

Reports

ANNUAL GENERAL MEETING, 7TH MAY, 1983

The Annual General Meeting of the Society was held in the Department of Chemistry, University of Bristol, at 12 noon, with 149 members present. Professor J. P. M. Brenan, retiring President, opened the meeting, taking the Chair.

The adoption of the Minutes of the last Annual General Meeting, as published in *Watsonia*, 14: 299-300 (1983), was proposed by Professor A. J. Willis and unanimously approved by the meeting. Apologies for absence received from members were read, and those present were deeply saddened to hear of the recent deaths (through tragic accidents) of Mrs Sheila Wenham, and Dr A. F. Devonshire, a member of the Society for 25 years, who was to have led one of the groups on the Avon Gorge field meeting on the following day.

REPORT OF COUNCIL

The adoption of the Report for the calendar year 1982, which had been circulated to members, was proposed by Lady Anne Brewis, seconded by Mr T. G. Evans and carried unanimously.

TREASURER'S REPORT AND ACCOUNTS

Proposing the adoption of this Report, which had been circulated to members, the Treasurer emphasised that his forecast deficit had been less than anticipated due to an unexpected legacy and a decrease in printing costs of the Society's journals. The adoption of the Report and Accounts was proposed from the Chair and carried unanimously.

ELECTION OF PRESIDENT

Mr J. F. M. Cannon B.Sc., F.L.S., as nominated by Council, was proposed from the Chair and his election was carried unanimously. The newly elected President took the Chair for the remainder of the meeting. Mr Cannon expressed the thanks of the Society to Professor J. P. M. Brenan. The Society had been fortunate in having for its President for the last two years a botanist with a truly world-wide reputation, and his example of maintaining his interest in our native flora, in spite of international commitment, could well be followed by many of today's younger professional botanists.

ELECTION OF VICE-PRESIDENT

The President welcomed the nomination of Professor D. A. Webb M.A., Ph.D., F.L.S., as a member from Ireland who was well-known in the Society for his work and writing and taxonomy, botanical geography and local Floras, as well as for his participation in many of the Society's Conferences.

ELECTION OF OFFICERS

The President warmly thanked those officers who had been nominated for re-election for their work for the Society in past years: Mrs M. Briggs M.B.E., F.P.S., F.L.S., Honorary General Secretary; Mr M. Walpole F.C.A., F.L.S., Honorary Treasurer and Miss J. Martin, Honorary Meetings Secretary; these officers were re-elected with acclamation. Four Honorary Editors: Drs S. M. Eden, R. J. Gornall and N. K. B. Robson were nominated for re-election and Dr J. R. Akeroyd for election. Mr J. N. B. Milton had been nominated as Honorary Field Secretary. These nominees

were proposed and elected unanimously. The President expressed the thanks of the Society for considerable work undertaken for the Society by all the officers, and extended a welcome to those newly elected.

Following the election of officers, Mr E. Milne-Redhead asked for the Society's thanks to Mr E. D. Wiggins as Editor of *BSBI News* to be recorded and this appreciation was warmly supported by the meeting. The President also took this opportunity to record thanks to Dr R. K. Brummitt, retiring Secretary to the Publications Committee; to Mrs U. M. S. Preston, retiring Minuting Secretary to Council; and to Mr D. H. Kent, retiring Vice-President who had contributed very greatly to the Society and to its publications for very many years. Thanks to all the above were endorsed by the meeting with applause.

ELECTION OF COUNCIL MEMBERS

Mr P. S. Green F.L.S., Dr C. P. Petch M.D., F.R.C.P. and Mr D. T. Streeter had been nominated and were unanimously elected.

ELECTION OF HONORARY MEMBER

The Honorary Treasurer, as Chairman of Publications Committee, in proposing Dr C. A. Stace, Hon. Editor for 12 years, stated that the endless trouble taken by Dr Stace with the editing and production of *Watsonia* was seen in the current very high standard of our Journal, which enhanced the Society's reputation internationally. His election was carried unanimously.

ELECTION OF HONORARY AUDITORS

The Honorary Treasurer, expressing our gratitude to Messrs Thornton Baker for auditing the Society's accounts, proposed their re-election. This was carried unanimously and the President undertook to send a note of the Society's gratitude.

ANY OTHER BUSINESS

The President thanked Mr A. L. Grenfell for the local organisation for this lively and well attended A.G.M. and, there being no further business, the meeting closed at 12.50.

M. BRIGGS

PAPERS READ AT THE ANNUAL GENERAL MEETING

THE ROLE OF THE BRISTOL UNIVERSITY BOTANIC GARDEN IN THE CONSERVATION OF RARE PLANTS

The best method of safeguarding rare plants is by conservation and management of their habitats. The main service that botanic gardens can play in assisting the conservation of species is by providing a display that will promote an interest in native plants, thereby helping to marshal public opinion in favour of their conservation. Such a display can also assist conservation directly by providing photographers with subjects that can be approached without disturbance of specimens in the wild.

The Botanic Garden at Bristol, by providing a source of plants and seeds of native plants, may reduce the temptation for gardeners to despoil wild population. Plants are supplied to the 900 members of the Friends of the Botanic Garden, and the garden's Seed List (which last year included 150 native species) was despatched in 1982-3 to about 1,500 subscribers and botanic gardens.

A small seed bank, with seed stored at $-20^{\circ}\text{C}.$, is maintained at the garden, and offers the most practicable way of conserving local genotypes. Without the seed reserve there would be risks of loss when cultivating over many years. These risks would be due to disease, pests, periods of bad weather, loss of labels, and theft. There would also be risks of genetic adulteration through hybridisation, genetic drift and unconscious selection during propagation.

Some 500 British species of vascular plants are being grown at Bristol in 1983. Of about 76 species

of 'threatened' plants with a distribution weighted towards south-western England, 36 species are grown from stocks originating from known localities in the British Isles. Out of a further 44 'non-threatened' south-western species 22 are grown. Some 40 species from these latter two groups are gathered in one area of the garden, with slate labels giving illustrations of flowers, distribution maps and ecological information.

Brief case histories on the cultivation of ten species of south-western plants were presented.

M. C. SMITH

In addition to the above, Dr C. M. Lovatt read a paper entitled *Rare plant conservation in the Avon Gorge* and C. Johnson read a paper entitled *The role of the Avon Wildlife Trust in plant conservation*.

EXCURSIONS HELD IN CONNECTION WITH THE ANNUAL GENERAL MEETING

BRISTOL UNIVERSITY BOTANIC GARDEN. 7TH MAY, 1983

The Society is greatly indebted to the Keeper, Dr M. C. Smith, who conducted a large party around the garden in most unfortunate weather conditions. The garden, although small by some standards, is set in magnificent surroundings and is well-planned, enabling it to fulfil efficiently its primary role of providing the University Botany Department with plant material and research facilities. Its secondary role, that of helping in the conservation of our native flora, is followed in the enlightened manner so eloquently described by Dr Smith earlier in the day. The garden derives much financial support in this work from its thriving League of Friends, whose members benefit reciprocally from a plant and seed distribution service.

AVON GORGE. 8TH MAY, 1983

The flora of the Avon Gorge is so well documented elsewhere that more than a brief summary of this meeting is unnecessary. The early date of the AGM and the lateness of the season combined to thwart partially intentions of examining the endemic *Sorbi* in detail, but study of tree-shape, bark and last season's fallen leaves went some way towards achieving this aim. Members were shown *Sorbus bristoliensis* and *S. wilmottiana*, Avon Gorge endemics, and also *S. anglica*, *S. eminens* and *S. porrigentiformis*, all British endemics of restricted distribution, in addition to some of the the commoner members of the genus.

Other specialities of this botanical 'Mecca' that were seen included *Hornungia petraea*, *Arabis scabra* (*A. stricta*) and abundant *Cerastium pumilum*. *Trinia glauca* was just coming into flower above Black Rock Gully and nearby were *Potentilla tabernaemontani* and *Carex humilis*, the latter already in fruit.

The Society is particularly indebted to Mr A. J. Byfield, Miss I. F. Gravestock, Dr C. M. Lovatt, Mr P. J. M. Nethercott and Mrs M. A. Silcocks, members of Bristol Naturalists' Society, whose expertise enabled some 100 members in four parties to be transported over the sensitive and dangerous habitats of the Gorge (without incident, one should add!). Those attending were saddened to learn of the recent sudden death of Dr A. F. Devonshire who was to have helped in this exacting task.

CHARTERHOUSE, MENDIP AND SAND POINT, SOMERSET. 8TH MAY, 1983

Forty-four members were transferred to Charterhouse by coach and the day's excursion commenced on the outcropping carboniferous limestone of Ubley Warren. Here *Hornungia petraea* and *Cerastium pumilum* were accompanied by a fine display of *Cystopteris fragilis*. Mr R. W. David demonstrated some of the lesser known characteristics of downland sedges and the party were able to compare *Carex caryophylla* and *C. montana* growing in close proximity. The latter, described by Linnaeus in 1753, remained undiscovered here until the Rev. E. F. Linton recorded it in 1890. The

lead-contaminated soils of the nearby mine excavations, worked from pre-Roman times until c. 150 years ago, do not support a rich flora but are noted for the lead-indicating species *Thlaspi alpestre* and *Minuartia verna*, both of which were much photographed and admired. The presence of *Silene maritima* evoked thoughts of earlier ages when the Mendips were islands in the sea.

After a picnic/pub lunch near the Rock of Ages in beautiful Burrington Combe, the business of the day was resumed at Sand Point (NT), north of Weston-super-Mare, W. Somerset. The landward end of the point, also of carboniferous limestone, was once the site of a traditional tea-garden. Although this establishment has been defunct now for some 30 years, many of the shrubs and herbaceous species at one time planted there still survive, largely on account of the southerly aspect and the proximity of the sea. Some, such as *Syringa vulgaris* and *Spiraea* \times *vanhouttei*, are obvious relics; the Mediterranean *Euphorbia characias* subsp. *wulfenii* seeds itself well and *Genista hispanica* subsp. *occidentalis*, an endemic of the western Pyrenees and northern Spain, is increasing. Both were in full flower. *Hermodactylus tuberosus*, also Mediterranean, in fruit, and a wealth of other interesting species including *Iberis sempervirens*, *Teucrium chamaedrys*, *Zauschneria californica* and *Erigeron karvinskianus* (*E. mucronatus*) were examined.

The walk along the point, in sunny but very windy conditions, yielded much of botanical interest; *Anthriscus caucalis*, *Vicia lathyroides*, *Orchis morio* and *Ranunculus parviflorus*, the latter in fine fettle, deserve mention. In addition to the profusion of spring annuals typical of the south-facing slopes, abundant *Trinia glauca* received special attention. Confined to four main areas of limestone in south-western England, *Trinia* appears to be pollinated solely by ants (C. M. Lovatt pers. comm. 1979) and the large disparity in the numbers of plants of each sex was most evident. Concerted efforts to locate *Cochlearia danica* \times *officinalis*, found here in quantity with both parents in 1982, proved unsuccessful but some reward derived from the sight of sheets of *C. anglica* on the salt-marsh in the bay below.

I am greatly indebted to Mr R. M. Payne for his help and support given at short notice following Mr A. C. Titchen's withdrawal through illness. It might be added that some twenty or more members continued botanising after the return to Bristol, such was the enthusiasm of the party! They were rewarded by the local adventive rarities *Agrostemma githago*, *Linaria supina* and *Carum carvi*.

A. L. GRENFELL

FIELD MEETINGS, 1982

ENGLAND

LOSTWITHIEL, CORNWALL. 11TH-12TH SEPTEMBER

Forty-one members and friends attended this meeting, designed to exhibit some characteristic habitats and plants of East Cornwall. The leaders (L. J. Margetts and R. W. David) were gratified by the size of the attendance, but also dismayed, for some of the sites to be visited were liable to damage by trampling, and the typical Cornish lane, narrow and often sunken, is no place for a cavalcade of cars. Thanks, however, to the willing, patient, and responsible co-operation of all members of the party, these fears proved groundless.

On Day 1, the morning was spent in a marshy valley south of Lostwithiel. This is the home of *Lobelia urens*; it is owned by the National Trust and managed by the Cornwall Naturalists' Trust. Its management raises some problems, and one purpose of the visit was to discuss these with the warden. Other plants noted were *Carex laevigata*, in Cornwall often in wet meadows rather than in woods, *Hypericum undulatum*, and the West Country brambles *Rubus riddelsdellii* and *R. rilstonei*.

The cars (a regular panzer division that luckily seemed to scare off other road users) then proceeded through a maze of lanes to the coast. After a cliff-top lunch, in perfect weather, descents were made into two adjoining coves, one a fine example of a storm-beach, the other containing an extensive raised beach. In the first the party compared *Polygonum maritimum* with *P. oxyspermum* subsp. *raii* and succeeded in raising the known number of the former from eight to over 40. Other characteristic plants of the habitat were *Crambe maritima*, *Crithmum maritimum*, *Euphorbia paralias*, and, on the cliffs, *Asplenium marinum*, *Orobanche hederæ*, and *Rubia peregrina*. Neap

tides prevented easy access to the western end of the beach, but most of the party, including senior and even disabled members, made the fairly severe traverse over rocks to see a wet cliff curtained with *Adiantum capillus-veneris*.

In the second cove the differences between *Carex distans* and *C. punctata* were studied; *Samolus valerandi* and *Scirpus cernuus* were added to the plant-list. The coastal path between the two coves yielded *Lathyrus sylvestris* in quantity, *Lotus angustissimus* and *L. subbiflorus*, *Euphrasia tetraquetra*, and *Potentilla erecta* \times *reptans* with both parents. A rock-cleft by the path offered a single tuft of *Asplenium billotii*, and *Polypodium interjectum* was on roadside walls.

For Day 2 the rendezvous was Kit Hill, one of the few surviving heaths overlooking the Tamar valley (Hingston and Viverdon Downs are largely reclaimed). Unfortunately the day was more misty than the previous one, and the spectacular view was curtailed. Notable plants were *Euphrasia anglica*, *E. confusa*, and *E. vigursii*; an *Epilobium ciliatum* hybrid (probably with *E. obscurum*); *Polypodium vulgare* s.s.; *Mentha suaveolens* (approaching *M. x villosa*) on the roadside; and six Rubi: *R. dentatifolius*, *R. nemoralis*, *R. orbis*, *R. peninsulae*, *R. polyanthemus* and *R. villicauliformis* (see *Watsonia*, 14: 76). After lunch at Luckett, the Cornwall Trust's woodland reserve was perambulated and yielded another *Rubus*, *R. adscitus*, both subspecies of *Hieracium umbellatum*, *Milium effusum*, *Physospermum cornubiense*, and *Euphrasia vigursii* again, the last two in great splendour and quantity. Drizzle set in at 3.30 p.m. and the party began to disperse, a gallant remnant going on to Pensilva to see *Sibthorpia europaea*, a single plant of which was found after an anxious search.

The leaders must particularly thank Keith Spurgin, press-ganged as third leader when numbers became alarming, Denis Harding, honorary warden of the *Lobelia* site, who not only arranged parking both there and at Luckett but acted as demonstrator in both reserves, and Dr D. E. Coombe, who sharpened members' appetites and eyes by producing, on the preliminary evening, a potted plant of *Polygonum maritimum* and who was a mine of information on Cornish history and place-names as well as on Cornish plants. R.W.D. wishes to pay special tribute to Len Margetts, without whose thorough organisation and planning nothing would have been achieved.

R. W. DAVID

LISS, HAMPSHIRE. 16TH OCTOBER

Twenty-eight members took part in this day excursion, on what proved unfortunately to be one of the wettest days of 1982; torrential rain gave way finally to drizzle only in the late afternoon.

Because of the dreadful conditions, the planned programme, which had included a visit to the famous open chalk grassland site of Noar Hill, in v.c. 12, had to be curtailed, and the excursion was confined to more sheltered woodland areas in v.c. 13. *Lycopodium clavatum* (in what may be its best locality now in south-eastern England) was seen with *Gaultheria shallon* and *Pernettya mucronata* along rides in Forestry Commission woodland in Harting Coombe; *Equisetum sylvaticum* was seen in quantity in a recently discovered locality in alder carr nearby, with such ferns as *Oreopteris limbosperma*, *Dryopteris carthusiana*, *D. dilatata* and *Blechnum spicant*. A wooded ravine north of Chithurst provided the most westerly locality for *Dryopteris aemula* in the Sussex Weald.

Those who managed to brave the weather to the end were invited back to tea at Liss at the home of the leader and his wife; this refreshment seemed to be much appreciated!

F. ROSE

WALES

LLEYN PENINSULA, CAERNARVONSHIRE. 18TH JULY

Two base-rich fens and a wet pasture with heathy patches in the vicinity of Edeyrn in the west Lleyn peninsula were visited by some 30 members of Sunday 18th July. The common south of Edeyrn produced a fair quantity of *Genista anglica* in flower and in fruit, and *Oenanthe fistulosa* (both with

less than half-a-dozen sites in Lley). *Carex hostiana*, *C. binervis*, *C. pulicaris* and other sedges were seen, but no trace of the *Botrychium* once recorded from here.

The two fen sites were especially rich both in orchids and in Cyperaceae. Apart from splendid *Epipactis palustris* at both places (a pale-flowered form was much admired), and *Gymnadenia conopsea* at one, the *Dactylorhiza* taxa were all but over. Some possible hybrids of *D. traunsteineri* with Heath Spotted Orchids, and perhaps *D. purpurella*, were discussed. In addition to the commoner sedges, well-grown *Carex lepidocarpa* was in abundance, and we also found *C. lasiocarpa*, *C. dioica*, *C. rostrata*, *C. acutiformis*, *C. diandra* and *C. disticha*, as well as *Cladium mariscus* and *Eriophorum latifolium*. Two species of *Utricularia*, *Crepis paludosa* and *Ranunculus lingua* were amongst taxa seen which have only one or two localities in Lley; and *Parnassia palustris*, which only occurs in fens and flushes towards the northern side of the peninsula.

In and around the farm at Edeyrn were a number of species which in this region are closely associated with old 'habitation' sites and appear to be relics of former 'herbal' usage: *Ballota nigra*, *Verbena officinalis*, *Artemisia absinthium*, *Chelidonium*, *Calamintha ascendens* and *Parietaria*; though perhaps some link with more 'calcareous' or drier soil is implied for some, for here, too, we saw one of the only three stands in west Lley of *Knautia arvensis*, and the locally rare *Malva moschata* and *Reseda luteola*.

A. P. CONOLLY

TENBY, PEMBROKESHIRE. 31ST JULY

Twenty members and friends gathered at Penally railway station to explore the fen between the railway and the dunes. The marsh owed its origins to the growth of dunes north from the Carboniferous limestone of Giltar Head. Long before this growth had finally enclosed the whole of the old Ritec estuary, an ample supply of calcareous water had created a freshwater marsh or fen in the 'armpit' of this extending limb of sand.

The fens and marshes of Pembrokeshire are widespread, but amongst the least known wetlands in southern Britain. Penally Marsh is the only one for which early records of plants exist. Tenby was the main focus for botanical recording in 19th century Pembrokeshire, and it is no coincidence that the first attempt at a Flora by Dr R. W. Falconer, F.R.C.S., listed 388 flowering plants and 14 ferns indigenous to "The Neighbourhood of Tenby" in 1848. On 25th August of the same year Charles Babington, Professor of Botany at Cambridge, had visited Penally Marsh and his opinion was that "the marsh is like the rough parts of the Cambridgeshire fens reproducing Bog Myrtle (*Myrica gale*) etc. Here is Marsh Fern (*Thelypteris palustris*), Greater Tussock Sedge (*Carex paniculata*), Small-fruited Yellow-sedge (*Carex serotina*) and other deep marsh plants".

In Philip Gosse's *Tenby, a seaside holiday*, published in 1856, there is a delightful chapter on 'Bog-botany', describing an expedition to Penally Marsh "well armed with pocket-lens and vasculum". I make no excuse for reproducing at length from this chapter, as it must be the earliest description of the art of *Carex paniculata* walking—an art with which modern connoisseurs of wetland are all too familiar! . . . "The perambulation of our ground was a matter of no small difficulty. It was an area of black soft mire, out of which grew great tussocks of bog-grass—the Panicked Sedge, I believe. These afforded a firm support when the foot was placed fairly on the centre of the tussock; but owing to the spreading of the grass on all sides, overarched the pits and ditches of mire below, it was not easy to know where to set down the foot. Many were the slips, many the plunges, desperate the struggles; and what with the efforts of the gentlemen to help the ladies from tuft to tuft, their own herculean attempts at balance-keeping while they sustained the fair, their occasional tumbles, dragging their protégées into their own humiliation, the ups and downs of all, the screams, the laughs—we became most uproariously merry. Grievously bemired of course we were: boots that had been lavender-coloured looked as if they had been dipped into the blacking bottle, the polishing being omitted; and hose of snowy radiance were encased in sable mud. But we had come out to

botanize, and botanize we would; we were out for a day's pleasure, and we were not to be disconcerted by a little bog-mire . . ."

Although over 120 years had elapsed since the visits by Babington, Gosse and their contemporaries, most of the c. 30 wetland species they recorded were re-found by our 20th century party. *Carex disticha*, first recorded in 1853, was admired for its dominant stands on the mown areas of the marsh, and was perhaps indicative of its estuarine origins. *Lysimachia vulgaris* and *Rumex hydrolapathum*, both recorded in 1848, were still abundant along the ditches and tall fen. In an area of more acid peat kept open by grazing horses, *Thelypteris palustris*, *Osmunda regalis* and a few bushes of *Myrica gale* were re-found. The latter had evidently declined since Gosse's time as he described the most fragrant Sweet-gale or Bog Myrtle as "growing in great profusion" and mentioned that "here in Wales they offer it as a token of kindly feeling to strangers". Although not in full flower, *Cyperus longus* was closely examined and photographed by the party. H. W. Pugsley had first found it at Penally in 1923. It has one other extant location in Pembrokeshire, at Orierton, where it may have been introduced to the lake. *Cyperus longus* was one of the first plants to be collected in Pembrokeshire. A specimen was taken from Whitesands Bay, St. Davids, in July 1773, but numerous searches have failed to re-find it despite precise locational details on the British Museum specimen label.

In the wettest areas, amongst the species-rich *Phragmites* and *Molinia* stands of the fen, were Gosse's large *Carex paniculata* tussocks. Growing alongside were the smaller tussocks of *Carex elata*. This was not amongst the six sedges recorded in Victorian times, but was discovered by the leader early in 1982 and is only the second record for the vice-county. A few flowering plants of *Baldellia ranunculoides* were found. It was the first record for the marsh since Babington's day. Two of his notable species that have yet to be re-discovered are *Cladium mariscus* and *Carex serotina*. It seemed likely that the first-named is now extinct, whilst the latter may just have been overlooked.

During lunch, the appearance of riflemen was followed by gunfire on the Ministry of Defence Small Arms Range. The marsh forms an integral part of this Range, and there is no doubt that the survival of this species-rich fen in such a popular tourist area as Tenby owes all to the presence of the military.

After refreshments, the party avoided the small arms fire and set off for the limestone sea-cliff of Giltar Head. A detour en route took in the site of *Gentianella uliginosa*, where much debate and reference to 'Clapham, Tutin & Warburg' preceded the identification of *G. uliginosa*, owing to the confusion caused by the presence of apparent intermediates with *Gentianella amarella*. The Dune Gentian is now confined in Pembrokeshire to the one disused sand pit, whereas it was more widespread when discovered by H. W. Pugsley in September 1923, "in a damp sandy pasture around Tenby" as a first record in Britain. Relict clumps of *Juncus acutus* were seen, and *Thalictrum minus* subsp. *minus* was spotted growing in the main dunes and on the wind-blown sand that tops Giltar Head itself. Both had been seen here by John Lightfoot in 1773.

Once on the sea-cliff, there were splendid views across to Caldey and St. Margaret's Islands, and time was spent discussing the *Limonium binervosum* group. Again with the help of 'Clapham, Tutin & Warburg', another of Pugsley's finds—his endemic *Limonium transwallianum*—was examined. There was, predictably, mixed enthusiasm for the prospect of yet more splitting of this group following Martin Ingrouille's work at Leicester University. The dry, south-facing and exposed maritime turf yielded two surprises. One was a plant of *Salvia horminoides* not previously recorded from the headland; the other was the re-discovery of *Asparagus officinalis* subsp. *prostratus*. This was last seen here by the late Tommie Warren Davis in July 1973 and, after repeated searches in subsequent years, it was assumed to be extinct. Mr and Mrs M. Kitchen found two clumps: one was growing on the extremely exposed margin of the cliff slope, whilst the second flowering stand was set back from the edge in a lush growth of *Festuca rubra* and *Ammophila arenaria* over sand. This second locality seemed to be the site of the 1973 record. The *Asparagus* had been seen by Babington between Giltar Head and Lystep Haven in August 1848, and R. W. Falconer refers to it as plentiful near Giltar Head in his work of the same year. Its re-location was a most appropriate end to the day's botanising in the footsteps of our more illustrious forebears.

Thanks are due to Major P. E. Pillar (Retd) of the Penally Training Camp, for permitting access to the marsh and adjacent areas.

S. B. EVANS

TAL-Y-LLYN LAKE, MERIONETH. 14TH AUGUST

A sizable party of members and friends assembled at Tal-y-llyn Lake (Llyn Mwyngil) 4½ miles south of Dolgellau, to explore the flora of the lake and adjacent marshland. The water level was fairly low and the weather fine, bright and cool.

Tal-y-llyn Lake, an oblong measuring about a mile by about a quarter of a mile and orientated south-west and north-east, lies below the steep southern slopes of Cader Idris and although at an altitude of only 270 ft it is rather upland in nature. It receives all the waters from the south-eastern quarter of Cader Idris, draining from acid mudstones and acid intrusive volcanics, and is moderately oligotrophic with a peaty and gravelly shore.

All the species recorded from the site, except *Potamogeton natans*, were seen. The most notable were *Callitriche hamulata*, *Carex rostrata*, *C. vesicaria*, *Elatine hexandra* (in great quantity), *Isoetes lacustris* (with sporangia), *Littorella uniflora* (flowering), *Menyanthes trifoliata*, *Myriophyllum alterniflorum*, *Nuphar* × *spenneriana*, *Nymphaea alba*, *Peplis portula*, *Phalaris arundinacea*, *Phragmites australis* (uncommon in the inland parts of north-western Wales), *Potamogeton alpinus*, *P. berchtoldii*, *P. perfoliatus*, *P. polygonifolius*, *Subularia aquatica* (in quantity), *Vaccinium oxycoccos* and *Wahlenbergia hederacea*.

The *Nuphar* was discovered here by the Rev. Augustin Ley on the 9th August 1886 and recorded as "*N. pumilum*". But the plant in fact has characters intermediate between those of *N. pumila* and *N. lutea*, the fruits are normally malformed, asymmetrical and contain only up to eight developed seeds. Two other hybrids new to Tal-y-llyn were discovered during the meeting, *Cirsium arvense* × *C. palustre* and *Senecio aquaticus* × *S. jacobaea*. Although no new species were added to the list for this well-botanised site, it was possible to do useful local recording because the lake runs into four 1 km and two 10 km nations grid squares.

After the meeting some members made a dash before the onset of rain to Tywyn to see *Limosella australis* in one of its few extant stations in the British Isles.

P. M. BENOIT

WYE VALLEY WOODS, GWENT AND HEREFORDSHIRE. 18TH SEPTEMBER

This meeting was primarily to study the species of *Sorbus* of the area. Two main problems were apparent: firstly the plasticity of the leaf form of *Sorbus aria* (L.) Crantz and *S. porrigentifformis* E. F. Warb., and secondly the distribution of species, with more species occurring on the south-facing rocks of the Seven Sisters and Lord's Wood, Herefordshire, than on the north-facing slopes of Lady Park Wood, Gwent. We were very fortunate to have Mr P. J. M. Nethercott with us, who could give us a considered opinion on problem trees.

The 'Welsh' meeting started in England. When examining leaves of *Sorbi*, only those on mature branches on 'spurs' away from ends of branches should be looked at, but as we were in a nature reserve it was stressed that specimen leaves should be sought for underneath the trees. In Herefordshire, *S. aria* displayed a bewildering variety of leaf forms. Some trees had small oval leaves, while others had large suborbicular leaves; some leaves had shallow lobes, while others had none. The fruit tended to be slightly longer than broad. *S. porrigentifformis* tended to differ from the type in the Avon Gorge, but Mr Nethercott pointed out the outward-pointing teeth, which on the sides of the leaves formed an angle of 90° with the leaf axis, and the dark crimson, subglobose fruit. *S. rupicola* (Syme) Hedl., in its exposed cliff-edge position, was wind damaged. A few typical leaves, long, narrow, obovate with long cuneate bases were found, but it bore no fruit. *S. eminens* E. F. Warb. had large obovate-orbicular leaves and bore large fruits (c. 20 mm) that made it fairly distinctive. The leaves of *S. torminalis* (L.) Crantz had turned a beautiful red and contrasted vividly with the green of the shaded trees on the Welsh side. *S. aucuparia* L., with its pinnately arranged leaflets, tended to have fruits only where it grew on path edges and had a fair share of the sunlight. *S. × thuringiaca* (Ilse) Fritsch needed no conservation measures to protect it, as it grew out from the top edge of a tufa-clad cliff. It had a peculiar leaf, with a basal pair of free leaflets and then paired lobes decreasing in size. Lower down in the valley it is more common to find pairs of free leaflets at the base of the leaves. Nearby were two trees of *S. × vagensis* which showed a similarity of leaf shape with one of their parents, *S. torminalis*, both having deeply divided leaves with pointed lobes, but whereas the hybrid had a

greenish-white tomentum on the underside of the leaf, the parent was glabrous. Other plants observed were *Solidago virgaurea*, *Serratula tinctoria*, *Geranium sanguineum*, *Hippocrepis comosa*, *Rhamnus catharticus*, *Tilia cordata*, *Carex humilis*, *C. montana*, *Scabiosa columbaria* and, by the River Wye, *Mentha* \times *smithiana*.

After lunch, the river was crossed and Gwent entered. *Elodea nuttallii* was retrieved from the river. Along the riverside path were growing *Tilia platyphyllos*, *Dipsacus pilosus* and *Atropa bella-donna*. It was necessary to climb to the top of the cliff to see the many *Sorbus torminalis*. Under these trees were growing two uncommon grasses for Gwent: *Festuca altissima* and *Hordelymus europaeus*. Fungi were much in evidence and among those seen were *Amanita phalloides*, *A. citrina*, *Hydnum repandum*, *Oudemansiella radicata*, *O. mucida*, *Lepiota procera* and many species of *Lactarius*. *Sorbus eminens* (only Gwent example?) and *S. \times vaginensis* were seen, the latter was determined positively only after comparison with the other herbarium examples.

T. G. EVANS

SCOTLAND

KINDROGAN, EAST PERTHSHIRE. 20TH–24TH MAY

Leaving the 'blown' Dandelions of an early season in the English lowlands, Taraxacologists ventured north to the Scottish glens in the hope of prolonging the short season, seeing some of the Scottish specialities, having a chance to exchange opinions and specimens and to learn. Politically, the meeting was equally divided, six English harmonising with six Scots. Interests were diverse, linked only by the genus *Taraxacum*, for while nearly everybody collected many specimens and the changing of drying paper in professional-looking presses went on far into the small hours, some also painted them very beautifully (Olga Stewart), some etched their leaf-outlines (Adrian Rundle), some looked them up on a portable computer terminal (Richard Pankhurst), and copious annotations were made by many. John Richards of Newcastle University led the party in identification, most ably abetted by Chris Haworth, the other *Taraxacum* referee, and both will agree that the presence of the other led to an unusually high rate of successful identification in this maddening group of plants.

Before the visit, East Perth was one of the least known vice-counties for *Taraxacum*, with only 13 species recorded. We failed to find two of these while adding another 42 species to the list. We were also able to add 25 species to the list for Mid Perth. Altogether, 62 species of *Taraxacum* were seen, just over 30% of the total for the British Isles, but with a higher proportion of apparently native and endemic species than would be the case in more lowland areas. One new species was discovered in the neighbourhood of Kindrogan, and has been provisionally named after the beautiful Glen Ardlie (or should it be Strath), in which it resides. The Taraxacological and other interests of the excursion were much aided by the Warden of Kindrogan Field Centre, Brian Brookes, who was an active member of the party and took us to many of his favourite local spots, which he quite rightly suspected might be rich for dandelions. Thus we were able to notice incidentally many other worthy plants, of which *Schoenus ferrugineus*, *Betula* \times *intermedia*, *Melampyrum sylvaticum* and *Pseudorchis albida* aroused as much interest as any.

The new sectional classification in *Taraxacum* was used throughout the course. Although the sections *Erythrosperma*, *Obliqua* and *Palustria* remain as conceived in the *Taraxacum flora of the British Isles* (Watsonia 9, suppl. 1972), *Spectabilia* and *Vulgaria* have been subdivided. *Spectabilia* sensu stricto now only includes the few pentaploid relatives of *T. spectabile* with adpressed bracts and large oblong achenes. The sections *Crocea* (high mountain plants) and *Naevosa* of Christiansen are now recognised, and the relatives of *T. nordstedtii* and *T. adamii*, with *T. praestans* and species previously considered to be *Vulgaria*, such as *T. raunkiaerii* and *T. haematicum*, are now placed in a new section. These usually have erect, pruinose bracts and unspotted leaves with bright purple midribs. The relatives of *T. hamatum*, previously placed in section *Vulgaria*, are also treated as a section, named *Hamata* H. Øllgaard. We were able to see several representatives of all these sections except *Obliqua* (northern coasts) and *Palustria* (southern fens).

The first day around Kindrogan yielded 36 species, including three which are as yet undescribed. One of these, formerly mistakenly called *T. crispifolium*, was discovered near Brian Brookes' new

cottage. The main road through Enochdhu was rather disappointing, but *T. retroflexum* and *T. incisum* occurred as sparsely distributed introductions.

Weedy, non-native species were far more evident on the Saturday morning, which was spent exploring the riverbank in Blairgowrie. Here the Scandinavian rarities *T. altissimum* and *T. angustisquameum* each occurred as single plants, while *T. uncosum*, *T. undulatiflorum*, *T. hemipolyodon* and *T. rhamphodes* were recorded for the only time, again as single individuals. Although introduced in the Highlands, *T. hemipolyodon* must be considered as native elsewhere, for it does not occur outside the British Isles. Further along the river, wooded banks revealed two local native species, *T. laetifrons* and *T. argutum*.

In the afternoon, a fen near Blairgowrie added *T. spectabile* and the much rarer Highland speciality *T. eximum* to the list (the latter proved to be quite widespread in mesic fens in the area) with *T. adamii* and *T. nordstedtii*. Totally unexpected however was *T. palustrisquameum*, previously thought to be restricted to fens in Norfolk, although with old records in Cambridgeshire and Lancashire. Other areas nearby added the rare introduction *T. praeradians*, and several stations were discovered for *T. polyhamatum*, which appears to be native in the Highlands, but not elsewhere. *T. pseudolarssonii*, the commonest *Naevosa* species in northern England which also occurs plentifully into southern Scotland, was another unexpected discovery. It is unusual in that the leaf spots fade with age.

On the Sunday, we ventured into Mid Perth to examine limestone sites around Aberfeldy and Schiehallion. An undescribed *Naevosa* species, known from northern England and Wales, proved to be widespread in this area, and an interesting and apparently undescribed *Hamata* species was also detected. The *Erythrosperma* species were disappointing, but one colony of *T. laetiforme* was found only just coming into flower. One plant of the rare *T. excellens* was found beside a woodland path, apparently introduced. The best find of the day was made on the way home near a transplant of *Schoenus ferrugineus*. Here a fine colony of the endemic and little known *T. scoticum* was found on a gravel track.

On the final morning we proceeded with frequent stops towards the railway station at Pitlochry. One species was added to the list for East Perth, the very rare northern species *T. melanthoides* (this as described in the *Taraxacum* Flora from southern meadows, can be equated with *T. scotiniforme*).

So ended an enjoyable and useful four days, and thanks to Brian Brookes as well as to all the participants should be placed on record.

A. J. RICHARDS

PITRODDIE DEN, SIDLAW HILLS, PERTHSHIRE. 13TH JUNE

A total of 21 members and friends of the B.S.B.I. and Perthshire Society of Natural Science attended the above joint excursion. The main aim was to explore a little known area of the Sidlaw Hills in the hope of finding new plant records and confirming some old ones.

Pitroddie Den comprises mainly south-facing slopes above a river valley together with a rock face and spoil from a long-disused quarry. It is extensively colonised by scrub, except from the uppermost grazed section. This may explain the failure to refind some old records, but nevertheless we were pleased to re-find both *Astragalus glycyphyllos* and *Lactuca virosa*. South-facing calcareous substrate supported such local rarities as *Agrimonia eupatoria*, *Carduus acanthoides*, *Primula veris*, *Reseda luteola*, *Sherardia arvensis* and *Viola hirta*. Apart from the plants, enjoyment of the visit was increased by the many butterflies which were on the wing.

We are grateful to Mrs M. A. Steele, Nether Durdie, for access permission, and in particular for the splendid gate which was especially erected to permit us access to the upper Den.

R. A. H. SMITH

GLEN FESHIE, CAIRNGORMS. 26TH-27TH JUNE

The joint meeting between the B.S.B.I. and the Alpine Section of the B.S.E. had 25 participants, for this two-day meet in Glen Feshie.

The group met at Achlean on the Saturday and proceeded to Coire Garbhlach, recording *Listera cordata* and *Genista anglica* amongst the dense sward of *Calluna*, which carpets much of the valley floor. On the banks of the Allt Garbhlach, *Equisetum pratensis* was scattered through the short turf and amongst open stony habitats, along with such widespread alpine species as *Alopecurus alpinus*, *Carex dioica*, *Epilobium alsinifolium*, *E. anagallidifolium*, *Juncus triglumis*, *Phleum alpinum*, *Salix myrsinites*, *Saxifraga hypnoides*, *S. oppositifolia*, *S. stellaris* and *Trollius europaeus*. The chief area of interest was the north facing cliffs above 2,000 ft; here, the large, free-flowering clumps of *Cardaminopsis petraea* were outstanding and the quantity of *Carex atrata* noteworthy. *Athyrium alpestre*, *Dryas octopetala*, *Cerastium alpinum*, *Coeloglossum viride*, *Cryptogramma crispa*, *Draba norvegica*, *Galium sternerii*, *Polystichum lonchitis*, *Saussurea alpina*, *Saxifraga nivalis*, *Silene acaulis*, *S. dioica* and *Veronica alpina* were amongst the interesting plants recorded.

On the Sunday the group divided into several small parties. The most energetic travelled up past Glen Feshie Lodge, then proceeded to explore under recorded areas in the upper reaches of the Feshie, recording *Betula nana*, *Drosera anglica*, *Dactylorhiza maculata* subsp. *ericetorum*, *Salix lapponum*, *S. phylicifolia*, and *Tofieldia pusilla*. A second party searched some south-facing cliffs near Creag na Gaibhne in the upper Feshie; fine stands of *Vicia sylvatica* were in full flower in the screes amongst the old *Pinus sylvestris* and *Sparganium angustifolium* was in pools near the river. On the cliffs, *Galium boreale*, *Anthyllis vulneraria*, *Arabis hirsuta*, *Asplenium viride*, *Botrychium lunaria*, *Briza media*, *Gymnadenia conopsea*, *Helictotrichon pratensis*, *Melica nutans*, *Orchis mascula*, *Rubus saxatilis* and *Saxifraga aizoides* were noted. Nearby, the recently discovered colony of *Ophioglossum vulgatum* was investigated and some 1,000 plants counted. A third party visited interesting sites in the Spey Valley, where they found the well established *Cicuta virosa* and the recently discovered *Carex chordorrhiza*.

I would like to take this opportunity to thank the land owner for his encouragement of this very successful field meeting.

R. J. D. McBEATH

FORTH & CLYDE CANAL, GLASGOW. 29TH AUGUST

Around 15 people attended this joint meeting with the Glasgow Natural History Society. The morning was spent visiting known sites on the western fringes of the city, while the object of the afternoon was to explore an unrecorded 1 km square east of the city at Cadder.

The day began at Bowling, where the western extremity of the Canal reaches the River Clyde. *Lemna gibba* was seen in its usual abundance as was a large colony of *Potamogeton lucens*. *P. pusillus* was an unexpected addition to this well-surveyed section, though sadly a tiny colony of *Lysimachia thyrsiflora* seemed to have finally succumbed to vigorous marginal clearance. The complex of scrub and old railway adjoining the canal contains well-established colonies of *Anaphalis margaritacea* and *Solidago rugosa*, while *Aster* × *salignus* was a new discovery. The old railway supported a large hybrid swarm of *Euphrasia arctica* × *nemorosa* and a rare toadstool, *Leptonia atomarginata*, was plentiful.

Further into the city at Knightswood, the canal speciality *Potamogeton* × *bennettii* was seen in quantity and the canal banks had abundant material for a diversion into *Solidago* taxonomy, forms of *S. gigantea* and *S. canadensis* sensu stricto being present. The nearby section at Clydebank has recently been shallowed and landscaped, destroying a formerly rich flora, but it was heartening to see *P. × bennettii* as the main recolonist.

At Cadder, an advance party kindly hauled out *P. trichoides* while the rest of us were still having lunch, but, apart from *P. × bennettii* again, no more notable aquatics were found. However the canal bank produced two surprising discoveries, *Rubus drejeri* (subsequently confirmed by A. Newton) and a single, large plant of *Nepeta cataria*.

There was too little time to appreciate the full richness of the canal flora but enough was seen to emphasise the considerable botanical importance of the Forth & Clyde Canal. It is distressing that its flora continues to be destroyed while conservation bodies show little effective interest.

A. J. SILVERSIDE

GRANGEMOUTH, STIRLINGSHIRE. 4TH SEPTEMBER

A party of 15 attended this joint meeting with the Glasgow Natural History Society. The object of the meeting was to explore the extensive areas of waste ground about the docks and beside the mouth of the River Carron. A century ago Grangemouth was a fairly prolific source of plant casuals and adventive aliens, but with the gradual decline in both volume of traffic and the use of stone ballast the variety of species has greatly diminished. Much of interest still remains to be found, however.

Before lunch the areas near the entrance of the docks were explored together with the muddy bank of the Carron, where estuarine conditions prevailed. On fairly dry, open, waste ground the most interesting species found included *Sisymbrium altissimum*, *Reseda luteola*, *R. lutea*, *Silene vulgaris*, *Sagina apetala*, *Erodium cicutarium*, *Pastinaca sativa*, *Convolvulus arvensis*, *Chaenorhinum minus*, *Senecio squalidus*, *S. viscosus*, and their hybrid *S. × londonensis*, *Carduus acanthoides*, *Poa compressa*, *Bromus sterilis*, *Avena fatua* and *Agrostis scabra*. A damp brackish depression produced a few plants of *Chenopodium rubrum*. The river bank yielded a selection of halophytes including *Spergularia salina*, *Atriplex littoralis*, *Salicornia* species (one of which was *S. dolichostachya*), *Aster tripolium* and *Puccinellia distans*. A prominent feature of the docks area was the abundance of the bramble *Rubus elegantispinosus*, a species recently detected in Britain and suspected of being a horticultural introduction. Other brambles seen in the area included *R. latifolius*, *R. nemoralis* and *R. leptothyrus*.

In the afternoon we turned our attention to a large area of grassy, waste ground, stretching towards the oil refineries. This was colonised in places by *Salix* scrub, and an interesting feature was the considerable tracts dominated by *Calamagrostis epigeios*. This extremely invasive grass had obviously increased greatly since our previous field meeting held here in 1969. In another place a small area was dominated by *Carex hirta*, while nearby was an extensive patch of *Carex acutiformis*. Casual introductions were scarcer here, but *Thlaspi arvensis*, *Linaria repens* and *Melilotus officinalis* were noted, also a sedge of the *C. muricata* group, which was subsequently determined as *C. spicata* by R. W. David. Towards the oil refineries some damper hollows provided variety with *Ranunculus sceleratus*, *Typha latifolia*, *Scirpus tabernaemontani*, *Carex otrubae* and *Phragmites australis*.

A. MCG. STIRLING

FRANCE

FONTAINEBLEAU, SEINE-ET-MARNE. 6TH-13TH JUNE

Twenty members attended this meeting in what is almost certainly the richest lowland forest of France; some 1200 vascular plant species have been recorded over the years in the Forêt de Fontainebleau, and more than half of this number was observed during the week's excursion, which was held in beautiful sunny weather.

In view of the very great interest and variety of habitats in the forest, it is not possible to give a proper account of the flora in this brief report, but it is hoped to do this more adequately at a later date.

The forest of Fontainebleau comprises a low plateau of Oligocene rocks in the south-eastern part of the Paris basin. By far the greater part of it is composed of Fontainebleau sandstones, producing a dissected plateau of sarsen-like boulders, sometimes forming ridges or inselbergs, elsewhere forming broad more level areas with karstic hydrological features. There are no streams; water percolates through the porous strata and emerges at spring lines round the edges, feeding the Seine or its tributaries; there are however boggy areas and even small lakes sitting on an impervious 'iron-pan' layer on parts of the plateau. While the acid sandy parts of the forest are very interesting, undoubtedly the richest floras occur on the thin limestones which occur either below the massive sandstone (Calcaïne de Brie) or, as relic outliers, on top of the sandstone (Calcaïne d'Etampes). These limestone areas display extraordinarily rich calcicole vegetation, including many rare British species of 'continental' distribution, such as *Pulsatilla vulgaris*, *Hypochaeris maculata*, *Veronica spicata*, *Silene otites*, *Scleranthus perennis* and many Orchidaceae, and also a very large number of European species that do not reach the British Isles, and are in some cases nearly or quite at their northern or western limits here; these include such species as *Peucedanum onoselinum*, *Seseli*

montanum, *Vincetoxicum hirundinaria*, *Teucrium montanum*, *Ranunculus gramineus*, *Helianthemum umbellatum*, *Amelanchier rotundifolia*, *Asperula tinctoria*, *Anthericum ramosum*, *A. liliago* and *Dianthus carthusianorum*. Perhaps most pleasure, however, was given to members by seeing very rare British plants in great abundance, such as *Ophrys fuciflora*, *Himantoglossum hircinum*, *Orchis militaris* and *Cephalanthera rubra*, and by the numerous *Orobanchae* spp., including the typical, white-flowered *Orobancha alba* on *Thymus*. The plant that gave the leader most pleasure was *Carex depauperata*, in fine condition and in some quantity, because this species is now reduced in the British Isles to a very few plants on a Somerset hedgebank.

The opportunity was taken, on both outward and return journeys to Fontainebleau, to sample the rich flora of the Normandy chalk slopes, where *Astragalus monspessulanus* (at its extreme northern limit) and many Orchidaceae were seen in plenty.

F. ROSE

