.F., to conclude the meeting and to take leave of Professor Gams amidst such splendour which, looked at closely, contained such reminders of home as *Silene acaulis*, *Cherleria sedoides*, *Salix repens*, *S. reticulata*, *Luzula spicata* and *Polygonum viviparum*.

B. W. RIBBONS