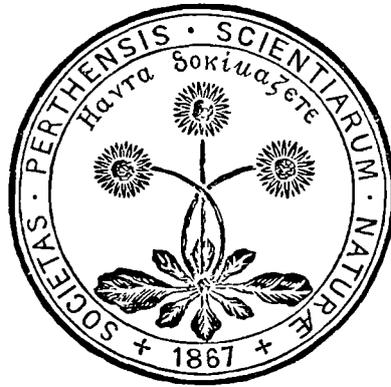


1989

P.S.N.S.



BOTANICAL SECTION

13

Bulletin

PERTSHIRE SOCIETY OF NATURAL SCIENCE - BOTANICAL SECTION

BULLETIN NO. 13

INTRODUCTION

I am particularly grateful to leaders for letting me have prompt reports of this year's field meetings, since I only managed to attend a couple of them myself. It has been another successful season and, now that Tetrads bashing for the Monitoring Scheme has ended, we have been able to survey more un- or under-recorded squares to fill in gaps for the new Perthshire check-list. This is now beginning to take shape, and the records for the first batch of species have been alphabetically processed.

On 24 September, a little late in the season as it turned out, we held a successful Fungus Foray, aimed at introducing plant botanists to the other vegetable Kingdom. A special article describes the 'proper way' to collect and examine fungi. Do not despair if it all seems at first too difficult. Remember this is the ideal, a thing to strive for, and take it step by step.

A successful and well-attended conference on 'Scotland's Threatened Plants', organised by the Botanical Society of Edinburgh, was held at Battleby on 14 October. Some of us attended, and for the benefit of others, a report of the proceedings has been included. A full record will be published in next year's volume of the Transactions of the BSE.

We record our thanks to landowners and occupiers for permission to enter their land, and to excursion leaders for guiding us safely through the hazards of the rough places, and checking and recording our findings.

BILL GAULD

MEIKLEOUR (NO 13 NE)

24 MAY 89

The year's first excursion, to Meikleour, by kind permission of Lord Landsdowne, although restricted to six members, turned out to be of unparalleled interest to the lucky few. Thanks to the high level of organisation by our Field Meetings Secretary, Margaret Macdonald, everything went well - except the weather, which became 'moist'.

We were guided by Douglas Henderson, the Head Gardener, to whom all thanks are due, through majestic Douglas Fir, various *Abies* species, European Larch, etc, past Rhododendrons and Azaleas ablaze with colour, Hornbeams, and Tulip Trees, down to the SSSI by the banks of the River Tay. The gravel banks, woodlands, and uncultivated meadows were the highlight of the evening, holding a great variety of plants including Lupins (mostly *L. polyphyllus*, a garden escape), Wood Millet (*Milium effusum*), Broad-leaved Meadow-grass (*Poa chaixii*), and Meadow Saxifrage (*Saxifraga granulata*). Pride of place for the evening must, however, go to the garden weed American Speedwell (*Veronica Peregrina*) - a new record for VC 89.

As light was failing we returned to the cars via the recently created pond with its attractive show of *Meconopsis*, *Primulas*, and *Helleborus*.

FREDDY FRENCH

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BALLOCH (NO 24 NE)

24 JUNE 89

Six members met at Bridge of Ruthven (NO 2920489), proceeded a mile or so westward by car, and then parked near Little Acre. After passing through a strip of VC 90 (Angus), where we did some recording for Adam Ritchie, the BSBI Recorder, we reached our objective, the nearby valley of the Kirkton Burn. The aim of the meeting was to try to relocate a number of interesting plants (eg *Eriophorum latifolium*, *Carex lasiocarpa*) previously recorded by Buchanan White at a marsh 'east of Alyth'. This we reckoned might be the Kirkton Burn marsh, or alternatively marshes on the Alyth Golf Course, to which the course manager would not give us access, understandably enough on a busy Saturday afternoon.

As it turned out we did not locate any of Buchanan White's records, but we did have a very good day, and found a number of interesting plants. Pride of place must go to Leslie Smith's spotting of Coral Root Orchid (*Corallorhiza trifida*), but other nice finds included Early Marsh Orchid (*Dactylorhiza incarnata*), Grass of Parnassus (*Parnassia palustris*), and Bladderwort (*Utricularia intermedia*). A total of 29 new records were made for the 5x5 km² quadrant, and it was agreed by all concerned to have been a very rewarding and interesting day.

Thanks to the Hon J.Duthac Carnegie, of Balloch House, who kindly permitted us access.

ROS SMITH

UPPER GLEN ARTNEY (NN 61 NE)

9 JULY 1989

Three energetic members met at the head of Glen Artney on a warm dry day to survey the Strath a' Ghlinne, by kind permission, of Drummond Estates. Most of the early part of the outing was by the sides of the stream, which had many small gorges and attractive cool and deep rock pools. Then we took to the well-maintained track to attain Coire na Cloiche, whose dry acid rocks proved to be of little botanical interest. We were, however, rewarded by the sight of a deer herd nearly 300 strong, with six stags in a separate party, and also a brief but satisfying view of a golden eagle.

Most of the plants seen were those typical of neutral and acid grassland and of stream-sides. Occasional richer flushed ground produced Broad-leaved Cotton-grass (*Eriophorum latifolium*), Wild Thyme (*Thymus praecox*), Yellow Mountain Saxifrage (*Saxifraga azoides*), Fairy Flax (*Linum catharticum*), and Quaking Grass (*Briza media*). A total of 148 species was recorded for the quadrant 61 NE.

R.E. THOMAS

BULLETIN NO.13

MILLEARN and INNERPEFFRAY (NN 91 NW)

16 JULY 1989

A small group of members met for an afternoon outing to record the flora of the River Earn bank by Millearn and then to visit Innerpeffray Wood, by kind permission of their respective owners.

The Millearn policies had many interesting planted tree species, to the particular delight of Freddie French, including fine specimens of Corsican Pine (*Pinus nigra*), a curious jagged-leaved Lime, a walnut-like tree which I subsequently keyed out to a Hickory (*Carya glabra*), and a range of difficult Willow species. The ground flora was quite rich, with Meadow Cranesbill (*Geranium pratense*), and Giant Bellflower (*Campanula latifolia*), white and blue, in showy stands. Near the river were a few clumps of Wood Club-rush (*Scirpus sylvaticus*), and a large patch of the introduced Pick-a-back PLant (*Tolmiea menziesii*).

On the other hand Innerpeffray Wood was very acid, with a limited flora. Some of the 'wetter' plants, such as Marsh Pennywort (*Hydrocotyle vulgaris*), will be lucky to survive intensive drainage operations. By contrast there seemed to be an abundance of different birds.

A total of 170 species was recorded for the quadrant 91 NW.

R.E.THOMAS

GLEN LOCHAN (by GLEN QUAICH) (NN 83 NW)

30 JULY 1989

Seven members met at Amulree and drove up the estate track to Lochan a' Mhuilinn, by kind permission of Glen Quaich Estate. Before lunch we mainly recorded in the damp ground west of the lochan; here the flora is dominated by sedges such as Beaked Sedge (*Carex rostrata*), with several clumps of Marsh Cinquefoil (*Potentilla palustris*), providing a colourful contrast. Lunch was taken near the watershed where we photographed four fully-open flowers of Knotted Pearlwort (*Sagina nodosa*).

We returned on the south side at a much higher altitude. At first the rocks were very dry and of a hard schist, with typically Goldenrod (*Solidago virgaurea*), though Holly Fern (*Polystichum lonchitis*), was not uncommon. The most productive area was a very steep damp gully on the west side of Craig Grianain, which shelters several calcicoles such as Green Spleenwort (*Asplenium viride*), Hairy Rock-cress (*Arabis hirsuta*), Yellow Mountain Saxifrage (*Saxifraga azoides*), Purple Saxifrage (*S. oppositifolia*), and Mossy Saxifrage (*S. hypnoides*), plus a striking display of deep-red Rosebay Willowherb (*Chamerion angustifolium*). We descended carefully in a brief heavy shower but were soon dried again by the warm sun. In all that area of quadrant 83 NW now has a list of 165 species.

R.E.THOMAS

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CARIE (NN 65 NW)

13 AUGUST 89

This was an all day affair to record in a relatively unrecorded 5 km square on the south side of Loch Rannoch, based round Carie Farm (NN 617572) with the permission of Mr James Menter, to whom we record our thanks. After knocking off the common species along the roadside, the party of six examined the rocky shore of the Loch where we discovered several areas of base-rich influence above the 'high-tide' mark. These held Lesser Meadow-rue (*Thalictrum minus*), Common Toadflax (*Linaria vulgaris*), Alpine Bistort (*Polygonum viviparum*), Globeflower (*Trollius europaeus*), and, rather more widely distributed, Sea Plantain (*Plantago maritima*) and Northern Bedstraw (*Galium boreale*).

The unimproved pasture around the farm was disappointing, but by the road bridge over the Allt Bogair we discovered Hop (*Humulus lupulus*), Welsh Poppy (*Meconopsis cambrica*), Tansy (*Tanacetum vulgare*), and Imperforate St John's-wort (*Hypericum maculatum*), as well as an unidentified *Geranium*. Regrettably Tansy and Imperforate St John's-wort are more lowland species, Hop is unknown as a native elsewhere in Perthshire, and Welsh Poppy is an introduction, so we were forced to conclude that these four species must have been planted.

The day was concluded with a rapid trot round the conifer plantations in an attempt to notch up a few more species - unfortunately despite our very best efforts we were unable to find any Lesser Twayblade (*Listera cordata*) which was our main endeavour.

In all we recorded almost two hundred species which was ample reward for those hardy souls who had left home that morning in the pouring rain in the expectation that the weather would be better near Loch Rannoch. Astonishingly, apart from the occasional squall, indeed it was.

NEALE TAYLOR

ARABLE WEEDS (NO 34 SW)

19 AUGUST 89

A group of seven members gathered under threatening skies at the car park in Meikle to record arable weeds. We had permission from two farmers - Mr Clerk, South West Fullarton (NO 302443), an organic farmer, and Mr Patullo, Langlogie (NO 312457), a couple of miles north-east of it, so we decided to split into two groups to maximise our coverage of the flora.

Ros Smith went to South West Fullarton, which in the event was rather disappointing, with none of the expected interesting weeds. However we also took in an old railway line and eventually managed to add 32 new records to the 5 km square card, before calling it a day - and just before we got absolutely soaked to the skin!

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The Langlogie square was completely unrecorded and a total of 109 records were made here by the party led by Neale Taylor. Again there were no unusual weed species, although Goat's-beard (*Tragopogon pratensis*), a species local in Perthshire, turned up on a roadside. Fiddleneck (*Amsinckia intermedia/lycopsoides*) was locally common in some of the fields as it was on South-west Fullarton. The canalised Dean Water was disappointing with only Purple Willow (*Salix purpurea*) and Wood Club-rush (*Scirpus sylvaticus*) of any note. This party finished by accidentally conducting a botanical raid into Angus on the old railway line, finding Restharrow (*Ononis repens*), Annual Pearlwort (*Sagina apetala*), Small Toadflax (*Chaenorhinum minus*) and Goat's-beard before realising their mistake. (I understand a report was made to the VC Recorder.- Ed.)

ROS SMITH and NEALE TAYLOR

FUNGUS FORAY - PADDOCKMUIR WOOD (NO 22 SW)

24 SEPTEMBER 89

Six of us met on a bright Sunday afternoon at Gallowflat Farm (NO 210210), where, by kind permission of the farmer, we left all but two cars, in which we drove gingerly along the very rough track to the RSPB Caravan. There we found a field worker filling plastic drainpipes with peanuts, strictly for the blue-tits, for which nesting-boxes had been provided throughout the wood. Paddockmuir Wood, owned by the Forestry Commission, lies alongside the Tay just above the reed-beds. It is an oakwood interspersed with other trees, broadleaved and coniferous, the whole gone completely wild, and so a promising site for fungi. It was, we found, heavily infested with Honey Fungus (*Armillaria mellea*).

The wet weather, following on the warm drought, had brought out the fungi, and it had been a magnificent year for field mushrooms, but at Paddockmuir the best was clearly over, and many specimens were too far gone to identify. We were immediately confronted by a *Russula*, probably *vesca*, then a puff-ball, *Bovista nigrescens*, by the colour of its interior. Other identifications included the Deceiver (*Laccaria laccata*) and the Amethyst Deceiver (*L. amethystea*), Sulphur Tuft (*Hypholoma fasciculare*), Zoned Polypore (*Coriolus versicolor*), *Diatrype disciformis* - a black wart on dead beech (No common name, unless Freddy French knows one), Oyster Mushroom (*Pleurotus ostreatus*) which is being grown commercially in Tayside and is sometimes available in the shops, and *P. lignatilis*, a small white version of the Oyster, on dead beech, Candle-snuff Fungus (*Xylaria hypoxylon*), Orange Peel Fungus (*Aleuria aurantia*), Watery Milk-cap (*Lactarius cunicularius*), Fly Agaric (*Amanita muscaria*), and Grey Coral Fungus (*Clavulina cinerea*). There were many small *Mycenas* in the grass, but we did not try to identify the species, nor that of a *Collybia* we found, beyond identifying it as a Tough-shank. We also found a black Earth-tongue (either *Geoglossum* or *Trichoglossum*), but did not take a specimen home to examine it properly.

In spite of the absence of edible fungi, and of the over-mature state of many of the fungi growing the wood, we had a good day, and learnt a little more about the fascinating world of the fungi.

BILL GAULD

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THE COLLECTION AND EXAMINATION OF FUNGI

At Paddockmuir we used two books. The first was the Collins Guide, handy-sized, with a long but fairly manageable 'key'. The book was adapted from a Danish original, and omits many species found in northern Britain. To some extent the key relies on microscopic characters, eg of spores. Second, we had the Pan Roger Phillips, covering many more species, but too large in format for easy management in the field. It has a one-page key, designed to direct you to the appropriate picture pages.

At the Battleby conference Roy Watling, not for the first time, criticised those who, like us, identified fungi 'out of picture books'. He went on to say that one of great virtues of Mycological societies was that, ever since their foundation, they had made a point of rigorously identifying and recording all the fungi found at each meet. From these detailed records it was possible to spot trends in the distribution and frequency of species over the years. He urged everyone going on fungus forays to maintain these high standards.

The officially approved procedure for collecting and examining fungi is set out in the '*British Fungus Flora, Vol.1 - Agarics and Boleti: Introduction*' by Henderson, Orton, and Watling, RBG, Edinburgh, HMSO, 1969. (This volume contains various key to fungi, down to genera, but they depend to a considerable extent on microscopic characteristics. Unfortunately the series had not been completed. I have only the first two volumes). Dr Watling has also produced his own book '*Identification of the Larger Fungi*', Hulton, 1973. This, while excellent for reference at home, is not so useful in the field, as it relies very much on microscopic characteristics, and lists only selected representative species.

The process is divided into three parts:-

Collection

"A few good specimens are infinitely better than several poor ones. - - - Always try to select specimens showing all possible stages of development from the smallest buttons to the largest caps. - - - Carefully dig up or cut from the substrate the entire fungus and handle as little as possible. The associated plants should be noted, especially trees, and if one is unable to identify the plants or woody debris retain a leaf or a piece of wood for later identification. One should note in a field-notebook any features of interest, such as smell, colour, changes on bruising, presence of a hairy or viscid surface. For transporting home the specimens should be placed in tubes, tins or waxed paper which are themselves kept in a basket [or a garden trug]. - - - Plastic bags are not suitable.

Macroscopic Examination

"Select a mature cap from each collection, cut off the stem and set the cap gill-edge down on white paper, or, if the specimen is small, on a microscope slide in a tin. A drop of water placed on top of small caps is essential to prevent drying out. - - - In this way a good spore print can be obtained after one to twelve hours. - - - While this is taking place, write full notes on the observable features; - - - All characters which change on drying *must* be noted - colour, texture, stickiness, shape, smell, taste. - - - It is very useful for future comparison always to note the characters of cap, stem, gills, flesh, etc. in the same order. - - - Carry out macrochemical tests at this stage - - - .

Microscopic Examination

"When one is more experienced with fungi it will be found necessary to carry out many microscopic observations, but when commencing the study it is necessary only to have an ordinary student's microscope; a calibrated eye-piece micrometer is an advantage as is an oil-immersion lens. An examination of the spores is always necessary; the examination of features such as the sterile cells on the gill and stem, etc, varies with the fungus under observation."

Reagents

Seven microchemical reagents and ten macrochemical reagents are listed, to be made up fresh at the start of each collecting season. Our new Field Secretary, Leslie Smith, who is an industrial chemist, will be able to advise on the advisability of amateurs dabbling in these. I have not used them myself.

Conclusion

While it is necessary to know the proper procedure, and do one's best to follow it, one should not be put off by the complications. Go out and enjoy collecting fungi, even if you rely mostly on the 'picture books'. Always take complete specimens, in good condition, and note exactly where they were found and on what. Note changes on bruising. Sniff and note the smell, but don't taste unless you are sure it's not none of the poisonous kinds. Don't ever take a fungus home to eat unless you are trebly sure you have got the identification spot on, and preferably checked by someone more expert than yourself. (And ALWAYS keep fungi for eating quite separate, in a different container, from the others) If people want identification sessions, with microscopes available, this can be arranged.

BILL GAULD

SCOTLAND'S THREATENED PLANTS

Some Section members attended an all-day conference on Scotland's threatened plants organised by the Botanical Society of Edinburgh at Battleby on 14 October. The auditorium at Battleby was almost full, the conference was most successful, and the Society is to be congratulated on its initiative in putting it on.

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After Dr Phil Smith, the Society's President, had set the scene, Mike Scott, naturalist and broadcaster, spoke on losses and gains to Scotland's flora. It was important to conserve plant communities, not just to think of individual rarities. He suggested a suitable 'logo' for plant conservation would be the unique pattern of lochans in the Flow Country. Next Terry Keatinge, NCC, dealt with mires and mosses, pointing out that Great Britain held c.13% of the total world resource of these habitats in middle latitudes. Apart from forestry, they were threatened both by large scale extraction of peat for fuel and horticulture - both of which uses contributed significantly to the 'greenhouse effect' - and by small scale activities such as muirburn, drainage, the enrichment of ground by grazing and trampling, and even by aerial pollution. Dave Mardon, the Warden of Ben Lawers, described the protection of montane willow scrub, contrasting Scotland with Norway. The long term solution would be to take hill sheep off large areas. To round off the morning Professor Raven, of Dundee, dealt with the coastal fringe, and the coming problem of rising sea levels.

In the afternoon the theme was the monitoring of changes. Our old friend Nick Stewart, Conservation Association of Botanical Societies, spoke on cryptograms - 70% of European bryophytes occurred in Great Britain, and many were unique to our island. Dr Roy Watling, RBG Edinburgh, said that 30% of Britain's larger fungi were mycorrhizal, that is associated with the root systems of trees and other higher plants, and it has been estimated that in the Netherlands 28% of mycorrhizal species are threatened. As our forests become better managed, much less dead timber lies around for the 'wood-rotters' to break down and recycle, and they are becoming scarcer. Imogen Crawford, NCC, dealt with the machairs of the Outer Hebrides, threatened by agricultural development and by the encroaching sea. Dr Jim Dickson, of Glasgow, said that some rare orchids, eg Broad-leaved Helleborine (*Epipactis helleborine*) had been found as weeds in Glasgow city gardens, a disused coal-bing deserved to be classified as an SSSI for harbouring some great rarities, and a bog in Easterhouse, threatened by development as a 'coup', was a site for Bog Rosemary (*Andromeda polifolia*).

The final section was on practical initiatives. Mr Planterose described the re-establishment of trees on an RSPB reserve in the North-west, and the founding of a commercial nursery for native tree species at Duart, and Dr Wilcox, of Aberdeen, the efforts of the University to provide a sanctuary for threatened plants.

Professor Charles Gimingham summed up what everyone felt to have been a most successful day. He stressed the vital importance of educating the general public, and ended on a note of sturdy optimism about the Government's plans for the future organisation of conservation. The proposed National Heritage Agency could be turned into a source of strength for conservation in Scotland.

BILL GAULD

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