

# B.S.B.I. NEWS

Sept. 1987

No. 46

Edited by R. Gwynn Ellis

Dept. of Botany, National Museum of Wales

Cardiff CF1 3NP



AN ESSEX CHURCHYARD del. PAT DONOVAN ©1987

(SEE P. 27)

ADMINISTRATION

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- your membership number is on the address label of your mailings).

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- ELECTED COUNCIL, in order of seniority, Rule 10 : Dr T.A. Cope; Mr E.F. Greenwood;  
Dr N.T.H. Holmes; Dr J.R. Akeroyd; Dr C.J. Cadbury; Mr H.J. Noltie; Lady Rosemary  
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Gale.
- REPRESENTATIVES ON COUNCIL, Rule 11 : Mr S. Beesley (Ireland); Mr H.J. Noltie  
(Scotland); Mrs J.A. Green (Wales).
- Representing N.C.C. by invitation : Mrs J. Robertson.
- Minuting Secretary in attendance : Miss E.J. Rich.

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CONTRIBUTIONS INTENDED FOR

BSBI NEWS 47

should reach the Editor before

30th OCTOBER 1987

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DIARY

This new section has been included to draw members attention to important dates and deadlines for events which are mentioned in more detail elsewhere in this issue; it is intended to supplement the BSBI calendar and not to replace it.

September 1987

26th: SHNH conference on 'Natural History at Liverpool and the Australian Connection', see p. 32

October 1987

4th: Close of exhibition 'Parks for the People', Manchester, see p. 33  
30th: Deadline for copy for BSBI News 47  
31st: Deadline for details of field meeting to Bulgaria, 1988, see p. 31  
Deadline for applications to exhibit at Annual Exhibition Meeting, London

November 1987

7th-8th: BBS weekend taxonomic workshop, see p. 33  
28th: Annual Exhibition Meeting, London, see Important Note on admission below & 'Help' on p. 4  
30th: Deadline for 1987 Monitoring Scheme records, see p. 6

January 1988

5th-7th: Meeting of Amenity Grass Research, see p. 33  
8th-12th: Celebration meeting of Societa Botanica Italiana, see p. 5

March 1988

5th: CABS/FFPS Symposium on 'Is Nature Conservation Working for Plants?', see p. 34

July 1988

15th-22nd: BSBI/RHS Symposium on 'The Common Ground of Wild and Cultivated Plants', see p. 32  
25th: Lapland Journey - In the Footsteps of Linnaeus (to August 8th), see p. 35

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NEWS FROM THE BRITISH MUSEUM (NATURAL HISTORY)  
AND  
IMPORTANT NOTE FOR THE ANNUAL EXHIBITION MEETING

Many members will be aware that, since April 1987, the Natural History Museum has had to introduce an admission charge to ordinary members of the public wishing to visit the Museum galleries. This has been essential to bridge the gap between the funding provided by the government and the resources required to maintain and develop services to education and science.

BSBI members wishing to make use of the Herbaria and Library, Mondays - Fridays, will not be required to pay the admission charge. They should inform the staff on duty at the door that they are visiting the Museum to work in the Department of Botany and they will be admitted without further formalities. If they are coming for a meeting with a particular member of staff, the name of the colleague involved can be mentioned. (As in the recent past, visiting the Herbaria to work on Saturdays has to be by previous arrangement.) Two new lifts on the right-hand side of the Main Hall were opened in April for the use of the public. These will make access to the Botany Department much easier and, at second floor level, the lift exit is adjacent to the entrance to the British Herbarium.

Special arrangements are necessary for the Annual Exhibition Meeting in November. When you receive your notice of the meeting, [with this issue of BSBI News, Ed.] you will find incorporated in it a members admission ticket to the Exhibition Meeting. **Bring this with you and show it to the Admission Officer on duty and you will be admitted to the meeting free of charge.** Spouses or other family members, who have been accustomed to coming to the meeting with members of the Society, will also be admitted under this ticket. You will not be admitted free without the ticket - so don't leave it at home. **YOU HAVE BEEN WARNED!**

JOHN CANNON, Keeper of Botany, British Museum (Nat. Hist.), Cromwell Road, LONDON SW7 5BD

**ADDITIONAL NOTICE FOR ANNUAL EXHIBITION MEETING  
'HELP'**

This regular exhibit is designed to give informal assistance with identification of awkward specimens, without embarrassment to either party. They are displayed anonymously and all are invited to make suggestions about their identity (also anonymously if preferred). It is particularly helpful for incomplete specimens such as odd fruits or foliage gathered when the flowers are not available, but all-comers are welcome. Slides and photographs can be displayed.

There is no need to book for this exhibit, just bring your problems along early on the day. Alternatively you can send them in advance to me at the address below.

SEAN KARLEY, 30 Harrowden Road, WELLINGBOROUGH, Northants NN8 3BH

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**CORRIGENDA CORNER**

For the benefit of members, it has been decided to publish here, the Corrigenda slips for Sedges of the British Isles and Willows and Poplars of Great Britain and Ireland. Copies for 'pasting in' are still available from Oundle Books (see BSBI News 45: 35 (1987)).

**Sedges of the British Isles**

The key on page 37 has been amended in the text.

Replace dichotomy 24 on page 37 by:

- |          |   |                    |
|----------|---|--------------------|
| 24a(14)  | Body of utricle distinctly winged for at least part of its length     | 24A                |
| 24b      | Utricle unwinged, except sometimes narrowly so on the beak            | 25                 |
| 24Aa(24) | Middle spikes entirely male; terminal or upper spikes entirely female | <b>10 disticha</b> |
| 24Ab     | Middle spikes male at top, female below; terminal spike entirely male | <b>9 arenaria</b>  |

- |                        |   |
|------------------------|---|
| p. 70 l. 12            | for infl. read spike.   |
| p. 78 l. 6             | for 1-4 mm read 1-4 cm.                                       |
| p. 80 l. 10            | for 3-8 cm read 3-8 mm.                                       |
| p. 98 l. 7             | for 1-3 mm read 1-3 cm.                                       |
| p. 104 l. 3            | delete comma after 1-2 mm.                                    |
| l. 4                   | for 2-4 mm read 2-4 cm.                                       |
| p. 106 last l. but one | delete C. curta,.   |
| p. 114 l. 13           | for 3-10 mm read 3-10 cm.                                     |
| p. 178 l. 12           | insert mm after 4-5.  |
| p. 192 l. 4            | insert - between 1.5 and 2.                                   |
| p. 264                 | insert digitata L. <b>49</b> after diandra Schrank <b>3</b> . |

**Willows and Poplars**

- |                   |  |
|-------------------|--|
| p. 118 l. 6       | for grey-sericeous read grey-pubescent.                                |
| p. 122 l. 3       | for 2-6 cm wide read 2-6 cm long, 1-3 cm wide.                         |
| p. 129 in heading | for <b>S. repens L. Salix</b> read <b>S. repens L. = Salix</b> .       |
| p. 132 in heading | for <b>S. viminalis L. Salix</b> read <b>S. viminalis L. = Salix</b> . |
| p. 144 l. 25      | for many read may.   |
| p. 182 l. 8 up    | for Female read Male.  |

EDITOR

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**EDITORIAL**

Peter Sell tells me that as a result of his note in BSBI News 45: 30 (1987) he has now obtained Cyril West's copy of Pugsley's Prodromus. He would also like to apologise if his comments in that note caused offence to members of the Kent Field Club and to Maidstone Museum.

**Rear-end** : Will my involvement with railways never cease?

One February night after a BSBI Council meeting in London, I was invited to Chris Preston's 21st birthday party (or a multiple thereof). This started in a pub near the Council meeting, and it was a very merry group that eventually ended up in a Malaysian restaurant in the West End. The wine and food flowed freely (not to mention a few bowls after the curry!) and it was not until 11.30pm that I remembered that I had a train to catch at 12 midnight. No problem my fellow guests said, "We'll get a taxi". At a quarter past midnight we eventually arrived at the station - by tube! My last train had of course long since gone, my two companions made sympathetic noises (they were by then almost incapable of coherent speech), then ran like hell (or at least like inebriated rabbits) to catch their train to Reading; leaving me stranded in a not quite deserted station. The hours that followed left an indelible impression on me; it was one of the coldest nights of the winter and I, and a few rather suspicious-looking companions, spent quite a lot of the time with our butts perched uncomfortably on a ledge above a hot air vent. Sleep was impossible, not only because of the cold, but also because of the presence of the aforementioned companions, who looked quite capable of relieving me of all that I possessed without so much as a by-your-leave (I soon wished JRA had left me his knob-kerrie). But the night eventually passed off without undue incident apart from the odd invitation to "warm yourself up dearie" (rejected, I hasten to add) from a passing 'person of the night', the sex of whom was rather indeterminate.

The reason for this rambling discourse is to explain the occasional reference in these pages (and elsewhere) to a certain 'Paddington Bear'!

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#### HON. GENERAL SECRETARY'S NOTES

**Congratulations** to Prof. Douglas Henderson, retiring Regius Keeper of the Royal Botanic Garden, Edinburgh, on his appointment as Queen's Botanist in Scotland. This position, which has been vacant for some years, was created in 1699.

We send our congratulations too to Prof. John McNeill, B.Sc., Ph.D., also a BSBI member who has been at the University of Ottawa, Canada, on his appointment by the Queen to the post of Regius Keeper of the Royal Botanic Garden, Edinburgh.

Congratulations too to the 'Societa Botanica Italiana' celebrating its centenary in January 1988.

The Italian Botanical Society was founded in Florence on January 8, 1888, and can be considered the ideal continuation of the Florentine Botanical Society, which was active between 1716 and 1783 and which was the first of its kind. The Italian Botanical Society has continued the botanical tradition of the 1800's as well, and in particular the initiative of Filippo Parlatore, who in 1844, founded the 'Giornale Botanico Italiano'.

Today the Italian Botanical Society is divided into regional sections and work groups; publishes two magazines: the Giornale Botanico Italiano and the Informatore Botanico Italiano; and organizes annual scientific conferences, botanical excursions and other activities dedicated to the various sectors of botanical research and environmental problems.

A celebration meeting will be held in Florence on January 8-12, 1988. Further details from: Societa Botanica Italiana, via La Pira, 4 - 50121, FIRENZE, ITALY.

If any member has a spare copy of Planting Native Trees and Shrubs by Gillian and Ken Beckett, Jarrold 1975, I would be very pleased to hear from them. This is now out of print, but of much practical use to groups currently planning to plant trees. An extra copy to lend to the advisory bodies would be much appreciated.

#### **Warburg Memorial Fund**

Two Reports of expeditions have been received from recipients of Warburg Memorial Fund grants. Paul Wilkin and Oliver Phillips with the Cambridge Tambopata Flora Study Group on ethnobotany in Amazonian Peru comment that in general their projects were successful, in spite of collection being limited by failure to obtain an export permit from the Peruvian Agriculture Ministry. Paul Wilkin says "we all had an extremely enjoyable and productive time in Peru, and a short view of the tropical forests has played an important part in my botanical education". They thank us again for the support of the Warburg Fund, saying that "the opportunity to work in Peru helped us on our part II botany degrees - as well as in our general education". Oliver Phillips who has since joined the BSBI, is hoping to study

for his Ph.D. on the use of medicinal plants by indigenous people in South America.

Adrian Newton went on the Anglo-Chilean Patagonian Expedition which explored the western edge of the Southern Patagonian Ice-cap, and Adrian tells us that "botanically the trip was a fantastic success!".

Both these Reports will be displayed at the Exhibition Meeting on November 28th.

We are grateful to the family of the late Mrs Beryl Hammond of Wiltshire who, because of the pleasure that she had derived from being a member of this Society since 1963, arranged for a collection for BSBI to be taken at her memorial service.

Two prospective new members wrote expressing their feelings for botany as "having had an incurable interest in wild plants since childhood..." and "...this newly found potential passion." I hope that both will join and will also derive pleasure from being associated with us.

#### Living up to its name

Field observations are always welcome as an invaluable supplement to Flora descriptions. Frances Abraham sent with her 1986 West Sussex records this graphic description of finding **Cardamine impatiens**:

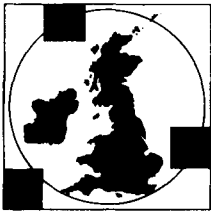
"Two plants in the hedge on the corner directly opposite Iron Pear Tree Farm. I found these plants in an amusing way - I stepped into the hedge to avoid a car and was quite startled by a flurry of popping sounds. Cardamine was firing off its pods and I suddenly realised why it is called impatiens."

#### Tail-piece - Is this a Record?

An illustration of part of a Dwarf Fan Palm, used to publicise an exhibition on technical and natural history illustrations, was captioned: **Chamrop Humilus**. As Mike Mullin pointed out, five errors in two words - quite a total; six if you add the missing authority for **Chamaerops humilis** L.

MARY BRIGGS, White Cottage, Slinfold, HORSHAM, West Sussex RH13 7RG

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## B.S.B.I. MONITORING SCHEME

Telephone: (office hours)  
Abbots Ripton (04873) 381  
(outside office hours)  
Peterborough (0733) 49398

Biological Records Centre,  
Monks Wood Experimental Station,  
Abbots Ripton, Huntingdon,  
CAMBRIDGESHIRE PE17 2LS.

Well, I'm quite amazed at the amount of squares being bashed - it seems as if half of Britain and Ireland are zipping round our selected 10km squares and tetrads. I've already received nearly 1000 cards with many super records including two possible hybrids new to the British Isles. Keep it up!

During the winter we will be entering all this year's data onto the computer. In order that we can summarize the records by the start of the next field season (Easter '88), please send completed cards to the v.c. recorders so they reach me by **30th November at the latest** - we will not guarantee to incorporate cards received here after that date. Please write legibly and check grid references. If you're not sure who to send cards to, I can pass them on. I've heard of a number of cards 'missing' after BSBI field meetings - if they're not sent in I'll come and scatter **Cardaria** seeds in your garden!

## Monitoring Scheme

### Whitsun Hunt (cf BSBI News 45: 12 (1987) for those who missed it!)

Fortunately nobody was sent to Rockall for taking the Whitsun Hunt too seriously, and the entries I've had are listed below in order of the species totals recorded for each of England, Ireland, Scotland and Wales. To calculate the winners, these totals were handicapped by dividing the species recorded by the figure given in fig. 3 of the Atlas (this figure indicates the approximate number of records for the square - hence compensating for different species richness).

| ENGLAND  | Square  | Total no.<br>of species | Handicapped<br>score |
|--|---------|-------------------------|----------------------|
| Mrs F. Le Sueur, T. Brown, A. Falla, J. Goode<br>and M.L. Long | 90/6.5  | 228                     | 22.8                 |
| Miss R. Murphy and Mrs L. Waldren                              | 20/1.7  | 166                     | 55.3                 |
| Mr and Mrs G.G. Graham   | 45/2.5  | 146                     | 24.33                |
| T. Rich  | 53/1.4  | 127                     | 42.3                 |
| C. Boon  | 52/1.5  | 118                     | 23.6                 |
| R.G.B. Roe   | 31/3.3  | 108                     | 21.6                 |
| I. Green   | 31/3.3  | 87                      | 17.4                 |
| M. Peet  | 53/4.7  | 83                      | 20.75                |
| F. Lammiman  | 54/1.0  | 83                      | 20.75                |
| M. Kitchen   | 31/6.9  | 6                       | 1.2                  |
| IRELAND  |         |                         |                      |
| Mrs S. and J. Reynolds   | H11/3.4 | 146                     | 73                   |
| S. Beesley   | H34/1.4 | 124                     | 41.3                 |
| S. Beesley, R. Field and Miss E. Maharg                        | H33/4.8 | 82                      | 27.3                 |
| Miss H. Megaw  | H33/4.8 | 43                      | 14.33                |
| SCOTLAND   |         |                         |                      |
| Mrs M. Martin and Mrs J. Muir                                  | 38/3.8  | 168                     | 42                   |
| B. Thompson  | 27/1.0  | 163                     | 40.75                |
| D. Welch   | 38/3.2  | 105                     | 52.5                 |
| A. Stirling and Miss A. Rutherford                             | 25/1.8  | 103                     | 34.3                 |
| Mr and Mrs J.K. Butler   | 29/7.4  | 81                      | 40.5                 |
| WALES  |         |                         |                      |
| M. Porter  | 32/0.2  | 147                     | 36.75                |
| Miss A.C. Powell and Mrs P.M. Wilson                           | 32/0.5  | 87                      | 17.4                 |

Congratulations to the winners who are therefore Rose Murphy and Lindsey Waldren, Sylvia and Julian Reynolds, David Welch, and Mike Porter, who should have received their prize copies of The Botanists. As at New Year, Jersey came out top of the lot on species recorded, whilst Mark Kitchen defends his deliberately chosen wooden spoon saying "Well one was **Puccinellia rupestris**!"

We are still desperately in need of help with far-flung corners of Scotland and Ireland - if you visit these areas on holiday please do some recording for us, and either the National Co-ordinators or I can suggest all sorts of places to go if you need a little prompting.

Apologies if news of the Monitoring Scheme is somewhat brief - that's because it's the middle of the field season and I've only managed to record in 38 of the selected 10km squares so far...!

TIM RICH, BSBI Monitoring Scheme Organizer, Biological Records Centre, Monks Wood Experimental Station, Abbots Ripton, HUNTINGDON, Cambs. PE17 2LS

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### JUST THE WEATHER FOR DUCKWEEDS?

Those of you enjoying recording in the most typical of British summers (long sunny days without a cloud in the sky... ha, ha) will not be surprised to learn that members of the British Ecological Society have also been troubled by soggy field notes (by 'soggy field notes' I don't mean habitat cards from marshy meadows!). After his notes and enthusiasm

## Monitoring Scheme

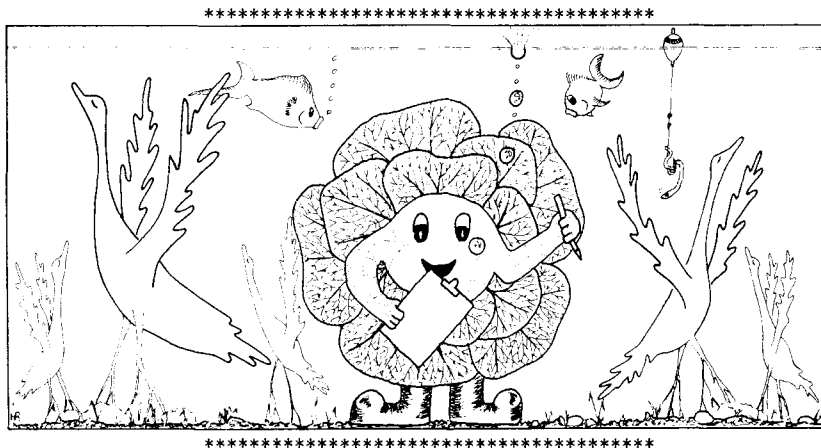
for our climate had been dampened yet again last year, Dr M.R. Young 'poured' his heart out to the BES (BES Bulletin 18(1): 29 (1986)) and asked how others solved the problem - 'any wet ideas?'

The solutions which flooded in (I think I mean undissolved field notes!) proved generally practical ('A soggy response' BES Bulletin 18(2): 79 (1987)) and I thought would help us keep afloat too. Tape recorders, pressure-sensitive pads, a glass-bottomed vehicle (originally designed for Monitoring Scheme recording in the Lion park in Durham, to set the record straight) were all suggested, but the winner (and best of the lot in my opinion) was 'waterproof' paper (available from Aqua Scribe, Hawkins and Manwaring, Westborough, Newark, Notts. NG23 5HJ) and pencils. After christening a notebook of such paper on one especially unsunny Monitoring Scheme meeting in May, I was instantly converted and was soon happily singing in the rain (ie making notes through films of water). The waterproof paper works completely submerged too - the ideal thing for Ireland where I gather it rains so much water flows up hill! Other products are also suggested in the original response.

The only drawback is the price - alas, too high to print species cards on the stuff. I suppose the cost of notebooks could be diluted by bulk purchase though?

Thanks to Dr M.R. Young and the British Ecological Society for permission to use the original article.

TIM RICH, Biological Records Centre, Monks Wood Experimental Station, Abbots Ripton, HUNTINGDON, Cambs. PE17 2LS



### RICH WITH HUMOUR

The last dynamic, fact-packed News  
Took pains unusual to enthuse  
Its readership brave, skilled, and keen  
In BSBI's Monitoring Scheme

Strong armed with safety rules, let's dare  
Approach, explore, our chosen square.  
Sharp searching eyes a-twinkle, too,  
At Tim's hilarious points of view!

Apart from writing epic verse, I would like to become more involved in the Society's... er... affairs, and offer my services as a referee for the following group:

**Female Botanists** Only well-grown specimens please. Fresh material preferred. Return postage welcome, but I don't promise to use it...

BRIAN WURZELL, 47 Röstrevor Avenue, Tottenham, LONDON N15 6LA



RECORDERS AND RECORDING

Amendment No. 5 to Vice-county Recorders, December 1985

**New Appointment:**

v.c. 91 Kincardines. Mr & Mrs E.L. Birse, 6 Woodburn Gardens, ABERDEEN AB1 8JA, have been appointed and we welcome them as Recorders.

**Change of address:**

v.c. 1 W. Cornwall. Keith Spurgin, 4 Dereham Terrace, TRURO TR1 3DE

MARY BRIGGS, Hon General Secretary

DAVID J. McCOSH, Hon. Secretary, Records Committee

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HYBRID BLUEBELLS

It is not generally appreciated that probably the majority of bluebells grown in gardens are hybrids.

**Hyacinthoides hispanica** (Mill.) Rothmaler x **H. non-scripta** (L.) Rothmaler is a naturally occurring hybrid. It has also been created artificially and commercially exploited.

Known in the trade as the Spanish Bluebell, it is vigorous and fertile, often increases rapidly in small gardens, and surplus bulbs are frequently consigned to 'the wild'. In some urban areas it is becoming more widespread than the English Bluebell. The colour is predominantly blue with shades of pink, purple and white occurring to a lesser degree. The true Spanish species is not often seen.

Set out below are the main differences between the species and the most widely observed intermediate.

| <b>H. hispanica</b>   | <b>H. non-scripta</b>   | <b>H. hispanica x<br/>H. non-scripta</b>                             |
|---|---|--|
| Leaves (usually) broad  | Leaves (usually) narrow   | Leaves (usually) broad   |
| Inflorescence not l-sided, flowers erect or spreading, erect in fruit | Inflorescence l-sided, drooping at the tip, erect in fruit                  | Inflorescence not l-sided, flowers usually spreading, erect in fruit |
| Perianth segments widely spreading, flowers becoming saucer-shaped    | Perianth segments parallel-sided below, flowers drooping, appearing tubular | Perianth segments moderately spreading, flowers bell-shaped          |
| Tips of perianth segments not reflexed                                | Tips of perianth segments distinctly reflexed                               | Tips of perianth segments turned outwards, scarcely reflexed         |
| Anthers blue  | Anthers cream   | Anthers blue, often cream in white and pink flowers                  |

K.W. PAGE, 10 Cannonside, FETCHAM, Surrey KT22 9LE

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VARIEGATED ARCHANGELS

Following our exhibits of **Galeobdolon** at the 1986 Scottish and London Exhibition Meetings (**BSBI News 45: 45** (1987)) several people have asked for further details. A full account is in preparation, dealing with the different kinds naturalized in Scotland, but in the meantime the following notes should assist in determining the species most likely to be encountered during the monitoring scheme.

Confusion is most likely to arise between variegated forms of **G. luteum** subsp. **montanum** and a misunderstood and consequently overlooked species, **G. argentatum** Smejkal. Both are tetraploids, 2n=36. The diploid **G. luteum** subsp. **luteum** can probably be ignored for our

purposes; it is very rare in the British Isles, and we do not know of any variegated form, though a puzzling plant found in Kirkcudbrightshire by Mrs O.M. Stewart has proved to be diploid.

**G. luteum** Hudson subsp. **montanum** (Pers.) R. Mill.

This may be encountered with varying degrees of variegation, either among normal, native populations or as an introduction. Some older English county floras mention variegated forms and, recently, Mrs I. Weston has sent us material with markings from Lincolnshire. In Scotland both variegated and unvariegated forms occur in scattered localities, usually long-established in estate policies, in some of which it has persisted since the late 19th century. The general effect of the foliage is nettle-like, especially of the flowering shoots, and the variegation takes the form of silvery-white patches or flecks on the leaves.

**G. argentatum** Smejkal

This recently described species (Smejkal, 1975) is now commonly offered for sale by nurseries and garden centres as a ground-cover plant, usually labelled 'Lamium galeobdolon variegatum'. Its aggressive and invasive nature soon necessitates reduction of its spread, and when thrown out the discarded material readily roots down and, if undisturbed, rapidly forms extensive patches. It is frequently found near modern housing estates. It is a more robust plant than **G. luteum** subsp. **montanum** and its leaves are broader with the toothing more even and crenate. The variegation is most distinctive, particularly in the winter months when, in addition to the silvery-white markings, a strong chocolate-brown zone develops along the midribs and extends into the main side veins of the leaves. In summer the brown colour disappears, the variegation generally becomes much duller, and the deep green of the foliage changes to pale yellow-green. The origin of this plant is obscure. It is known only in cultivation or as an escape.

It will be noted that, for reasons which it is unnecessary to discuss here, the name **Lamiastrum** has been discarded in favour of the older **Galeobdolon**.

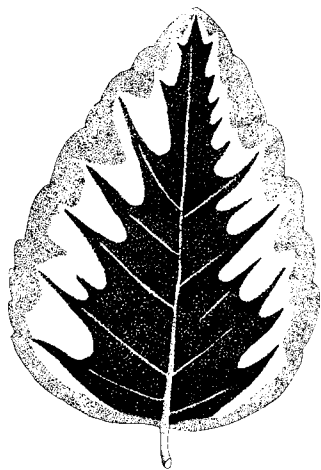
The more important differentiating characters of the two species may be summarised as follows:

**G. argentatum**

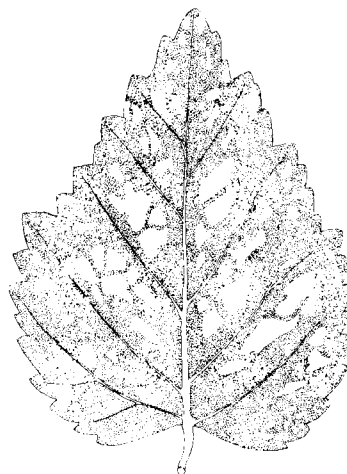
Lower leaves of procumbent shoots broadly ovate, margins shallowly crenate-dentate, coloured brownish-maroon along the midrib and lateral veins in winter; splashed metallic silver-white.

**G. luteum** subsp. **montanum** 'variegatum'

Lower leaves of procumbent shoots more narrowly ovate, margins rather sharply and irregularly dentate, nettle-like; not developing brownish-maroon zone in winter; marked with silver-grey splashes or flecks.



1cm  

**G. argentatum**

Leaves of sterile shoots del. H. Reynolds

**G. luteum** subsp. **montanum** 'variegatum'

**Reference**

Smejkal, M. (1975) *Galeobdolon argentatum* sp. nov. ein neuer Vertreter der Kollektivart  
*Galeobdolon luteum* (Lamiaceae): *Preslia* 47: 241-248.

We would be grateful for any information concerning the introduction of Smejkal's plant to Britain. It would seem to be about the late 1960s. We would also be pleased to comment on any material of *Galeobdolon* sent to us.

ALISON RUTHERFORD, Moniaive, 19 South King Street, HELENSBURGH, Dunbartonshire G84 PU7

A. McG. STIRLING, 17 Austen Road, GLASGOW G13 1SJ

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**THE TRADITIONAL COUNTY FLORA  
SOME NEW WAYS OF PRESENTING THE RECORDS**

The latest development in county Flora writing seems to be to dispense with the publishing of individual records altogether. This is all very well if at least one Flora of the county has appeared already and the basic and primary task of itemising what has ever been recorded where and by whom - and critically assessing this - has been carried out once and for all with an adequate degree of thoroughness. But there are still many counties which have not yet had the good fortune to have their floras reported on in that essential preliminary amount of detail. 'First generation' Floras, in the classic mould, are thus likely to go on being written for a good time yet and there will surely continue to be more than a few authors who will choose to adhere to the pattern that has long been conventional.

In view of this, it may be worthwhile drawing attention to one or two modifications to that pattern which I have taken the opportunity to introduce in my recently-published Flora of the Isle of Man. I had expected that when that came to be reviewed these modifications would have provoked some comment; but as that has not turned out to have been the case, it is necessary to have recourse to these pages to repair the omission.

The innovations are fourfold:

1. Multiple status categories. It has long been conventional to employ the status classification devised by H.C. Watson in an unimaginatively procrustean manner, assigning each species to one ('best') category only. If it is regarded as 'native', that word and that alone is allowed to appear, regardless of whether it is also a 'colonist' or a 'denizen' in some of its occurrences. In reality, many species are of course of dual or even multiple status and it is surely only right that the text should reflect this. The switch to a multiple system was originally made in a handlist I produced for the Manx Museum in 1970, and subsequently the British Museum team followed my example in their Flora of Mull.
2. Districts based on cardinal points. Writers of county Floras have traditionally, and very sensibly, divided up their area into a series of districts, under which locality records can be grouped more manageably and for easier reading. It has been customary either to name these districts after the rivers with whose basins they tend to be substantially coterminous or simply to assign numbers to them. Neither of these procedures, however, is altogether satisfactory. Those unfamiliar with the county will be able to visualise where on the map a particular record belongs only after using the Flora continually. If, however, the districts are named after the cardinal and sub-cardinal points, and indicated by their respective letters, that drawback is immediately overcome. The Isle of Man lends itself to subdivision on such a basis perhaps exceptionally well, by reason of its general shape and the broad correlation it exhibits within its compass between climate, terrain and geographical position. It is hard to believe, however, that other counties could not be divided up - or at any rate have their districts renamed - in a similar way without undue difficulty.
3. Age-differentiation of records. There is clearly a lot to be said for distinguishing in the text between 'recent' (say, post-1950) records and those made at an earlier date. A simple way of doing this which, surprisingly, I seem to have been the first to hit upon is to indicate the authorities for one set of records by citing only initials and those for the other set by citing only surnames, thus enabling the two categories to be told apart at a glance. Alternatively, of course, they could be distinguished by means of different type-faces, but that would presumably be prohibitively expensive.



*Anthyllis vulneraria* L. subsp. *vulneraria* del. Olga Stewart © 1987

4. Listing of second and subsequent recorders. In many, perhaps most, county Floras only the first person to record a particular plant in a particular locality is cited (though a mystifying '!' is conventionally used to indicate it has also been seen there by the author, either before, simultaneously or since). For some strange reason it has come to be regarded as superfluous to print the names of subsequent discoverers. Admittedly, some of these may have been put on to the locality by its original finder(s) and are thus hardly deserving of credit; but equally some may be genuine rediscoverers, valuably proving a plant's persistence. Clearly, a list of all the people who have recorded the plant at the spot in question would be unwieldy and tedious as well as too expensive to print. But it is possible to go some of the way towards repairing the omission by indicating at least second recorders and using 'etc' to indicate finds by different people on three or more occasions. This at once shows up localities that are relatively well-known (and in which the plant is probably most readily to be found) and provides a usefully greater measure of continuity over time.

It would be interesting to have the reactions of other county Flora writers - and users - to these four innovations.

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#### ANTHYLLIS VULNERARIA L. (KIDNEY VETCH)

This note brings to the attention of BSBI members the various subspecies and varieties of **Anthyllis vulneraria**. All the British and Irish taxa are shown in the accompanying illustrations (pp. 12, 14 & 15)

**Anthyllis vulneraria** subsp. **vulneraria** var. **vulneraria** is the most common variant, and is found all round the coast, and inland on calcareous soils throughout the British Isles. A red-flowered variety, var. **coccinea**, is a rarity on the coasts of Cornwall and Wales. The much-branched var. **langel** has a coastal distribution from Cornwall to Durness, Sutherland. These varieties usually have appressed hairs on the stem and leaves.

**A. vulneraria** subsp. **lapponica** has somewhat spreading hairs, especially on the calyx, and is found on the coasts and mountains of Scotland, southwards to E. Lothian and Renfrews. Subsp. **corbierel** has distinctly spreading hairs all over the plant, and is rare on the coasts of Anglesey and Cornwall.

The two non-natives are **A. vulneraria** subsp. **polyphylla** and **A. vulneraria** subsp. **carpatica** var. **pseudovulneraria**, which have been introduced with crops or grass seed. The former subspecies has been found on roadsides around Inverness and in Fife, but the latter has a wider distribution, with well scattered records in England and Wales; it has also been seen in Scotland in v.c.c. 73, 95, 106 and 107.

John Akeroyd is preparing a paper on the distribution of taxa of this variable plant in Britain and Ireland. He would be interested to hear of the rarer subspecies and varieties found in new localities, and would be pleased to examine specimens. (Dr J.R. Akeroyd, Botany Department, Plant Science Laboratories, Reading University, PO Box 221, Whiteknights, READING RG6 2AS).

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#### A CAUTIONARY TALE

From time to time one hears of plants recorded well outside their normal range, this creates considerable interest until one discovers that they were in fact planted in the new locality.

I well remember getting very excited over the discovery of **Helianthemum apenninum** on a cliff in Gower (v.c. 41). A paper was duly published, and it was not until a year or so later that we learnt that the species had been transplanted from Breaun Down in Somerset by a local botanist. He also turned out to be partly responsible for the 'spread' of **Matthiola sinuata** from its main Glamorgan site at Jersey Marine near Swansea to some of the nearby dune systems.

Details of another example have just come to light in Scotland. A certain lady (now



*Anthyllis vulneraria* L. subsp. *corbieri* (Salmon & Travis) Cullen and *lapponica* (Hyl.) Jalas  
del. Olga Stewart © 1987



*Anthyllis vulneraria* L. subsp. *polyphylla* (DC.) Nyman and *carpatica* (Pant.) Nyman  
del. Olga Stewart © 1987

deceased) transplanted **Primula scotica** from Dunnet Head, Caithness to Tarbat Ness, Ross-shire (GR NH/947.876) in the 1960's, because she liked the plant. When she discovered that botanists were excited about the presence of this species so far south, she was too embarrassed to own up, but always felt guilty about it. Ursula Duncan in her Flora of East Ross-shire (1980), states that the species is now believed to be extinct in that locality, and it is useful now to be able to put the record straight.

My thanks to Julian Clokie for providing this information on **Primula scotica**.

Are there any other examples of this sort that should be brought to members' attention?

EDITOR

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### SURVEILLANCE OF ALIEN WATER WEEDS

Concern has been growing that certain species of alien water weed such as **Crassula helmsii** have been spreading across the British Isles and, as well as posing a threat to indigenous species, could become a menace to navigation and land drainage. The Biological Records Centre has kindly agreed to collaborate with the authors to collate data on a number of such species in order to determine the extent of their distribution, rate of spread and other autecological information which could be useful in their management.

The species included within this project are underlined in the text, with distinguishing features or identification keys provided where appropriate.

**AZOLLACEAE** Azolla filiculoides Lam.

#### HYDROCHARITACEAE\*

##### A. **Elodea, Lagarosiphon, Egeria**

1. Leaves spirally arranged; often recurved Lagarosiphon major (Ridley) Moss  
Leaves verticillate or opposite; rarely recurved . . . . . 2
2. Male spathes 2- to 4-flowered; petals much longer and wider than sepals; leaves in whorls of 4-5 and frequently 25-40mm long Egeria densa Planch  
Male spathes 1-flowered; petals narrower than sepals or nearly as wide; leaves in whorls of 3 (rarely 4) and usually less than 25mm long . . . . . 3
3. Sepals of female flowers 1-1.8mm long; male flowers breaking free and rising to the water surface; leaves less than 2mm wide Elodea nuttallii (Planch) St. John  
Sepals of female flowers 2-3.5mm long; male flowers not breaking free; leaves usually at least 2mm wide (if narrower then often more than 15mm long) . . . . . 4
4. Leaves usually c. 10 x 2mm, oblong-linear, rounded at the apex; sepals of female flowers 2-2.7mm long Elodea canadensis Michx.  
Leaves up to 25 x 2.5mm, gradually tapered to the acute apex; sepals of female flowers 3-3.5mm long Elodea ernstiae St John  
(E. callitrichoides auct., non. (Rich.) Casp.)

##### B. **Vallisneria**

Leaves all uniform, submersed, ribbon-shaped and occasionally spirally twisted, toothed margin especially near leaf tip, longitudinal veins extending to the apex. Flowers borne at base of leaves under water Vallisneria spiralis L.  
(Leaves of two or more possible forms, the submerged ribbon- or strap-shaped leaf, straight or arching but never spirally twisted, never toothed, longitudinal veins not all extending to the apex. The floating or emergent leaves, when present, lanceolate to sagittate. Flowers borne above water on emergent stem Sagittaria sagittifolia L.)

#### LEMNACEAE

3 veins in each frond, 3-5mm in length, dark green, opaque. The frond apex is usually rounded and without a point. The upper surface is usually smoothly rounded Lemna minor L.

1 vein in each frond, 1-3mm in length, pale green, translucent. The frond apex is obtuse usually with a slight, but distinct point. The upper surface has a longitudinal ridge often visible to the naked eye as a pale line L. minuscule Herter.

These and other characteristics are provided by Leslie, A.C. & Walters, S.M. 1983; The occurrence of Lemna minuscule in the British Isles. Watsonia 14: 243-248.



**APONOGETONACEAE**

**Aponogeton distachyos** L. is readily identified when flowering, bearing a forked cluster of white flowers. The floating leaves can be distinguished from those of **Potamogeton natans** L. and **P. polygonifolius** Pourr. by the cross veins which are not so obvious in the latter species.

**HALORAGACEAE\***

1. Upper bracts pinnatisect, with capillary segments
  2. Emergent leaves sparsely glandular; hermaphrodite flowers usually present; fruit smooth **Myriophyllum verticillatum** L.
  2. Emergent leaves densely glandular; hermaphrodite flowers absent (in Europe female only); fruit finely tuberculate **M. aquaticum** (Velloso) Verdcourt (**M. brasiliense** Cambess)
1. Upper bracts simple, entire or serrate
  3. Stamens 4; uppermost emergent leaves simple, entire or toothed (like the bracts) **M. heterophyllum** Michx
  3. Stamens 8; all leaves pinnate
    4. Leaves in whorls of 3; bracts broadly ovate to elliptic, serrate or subentire; flowers all hermaphrodite; ripe nutlets longitudinally ridged and tubercled on the inner face **M. verrucosum** Lind.
    4. Leaves mostly in whorls of 4; upper bracts narrowly ovate to lanceolate, entire; some flowers unisexual; ripe fruit smooth or rugose but not tubercled on the outer face
      5. Spike short (less than 3cm) and drooping at tip at first; upper flowers often alternate, not whorled; leaves with 6-18 capillary segments **M. alterniflorum** DC.
      5. Spike usually more than 4cm long and erect throughout; all flowers whorled; leaves with 13-35 capillary segments **M. spicatum** L.

**CRASSULACEAE** (pers. comm. H. Dawson)

Rarely exceeding 8cm in height with flowers sessile in the leaf axils

Up to 40cm in length, flowers are produced on pedicels 2-8mm  
**Crassula aquatica** (L.) Schonl.  
**C. helmsii** (T. Kirk) Cockayne

The submerged stems of **C. helmsii** might be mistaken for **Callitriche**. **C. helmsii** leaves are connate at the base and acute at the tip whereas in **Callitriche** the tips are emarginate to spanner-shaped.

Other aquatic aliens which have been recorded for the British Isles but which have never presented any problems are **Sagittaria rigida** Pursh, **Pontederia cordata** L. and **Hydrilla verticillata** Royle.

If you have any records you wish to contribute to the database, they should be sent to either Max Wade (**Elodea**, **Egeria**, **Lagarosiphon**, **Vallisneria**, **Crassula**, **Aponogeton**) or Owen Mountford (**Azolla**, **Lemna**, **Myriophyllum**). In addition to location, habitat and date, a note of accompanying species, an estimate of the depth of water the plant was found in, management of water body and other pertinent information would be most useful. Specimens for checking would also be acceptable.

\* Adapted from Flora Europaea

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 OWEN MOUNTFORD, Institute of Terrestrial Ecology, Monks Wood Experimental Station, Abbots Ripton, HUNTINGDON PE17 2LS

[If the article by Stephanie Pain ('Australian invader threatens Britain's waterways', New Scientist July 23 1987) is to be believed then the sooner someone finds a culinary use for **Crassula helmsii** the better; perhaps our botanical gourmets can come up with some appetizing recipes - or how about pigmyweed wine! Ed.]

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CABBAGE PATCH - II

WHAT-A-CRESS?  
OR  
HOW TO DO NASTURTIIUM R. BR.

Once you know them and provided you have ripe fruit, watercresses aren't too tricky. This note sets out how I do them as most literature accounts seem either inadequate or misleading.

I cannot determine the species without ripe fruit, or in the case of the hybrid (i.e. *Nasturtium officinale* x *microphyllum*), a well-developed, ±sterile inflorescence. Plants are plastic vegetatively and cannot be done from leaf shape or size. I haven't been able to investigate the green/brown-purple foliage characters properly, and I find the 'anthers dehiscing inwards/outwards' character difficult to see, let alone assess. Fruit curvature and pedicel characters are useless, and whilst *N. officinale* usually has seeds in 2 rows in each loculus and 'good' *N. microphyllum* seeds in 1 row, *N. microphyllum* may have seeds in 2 rows too, especially at the base of the fruit (fig. 1).

What to look at, and when

I. MATURE FRUIT

Fig. 1 shows *N. officinale* has short, fat fruits and *N. microphyllum* long skinny ones. The inflorescence of the hybrid elongates like mad with only aborted or irregularly-developed fruits; these rarely reach 1cm and have many undeveloped ovules and few good seeds in each loculus.

Measure both length and width of mature fruits - a low-power binocular plastic ruler should give sufficient resolution. Length is measured from the base of the valve to the tip of the persistent style. Width here is measured in the middle of the fruit, not necessarily the widest part.

About 5 healthy mature fruits from the lower half of the first main inflorescence should be selected. Obviously, fruit are mature when the seeds are brown and the valves drop off, but before they are ripe, be careful, fruits continue to fatten after they've stopped elongating; hence make sure they are consistent in both length and width.

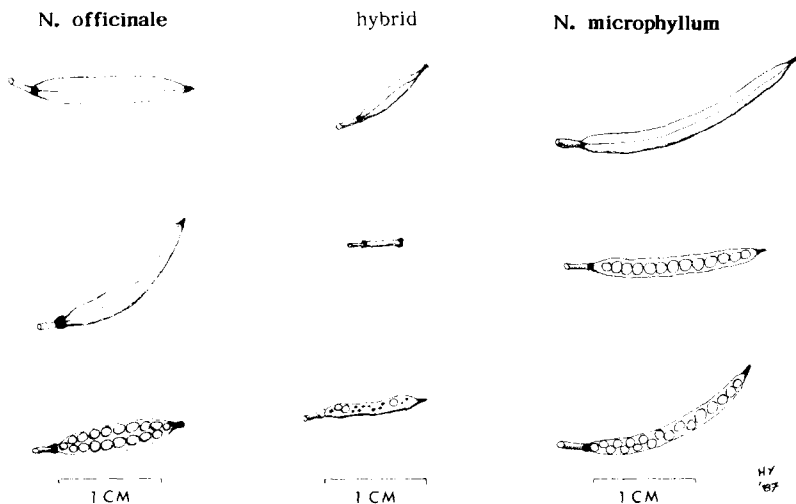


Figure 1. Ripe fruit of *Nasturtium* taxa selected to show variation.

2. SEEDS

The seed surface sculpturing is the most instantly diagnostic character but isn't easy to see without a microscope (typical isn't it?). *N. officinale* has seeds with relatively few, large depressions on the surface, whilst *N. microphyllum* has many small ones. What few seeds are produced by the hybrid are intermediate.

The sculpturing is caused by the collapse/dehydration of the seed's outer layer of cells, and is most easily observed on ripe brown seeds. Using a x10 lens it is possible to see the large distinct depressions of *N. officinale* but not the tiny ones of *N. microphyllum*. With a x20 lens and an eye of faith, depressions of both can be seen and their relative sizes assessed. Under a microscope the differences are much clearer.

Unripe green seeds still have turgid outer cells and the 'sculpturing' can't be made out with a lens. Even under a microscope, the light needs to be right to distinguish the outer layer from the 2nd layer (whose cells are all small).

The difference in sculpturing is best quantified by counting the number of depressions passed through on a scan across the width of a seed (a method suggested by Prof. C.A. Stace). This is considerably quicker and easier than counting the total number of surface depressions, which in any case usually depart markedly from ranges copied uncritically in most Floras. Fig. 2 shows the frequency distributions of depressions counted for seeds of the two species. Again, count at least 5 seeds to get the variation.

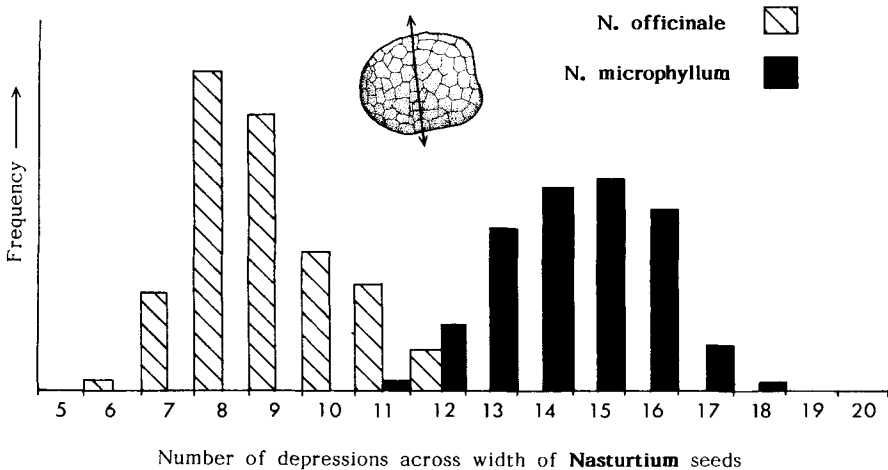


Figure 2. Barchart showing frequency distributions of the number of depressions across the width of *Nasturtium* seeds.

KEY

1. Fruits to 10(-11)mm long, aborted or dwarfed with 0-3(-4) seeds per loculus  
*N. officinale* x *microphyllum*
1. Ripe fruits (9-)11-23(-24)mm long, well-formed with many good seeds 2
2. Ripe fruits (9-)11-19(-24)mm long x (1.6-)1.9-2.7(-3.0)mm wide; seeds with (6-)7-12 depressions across width *N. officinale*
2. Ripe fruits (15-)16-23(-24)mm long x (1.0-)1.3-1.8(-2.0)mm wide; seeds with (11-)12-18(-20) depressions across width *N. microphyllum*

These measurements are based on about 20 collections; no doubt there is more variation present but this should give you a good start to naming material. I'm prepared to have a go at any troublesome specimens, but I don't claim to be able to do every plant!

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**ALLIUM AMPELOPRASUM L. var. BABINGTONII (BORRER) SYME - II**

With reference to the note by A.H. Aston in *BSBI News* 45: 31 (1987), the spathe in **Allium ampeloprasum** and its close allies protecting the young inflorescence evidently consists of two fused bracts prolonged into a flattened rather long beak. Usually the spathe separates as a whole from the scape by a horizontal split all round its base and is cast off entirely by the expanding umbel; such a spathe is described as 'deciduous' in contrast to the persistent spathe valves in many species. Occasionally in bulbil-bearing forms the spathe may split longitudinally into two persistent valves, an abnormal happening not mentioned in Floras. William Borrer (1781-1862) noted this as long ago as 1847 when describing var. **babingtonii** as a new species in *English Botany*, Suppl. 4: t. 2906 (1847): "The spathe has a linear compressed point sometimes two inches long. It sometimes falls off in one inflated calyptiform piece and sometimes splits into two unequal pieces which are often persistent."

The terms 'few-flowered' and 'many-flowered' are relative. **A. ampeloprasum** without bulbils may have up to a thousand flowers in the umbel and is thus undoubtedly many-flowered. Var. **babingtonii** with maybe a hundred or so flowers arising out of its numerous bulbils is thus few-flowered by comparison with this but many-flowered by comparison, for example, with **A. triquetrum**.

At least eight European species and six non-European species of **Allium** are known to include variants with bulbils replacing some or all of the flowers in the umbel. Young plants arising from bulbils have a flying start over seedlings and by reason of their food supply escape hazards endangering a germinating seed. In the wild, colonies of limited extent can arise from such bulbils, but the weight of bulbils deprives them of the wide dispersal effected by seed. Man-made conditions favour such bulbiferous variants by providing opportunities for colonization; human activity has carried some of them far outside their natural range. Thus the Caucaso-Iranian **A. paradoxum** in its bulbiferous variety (var. **paradoxum**) distributed by botanic gardens has become naturalized in many places in Europe. Crow garlic, **A. vineale**, is probably of Balkan origin but by means of profuse bulbils somewhat like grains of corn is now a widespread agricultural weed. Both it and **A. ampeloprasum**, as their names imply, probably started as weeds of vineyards and were introduced into new localities among the soil attached to the roots of vines.

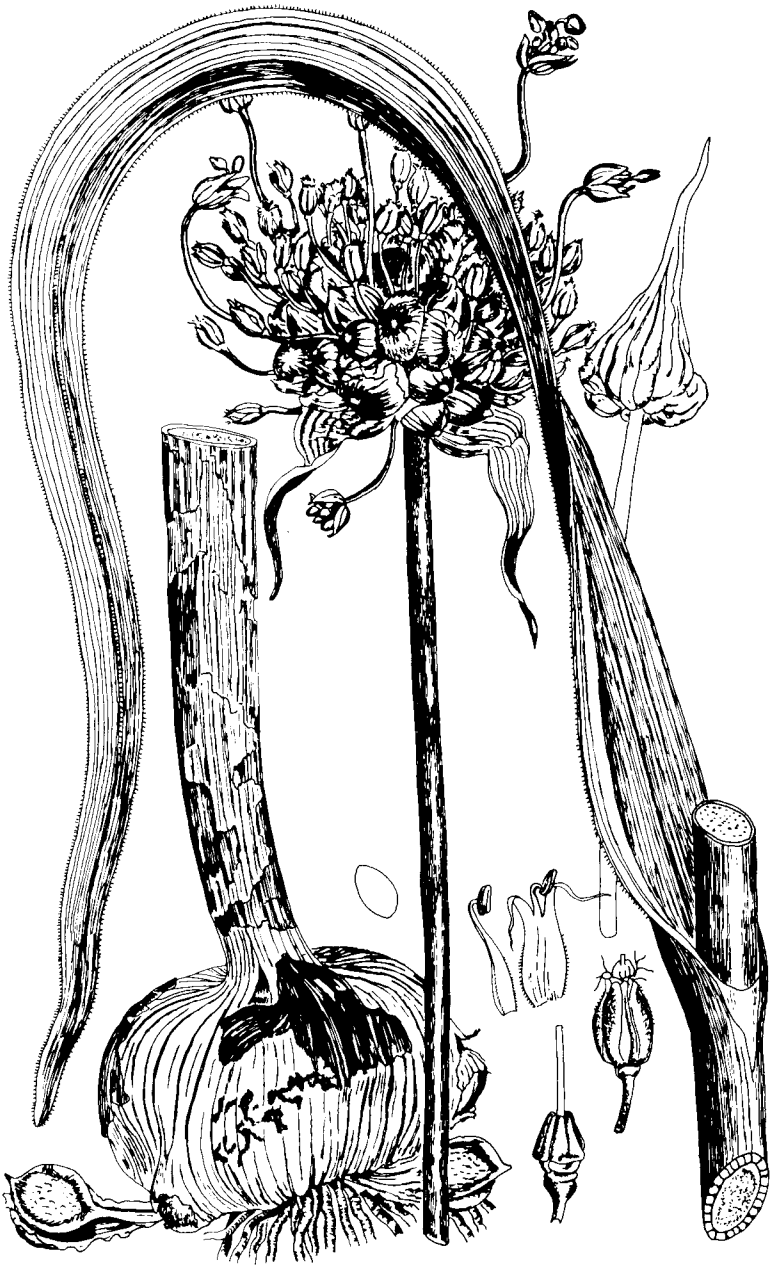
Bulbiferous forms of **A. roseum** are much more common than the non-bulbiferous normal form. Species capable of producing bulbiferous varieties in one area can produce them independently in other areas; if parent stocks differ, e.g. in chromosome number, so will their bulbiferous offspring. This is undoubtedly true of **A. roseum**. The bulbiferous variants of **A. ampeloprasum** and **A. scorodoprasum** may owe their northern localities to former but now forgotten culinary use.

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**MICROCOMPUTERS FOR BOTANISTS - II**

I write as a dedicated, though I trust unbiased, user of Acorn and BBC microcomputers. Richard Pankhurst is of course quite right when he draws attention to the two major shortcomings of the BBC micros - their small memory and lack of compatibility with the IBM PC range (see *BSBI News* 45: 16 (1987)). For many purposes these restrictions do not matter at all; it is when we come to handling really large data sets, really long programs and programs written in non-BBC Basic that we meet with problems. It is possible to upgrade most BBC machines (with a 512K co-processor running under DOS Plus for approximately £270) to a high degree of IBM PC compatibility - the question will be whether the outlay is justified in contrast to the purchase of an entirely new system which would be totally compatible. Very many workers in educational establishments are already working with BBC machines, are used to programming in BBC Basic, and might well wish to extend their existing systems to include the many commercial applications available, hard disc access etc. rather than start all over again. Indeed the present investment in BBC micros is such that I would like to see far more support given to them where it is appropriate, rather than joining the general computer press in running down the Acorn system by persisting in claiming them to be out of date and being in immediate need of replacement. Fashions change: for instance the smaller, more robust and more convenient 3.5 inch discs used on the BBC Master Compact are now becoming increasingly



*Allium ampeloprasum* L. var. *babingtonii* (Borrer) Syme del. H. Reynolds  
(based on the illustration in English Botany, Suppl. 4: t. 2906 (1847))

popular on a wide range of micros, though this was not the position a few short years ago. I would also draw attention to the danger of regarding colour displays as being automatically beneficial - in my opinion (biased?) they are not necessarily so; white on black, green on black etc. are perfectly satisfactory for displaying data, keys, many kinds of graphics uses etc. - they are even advantageous in that they concentrate attention on the technical matter in hand without the distractions of super-dazzling auroras all over the screen. And, a bonus, they can be used with much less expensive monitors.

If Richard Pankhurst is right and his own advice becomes out of date in one (or at maximum two) years - then we would really benefit by knowing more of how he thinks this will come about, as this could materially influence would-be purchasers in their decisions. We cannot necessarily wait that long before we make our choices.

But these points apart, no amount of dedication to BBC micros or cunning programming will get round problems such as restricted memory for large data sets or databases, and BSBI members must indeed decide whether to expand existing BBC systems, or whether to start afresh with IBM PC compatibles (or carry out more ambitious projects on mainframe computers?); and if you must use a program written in non-BBC Basic, then you obviously have to expand or buy anew.

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**P.S.:** The unrevealed competitor to the BBC Micro would appear to be the Acorn RISC (Reduced Instruction Set Computer). Of course it could as easily be yet another new standard to be established by IBM, but either way I believe my comments remain valid. I simply cannot visualise all BBC computers vanishing into limbo overnight. D.H.B.

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#### A DISTRIBUTION MAP PLOTTING PROGRAMME FOR IBM COMPATIBLE MICROCOMPUTERS

A Microsoft QuickBasic program has been developed on an IBM compatible PC to allow simple distribution maps, showing presence/absence in 10km, 5km, 2km or 1km squares of the National Grid, to be plotted on an outline map of England, Wales and Scotland. Any part of the outline can be selected by positioning a pair of cursors at two opposite corners of the desired rectangle and the selected area is then rescaled to fill the screen. The only limit on this 'zooming in' process is the resolution of the outline. The 100km grid can be superimposed over the image and it is possible to identify any particular 'dot' by positioning the cursor over it and pressing the '?' key.

Output can be obtained on a dot-matrix printer using the PC's 'PrtSc' facility, but this produces rather low quality results. Much better quality can be achieved using a plotter which recognises Hewlett-Packard Graphics Language commands. The image shown on the screen is automatically scaled to fit either A3 or A4 paper. On the screen only two symbols are available - either an open or closed circle, but on the plotter up to four pen colours and four levels of shading can be used. The pens to draw the titles, the outline, and the 100km grid can also be independently selected.

Input consists of a DOS text file containing any mixture of 2, 4 or 6 figure grid references in normal (eg. NZ1265) or numeric (eg. 45/1265) format. (If 2 figure grid references are specified (eg. NZ16) then no symbol is plotted if anything other than 10km square symbols are selected.) Each grid reference is followed by a single digit (0-9) indicating the symbol to plot. The input file can be written by another program or entered manually using a suitable editor or wordprocessor (eg. Wordstar in non-document mode).

The program was developed on Compaq machines and has been successfully tried on an Amstrad PC. It should run on any IBM compatible PC with a suitable high-resolution (640x200) graphics card. The only plotter used so far is an Hitachi 672. Further information is available from the author.

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[I hope to include examples of the maps produced by these different computer programs in the next issue. Ed.]

## DISTRIBUTION MAPPING WITH THE AMSTRAD PC1512

A distribution map plotting program has been developed for the Amstrad PC1512 and is currently being used in the Montgomeryshire Flora Project. The program, which includes a Coincidence Mapping facility, is written in a generalised way and is available for other Flora projects. The program will also run on other IBM compatible PCs fitted with an IBM or Hercules graphics board.

The data requirements for the program are fully compatible with those for a similar program written for a mainframe computer which allows access to plotters suitable for producing high quality products for publication. Further information is available from the author.

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## IDENTIFYING PLANTS WITH MICROCOMPUTERS

Two years have passed since my last note on the subject, and in the computing world, that is a long time. The current wave of IBM compatible micros are significantly different from the earlier BBC-B's because there is now at last plenty of memory for running a complete range of identification programs, including key construction. All the programs in the so-called 'PANKEY' package now run on IBM/PC and similar machines, including the AMSTRAD PC1512. The popular ONLINE program has been improved; the latest versions now accept numerical characters directly. The older version for the BBC is still available, but the new versions are much faster and better and can tackle many more species. Datasets now available for British plant groups are:

### Euphrasia

**Rubus** in Scotland

\*Grasses (vegetative)

### Carex

**Hieracium** (70 commoner species)

\*\*Orchids

Ferns and fern allies (in preparation)

\* Corresponds to the punched card key by Pankhurst and Allinson from the Field Studies Council.

\*\* Exists also with colour graphics, for Enhanced Graphics Adaptor (EGA) only

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## NOTES AND ARTICLES

### CAREX VESICARIA L. AS SHOE-HAY IN LAPLAND

In Lapland the traditional choice of winter footwear is reindeer-skin boots lined with shoe-hay in preference to socks. Shoe-hay is still worn today on the nomadic trails in winter, and an important item of Lappish family economy is the cutting and preparation of sufficient **Carex vesicaria** in late summer to last through the following winter. Jan-Olov Winka, Director of the Lappish Museum at Samegarden, Tarnaby, Sweden, has described the cutting of the **C. vesicaria** for shoe-hay. The sedge blades are cut close to the ground, and gathered into small hand-held sheaves, that are knotted to keep the blades together.

Back home they are beaten against a tree trunk, then combed with a shoe-hay comb until only threadlike fibres remain. These are dried on the washing line and finally plaited for storage. For use, the long plait is shaken out and a 'nest' of hay made in the shoe; this is held firm while the foot is slipped snugly inside - (not as easy as it sounds; practice would be required for comfort, as we were to discover!). In the evening, when the Lapp takes off his winter shoes, he pulls out the shoe-hay, carefully straightens it and hangs it to dry for the coming day, turning the boot inside out to dry also.

Shoe-hay is called Sennagrass too, linking this with the Lappish name Sennaland for the

regions of marsh, lakes and streams where *Carex vesicaria* is dominant. The selection of habitat for the harvesting of the sedge is of great importance - that growing among willows in semi-shade by water is the best. *Carex vesicaria* growing in open water and in full sunlight was described as useless, the increase of lignin in the blades making these too brittle when dry.



Kristina Utsi plaiting shoe-hay for storage Photo Mary Briggs

On a recent visit to Swedish Lapland our interest in the shoe-hay was rewarded by an invitation to visit Kristina Utsi, a Lapp lady who gave us a demonstration on the preparation of the sedge. The shoe-hay comb was a set of long nails projecting from a wooden board, and the sheaf of sedge was drawn through this with just sufficient pressure to shred, but not to break or tangle, the blades. We all had a turn at preparing the shoe-hay and trying our feet in a Lappish boot. The *Carex vesicaria* hay is very sweet-smelling, and as we stood on Kristina's lawn (of *Rubus arcticus*!) in the northern sunshine learning about shoe-hay, it was for us a memorable day.

MARY BRIGGS, White Cottage, Slinfold, HORSHAM, West Sussex RH13 7RG

P.S. Tragically, shoe-hay is a small part of the culture, tradition and life-style of the Lapps, now so desperately threatened by the Chernobyl fall-out. M.B.

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## THE LAXTON ELM

One of the most distinctive forms of Elm to be found surviving as a mature tree in Midland England in 1987 is that in the village of Laxton, Northants., (GR 42/946.961). Two other very similar trees grow on the roadside towards Harringworth, about 2km to the West. All three have a spreading rounded canopy recalling typical Huntingdon Elm, but the Laxton trees have thick glabrous leathery leaves, dark green and glossy above, similar in size to those of the Wych Elm and its large-leaved hybrids, not strongly asymmetrical at base, but with longer petioles than *U. glabra*. The most distinctive character though is that the short shoots do not remain 5-leaved, but elongate as the season advances like those of the Lock Elm *U. minor* var. *lockii* sensu Richens, (or *U. plotii* sensu Melville).

The single mature tree in Laxton village seems to be about 80-120 years old. Close to it there is a much younger sucker generated specimen showing similar characters. In neighbouring hedges up to a distance of about 500m, there are scattered sucker survivors of the former population of 35-40 typical Lock Elms for which the village was well known until they succumbed fairly early in the Dutch Elm Disease catastrophe. The largest of these would perhaps have been 100 years old had they survived.

I have little doubt that the late R. Melville would have quoted this tree as first class presumptive evidence of in situ hybridization between *U. plotii* as seed parent and *U. glabra* as pollen parent, and he would have assumed the latter to have been growing in nearby woodland of which there is still plenty, though a good deal of it has now been clear felled and planted with conifers. I have no idea whether there is now any *U. glabra* in these woods, though this is largely irrelevant since the putative pollination would have taken place over 100 years ago.

The indications regarding the other two trees are by no means as clear as this. There had not been any Lock Elms within seeding range during the 40 years of my experience in the area, but much of it was denuded of trees for the construction of Spanhoe Airfield during World War II. I feel pretty certain that they belong to the same clone as the Laxton Elm or to one closely allied. If they do belong to the same clone, it is highly likely that they were planted, and the Laxton Elm may have been also, all three having originated in the same local nursery.

The taxonomy of the Wych Elm/Lock Elm hybrids is confusing. Melville committed himself to the view that *U. elegantissima* as described by A.R. Horwood in the *Flora of Leicestershire and Rutland* (1933) and elsewhere was an f1 hybrid between *U. glabra* and *U. plotii*. By the rules of taxonomy this meant that thereafter all hybrids diagnosed as having this parentage were entitled to the name *U. x elegantissima*. Later it emerged that Melville based his opinion not on the tree which Horwood described but on another which may or may not have been the same. Finally, Clapham, Tutin & Warburg and *Flora Europaea* both rejected *U. plotii* as a distinct species, making the name *U. x elegantissima* for the time being invalid, and the name *U. x hollandica* valid only for so long as the Lock Elm is regarded as a variety of *U. minor*, and *U. glabra x minor* is regarded as the parentage of all kinds of hybrid Wych Elm, including Dutch, Huntingdon and hosts of other unnamed clones.

Although I said that I thought that Melville might have called the Laxton Elm an *U. glabra x plotii* hybrid, I am by no means certain that he would have done so. Many of the large leaved Elms in local woods are hybrids between *U. glabra* and other *U. minor* clones, and Melville often claimed to be able to identify characters of three or four ancestral species in a single specimen. If he had been able to do so in this case, then he would not have called it *U. x elegantissima*, though *U. x hollandica* might still have been a valid name within the classification of species in *Flora Europaea*; and the name would have been as uninformative as ever. To Melville, *U. x hollandica* had a much more precise meaning than it has now, if the *Flora Europaea* classification is accepted.

But the Elms themselves are unchanged. The Laxton Elm is not the same as the Dutch Elm nor the Huntingdon Elm, and I think a legitimate criticism can be levelled at the Taxonomists, that the rules of Taxonomy do not cover a system for the naming of distinctive clones in genera in which propagation is normally vegetative and intra clonal, and self pollination never (or only in extremely rare cases) leads to the production of viable offspring, making 'breeding true' a very rare occurrence.

Peter Sell tells me that he has started to collect data for describing Elms with a view to naming the different clones as micro-species in a way analogous to that used for *Taraxacum*, *Hieracium* and *Rubus*. This may be a practical solution, though specimens of mature trees are now so few and far between in the parts of Britain where the greatest diversity of clones occurs, that it might result in every small local group of trees

finishing up with a different name. It would however make attempts to deduce the possible parentage of a tree such as the Laxton Elm largely unnecessary. (PDS says it is a waste of time anyway and I agree, at least to the extent that it is totally unsusceptible to experimental verification). If PDS works fast and hard though, there may yet develop a basic framework of microspecific names on which to build when all the hundreds of surviving sucker hedges start generating populations of new undiseased maturing trees.

K.G. MESSENGER, 5 Wheatley Avenue, UPPINGHAM, Rutland, Leics. LE15 9SN

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### ESCHSCHOLZIA IN TENERIFE - II

Following my recent note (BSBI News 45: 31 (1987), a number of members have been in touch regarding my enquiry.

A. Hansen of the Museum Botanicum Hauniense, Copenhagen confirms that the plant is **Eschscholzia californica** Cham. and that it has been known from Tenerife for 30 years and also occurs on Gran Canaria, Hierro and La Palma. Miss L. Garrad notes that it was reported by Kunkel (1971) and reports it herself as **E. californica** (but yellow rather than orange) from various parts of Tenerife and from Gran Canaria. She suggests that the reason that we only observed plants in the mountain area was that they were out of season lower down.

Mrs A. Butcher tells me that Moeller (1981) notes it from the same place on the Las Canadas road as we found it, whilst Dr J.H. Dickson of Glasgow University has produced a paper, soon to be published by the Linnean Society on 'Invading Plants at High Altitudes on Tenerife, especially in the Teide National Park' which includes **E. californica**, a "widespread ruderal at low to high altitudes" which might become aggressive since it is a "genetically variable endemic of California which has become weedy within that state and elsewhere, such as Chile where it is abundant in the coastal hills." Finally, it is still there; Trevor Evans saw it in April 1987!

My thanks to all who wrote to me.

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- Kunkel, G. (1961). Guardernos de Botanico Canaria, Suppl. 2.  
Moeller, H. (1981). Flora of the Canary Islands, Kolbe, Pto. de la Cruz.

ALAN SHOWLER, 12 Wedgwood Drive, Hughenden Valley, HIGH WYCOMBE, Bucks.  
HP14 4PA

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### MORE HOLCUS MOLLIS L. IN W. IRELAND

In conjunction with Professor Victor Westhoff (Nijmegen, The Netherlands), the author has recently undertaken a study of the flora and vegetation of Derryclare Wood (Ferguson & Westhoff, Proc. Kon. Nederl. Akad. Wetensch., Series C. 90 (1987)). This relict semi-natural woodland lies at the foot of the Benna Beola (Twelve Bens) in Connemara. In a shallow basin (Irish Nat. Grid Ref. L 832 497) surrounded by acidophilous *Blechno-Quercetum* typicum, **Holcus mollis** forms the dominant species in the field layer. It was therefore with some surprise that we learnt from Webb & Scannell's Flora of Connemara and the Burren (1983 p. 246) that this species was considered to be all but absent from the area. Recently Professor Max Walters (BSBI News 45: 46 (1987)) has pointed out that authentic records of **Holcus mollis** are to be found in Connemara, noting the presence of a small population in the grounds of Curreravagh House Hotel. The locality in Derryclare Wood not only represents an additional record, but emphasises that the species can, under certain circumstances, be locally abundant.

D.K. FERGUSON, Department of Botany, University of Antwerp (RUCA), Groenenborgerlaan 171, B - 2020 ANTWERP, Belgium

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## INAUGURATION OF A CHURCHYARD CONSERVATION SCHEME

Anyone passing by an apparently unspectacular triangular enclosure in Essex on May 11th, might well have wondered what attracted over one hundred cars parked along adjacent roads at East Hanningfield, to this tiny burial ground called Little Gibcracks.

No police, fire brigade or other public services were in evidence, so why the crowd? Did they but know this was the inauguration of a conservation scheme for churchyards and burial grounds pioneered by the Essex Naturalists' Trust associated with the BSBI, Essex Field Club and W.I.

Amongst those participating were the Mayor of Chelmsford, the Archdeacon of Colchester, Mary Briggs and Ken Adams, Chris Miles of the Essex Naturalists' Trust and the Revd Nigel Cooper who organised the event. Roger Tabor, Naturalist and Broadcaster for BBC East explained the significance of the occasion, stressing the fact that churchyards offer a feature of great value to wildlife as they are areas which have remained undisturbed for ages.

Such places have accumulated a valuable collection of comparatively rare plants and here some sixty species have been recorded including: Green-winged Orchid (*Orchis morio*), Adder's-tongue (*Ophioglossum vulgatum*), Betony (*Stachys officinalis*), and Common Milkwort (*Polygala vulgaris*).

On this occasion a note of caution was sounded - it is definitely not sufficient just to leave the resident species to their own devices; it was emphasised that conservation means more than this.

Not only the flowering plants but lichens on roofs, head-stones and tree-bark, bats - proverbially in belfries - and innumerable insect species have all appreciated the tranquil attributes of churchyards.

It must be recognised that those with loved relatives buried in newer sections of a cemetery want to see those parts kept in a tidy condition. There need be no conflict if the recommendations in recently published books and pamphlets are consulted and followed.

Whilst commending the Essex Churchyards Conservation Group on their initiative it is hoped that other counties or even individual parishes will hunt out similar sites with the required characteristics and inaugurate similar projects.

### Further reading:

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- Greenoak, F. (1985). God's Acre. The flowers and animals of the parish churchyard. 192pp. Orbis Pub. Ltd. London.
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- Leaney, R. (1984). The Churchyard Conservation Scheme. Norfolk Naturalists' Trust Annual Report 1983.
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- Bingley, F.J. (1977). Churchyards and Conservation. In Landscape History & Habitat Management. pp. 22-24. Edit. J. MacConnell. South Essex Nat. Hist. Soc.
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- Poynings Churchyard Study (1984). Mid Sussex Naturalists' Group (Centre for Continuing Education, University of Sussex).
- Brightman, F.H. & Laundon, J.R. (1984). Lichens in Churchyards. British Lichen Society. (A 2 page leaflet available from Tony Fletcher, Leicestershire Museum Service, 96 New Walk, LEICESTER LE1 6TD.)
- Stebbins, R.E. & Jeffries, D.J. (1982). Focus on Bats. Their Conservation and the Law. 16pp. Nature Conservancy Council. London.

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[A superb drawing of an Essex churchyard by Pat Donovan graces the front cover of this issue. Ed.]

## ALIENS AND ADVENTIVES

## ADVENTIVE NEWS 36

compiled by Adrian L. Grenfell

## ALIEN RECORDS 3

This third annual selection of alien records considered unacceptable for Watsonia contains several of considerable rarity: more, perhaps even scarcer, which time and space do not permit of inclusion here, will be dealt with in the next article. An asterisk (\*) before the record indicates a new vice-county record. Records are arranged in the order given in the List of British Vascular Plants by J.E. Dandy (1958) and his subsequent revision (Watsonia 7: 157-178 (1969)). With the exception of collectors' initials, herbarium abbreviations are those used in British and Irish Herbaria by D.H. Kent and D.E. Allen (1984).

- Abies alba** Mill. \*103. Mid Ebudes: nr Tobermory, Isle of Mull, GR 17/50.55. Hillside amongst pines and larches; three established and two seedlings. A. Wright, 1986. 1st record. Silver fir.
- 46/7 **Ranunculus sardous** Crantz 50. Denbs.: nr Halton, GR 33/30.39. Single large plant in vehicle track, waste ground, Chirk town tip. J.A. Green, Sept. 1986. ?1st post-1930 record.
- 78/1 **Conringia orientalis** (L.) Dumort. 39. Staffs.: Wolverhampton, GR 32/90.98. Waste ground. B.R. Fowler, June 1972. 1st post-1930 record.
- 123/sch **Silene schafta** C.C. Gmel. ex Hohen. \*77. Lanarks.: Linthouse, Glasgow, GR 26/54.66. Waste ground near old dock. P. Macpherson, Sept. 1985, **herb. P.M.**, det. E.J. Clement. 1st record of this Caucasian perennial - presumably of garden origin.
- 153/2 **Amaranthus hybridus** L. \*38. Warks.: Leamington Spa, GR 42/31.65. Garden. J.W. Partridge, Sept. 1986, **WAR**, det. J.M. Mullin (BM). 1st record. (Bird seed). \*77. Lanarks.: Meadowside, Glasgow, GR 26/55.66. Dockland. A. McG. Stirling & P. Macpherson, **herb. P.M.**, det. J.P.M. Brenan. 1st record.
- 153/spi **Amaranthus spinosus** L. \*77. Lanarks.: Glasgow, GR 26/52.66. Dockland. P. Macpherson & E. Teasdale, 1984, **herb. P.M.**, det. J.P.M. Brenan. 1st record of this very rare casual.
- 154/amb **Chenopodium ambrosioides** L. \*17. Surrey: Brookwood, GR 51/95.57. Margin of rough road, 4/5 plants on either side. Surrey Field Club meeting, Sept. 1986, det. E.J. Clement. 1st record. (The smell of this plant is so characteristic and strong that it may be reliably determined without opening its package!).
- 168/8 **Geranium macrorrhizum** L. \*29. Cambs.: Cambridge, GR 52/45.57. Single plant self-sown at base of garden wall. A.C. Leslie, Dec. 1985. 1st record. The well-known Italian crane's-bill.
- 192/7 **Trifolium incarnatum** L. \*46. Cards.: Aberystwyth, GR 22/59.81. "Permanent pasture land" - field immediately N.E. of original National Library of Wales building. M. Thomas, 1924. 1st record. Ref. Ann. Appl. Biol. II: 354 (1924).
- 225/gla **Rosa glauca** Pourr. (**R. rubrifolia** Vill.) \*17. Surrey: Oxted, GR 51/38.51. Roadside, one plant, clearly bird sown from large bush nearby. A.C. Leslie, 1986. 1st record.
- 227/bul **Cotoneaster bullatus** Bois. 77. Lanarks.: Craigton, Glasgow, GR 26/54.64. Waste ground, two plants 200 yds apart. P. Macpherson, 1986, **herb. P.M.**, det. J.R. Palmer.
- 229/5 **Crataegus crus-galli** L. 39. Staffs.: Kinver Edge, GR 32/83.82. Conifer plantation; one tree, edge of wood. C.B. Westall, Aug. 1983.

- 279/1 **Coriandrum sativum** L. 26. W. Suffolk: Kentford Pit, GR 52/71.68. Disused pit on sewage waste. G.M.S. Easy, 1985. 2nd record. (Bird seed).
- 320/alp **Polygonum alpinum** All. 90. Forfar: Montrose, GR 40/71.60. Waste ground on industrial estate. N.K. Atkinson, June 1986. 2nd record.
- 336/cor **Alnus cordata** (Loisel.) Duby \*17. Surrey: Farnham, GR 41/85.47. Roadside; one self-sown sapling 2' high. A.C. & J.F. Leslie, K. Page, 1986, **herb. A.C.L.** 1st record. Italian alder.
- Phacelia tanacetifolia** Benth. \*17. Surrey: Guildford, GR 41/96.51. Two plants on disturbed ground (new gas line). N.E. & R. Sherlock, June 1986. 1st record.
- Lavandula angustifolia** Mill. \*29. Cambs.: Cambridge, GR 52/45.57. Self-sown at base of garden wall. A.C. Leslie, Dec. 1985. 1st record.
- 475/4 **Campanula lactiflora** Bieb. \*17. Surrey: Wisley, GR 51/07.58. Single plant, entrance to grass track. I. Green, 1986, det. A.C. Leslie. 1st record.
- 475/pos **Campanula poscharskyana** Degen. \*29. Cambs.: Cambridge, GR 52/46.57. Self-sown beneath garden wall. A.C. Leslie, Dec. 1985. 1st record.
- 487/can **Sambucus canadensis** L. \*17. Surrey: Wisley, GR 51/06.58. Several clumps of the var. **aurea** on waste ground by the car park. A.C. Leslie, 1986, **herb. A.C.L.** 1st record.
- 663/59 **Carex vulpinoidea** Michx \*77. Lanarks.: Ibrox, Glasgow, GR 26/55.64. Waste ground. P. Macpherson, 1986, **herb. P.M.**, det. A.O. Chater. 1st record of this N. American sedge.
- 683/4 **Bromus inermis** Leyss. \*39. Staffs.: Wombourne, GR 32/87.92. Small patch on railway ballast 0.5km south of Wombourne. C.B. Westall, Sept. 1984, det. A. Melderis (BM). 1st record.
- 683/19 **Bromus carinatus** Hook. & Arn. \*35. Mons.: Coed Morgan, GR 32/36.12. Several plants on field margins/gateways. T.G. & U.T. Evans, July 1986, **herb. T.G.E.** 1st record.

May I reiterate my annual plea for dried material (with colour notes) rather than fresh specimens which are so troublesome in summer months? In future I am prepared to accept fresh material only by prior arrangement and, even then, not by post.

Thank you again for your sendings and correspondence - good hunting!

ADRIAN L. GRENFELL, 19 Station Road, Winterbourne Down, BRISTOL BS17 1EP

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#### COTONEASTERS ON GREAT ORME'S HEAD, NORTH WALES

Apart from the rare **Cotoneaster integerrimus**, visitors to this headland in Caernarfonshire will find that **C. microphyllus** is abundant there; and in the less exposed parts **C. horizontalis** and **C. simonsii** are quite frequent. In 1985 I also noticed a smallish specimen of **C. franchetii** not far from a large colony of **Arbutus unedo** seedlings. Later Mr E. Phenna and I came across another plant of **C. franchetii** on the Orme, and other species of **Cotoneaster** may well be found there, especially those which have been planted in the town of Llandudno below.

There are scattered specimens of **Berberis thunbergii**, bird-sown on the Orme and it is abundant in one place on rocky slopes near the town.

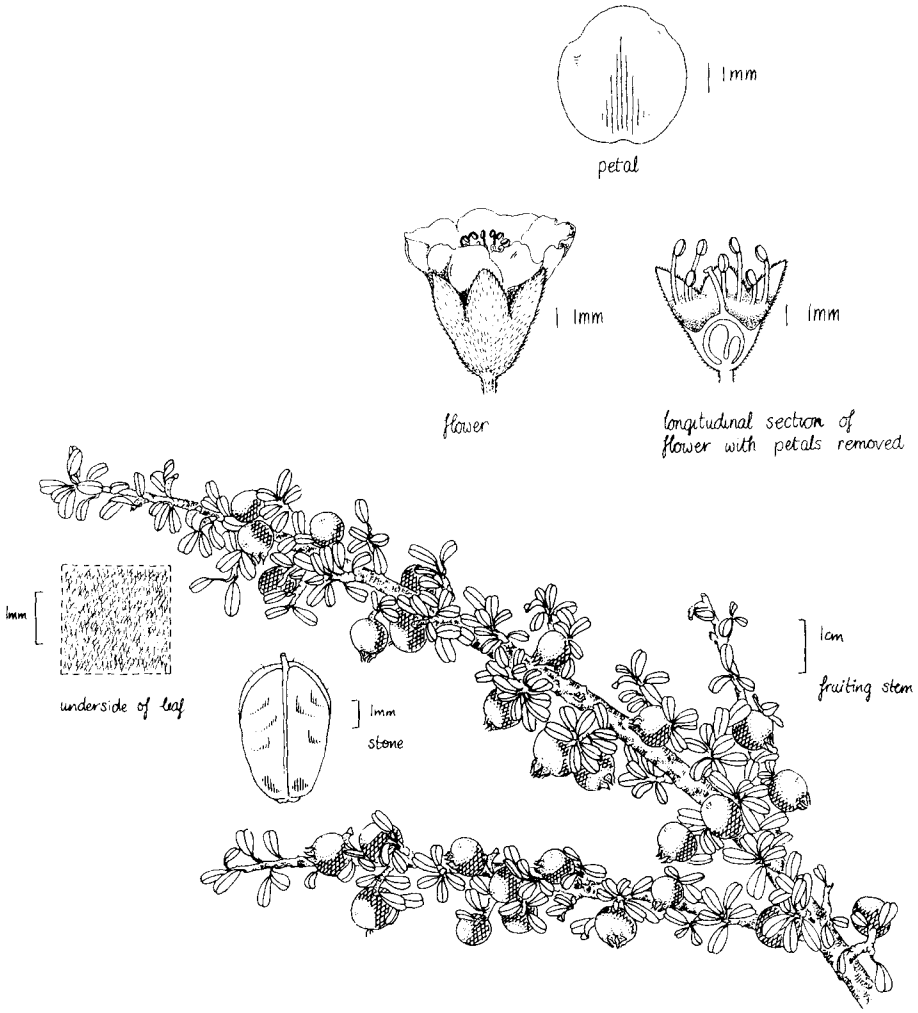
J.R. PALMER, 19 Water Mill Way, South Darent, DARTFORD, Kent DA4 9BB

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**COTONEASTER MICROPHYLLUS WALLICH EX LINDLEY**

This species is one of our best known naturalized Cotoneasters with its low-growing habit, small evergreen leaves which are dark glossy green above, and its dull maroon berries. It is one of the group with flat white-petalled flowers, its leaves (up to 8mm long) are obovate with a cuneate base and an obtuse or emarginate apex. It does not grow more than 3ft high at the most, unless against a wall.

**C. microphyllus** is often abundant on calcareous uplands but, in my experience, is nothing like as frequent on lower ground or in the vicinity of towns as for example **C. horizontalis**, **C. simonsii**, **C. franchetii**, **C. bullatus** or **C. dielsianus**, species which often accompany **C. microphyllus** on higher ground.



*Cotoneaster microphyllus*

Hilli 25.11.1983

Increasingly I am finding that other evergreen species are becoming naturalised, and some of these with similar wide-open white flowers might possibly be confused with

**C. microphyllus.**

1. **C. dammeri** and **C. 'Skogholm'** have much larger leaves which are rather glossy especially when young. They are both more rampant in habit.
2. What I take to be **C. buxifolius** has slightly shiny leaves (smaller than the last two) but which are paler green, a bit larger than the leaves of **C. microphyllus**, and with a pointed apex.
3. **C. congestus** has a congested habit and much duller leaves than **C. microphyllus**.
4. **C. conspicuus** has sage-green leaves, dull when mature; about the same size as the leaves of **C. microphyllus** but with a pointed apex. (It is often sold by nurseries and garden centres as **C. buxifolius**.)

All the foregoing, 1-4, have fruits of a brighter truer red than **C. microphyllus**.

5. Another widely-planted species which can seed itself and become naturalised, is generally similar to **C. microphyllus** in appearance, and even has the same dull maroon-coloured fruits, but grows much taller, up to 12ft high. It also has flowers in two's and three's rather than singly. This I consider to be **C. prostratus** var. **lanatus** (presumably it does grow prostrate high in the Himalayas!).

**N.B. C. microphyllus** var. **cochleatus** is sometimes planted and I have noticed it seeding itself at Maidstone, v.c. 15. This is a more prostrate form with paler green, duller, broader leaves.

J.R. PALMER, 19 Water Mill Way, South Darenth, DARTFORD, Kent DA4 9BB

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**GIANT ECHIUM IN NORTH WALES**

Whilst visiting Llandudno, Caernarfonshire, in 1985, I was surprised to notice about eight plants of 'Giant' or 'Tree Echium' on rough waste ground near the foot of the Great Orme. The self-sown, 2-3 year old plants were growing at the back of gardens on the outskirts of the town.

**Echium pininana** Webb & Berthelot is not exactly a common garden plant in North Wales; indeed, as far as I know, the species has only been seen as a rather marginal escape in the mildest south-western parts of Britain; as in the various Channel Islands. I have seen it myself as an escape in Scilly in 1971, and in two places near Penzance in 1981.

The colony at Llandudno was sheltered from the north by high stone walls which rise in stages to the **Haulfre Gardens**, and these, with their exotic flora and greenhouses are the most likely source of the **Echium**.

The walls also had **Leycesteria formosa**, **Asarina procumbens** and **Hebe x franciscana** well naturalized on their faces; all no doubt escapes from **Haulfre Gardens**.

J.R. PALMER, 19 Water Mill Way, South Darenth, DARTFORD, Kent DA4 9BB

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**NOTICES (BSBI)**

**FIELD MEETING - 1988**

**ADVANCE NOTICE - BULGARIA**

It is proposed to organise, through the British Bulgarian Friendship Society, a 14 day botanical excursion to Bulgaria in 1988 from May 28th - June 11th.

Vegetation in Bulgaria is rich and varied. The country's geographical location and its complex physical relief are favourable for the growth of more than 3500 Central European, Mediterranean and steppe plant species some of which are endemic to Bulgaria. During June the growth of vegetation reaches its zenith with tremendous beauty whether on the mountains or in the lush valley meadows.

Visits planned for the excursion include: to Vitoshka to the Toefenoto Nature Reserve and Cerni Vrah; 2 mountain excursions from Borovets, and Vihren in the Pirin Mountains; meadows at Rila and Predela; Cervenata Stena Nature Reserve, Lake Batak at Bansko, and possibly the limestone mountains at Chudnita Mostove.

This excursion is organised by Prof. Ted Shellard, Emeritus Professor of Pharmacognosy, University of London, whose Bulgarian friend, Dr Ivan Assenov will be the leader. Dr Assenov is Head of the Department of Botany and Pharmacognosy, Faculty of Pharmacy, Medical Academy, Sophia, and an officer of the Bulgarian Botanical Society.

Further information, (detailed itinerary, plant list and approximate cost), is available from the address below; please write before the end of October if you are interested.

Professor E.J. Shellard, 244 Ellerdine Road, HOUNSLOW TW3 2PY

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### THE COMMON GROUND OF WILD AND CULTIVATED PLANTS

Glasgow, July 15th - 22nd 1988

A symposium on this theme, sponsored jointly by the RHS and the BSBI, will be held at Strathclyde University, Glasgow from Friday evening July 15th 1988.

It will commence with two days of papers of common interest to botanists and gardeners, and be followed on the Monday by a visit to the Garden Festival. The next four days will be devoted to bus trips to show wild flowers to gardeners and gardens to botanists.

The inclusive cost for the first three days should not exceed £100, and for the full programme, £250 (including all bus tours).

It would be appreciated if prospective participants could contact the organizer, Mrs J. Gray, Meeting Makers, 73 Rottenrow East, GLASGOW G4 0NG (from whom further details are available) so that some idea of possible numbers can be obtained.

C.D. BRICKELL, Royal Horticultural Society's Garden, Wisley, Ripley, WOKING, Surrey  
DAVID McCLINTOCK, Bracken Hill, Platt, SEVENOAKS, Kent TN15 8JH

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### THE VEGETATION OF POLAND

Members contemplating joining the proposed BSBI excursion to Poland in 1989 (BSBI News 45: 27 (1987)) may like to know that although the main English language book on the flora of Poland, Vegetation of Poland, is now out of print, a Repro Reprint edition bound in soft or hardcover is available (for \$180!). Anyone interested in obtaining a copy should contact me so that the order can be processed. This will take some 16 weeks from receipt of payment.

MARGARET PERRING, 24 Glaphorn Road, OUNDLE, Peterborough PE8 4JQ

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### NOTICES (OTHERS)

#### NATURAL HISTORY AT LIVERPOOL AND THE AUSTRALIAN CONNECTION

The Society for the History of Natural History are holding a one day conference on 'Natural History at Liverpool and the Australian Connection' at the Liverpool Museum on Saturday, 26th September, 1987. The full and varied programme includes several talks and the opportunity to view the exhibition 'Australia 1788 - A mine of botanical novelty', the archives and rare books associated with the 13th Earl of Derby 1775-1851, and the Liverpool Botanic Garden founded in 1802.

Accommodation is available and further details and booking forms may be obtained from the address below.

ERIC F. GREENWOOD, Liverpool Museum, William Brown Street, LIVERPOOL L3 8EN

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**AMENITY GRASS RESEARCH : SIXTH DISCUSSION MEETING**  
Aberystwyth, January 5-7th, 1988

The Sixth Discussion Meeting on Amenity Grassland Research will be held at the University College of Wales, Aberystwyth from the 5th to the 7th of January, 1988. Anyone with an interest in the management or study of amenity grassland is welcome to attend the conference. Full board accommodation will be available (approximate cost £14 per day), and there will be a conference fee of approximately £15-£20. The conference programme will include papers on the establishment and management of amenity grassland, on plant breeding and cultivar evaluation, and on playing quality of sportsfields and use of synthetic turf. A field trip is also being arranged to a local nature reserve and participants will have an opportunity to observe a computer program for the identification of pasture species.

For a full programme and enrolment form, please contact:

Dr RICHARD GIBBS, Soil Science Unit, The University College of Wales, ABERYSTWYTH, Dyfed SY23 3DE (Tel. 0970-3111 ext. 3168)

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**PLAYING SURFACES RESEARCH QUESTIONNAIRE**

The National Turfgrass Council conducted a questionnaire survey in 1985, of current and planned playing surfaces research in the UK. The results were summarised in NTC Research Bulletin No. 1 published last year. To update this information, and to have it available for discussion at a meeting of the Amenity Grass Research Workers in Aberystwyth (see above), the NTC is now again sending a questionnaire to all those known to be conducting research in this area of natural (and synthetic) surfaces for sports and games. Dr M.G. Hawtree is responsible for the survey.

Anyone currently undertaking - or planning to undertake - such research, who has not been sent a questionnaire, is invited to write for a copy to Dr M.G. Hawtree, c/o The Secretary, at the address below.

The boundaries between playing surfaces research and other amenity grass research are not always sharply defined, and the NTC prefers to include, rather than exclude, borderline items. 'Non-academic' as well as 'academic' research is of interest. A check-list of possible research topics is available from Dr Hawtree.

J.P. SHILDRICK, The Secretary, NTC, 3 Ferrands Park Way, Harden, BINGLEY, West Yorkshire BD16 1HZ

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**BRITISH BRYOLOGICAL SOCIETY MEETINGS - 1987**

November 7th-8th. Weekend taxonomic workshop, University of Manchester.

It is proposed to provide experience in the taxonomic use of gemmae and peristomes, and a simple, very cheap and very quick method for sectioning bryophytes.

Further details from the Local Secretary at the address below.

Dr S.R. EDWARDS, The Herbarium, Manchester Museum, The University, MANCHESTER, M13 9PL (Tel. 061-273-3333 ext. 3319).

BSBI members would be most welcome at this meeting.

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**PARKS FOR THE PEOPLE**

Manchester City Art Gallery is staging an exhibition on the theme 'Parks for the People: Manchester and its Parks 1846 - 1926' at Wythenshawe Hall, Wythenshawe Park, Northenden, Manchester 23, from May 23rd - October 4th, 1987.

The exhibition traces the history of the city's parks from the seventeenth century onwards, drawing on unique archival and photographic resources, many of which will be on public display for the first time. These illustrate the philanthropic, social and political

factors which led to the conversion of private estates into public pleasure parks.

The exhibition will deal with those who created the parkspace, from the late eighteenth century landscape architect to the twentieth century corporation gardener. Past tools of the trade will be displayed alongside photographs of the gardeners themselves. The exhibition also covers the growth of botanical societies and field clubs in the North West, and unique minute books and medals are on display.

The exhibition is open Monday - Saturday (not Tuesday) 10-6; Sunday 2-6; admission free. Further information may be obtained from the address below.

CLARE LATIMER, Manchester City Art Gallery, Mosley Street, MANCHESTER M2 3JL (Tel. 061-236 9422 ext. 237)

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### **NORTH SEA FORUM REPORT - MARINE FORUM**

The North Sea Forum Report comprises thirty-one chapters on a wide range of topics which examine the health of the living resources of the North Sea, the status of the non-living resources and the impact man's varied activities have on these.

The first chapter - the Statement of the North Sea Forum, draws together the major concerns and recommendations detailed in the rest of the Report and provides a comprehensive assessment on the environmental status of the North Sea. This document has been supported by over 50 leading environmental organisations and concerned scientists. The Report has been submitted, as a non-governmental organisation briefing, to the UK government which is hosting the second Ministerial Conference on the North Sea in November 1987.

The North Sea Forum was established to prepare an NGO brief for the UK ministers. With this work nearing completion the opinions of 300 individuals and organisations were canvassed to determine the future of the Forum. A decision, based on responses received, has been taken to create the

### **MARINE FORUM**

The principal aims of the Marine Forum are:

To promote the aims of the World Conservation Strategy for the sustainable use and development of the marine and coastal environment.

To improve communication on marine and coastal issues among all concerned with the coastal shelf seas of North-West Europe, but particularly the North Sea.

To follow up recommendations made that relate to these seas.

To centralise and coordinate responses of participants to major marine and coastal issues.

Participation will be sought widely from industry, environmental organisations, researchers and other individuals involved in marine and coastal issues. Close links will also be sought with government and official bodies.

Further details on the North Sea Forum Report and the Marine Forum are available from the address below.

EDWINA MILESI, Council for Environmental Conservation, London Ecology Centre, 80 York Way, LONDON N1 9AG (Tel. 01-837-5359)

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### **IS NATURE CONSERVATION WORKING FOR PLANTS?**

The Conservation Association of Botanical Societies and the Flora and Fauna Preservation Society have arranged a symposium on 'Is Nature Conservation Working for Plants?' to be held at the Zoological Society of London's Meeting Room, Regent's Park, London on Saturday 5th March 1988.

Further details and booking forms are available from the address below.

FFPS, 8-12 Camden High Street, LONDON NW1 4RY

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**MANAGEMENT OF FLORA SITES IN AVON GORGE BRISTOL**

Visitors to the Avon Gorge may be surprised to see groups of rock climbers wielding bow-saws, billhooks and loppers. These workers belong to the Conservation Climbing Unit of Bristol City Council.

In conjunction with the NCC and the Bristol Downs Committee, they are removing scrub on the rock-faces of the gorge. This is to protect the sites of plants like the Spiked Speedwell (*Veronica spicata* L.).

The climbers are part of the City Council's Community Programme Agency. They have all been specially trained in climbing and conservation techniques. The unit also does work at Burrington Coombe, south of Bristol and should soon be at Cheddar Gorge.

BSBI members are welcome to visit the team at work but prior clearance has to be obtained from NCC to examine certain plant sites.

Further details can be obtained from the C.P. Agency Manager, Howard Scull, at the address below. (Tel. 0272 273916).

M. HOWARD, C.P. Agency, Old Custom House, Queen Square, BRISTOL BS1 4JH

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**BEES WASPS AND ANTS**

Members interested in Bees Wasps and Ants who would like to receive the new biannual newsletter produced by the Bees Wasps and Ants Recording Society (first number published May 1987) should contact:

J.P. FIELD, Dept. of Pure and Applied Biology, Imperial College, Silwood Park, ASCOT, Berks SL5 7PY

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**IN THE FOOTSTEPS OF LINNAEUS**

The Linnean Society of London is planning, as part of its Bicentenary Celebrations, Lapland Journey 1988 : in the Footsteps of Linnaeus. This will take place from 25th July to 8th August 1988, and will travel from Uppsala through northern Sweden to Abisko and return through Finland. There may still be places available. All enquiries to the address below.

Dr JOHN PACKHAM, Woodland Research Group, School of Applied Sciences, The Polytechnic, WOLVERHAMPTON WV1 1LY.

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**REQUESTS AND OFFERS**

**JAMES SYKES GAMBLE (1847-1925)**

The botanist James Sykes Gamble (1847-1925) served in the Indian Forestry Service during the second half of the 19th century. He was an outstanding scientist whose various achievements have been sadly under-publicised: these include producing a manual on Indian Trees concerned with the structure of their timber and, inter alia, what is still the standard monograph on bamboos of the Indian subcontinent. I first became interested in Gamble through working with bamboo in Bangladesh and hope eventually to publish an account of the man and his work. There is not much in the 'official' literature which is particularly informative about Gamble the person and I therefore wonder if any BSBI members have any recollections of the man or know of extant relatives. He married very late in life, aged 63, and lived out his retirement years at Highfield, his house in East Liss, Hants. His obituaries mention that he established an extensive garden/arboretum at his home. Does this still exist? I hope that members can help me in my task and I look forward to hearing from you.

Dr ERIC BOA, 85 Dorien Drive, Raynes Park, LONDON SW20 8EL

### ULEX SEED

I am working on a chemotaxonomic study of the genus *Ulex*, and am very interested in the comparison between populations growing throughout its natural geographical area.

I would be very grateful for samples of seed (about 2 grammes) of *U. europaeus* and *U. gallii* from anywhere in Europe.

Dr MARIE-THÉRÈSE MISSET, Maître de Conférences, Laboratoire de Botanique, Plasticité et Microévolution, Campus de Beaulieu 35042, Université de Rennes I, RENNES, France

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### ECBALLIUM AND LATHYRUS TUBEROSUS SEED

A letter from Eric Clement in *BSBI News* 40: 24 (1985) asked "Is *Ecballium* still in Sussex?" I have had it in my garden every year since 1980 and can supply seed on request. I also have the 'Fyfield Pea', *Lathyrus tuberosus* (Tuberous Pea), plentifully in my garden and again can supply seeds if required.

C. HEMINGWAY, 10 Kingsway, SEAFORD, East Sussex BN25 2NE

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### LETTERS

#### RAILWAYS AND PLANT DISTRIBUTION - III

In response to A.L. Primavesi's note on this subject (*BSBI News* 45: 16-17 (1987)), the following observations on *Senecio squalidus* may be of interest.

During the years 1946-50, I had occasion to travel frequently between Wolverhampton and Stafford. Wolverhampton was then served by the G.W.R. (and L.M.S. at a separate station). Stafford had only the L.M.S. - which, unlike the G.W.R., did not serve Oxford.

In 1946 there was quite an amount of *S. squalidus* in Wolverhampton, which I remember seeing particularly in and around the G.W.R. station. But in Stafford there was none, I walked around looking for it, as I was then beginning to take an interest in botany.

STANLEY MARVIN, 8 Addenbrooke Road, DROITWICH, Worcs. WR9 8RW

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### BOOK NOTES

Norman Robson will contribute his regular feature 'BOOK NOTES' in *BSBI News* 47; meanwhile:

FLORA OF THE BRITISH ISLES ed. 3, Clapham, Tutin & Moore, was published in May 1987 at £65.

A review will be published in *Watsonia* 17(1), January 1988.

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### TRAVEL GUIDES - AGAIN

My apologies to Mr B.E. Smythies for omitting mention of his *Flora of Spain and the Balearics* when referring to check-lists for Majorca (*BSBI News* 45: 4 (1987)). As Bill points out a list for the Balearics can be prepared more quickly and easily from his check-list than from *Flora Europaea*. Our President also sends the following recommendation for a Flora of the Balearics: *Catalogue provisoire de la flore des Baléares*, 2nd ed. Liege 1979, by J. DuVigneaud. Published by the Soc. Échange Pl. Vasc. Europe Occid. Bassin Méditerr. Fascicule 17, Suppt.

MARY BRIGGS, White Cottage, Slinfold, HORSHAM, West Sussex RH13 7RG

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NEWS FROM OUNDLE BOOKS

Margaret Perring, who tells me that she has had a busy season chasing up requested books and new publications for us, has prepared the new Stock List enclosed with this mailing. She also asks me to mention the following titles - not included in the 1987 List, but which she can obtain for you:

FLORA OF SPAIN and the Balearic Islands, Checklist of Vascular Plants, B.E. Smythies:  
Vol. I 1984. Pteridophyta, Gymnospermae, Acanthaceae - Crassulaceae (212 pages).  
Vol. II 1984. Cruciferae - Rutaceae (486 pages).  
Vol. III 1986. Salicaceae - Zygophyllaceae (880 pages).  
In Englera 3(1), 3(2), 3(3).

CRETE, Checklist of the Vascular Plants, Colville Barclay, 1986. Englera 6.

HANDBOOK OF EUROPEAN SPHAGNA, R.E. Daniels & A. Eddy, 1985. 262 pages. 41 colour photographs, 85 black & white diagrams and distribution maps. A field key and description of 40 species of **Sphagnum**. (£11.25)

RETKEILYKASVIO (FIELD FLORA OF FINLAND), 3rd ed. Edited by L. Hamet-Ahti et al., 1986 (review in Watsonia 16(4): 454 (1987)).

MANUAL OF THE GRASSES OF THE UNITED STATES  
A.S. Hitchcock, 1935. Revised 2nd Edition 1950. Agnes Chase. Definitive encyclopedia. Catalogues and describes 1,398 species in 169 numbered genera. 1,199 figures. Keys and distribution maps. In two volumes. (£19.00)

MARY BRIGGS, White Cottage, Slinfold, HORSHAM, West Sussex RH13 7RG

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THE FLORA AND VEGETATION OF COUNTY DURHAM

Unfortunately, due to machinery breakdown and other technical faults, the original publication date of July 1987 could not be kept. It is now unlikely that the Flora will be published for some months. I wish to apologize to those who have ordered a copy and assure them that this will be sent as soon as available.

MYRA BURNIP, 38 Langholm Crescent, DARLINGTON, Co. Durham DL3 7SX

[Two other Local Floras have also suffered from similar delays in publication: The Flowering Plants and Ferns of the Shetland Islands and Flora of Lough Neagh. Subscribers should have received notification that both will be published in October 1987. Ed.]

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THE FLOWERING PLANTS AND FERNS OF NORTH LANCASHIRE

An account of The Flowering Plants and Ferns of North Lancashire by L.A. & P.D. Livermore is to be published in September 1987. An area of over 220 square miles is covered, including the Lune Valley, part of the Morecambe Bay coast, outliers from the Pennines and the limestone of the Silverdale area.

The account is based on over 40,000 tetrad records for c.1280 taxa, collected over the past 10 years. Sixty-two pages of distribution maps (735 maps) are included in the 160 pages of the A4-sized paperback.

A limited number of copies are available at £4.95 (£5.95 incl. P.& P.) from the address below.

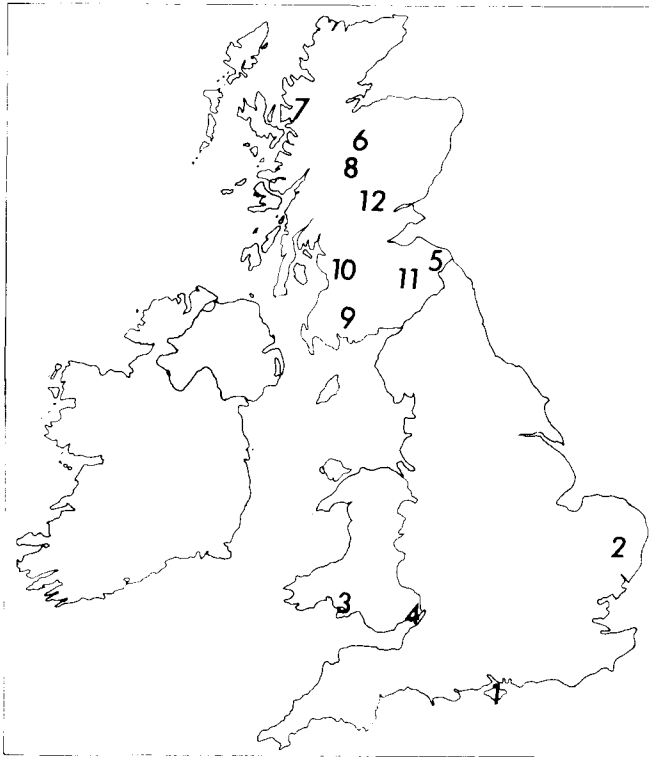
L.A. & P.D. LIVERMORE, 8 Durham Avenue, Scotforth, LANCASTER LA1 4ED

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**FIELD MEETINGS, 1986**

Reports of field meetings are edited by, and should be sent to, Dr B.S. Rushton, Biology Department, The University of Ulster, COLERAINE, Co. Londonderry, Ireland.

The map shows the approximate locations of the field meetings reported below.



ENGLAND

**1. ISLE OF WIGHT. 7TH-8TH JUNE**

The very nature of this meeting demanded control of numbers and the 24 participants represented about half the applicants.

Above the chalk cliffs rising out of the sea at the western and eastern extremities of the island there is a safety fence and between it and the cliff edge there is a unique association of plants. This area, shaped by numerous factors, rabbit activity, slippage and a wind of unbelievable ferocity is home to many species including **Hyoscyamus niger**, **Marrubium vulgare**, **Chaerophyllum temulentum**, **Torilis nodosa**, **Thesium humifusum**, **Poa bulbosa**, **Valerianella eriocarpa**, **Orobanche purpurea**, **Euphorbia portlandica** and **Silene nutans** (the yellow-flowered form).

Additionally, the opportunity was taken to see many other plants of the island including **Fumaria martinii**, **Orobanche rapum-genistae** growing among gorse (**Ulex europaeus**), **Matthiola incana**, **Brassica oleracea**, **Pulmonaria longifolia**, **Gaudinia fragilis**, **Myosurus minimus** in quantity, **Orchis morio** in abundance with wide colour variation and **Melampyrum arvense**, the latter on a shelf of a 130m cliff. When several members disappeared over the edge of the cliff, including some of mature years, it was with bated breath that their return was awaited.

**B. SHEPARD**

## 2. SUFFOLK BRECKLAND. 6TH JULY

A party of 35 members were accepted by the end of February. The meeting was an introduction to Breckland and to see some of the flora of the late season. Two wetland and two dry sandy sites were visited within 5km of Lakenheath. With the exception of Madsdross Hill, all of the sites visited were by courtesy of the Suffolk Trust for Nature Conservation.

We met on the sand-hills of Wangford Glebe near Brandon which is probably the remaining relic of original Breckland where erosion is still active and encouraged by rotovation. We made a brief stop and saw *Corynephorus canescens* and *Calamagrostis canescens*.

In a short distance we were again on the margin of the fens at Pashford Poors Fen, a narrow strip of 10ha, mainly chalky sand with 4ha of light peat, now becoming harassed by shortage of water. Our late visit and the recent rain had provided an unwelcome canopy of *Arrhenatherum elatius*. In the wet areas we saw *Stellaria palustris*, *Achillea ptarmica*, *Potentilla palustris*, *Ranunculus flammula* and *Cladium mariscus*.

After lunch on the fen, 2km up a sandy track took us to the old road and to the former site of the Lakenheath rubbish dump and here we briefly paid respects to the mortal remains of *Bromus tectorum*. In a short walk across Madsdross Hill we encountered some of the Breckland specialities including *Silene otites*, *S. conica*, *Pheum arenarium*, *Apera interrupta*, *Minuartia hybrida*, *Medicago minima* and *Thymus serpyllum*. This stop added many new plants to personal lists.

Our final stop was at the 5ha of Poors Fen which was literally rescued from the plough at the eleventh hour and is now a leased reserve of the Suffolk T.N.C. Here we found a few plants of *Lathyrus palustris* which were suffering from lack of water. The fen was a blaze of colour with both *Lysimachia vulgaris* and *Lythrum salicaria* playing their part. *Peucedanum palustre*, *Scutellaria galericulata* and *Dactylorhiza incarnata* were still flowering and the alien *Erucastrum gallicum* reminded us that it can find its way about fens. As we left the fen, there was a final glance at a ditch where *Carex pseudocyperus* drooped over the water with *Hottonia palustris* and *Hippuris vulgaris* suggesting that it was free from contamination in spite of the surrounding arable.

P.J.O. TRIST

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## WALES

## 3. MACHYNYNS, CARMARTHEN. 16TH AUGUST

On one of the few sunny days of August 1986, about 15 members gathered beside the ponds at Machynys (GR 21/512,980) near Llanelli. These ponds, situated within a large semi-derelict industrial area on the south-east Carmarthen coast, are believed to have originated as a result of the flooding of 19th century clay pits, and are of interest to the botanist because they are thought to have served as a refuge for aquatic plants, including county rarities, that presumably once grew in adjacent wetland areas long since drained.

The early chronicler of botany in Carmarthen, James Motley (died 1857), recorded within the county several water plants for which no locality is known, though it is believed that some at least were found on the then suitable marshy coastal plain around the Machynys area. Many of his non-localised records - *Potamogeton lucens*, *P. gramineus*, *Groenlandia densa*, *Lemna polyrhiza* and *L. gibba* - have yet to be re-found, though in 1982, *Lemna trisulca* was indeed re-discovered, in fair abundance, on some of the Machynys Ponds and all present at the meeting had the opportunity to see this attractive duckweed.

Prior to visiting the 'Lemna Ponds', members viewed several damp slack areas which contained interesting assemblages. The first held *Equisetum variegatum* (it is known that a sand dune area once existed at Machynys) and, perhaps more unexpectedly, *Osmunda regalis*; though the few small grazed examples of this fern compared poorly with the large individuals that are often found in the better colonies on the adjacent South Wales Coalfield.

Another more flooded depression held a sward of *Hippuris vulgaris* (rare in v.c. 44, Carmarthen), much *Berula erecta*, *Ranunculus baudotii* (long finished flowering) and, underwater, *Chara vulgaris* ("approaching var. *gymnophylla*", J.A. Moore). The last main slack inspected had a much coarser growth of vegetation, mostly *Juncus*-dominated but with *Oenanthe lachenalii* in parts. On each side of this area were the two most important *Lemna trisulca* ponds, one exclusively with a thick mat of *Lemna*, the other also with other

aquatic macrophytes such as *Potamogeton natans* and *Hydrocharis morsus-ranae*; both ponds were fringed with *Typha latifolia*.

Taking leave of the wetland plants, the party then turned its attention to the weed flora on the nearby waste ground, identification of many species being aided by the experience of the BSBI recorder for Monmouth, T.G. Evans, who was present on the excursion. *Datura stramonium* was found, *Chenopodium ficifolium* and other commoner adventives were noted; all were pleased by the stately flowering of the South African *Curtonus paniculatus*.

After lunch the party examined another site a few kms to the east - Bynea (GR 21/555.990), a composite area of waste ground, brackish marsh and saltings. *Bidens frondosa* (a new v.c. record) was located alongside a wet ditch, whilst nearby gritty soil held the grasses *Vulpia myuros* (in great quantity) and *Desmazeria rigida*. Also present were *Artemisia absinthium*, *Veronica agrestis*, *Filago minima* and the sedge *Carex muricata* subsp. *lamprocarpa*. Finally, but before the dispersal of the party, all admired the profuse flowering of the hybrid *Hypericum androsaemum* x *hircinum* (= *H. x inodorum*?); at this locality it is commonly and extensively established.

I.K. MORGAN

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#### 4. SEVERN ESTUARY, GWENT. 23RD AUGUST

Ten members gathered at the Severn Tunnel Junction before moving off to the Caldicot Rifle Range car park. A 2km walk brought the party to the shore where the sea-wall reën yielded up *Lemna polyrhiza*, *L. trisulca*, *L. minor*, *L. gibba*, *Veronica catenata*, *Typha latifolia* and *Berula erecta*. *Sison amomum* continued its lane-side march on to the reën bank. A quick scramble over the sea-wall gave access to the upper salt-marsh containing *Trifolium fragiferum*, *Glaux maritima*, *Juncus gerardi*, *Hordeum secalinum*, *Puccinellia distans*, *P. maritima*, *Aster tripolium*, *Plantago maritima* and *P. coronopus* though undoubtedly the most interesting plants were *Bupleurum tenuissimum* growing in their usual spot along the edge of the bank leading to the lower salt-marsh.

The latter was first colonized by *Salicornia ramosissima*, *S. dolichostachya* and *S. europaea*, though we failed to re-find the last named on the day, *Suaeda maritima* and the *Aster* and then by *Spartina anglica*, by far the most frequent Cord-grass. *Salicornia dolichostachya* was easily separated by its visible anthers and its tapering terminal spike consisting of up to 20 flowering segments.

The last two winters had completely re-arranged the bed of the River Severn. The deep mud had been washed away, the gravel had been levelled and much had been deposited much closer to the shore, so that access to the *Zostera* beds was the easiest ever experienced by the leader. This, with the fine warm calm weather, would have enabled a far larger party to have made the trip safely and comparatively easily. However, it was easier to guide the smaller party away from the danger of the stray missile from the rifle range and enabled those present to benefit much more from the accessibility of the leader. Everyone was impressed by the extent of the Eelgrass beds with *Zostera noltii* soon identified by its unbranched flowering stems, the narrowness of its leaves and the male perianth flaps (retinaculæ) visible in the fruiting body. *Z. marina*, in its extreme form, was also quickly picked out, especially when the deeper channels were reached. The party soon began to realize how difficult it was to separate out the third member of the genus, because it appears to be far less common and/or it flowers far less freely than the other two. Though the leader was convinced he had found some undoubted *Z. angustifolia* there were sceptics not entirely convinced.

My thanks go to Derek Upton who helped in the safe passage of the party and who was a mine of information on the archaeology of the Eelgrass region, once the home of people when more water was locked up in the polar ice caps. Relics noted among the *Zostera* included large naval shells dating back to the 19th century, 20mm and 303 shell cases dating from 1940-42, jasper, a Samian pottery fragment, animal bones from B.C. and a whole bottle from the last century.

Some partook of 'dessert' after the 'main course', and with the leader, delved in reens to 'fish out' *Azolla filiculoides*, *Carex elata*, *Sagittaria sagittifolia*, *Wolffia arrhiza*, *Ceratophyllum submersum*, *Catabrosa aquatica* and *Hydrocharis morsus-ranae*; *Arctium lappa* and *Datura stramonium* var. *atata* were 'picked-up' at their edges.

T.G. EVANS



SCOTLAND

5. BERWICKSHIRE. 24TH-25TH MAY

The Proprietor of the Chirnside Country House Hotel was amazed to find he had a party of ten for the weekend on the strength of his Dandelions. This convivial group with three local supporters raised the recorded **Taraxacum** flora of Berwickshire from a miserable 21 acceptable species to 61, a firm basis for future work. A total of 160 records were determined by C.C. Haworth representing 54 species which allowed the frequency of the commoner species to be estimated.

Eight sites, showing some variety of habitat were recorded reasonably fully in excellent weather. The number of **Taraxacum** species at each site was 15, 17, 14, 14, 17, 8 and 10.

On Saturday, the coast at Pease Bay was successful in producing five Erythrospermae which were repeated at the NNR at St. Abb's Head. Everyone had been told to look out for **Viola canina** and the first localized record for v.c. 81 (Berwicks,) was duly made at the Reserve. Short stops at two roadside verges of some general botanical interest produced only six species each, but a stop at the A1 near Reston produced a rich **Taraxacum** flora with five introductions to the region including **T. stereodes** at its most northerly known station.

Sunday started well with a rich and plentiful native **Taraxacum** flora at Fouldean Dean. Dandelions were scarce at Bluestoneford but with care a respectable total was accumulated and lunch was enjoyed in the company of much birdsong. The afternoon was a disappointment, three herb-rich roadside verges failed to produce a respectable showing of Dandelions and access to limestone by the Tweed was restricted by flooding, though **T. subnaevosum**, previously seen at St. Abb's Head, was recorded again, and the party was reduced to 'gardening' in the village of Birgham.

Thanks are due to Kevin Rideout, the NTS/SWT Ranger at St. Abb's Head.

M.E. BRAITHWAITE & C.C. HAWORTH

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In previous years, a joint meeting has been held in early summer of the Alpine Section of the Botanical Society of Edinburgh and the BSBI. For reasons of safety, numbers have had to be curtailed and the meeting is now held only under the auspices of the Botanical Society of Edinburgh. Nevertheless, BSBI members are still attracted to these popular meetings and hence the continued inclusion of this report in the Field Meetings section.

6. BEN ALDER, INVERNESS-SHIRE. 28TH-29TH JUNE

The meeting of the Alpine Section of the Botanical Society of Edinburgh attracted 17 members to Ben Alder for a weekend in glorious sunshine.

The party met at Dalwhinnie then drove in convoy along the track to Loch Pattack where the cars were parked. Culra bothie was reached after an hour's walking and the ten members who were camping left their tents and food at Culra.

The path from Culra which leads to Loch Ossian was followed and fine stands of **Lycopodium clavatum**, **Rubus chamaemorus**, **Cornus suecica**, **Betula nana** and **Vaccinium uliginosum** were soon admired. The lunch stop was on the lower slopes of Ben Alder at the site where **Phyllodoce caerulea** was found in 1966. The plant was only just in flower due to the cold late spring.

After lunch a hot hard scramble took us on to the Ben Alder plateau but little was found in flower as large snow fields remained and winter had just released its grip. At the stream edge **Caltha palustris** subsp. **minor** was in full flower and **Silene acaulis**, **Sibbaldia procumbens**, **Loiseleuria procumbens**, **Gnaphalium supinum** and **Carex vaginata** were noted.

Some members descended via the north-east ridge while others bagged Beinn Bheail to the south-east.

The weather was ideal for camping and the next morning in bright sunshine the group headed for Coire Cheap.

On the limestone rocks fine stands of **Salix lanata** and **S. reticulata** were in full flower but the **Dryas octopetala** which is so impressive here was only starting into growth. A few plants of **Saxifraga cespitosa** were in full flower and much photographed as was the

*Silene acaulis* which is prevalent and was in peak condition. Other notable plants included *Asplenium viride*, *Polystichum lonchitis*, *Trollius europaeus*, *Cerastium alpinum*, *Minuartia sedoides*, *Saxifraga nivalis*, *S. hypnoides* and *S. oppositifolia*, *Veronica fruticans*, *Carex saxatilis* and *Coeloglossum viride*. No plants were found of *Minuartia rubella* although it has been recorded in the recent past.

The lichen *Fulgensia bracteata* which is such a feature on this limestone cliff was much admired.

The party split into groups and descended back to Culra by various routes including over the summit of Carn Dearg; on the south side near the top, was found a great deal of *Cryptogramma crispa* amongst the many boulders.

R. McBEATH

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## 7. WESTER ROSS. 5TH-11TH JULY

About 20 members and friends attended this meeting in Wester Ross, based at the NCC's Anancaun Field Station on the Beinn Eighe National Nature Reserve. Recording was concentrated on three sites, Beinn Eighe NNR/SSSI, Loch Maree area, and Rassal Ashwood NNR/SSSI on the Durness limestone near Loch Kishorn. The two major aims of the meeting were to provide information on the distribution and population sizes of those species listed as of importance in the management plan for each site and to attempt to re-find some species which had not yet been recorded since the early 1950s. The good attendance enabled a greater area of each site to be covered than anticipated and on most days the group was divided into at least two parties. Recording was primarily 'site' based with annotated distribution maps and BRC 'GEN 8' population cards being completed for the most interesting species and full species lists produced for defined habitats.

On the first day the lower part of the Beinn Eighe Reserve on the south west shore of Loch Maree was visited. The group split into two parties. The larger party of 14 people spent most of the day in the Glas Leitire native pinewood with the aim of re-recording a number of characteristic pinewood plants that had not been seen for about 30 years, particularly *Linnaea borealis* and *Trientalis europaea*, neither of which are common in the north west highlands. *Linnaea borealis* eluded us but a large colony of *Trientalis*, comprising hundreds of plants, was located under bracken in a dry open area of pinewood with *Quercus petraea* and *Betula pubescens*. *Listera cordata* was found to be common almost everywhere and other records of particular interest were a number of large new colonies of *Goodyera repens*, and some of *Orthilia secunda*, a species that had not been seen for many years. The second group climbed from the loch edge through birch woodland to the fucoid bed outcrops at about 200m altitude. *Listera ovata* and *Sanicula europaea* were recorded in the birchwood but there was little else of particular interest, most of the best records being confined to the north-facing fucoid cliff above the woodland. Here the Holly Fern, *Polystichum lonchitis* was abundant, 20 plants being counted on one short section of cliff, together with *Carex flacca*, *C. pulicaris*, *Cirsium helenioides*, *Geum rivale*, *Luzula sylvatica*, *Orchis mascula*, *Oxyria digyna* and *Saxifraga oppositifolia*. However, the most exciting find on the cliff was a colony of *Pyrola minor* with five flowering spikes and at least 20 rosettes growing on the same ledge as about 20 plants of *Orthilia secunda* and three flowering spikes of *Pseudorchis albida*. On the grassland and flush areas just below the cliff were found *Botrychium lunaria*, *Phegopteris connectilis*, *Gymnocarpium dryopteris*, *Parnassia palustris*, *Saxifraga aizoides*, *Thalictrum alpinum* and *Trollius europaeus*.

On the second day the group proceeded on foot in heavy rain to the saddle between the peaks of Meall a' Ghiubhais and Ruadh-stac Beag on the Beinn Eighe NNR, where it split into two roughly equal parties. The first party visited a further fucoid outcrop at about 450m altitude, including a small enclosure fenced against red deer. Red deer grazing on the unenclosed grassland in this area is intense and it was interesting to see how a tall herb community with *Angelica sylvestris*, *Asplenium trichomanes*, *Botrychium lunaria*, *Cardamine pratensis*, *Carex pulicaris*, *Coeloglossum viride*, *Filipendula ulmaria*, *Galium boreale*, *Geranium sylvaticum*, *Geum rivale*, *Luzula sylvatica*, *Orchis mascula*, *Orthilia secunda*, *Trollius europaeus* and *Valeriana officinalis* had developed in the enclosed areas, most of these species being very tall and vigorous. In contrast although most of the same species were recorded outside the enclosure they were, in every case, very much smaller and less abundant. The most interesting record for this area, outside the enclosure, was a colony of 33 non-flowering rosettes of *Ajuga pyramidalis*, a species which has not been

recorded on Beinn Eighe since the early 1950s. The second party examined the north and east facing cliffs of Ruadh-stac Beag before contouring round on to the summit of the hill. These cliffs, the intervening heather banks and more open areas of quartzite scree and boulders provided the following records of interest: *Alchemilla alpina*, *Arctostaphylos alpinus*, *Cardaminopsis petraea*, *Carex bigelowii*, *Cornus suecica*, *Cryptogramma crispa*, *Epilobium alsinifolium*, *Loiseleuria procumbens*, *Rubus chamaemorus*, *R. saxatilis*, *Saxifraga stellaris*, *Saussurea alpina*, *Sedum rosea*, *Sibbaldia procumbens*, *Thalictrum alpinum* and *Trollius europaeus*. On the exposed summit of Ruadh-stac Beag where richer serpulite grits outcrop, moss heaths have developed and *Alchemilla filicaulis*, *Armeria maritima*, *Cardaminopsis petraea*, *Cochlearia micacea*, *Gnaphalium supinum*, *Juncus trifidus*, *Luzula spicata*, *Polygonum viviparum*, *Salix herbacea*, *Saussurea alpina*, *Saxifraga hypnoides*, *S. stellaris*, *Thalictrum alpinum* and *Vaccinium uliginosum* were recorded.

On the third day the Durness limestone exposure which comprises the Rassal Ashwood NNR and SSSI was visited and to make the best of the fine weather and available manpower the group split into three parties. The first party concentrated on producing systematic species lists for each of the two enclosures within the ash woodland section of the NNR and the remainder of the site which comprises the best limestone pavement, two small limestone gorges and a moribund birchwood on limestone pavement was divided into two roughly equal units for the purpose of recording. There were few new records for the site although *Ophioglossum vulgatum* and *Dactylorhiza incarnata* were recorded from the ashwood for the first time. *Carex rupestris* was recorded in quite large colonies from both the birch woodland and the open limestone pavement and the gorges provided extensive stands of *Dryas octopetala* and *Salix myrsinites*. Lack of time prevented a detailed survey of the main Allt Mor gorge on the eastern boundary of the site although a pilgrimage was made to the lower part of the gorge where several flowering plants of *Epipactis atrorubens* were seen.

Continuing good weather on day four enabled us to visit the Loch Maree Islands NNR. There are over 60 islands within the Reserve occupying a fairly level platform of Torridonian Sandstone in the centre of the deep glacial trough of Loch Maree. Most of the islands are completely undisturbed and comprise a mosaic of native Scots pinewood and bog communities. The use of the two NCC boats in a continuous ferrying operation enabled us to land small parties on most of the larger islands and annotated distribution maps were produced for *Deschampsia setacea*, *Goodyera repens*, *Hymenophyllum wilsonii*, *Isoetes lacustris*, *Lycopodiella inundata*, *Myriophyllum alterniflorum*, *Ophioglossum vulgatum*, *Osmunda regalis*, *Sorbus rupicola*, *Sphagnum fuscum*, and *Utricularia intermedia*, all of which were found to be fairly abundant. Unfortunately we were not able to confirm old records of *Linnaea borealis* or *Rhynchospora fusca* but species recorded for the first time were *Carex viridula* subsp. *viridula* (*C. serotina*), *C. limosa* and *Drosera intermedia*.

Days five and six were spent on high ground on the Beinn Eighe ridge and in Coire Mhic Fhearchair. On day five the group ascended Beinn Eighe from the south via the steep path into Coire an Laoigh and recorded *Arctostaphylos alpinus* in small quantities on bare rocky areas with *Carex bigelowii*, *Diphasiastrum alpinum*, *Juniperus communis* subsp. *nana*, *Loiseleuria procumbens* and *Vaccinium uliginosum*. On the richer grassland and flush areas *Alchemilla alpina*, *Antennaria dioica*, *Cornus suecica*, *Luzula spicata*, *Saxifraga stellaris* and *Sibbaldia procumbens* were seen. On the ridge at Coinneach Mhor *Cerastium arcticum* was common together with several large colonies of *Pyrola minor* and *Salix herbacea* on eroded serpulite scree but the most exciting find was a colony of over 20 plants of *Saxifraga rivularis*.

A long walk out to the north facing Coire Mhic Fhearchair on day six was rewarded with many exciting records including *Athyrium distentifolium*, *Cardaminopsis petraea*, *Cerastium arcticum*, *Coeloglossum viride*, *Dryopteris expansa*, *D. oreades*, *Deschampsia cespitosa* (the alpine form, *D. alpina*), *Lycopodium annotinum*, *Oxyria digyna*, *Poa nemoralis* (the mountain form, *P. balfourii*), *Saussurea alpina*, *Saxifraga hypnoides* and *Sedum rosea*.

T. CLIFFORD

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## 8. GLENCOE AND RANNOCH MOOR. 12TH-13TH JULY

17 members and friends attended one or both days; on the Saturday, 14 set out for Bidean nam Bian and on Sunday, 15 ventured on to Rannoch Moor.

The weather was dry with cloud and sunshine alternating except for one short shower on

Sunday afternoon. A light breeze moderated the temperature and defeated the midges.

The 1000m ascent on Saturday was completed with little delay and after sighting *Saxifraga rivularis* lunch was consumed. This plant was quite scarce because snow banks were still melting and many plants were tiny though a few were already flowering. *Cerastium arcticum* was abundant at our lunch stop and throughout the rest of the day.

After lunch the extensive and complicated rocks were examined. Gullies and shelves allowed access to most plants and *Cystopteris montana* was soon found and proved abundant. *Saxifraga nivalis* was seen along with all the usual arctic-alpines viz. *Silene acaulis*, *Thalictrum alpinum*, *Epilobium anagallidifolium*, *Saxifraga stellaris*, *S. hypnoides*, *S. oppositifolia*, *Saussurea alpina* etc. (*Saxifraga aizoides* was seen later but was strangely uncommon.)

The rocks led to a steep face with a ledge rising to the right and this we followed in several small groups, finding *Saxifraga cernua* in quantity (a count recorded about 400 plants) along with a good deal of *Draba norvegica*. On the descent we looked for *Carex lachenalii* but found only *C. saxatilis* and, of course, *C. bigelowii*.

A few members of the party visited a wet rocky area at a lower level and found *Carex atrata* and *Juncus castaneus*. These appear to be new to this area.

The next day we first visited a site for *Scheuchzeria palustris* of a considerable size and then split into two parties which scouted in slightly different directions. Just before lunch one party discovered a second, smaller site and after lunch a further eight or more sites were discovered, all considerably smaller than the first. Other plants seen on the moor included *Betula nana* and what appeared to be a hybrid between this species and *B. pubescens*. The wetter parts regularly had *Carex limosa*, *C. lasiocarpa*, both *Utricularia minor* and *U. intermedia* and occasionally *Carex rostrata* and *Myriophyllum alterniflorum*.

On the roadside, seen on both the outward and return journeys was a robust plant of *Leymus arenarius*, fully 25km from the sea!

A. SLACK

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## 9. RHINNS OF KELLS, KIRKCUDBRIGHTSHIRE. 26TH-28TH JULY

The aim of the meeting was to confirm some old records of Hawkweeds and to explore some little known country for the same genus.

Seven members met at Clatteringshaws Reservoir (GR 25/5.7.) and drove some 10km along forestry tracks to the west slopes of Millfire, collecting *Hieracium gothicoides* by the Garrary Burn on the way. From there it was an easy walk to the ridge. This mostly had a poor flora with *Solidago virgaurea*, *Salix herbacea* and *Carex bigelowii* amongst the rocks. Further south on Millyea *Saussurea alpina*, *Thalictrum alpinum* and *Dryopteris expansa* were seen locally and in a side gully *Sedum rosea* and *Hieracium centripetale*, but there was no sign of *H. holosericeum* collected here in the 1880s.

On Sunday the party met at Murray's Monument and explored the lower Tonderghie Burn in wet conditions finding *H. duriceps*, *H. diaphanum* and *Carex pallescens* but not *H. hebridense* identified from a 1977 collection in this area. The Black Loch nearby yielded *Lobelia dortmanna*, *Littorella uniflora*, *Nymphaea alba* and *Carex lasiocarpa*. After lunch a short drive to the north brought us to Cairnbarer which was explored in conditions of thick mist/low cloud. It proved to have a relatively rich flora: *Sedum rosea*, *Thalictrum alpinum*, *Linum catharticum* and *Galium boreale* in some quantity and, very locally, *Potentilla crantzii*. Hawkweeds were scattered over the hill and included *H. dasythrix*, *H. ampliatum*, *H. langwellense*, *H. argenteum* and *H. vulgatum* as well as a decorative form of *H. duriceps* with heavily blotched leaves.

Monday morning was spent by two rocky rivers near Luce in Wigtownshire. The county is almost unknown territory for Hawkweeds and it was encouraging to confirm old records of *H. gothicoides* and *H. umbellatum* and more recent ones of *H. dissimile*, *H. vulgatum* and *H. reticulatum*. In addition, records were made for *H. sommerfeltii*, *H. lissolepium*, *H. latobrigorum* and *H. subcrocatum*. *Anagallis minima*, *Radiola linoides* and *Plantago maritima* were seen on a nearby roadside.

In the three days we covered a wide range of country, added several new county records for Hawkweeds and showed that, in suitable habitats, there may well be further interesting discoveries to be made.

D.J. McCOSH

## 10. GLASGOW. 9TH AUGUST

13 people took part in recording at three separate localities, all in v.c. 77 (Lanarks.). Firstly, the last virgin tetrad of the 90 in the Flora of Glasgow 'rectangle' was investigated at Cambuslang Park and adjacent waste ground, and secondly around Gilbertfield Castle (65T48); recording in the morning produced almost 200 species including *Polystichum aculeatum* and *Chaerophyllum temulentum*, neither of which is common near Glasgow.

In the afternoon, a poorly known tetrad (66T82) was examined and yielded 140 records. The highlight of the day was an overgrown meander of the North Calder at Newlands Farm; this evil-smelling fen had a profusion of *Glyceria plicata*, with only a few previous records from the Glasgow rectangle and, most striking of all, a large stand of *Rumex hydrolapathum* which none of the participants had ever seen in Scotland.

Mrs C.A. Dickson and Mr J.R.S. Lyth and the vestry of St. Andrews Episcopal Church, Uddingston, are thanked warmly for providing facilities and cakes for lunch.

J.H. DICKSON

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## 11. MIDLOTHIAN. 30TH AUGUST

The purpose of this meeting, held at Bankhouse Farm, north-west of Stow, was two-fold; firstly to 'square-bash' in unallocated 1km squares for the Botany of Lothians Project, and secondly to instruct beginners in plant identification.

Unfortunately, despite a bright pleasant day, only three people turned up and so only one square could be tackled. The two beginners, however, benefitted from the low attendance, receiving almost individual tuition.

The meeting started in a damp meadow area where various waterside plants were recorded including *Myosotis* spp., *Mentha* spp., *Veronica beccabunga* and *Glyceria fluitans*. Moving to drier pastures we encountered some of the more common agricultural weeds such as *Sinapis arvensis*, *Euphorbia peplus* and *Spergula arvensis*. With these we saw an interesting mixed population of *Galeopsis speciosa* and *G. tetrahit* showing an amazing range of colours and sizes. Higher up the hillside were found *Oreopteris limbosperma* and *Athyrium filix-femina* in some profusion, and also *Briza minor*, *Lathyrus montanus*, *Vicia cracca*, *V. sepium*, *Danthonia decumbens* and *Luzula pilosa*.

Other nearby squares produced *Viola lutea* in some quantity and *Corydalis claviculata*, the latter with only two other stations in the Lothians. 110 species were recorded during the day, but much of the square remains to be searched.

D.T. MCKEAN

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## 12. KINDROGAN FIELD CENTRE, PERTHSHIRE. 20TH-27TH SEPTEMBER

Ten people attended this meeting, a course devoted to the study of water plants and Stoneworts. Kindrogan lies within easy reach of an interesting range of water bodies, many well studied by Abram Sturrock, F. Buchanan White and others in the late nineteenth century, the heyday of Perthshire botany. We were thus able to see a wide variety of habitats, and compare the present flora of many sites with earlier records.

Three days were spent examining the chain of lochs between Blairgowrie and Dunkeld. In shallow water in the Loch of Butterstone we found the superficially similar *Eleocharis acicularis*, *Littorella uniflora*, *Isoetes lacustris*, *Lobelia dortmanna* and *Subularia aquatica*, and soon became familiar with their vegetative characters. Other aquatics there included *Callitriche hermaphroditica*, *Myriophyllum alterniflorum*, *Potamogeton berchtoldii*, *P. crispus*, *P. gramineus*, *P. natans*, *P. x nitens* and *P. obtusifolius*. Masses of *Nitella flexilis* grew in somewhat deeper water, and at the eastern side of the loch we were

particularly pleased to find *Najas flexilis* mixed with it. The globose cyanobacterium *Gleotrichia* was abundant throughout the loch.

Many of these plants, including *Najas*, were also seen at the nearby Loch of Lowes, a Scottish Wildlife Trust reserve. Additionally we found *Potamogeton filiformis* growing scattered amongst a lawn of *Eleocharis acicularis*, and fine patches of *Elatine hexandra*. Marlee Loch and Loch of Clunie, further east, also had a similar flora to Butterstone. At Marlee stands of *Potamogeton alpinus* grew with *Nuphar lutea* on both sides of the entrance of Lunan Burn, and there were a few handsome plants of *Rumex hydrolapathum* on the shore. However, we had to wade through green algal blooms on the water surface, and it seems that the water quality may be deteriorating. The abundance of *Callitriche hermaphroditica*, loaded with fruit, was notable on the shore of Loch of Clunie.

The smaller lochs around Blairgowrie were less interesting. In White Loch *Elodea canadensis* was the most frequent species, and only two *Potamogetons*, *P. crispus* and *P. obtusifolius*, were found. The adjacent Fingask Loch held more aquatics, including *Potamogeton filiformis*, *P. x nitens*, *P. perfoliatus*, *P. pusillus* and *Zannichellia palustris*. *Ranunculus circinatus*, rare in Scotland although not as rare as the *Atlas of the British Flora* suggests, grew in both. Monk Myre proved to be horribly eutrophic, and the only aquatics we recorded were *Eleocharis acicularis*, *Lemna minor*, *Potamogeton crispus* and *Zannichellia*. *Zannichellia palustris* is one species which has increased in Perthshire this century - only one locality was known to Buchanan White.

Loch Kinardochy provided a contrast to these lowland lakes. It is attractively situated amongst acidic moorland at an altitude of 365m, but receives drainage from a nearby outcrop of Dalradian limestone. Long stems of *Potamogeton praelongus* had been washed on to the shore, some bearing the enormous fruits characteristic of this species. A further five *Potamogetons* were found, and *Chara globularis* could be seen growing with *Nitella flexilis* in the clear water. At Lochan an Daim to the west, *Utricularia australis* grew in the water and *U. intermedia* in a *Carex rostrata* swamp. On the return journey we stopped briefly at Loch Dunmore north of Loch Faskally, where *Potamogeton natans* and *Sparganium minimum* were the most frequent species.

With both vice-county recorders in the party it was inevitable that we should spend a day in v.c. 87 (W. Perth). After visiting Doune Ponds to inspect *Pilularia globulifera*, we spent some time at the Lake of Menteith. *Elatine hydropiper* was seen at both these sites. A stop at the River Leny south of Loch Lubnaig proved to be one of the most memorable of the week. *Nuphar pumila* grew in a rather sheltered bay, and its fruits were aptly likened to bottles of 'Perrier Water' rather than the brandy bottles of its larger relative. In the more rapidly flowing stretches *Juncus bulbosus* var. *fluitans* was conspicuous as bright green patches, growing with forms of *Potamogeton natans* with abundant phyllodes and of *P. polygonifolius* with submersed leaves. *P. berchtoldii*, *P. perfoliatus* and *P. praelongus* were also found here. Later an aquatic of a different sort was sampled, with some of the party enjoying salmon for dinner although some preferred haggis with its inevitable and (to me) inedible accompaniment of neaps.

During the week brief visits were made to some rivers. In the River Isla *Potamogeton pectinatus* and *P. perfoliatus* were seen at Couttie. *Limosella aquatica* grew on mud by the river further downstream at Bridge of Isla, and we found *P. x nitens* and *P. x salicifolius* in the water. This is apparently the first Perthshire record of *P. x salicifolius* since it was collected in this river in 1887. Another *P. lucens* hybrid, *P. x zizii*, grew in the River Earn at Dalreoch Bridge. However we did not find *P. lucens* itself anywhere.

In all we saw almost half of the British species of aquatic vascular plants in six days fieldwork. The undoubted success of a very enjoyable week was partly due to the fine weather, but primarily to the efforts of Nick Stewart, who as course leader combined taxonomic expertise with local knowledge. Thanks are also due to Jenny Moore, who introduced us to the charophytes and managed to compensate for the lack of variety among the plants found in the field by providing specimens from elsewhere. We are also grateful to the staff of Kindrogan for arranging access to so many sites.

C.D. PRESTON

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