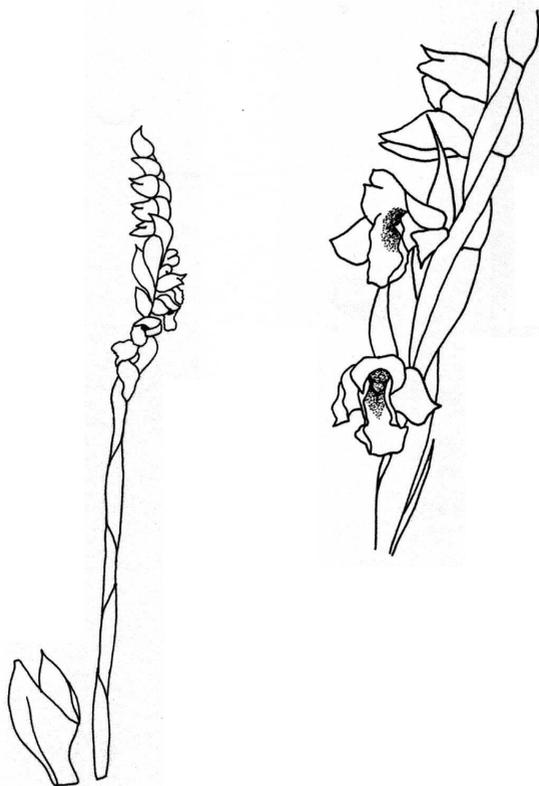


The Hardy Orchid Society *Newsletter*



No. 22 October 2001

The Hardy Orchid Society Committee is...

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Enclosed with this Newsletter: Application Form for the Autumn Meeting

Cover illustration: *Spiranthes spiralis* by Sarah Marks

Autumn Meeting, 2001

Colin Clay, Meetings Secretary

The next meeting will be on Sunday 4th November 2001 at Horticulture Research International, Wellesbourne, near Warwick and incorporates the Autumn Photographic Competition (see next article in this Newsletter for Photographic Competition schedule).

An Application Form plus sketch map with directions is enclosed with this Newsletter. Use of the application form is **essential** to give us information on attendance and for catering requirements – lunch, drinks, etc. Those not paying for a lunch will need to pay a small amount in advance, to cover the cost of coffee, tea and biscuits etc. Guests may accompany members but must pay an **additional charge** of £3 – please include them on your application form.

Please bring your Competitive Photographic Images, Prints or Slides (please note entry time). There should be room to display any other orchid-related material that you would like to exhibit; please forewarn us if you need tables or Poster Panels.

‘Trade’ Plant Sales tables will be subject to a charge of £25, payable in advance and booked with Sarah Marks. A Sales Table for Members plants will be present and people are encouraged to bring their spare plants. Plant Sales will not be restricted to orchids; please bring any plants that may appeal to hardy orchid enthusiasts. Double labeling, to indicate plant name and selling price should be adopted if possible. Sellers will be expected to donate 10% of monies to the Society. The Plant Sales room will be locked when not attended. All proceedings are on the ground floor and cars may pull-up adjacent to the Conference Facility for easy unloading / loading of plants.

A small and very local B&B list is available from Sarah Marks (please send s.a.e.) but there is no shortage of B&B establishments in the area, due to the proximity of Stratford upon Avon. Accommodation information may be found on the following websites: <http://www.stratford-upon-avon.co.uk/soaaccghouse1.htm>
<http://www.hotels-england.co.uk/warwickshire.htm>.

Programme

08:30 Set-up Trade and Members Plant Sales Tables.

09:00 Meeting opens: Coffee / Tea: Informal chat. Hand in Photographic Competition entries before 09:45. Plant Sales Tables open.

10:55 Chairman's Introduction

11:00 Orchid Hunting in the U.K., Part 1 – Brian Laney

11:50 Fabulous Apulia: the land of the Ophrys – Simon Andrew

12:40 Results of the Photographic Competition – Prints section, with judges comments

13:00 Lunch – a brief walk to the HRI Restaurant. Plant Sales and viewing of Photographic prints.

14:15 Results of the Photographic Competition – Slides section. Viewing of the prize winning entries with judges comments

14:30 Dubious dealings in the dark: Unearthing the secret life and fungal partners of orchids in the field – Jonathan Leake

15:30 In the bog – Tony Hughes

15:45 General Discussion Session – Any HOS topic (this will include a report from the IUCN Orchid Conference, Perth, Australia by Jim & Rosemary Hill)

16:00 Tea and informal chat.

17:15 End of Meeting. Vacate by 17:30.

HOS Photographic Competition

Doreen Webster, Show Secretary

Being a new Show Secretary I know, because you are such kind folk in the HOS, you will be forgiving when I make mistakes - at least, I hope so. The classes for this year's HOS Photographic Competition to be held during the Autumn Meeting at Wellesbourne, are exactly the same as last year but the rules are very slightly different. I feel sure some of the winning entries will appear on the HOS Website and possibly, some will be published in colour in the quarterly Newsletter, so please try to bring along as many photographs relating to orchids as possible, in order to make an exceptional photographic display. Do please remember the photographs must be ones you have never shown at the HOS display before. However, if in addition to your entries, you would like to bring along any you have

shown before, we could put up a non-competitive display which would be enjoyable for new members, and I know established members would like to see them again.

Classes

1. An orchidaceous landscape, print size up to 6x4 inches
2. A single orchid plant, print size up to 6x4 inches
3. A close-up, print size up to 6x4 inches
4. An orchidaceous landscape, print size up to 10x8 inches
5. A single orchid plant, print size up to 10x8 inches
6. A close-up, print size up to 10x8 inches
7. An orchidaceous landscape, 35mm colour slide
8. A single orchid plant, 35mm colour slide
9. A close-up, 35mm colour slide

Rules

- a) Judging will be based on the quality of the pictures, not on the rarity of the plants.
- b) Plants may be wild or cultivated, though only 'hardy' plants are acceptable.
- c) Advanced entry is not required, but all entries must be staged by 09.45 a.m. so that judging can be completed before the meeting.
- d) Prints must be unmounted, so that they can be inserted in plastic pouches for protection when on display.
- e) You may enter up to **three prints** in each of classes 1 to 6, but will only receive **one award** per class.
- f) You may enter only **one slide** in each of classes 7 to 9.
- g) Pictures entered previously in HOS displays are **not** permitted. (Please refer to my notes).
- h) Prints should have a small note with them of what the plant is and any information of interest to other members but your name must only appear on the reverse side of the print.
- i) Slides should be labelled with your name (the judge will not be seeing the actual slide out of the projector!) and with an alignment dot on the **bottom left corner** of the mount (when viewed the right way up). Any standard slide mount is acceptable.

No trophies, no prizes - but your efforts will be rewarded by the pride of winning and the possibility of seeing your own little photographs in colour in the Newsletter, or you may even be able to proudly declare that you "*Have pictures on the Web!*"

The Orchid in Chinese Art

Sarah Marks

As with Orchid cultivation, the Chinese were the first to represent the Orchid artistically. Mi Fei is considered by many to be the first orchid painter during the Song Dynasty (A.D. 960-1279). It remains important even today as a practice subject to improve painting skills. The leaves are one of the most difficult strokes to paint well, requiring a smooth flowing movement from the shoulder. The delicacy and essence of the petals are also captured in one single brush stroke and arranged to show different flower postures. Asymmetry in brush stroke, flower pose and overall composition is aimed for as nothing in nature is truly symmetrical.

Freestyle painting was developed by the Scholar Painters - Officials who retired from their duties and lived as recluses in the mountains and spent their time writing poetry, painting, philosophising and studying nature. Rather than painting with their subjects in front of them, painters would venture out and absorb the Chi (energy) of the natural world around them and return to paint from memory and experience and express the Chi in their paintings. Observers enjoying the paintings absorb the Chi "gathered" by the artist from the natural world.

To the Chinese, the Orchid is a symbol of purity and virtue and has been described as "the scholar's sweetheart, hiding behind rocks and growing at the lake shore like a demure young girl washing her hair". A famous poet Qu Yuan (c. 343-278 BC) wrote many poems about the orchid and it is to commemorate this poet that the Orchid became a favourite subject in Chinese painting, poetry and literature.

When a student takes up Chinese Brush Painting, the Four Gentlemen subjects are studied. As well as the Orchid, they include Plum Blossom, Bamboo and Chrysanthemum. This study provides the student with the necessary skills to paint any plant structure and apply what they have learned to other plant subjects. In Chinese Art Schools, Calligraphy and the Orchid are practised for at least one hour per day to develop the skill of using the brush. It is said that it takes half a life-time to master the painting of the Bamboo, but a whole life-time for the Orchid.

Growing Ophrys, a Waiting Game

Carl Hardwick

Over the last five years I have been building up my collection of *Ophrys* however, it has only been in the last couple of years that I have seen plants start regularly flowering. I believe this is due to a few changes I have made in my cultivation methods.

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Orchid painting by Sarah Marks

1. Throughout the year the greenhouse I house my plants in has all its vents open to allow maximum airflow. The only times I close the greenhouse vents are when frost threatens.
2. When temperatures dip and frost threatens I do use a little heat from an electric fan heater, which keeps the greenhouse just frost free while still maintaining some air movement.
3. The period from mid December to mid February I reduce the watering to a minimum only allowing the compost to remain barely damp and keep the plants from becoming too desiccated. This measure also reduces the risk of frost damage to the developing tubers.
4. As temperatures rise in spring the plants are watered liberally with rainwater; this having weak seaweed based fertiliser added on occasions.
5. Water is withheld or greatly reduced depending upon the plant as the plants' leaves turn yellow in April or May.
6. As the leaves dry and turn brown in late April and early May, the plants are placed outside under cover for the remainder of the summer. The plants are not placed in direct sunlight so they are warm but not baked.
7. At the end of September the covers are removed from the plants and they are exposed to any autumn rain that falls.
8. If the weather is extremely wet then the covers will be placed back over the plants, preventing the plants from becoming too wet and lessening the chance of root rot.
9. Growth of plants is usually fairly rapid at this time of year, with the rosettes of leaves fully formed by the end of November.
10. Once heavy frosts set in, the plants are moved inside into the frost-free environment of the alpine house.

Ophrys do not seem that bothered by the type of compost they grow in, as long as they have a mix that is not too rich and is gritty, producing free drainage. I personally like to repot yearly, this giving me the chance to inspect the tubers and see if I have had any doubling up or detect any problems early on. The compost I use is a 50/50 mixture of sterilised Chiltern loam and sharp grit. The compost is topped off with a layer of grit; this forms a dry collar for the plants.

Some species seem to have two types of growth patterns. I have one form of *O. cretica* that flowers yearly but never produces a second tuber. However, I have a second form that has a doubling of tubers every couple of years but only one of these new tubers seem to flower at a time. The year they all flower, I will have a spectacular pot that should be appreciated on the show bench.

A puzzle for all growers out there: I have had a couple of plants that seem to have missed a year of growth. A new tuber has developed from the old without having developed any leaves; roots are present growing from the top of the old tuber. Do

plants miss leaf growth in the wild?

Winter temperatures have a huge influence on flowering times. Last year with the warm mild spell after Christmas, I had plants come into flower by early February, whereas this year, as I write these notes, it looks like the earliest I will see a flower will be mid March. This follows the very cold winter this year where growth has remained static for almost a month.

The pots I grow my *Ophrys* in are all clay as this seems to suit them and prevents me over watering at the critical mid winter period. Pots can be any shape but I find as long as the plants have four or five inches of compost, they seem happy. The roots of *Ophrys* develop sideways from the top of the tuber into surrounding soil, they then explore downwards into the compost for moisture and nutrient.



Ophrys cretica
(Photo by Simon Tarrant)

I have not grown any *Ophrys* from seed as yet, but thanks to the generosity of Adrian Blundell I have grown a few species from mini tubers in agar. These have reached a decent size now and I look forward to seeing them in flower. The first season out of the flask the seedlings were given a moist summers rest so as not to desiccate the small newly formed tubers. Once over this delicate stage, they were treated as the flowering size plants.

I do hope this article is of some use to anyone thinking of starting to grow this interesting and spectacular genus.

Unearthing the wealth - back issues of the Newsletter **Moirra Tarrant**

Several mentions have been made in these pages about the wealth of information contained in back issues of the HOS Newsletter - all of which are currently still available. Members might find it helpful to have a reminder of where information on some of the more popular topics can be found (a full Contents List is on the HOS website). In each case, the issue numbers are contained in brackets.

Growing Orchids from Seed

Flasking Forum by Richard Manuel Part 1 (2), Part 2 (3), Part 3 - Weaning (4), Part 4 - Sterile work areas (5), Part 5 - Seedling growth, the rhythm method (8)

Symbiotic culture of hardy orchid seedlings by Jim Hill (5)

Dactylorhizas from seed by Alan Dash (12)

Sterilisation of orchid seed (19) and Sowing seed of hardy orchids (20) by Ted Weeks

Orchid Culture

Growers Diary by Alan Dash Part 1 (1), Part 2 (2), Part 3 (3), Part 4 (4)

Cultivation of Mediterranean orchids by Richard Manuel Part 1 (8), Part 2 - Potting composts (9), Part 3 - Plant management (10)

Dactylorhiza cultivation and propagation by Alan Dash (9)

Growing orchids in the open garden by Mike Powell (1)

Disa uniflora cultivation by Peter Corkhill (16)

What is hardy? by Richard Manuel (16)

Hardiness of “tender” orchids by Mike Powell (17)

Cypripediums

Cypripedium seed germination by Carson Whitlow (5)

Cultivation of Cypripediums by Peter J. White Part 1 (6), Part 2 (7), Part 3 (8), Part 4 (9), Part 5 (10)

Sciencey stuff

Orchid mycorrhizal fungi and their long-term storage by Phil Meek (2)

A DIY glove box by Carol Dash (3)

A DIY laminar flow cabinet by Carol Dash (4)

Viruses in orchids, the story so far by Colin Clay (7)

Seed sowing and replating media for terrestrial orchids by Peter J. White (7)

Some thoughts on culture medium sterilisation by Kath Fairhurst (9)

Conservation science

Tri-partite relationships between orchids, fungi and other plants by Jonathan Leake (15)

Orchid conservation, what determines orchid distribution and abundance by Helen S. Scott (19)

And for those catching up on our President’s work on DNA

A layman’s interpretation of Gene sequencing by Tony Hughes (10)

Does DNA reveal all about the evolution of terrestrial orchids by Richard

Bateman, reported by Bill Temple Part 1 - Speciation and conservation genetics (19), Part 2 - Evolutionary relationships (20 & 21)

Choosing a holiday destination?

Great Britain North Dorset - Tony & Diana Hughes (6)

Cotswolds - Tony & Diana Hughes (18)

	Fife - Patrick Marks (18)
France	general - Alan Blackman (15) Drôme - Richard Manuel (18)
Geneva	Leslie Lewis (20)
Italy	Apulia (Gargano area) - Paul Harcourt Davies (2) Apulia (Murgia Hills & Trulli) - Paul Harcourt Davies (3) Dolomites - Tony & Diana Hughes (3) Dolomites - Carol Dash (14)
The Med	Mallorca - Carol & Alan Dash (1) Rhodes - Tony & Diana Hughes (4) Cyprus (HOS trip) - Jim Hill (5) Crete (HOS trip) - Trevor Marks (10) Samos - Simon Tarrant (15)
Austria	Filzmoos - Carol Dash (12)
Sweden	Gotland - John Hagggar (11) Gotland - Simon Tarrant (17)
USA	New England - Sarah Marks (16) West coast - Bill Temple (18) Florida - Mike Parsons (11)
Canada	Bruce Peninsula - Carol Dash (19) Canadian Rockies - Mike & Veronica Baker (19)
Australia	West & south coast - Richard Lawrence (8)

Newsletters are available from the Newsletter editor (address inside front cover) at £2.50 each. Issues 8 - 14 are still available to members at the sale price of £1.00.

Webs and Bees

Tony Hughes

When development of the HOS website (www.drover.demon.co.uk/HOS) started over two years ago, one objective was to build up an on-line picture gallery of all the British orchids. Thanks to the generosity of several HOS members (who didn't mind me borrowing their slides, digitising them and generally ruining their superb photography in order to fit the pictures onto a web-page!) the "Gallery" section rapidly grew. Ambition grew equally rapidly, so sub-species, varieties, colour variants and so on were included, and the project mushroomed.

Unfortunately, a few of the early pictures had involved a bit of cheating! Although all pictures were of orchids that are found in Britain, in some cases the actual photos had been taken in foreign parts. A prime example was the Lady's Slipper (*Cypripedium calceolus*), where the plants depicted were snapped at a celebrated site on the north face of the Jungfrau in Switzerland. Eventually this problem was

rectified when Graham Giles came up with a picture of the genuine Yorkshire plant, taken before any of the recent re-introductions had flowered.

Another notable cheat picture involved the distinctive “Bicolour” Bee Orchid (*Ophrys apifera* var. *bicolor*), where Richard Manuel’s close-up had been obtained as far away as Cyprus. I tried to rectify this matter during one of Norman Heywood’s HOS outings in Dorset but, despite searching what seemed like the whole of Fontmell Down, we concluded that it was resting underground that year. It was therefore a pleasant surprise when, earlier this summer, an e-mail on various conservation matters went around the Committee - it contained the tantalising phrase “Bicolour Bee”. The originator of this bit of information was Brian Laney, who obligingly e-mailed me detailed directions to where the plants might be found. The next day being hot and sunny, I high-tailed it to the depths of Warwickshire, lined myself up with the appropriate lamp-posts, measured off the specified number of paces, and there at my feet was a Bee Orchid. Any scepticism I might have had rapidly evaporated – it was undoubtedly “var. *bicolor*”. I then had to work fast because it was on its very last flower and the blazing midday sun was not improving it at all! After taking the necessary photos, a search of the area eventually located three other specimens that Brian had pin-pointed, but these were all distinctly “past it”. A gratifying point was that each of them had a single fat seedpod, rapidly maturing, so there is a chance that they may proliferate there. Now all that remains is for me to put a genuine British image on the website!

I have to admit that there are still a few “cheats” on our website, so if anyone has been to the Burren for the Dense-flowered Orchid (*Neotinea maculata*), or to the Channel Islands for the Jersey Orchid (*Orchis laxiflora*), or has snapped that most elusive of British plants, the Ghost Orchid (*Epipogium aphyllum*), do let me know. Also, I should be delighted if keen-eyed HOS members would check through the “British Orchid Pictures” section of the website to see if there are any serious omissions that they could help to rectify. And then we might consider moving on to natural hybrids!

Letter to the Editor **John Haggart writes...**

An article in the 1993 National Pleione Report by Einar Myholt from Norway detailed a medium devised by Dr Svante Malmgren from Sweden for growing European orchids asymbiotically. Dr Malmgren was a pioneer in growing European *Cypripedium calceolus* in quantity from seed in the late 80’s and early 90’s. I have been using a 1996 modification (see reference) of his medium for the last four years to successfully grow many species of *Dactylorhiza*, *Anacamptis*, *Spiranthes*, *Gymnadenia* and *Ophrys*. *Orchis* species too grow well on this medium albeit rather more slowly. I still use this medium to grow *Epipactis*, *Anacamptis*

pyramidalis, *Gymnadenia* and *Orchis*, which I find difficult or impossible to grow using the symbiotic fungi presently available.

The 1996 medium is made up as follows:

Ca ₃ (PO ₄) ₂	75mg/litre
MgSO ₄ ·7H ₂ O	75mg/litre
KH ₂ PO ₄	75mg/litre
Sucrose	10-20g/litre
Agar	6g/litre
Vamin	300mg amino acids*
B-vitamins	**
Charcoal	0.5g/litre
Pineapple juice	25ml/litre
Tap water to...	1 litre

* Vamin is a medical amino acid mixture designed for intravenous administration and is only available on prescription. 2.25ml of “Vamin 18” is equivalent to 300mg amino acids. I suspect that a similar quantity of casein hydrolysate (that can be obtained without fuss from Sigma-Aldrich) would probably give similar results although I have not tried this myself yet.

** Svante Malmgren used a ¼ of a vial of another medicinal product marketed as “Solivito” in Britain as his vitamin B source. One vial of this material contains 3.2mg thiamine, 3.6mg riboflavin, 40mg nicotinamide, 4mg vitamin B6, 15mg pantothenic acid, 100 mg vitamin C, 60 mcg biotin, 0.4mg folic acid and 5mcg vitamin B12. I have personally used dispersed vitamin B complex tablets of roughly similar composition but usually use 0.25ml of a veterinary multidose vitamin B injection called “Duphafral Extravite”.

A few years ago I made contact with Dr Malmgren who gave me the details of a similar but new medium that he has prepared. This medium, Svante’s “ammonia-pineapple” formula, I have myself been using for several years now. The formula is unusual in that its sole nitrogen source is ammonia/ammonium. It contains no added organic nitrogen (so forget the trials and tribulations associated with obtaining Vamin!) and no nitrate. This is a situation that common beliefs indicate should not be suitable for hardy orchid germination and growth. Svante reckons that the orchids could not have read the books! Although some orchids seem to grow less well on the new medium than the old (*Epipactis* and northern *Orchis* species, for example), I have found the ammonia-pineapple formula extremely useful for growing *Dactylorhiza*, *Anacamptis* and *Gymnadenia* rapidly to a large, weanable size asymbiotically. Dr Malmgren also assures me that it is very good, and an improvement on his original formula, for growing Mediterranean *Orchis* and *Ophrys* species too.

Several years back it was Svante Malmgren who advised me to cool down my asymbiotic cultures of northern summer-green species to 8° to 12° in the autumn months prior to refrigerating them for their winter dormancy. This results in a prolongation of the in vitro growing season and enhanced root growth of the species indicated above.

Dr Malmgren has suggested that perhaps the Hardy Orchid Society Newsletter might be interested in receiving an article about his own experiences with this new formula and with its application to other genera such as *Cypripedium*.

The new formula differs from the above in several respects. Firstly there is no Vamin/amino acid. The pineapple juice is used at double the strength (50ml per litre) but is neutralised to pH6 with aqueous ammonia prior to use. I have used household ammonia available from "Boots" for this purpose. Otherwise the mineral/charcoal/agar/sucrose/vitamin B components remain the same. The medium is made up as before with tap water.

Ref: Malmgren, S (1996) *Orchid Propagation: Theory and Practice*

In: North American Native Terrestrial Orchids Propagation and Production - Conference Proceedings March 16 & 17 1996.

ISBN 0-9655075-0-5

Orchid Safari to Deepest Gloucestershire **Roy Bailey-Wood**

Some of you may recall Richard Manuel's note in the April 2001 Newsletter, that he was arranging a field meeting in the Bristol/Gloucester area for June 24th. As a result, some 18 members duly met at a lay-by on the A432 just off the M4. There had been some doubt even up until a week or so before the date that the Foot and Mouth outbreak would result in cancellation of the meeting but fortunately that did not happen. Members came from quite a wide area including some of us from Wales where some of the orchids that we were hoping to see are not found.

We met at 10 o'clock on a bright, clear sunny morning and suitably rejuvenated by a cup of coffee set off along the road on a walk of all of a couple of hundred yards to see a fine colony of Lizard Orchids (*Himantoglossum hircinum*). There were dozens of plants that had just come into flower and were localised in a small area on a steep bank sloping down from the road. On the other side of this rather busy road there were good numbers of Common Spotted Orchids (*Dactylorhiza fuchsii*) a few plants of Bee Orchid (*Ophrys apifera*) and some gone-over specimens of Greater Butterfly Orchid (*Platanthera chlorantha*) all nicely spread amongst some low shrubs.



Ophrys apifera

Photo by Simon Tarrant

After some time spent taking photographs and admiring the plants we set off north along the A432 to Selsley Common. This was something of a problem for those of us without the correct OS maps and we had to go in convoy to be sure of getting to the right place. Perhaps in future, for field trips visiting different sites members could be forewarned about maps that would be required. Selsley Common is a local beauty spot and judging from the amount of parking space available at the roadsides is clearly very popular with the locals. By the time our convoy arrived it was getting quite warm so the gently breeze blowing over the hillside was very welcome. The Common is a large grassy limestone hill blessed with wonderful populations of grassland plant species including orchids, although we were here primarily to see the Musk Orchid (*Herminium monorchis*) which is known to grow here in small numbers. Fortunately, our local experts had some knowledge of where it was to be found which was just as well otherwise the chances of finding

this minuscule orchid in such a large area of grassland would have been very small. During our search other orchids spotted were Fragrant Orchid (*Gymnadenia conopsea*), including a few small albino plants, Common Spotted Orchid, some very nice plants of Bee Orchid, as well as Pyramidal Orchid (*Anacamptis pyramidalis*). There were also a few stalks of what were probably Early Purple Orchid (*Orchis mascula*). It took some time before our eagle-eyed experts found our quarry which was hardly surprising as there were only about half a dozen very small plants there. These barely came above grass height and could easily have been mistaken for small bedstraw-type plants. This made seeing them all the more rewarding.

After all this hard work it was time for lunch for which we were invited to Nigel and Maureen Denman's beautiful Cotswold cottage set on a hill in idyllic quiet countryside, much to the envy of those of us who live in a city. This was a good opportunity for people to get to know each other whilst munching juicy fresh



Gymnadenia conopsea
Photo by Simon Tarrant

strawberries, thoughtfully provided by Tony Hughes. Much invigorated, our convoy set off on a rather slow journey through beautiful countryside passing through typical Cotswold villages, not to mention Stroud, to Workman's Wood near the village of Sheepscombe where we had come to see the Red Helleborine (*Cephalanthera rubra*). After a walk through the wood, which some time I must visit again, we reached a small enclosure surrounded by high wire-netting erected to protect the plants. We spent a long time peering through the netting trying to see any plants, initially without any success although after most of us had left a few plants were spotted with the help of binoculars. Interestingly, there does not seem to have been any attempt to help plants perhaps by judicious weeding or pruning of shrubs and undergrowth. I know there are those that feel we should not interfere with nature, but given the totally unnatural environment imposed by such an enclosure then surely this hardly

applies. From my own experience this seems to have been an outstandingly bad year for Helleborines, certainly in South Wales. A small colony of Slender-lipped Helleborine (*Epipactis leptochila*) which I have been monitoring for a number of years failed to produce a single plant this year and a thriving colony of unusual Broad-leaved Helleborines (*Epipactis helleborine*) at Kenfig Burrows on the South Wales coast and another colony at Whitford Burrows on the Gower have had only a very small number of plants and few in flower. I wonder whether the very wet winter may have been the reason for the small numbers this year. I would be interested to hear (via email) if other members have had similar experiences.

Our convoy set off again this time to Swift's Hill to the east of Stroud. This small steep hill is covered in short grassy turf and home to the Frog Orchid, *Dactylorhiza viridis* (*Coeloglossum viride*) although we only found a few very small diminutive plants, which again, without the help of our experts could easily have been missed. A few Pyramidal Orchids were also scattered around and also a few of the ubiquitous Common Spotted Orchids and perhaps a couple of Broad-leaved Helleborines.

This brought us to the end of our safari and an extremely enjoyable day. The sun had shone all day and it had been made all the more enjoyable by being able to discuss orchids with others suffering from this affliction. I would like, on behalf of all those who participated, to thank Richard for making it such a memorable day for all of us and also of course our local experts for sharing their knowledge for our benefit.

If you have any comments on the effect of the wet winter on *Epipactis*, Roy can be contacted at: baileywoodR@netscape.net

Using Satellite Technology to Locate Orchids

Simon Tarrant

Working in the field of information I have always been obsessed with cataloguing and classifying any data I obtain. Since I became seriously interested in seeking out orchids in the wild I started to think about ways of recording all sorts of information about them, including location information. Having read a bit about GPS receivers I decided to apply GPS to my hobby.

GPS stands for Global Positioning System, and a GPS receiver is a handheld device similar in size and shape to a mobile phone, which detects signals from a series of U.S. satellites to determine its position anywhere in the world. The system is a commercial spin-off from U.S. military requirements, and is expected to provide accuracy to within 100 metres horizontally and 150 metres vertically 95% of the time. In my experience my GPS has provided horizontal accuracy to within 1 - 2 metres all the time.

Not surprisingly, America leads the way in the production of GPS receivers. Mine is an Eagle Explorer which I bought in 1997. Newer models have decreased in size and weight, and no doubt increased in facilities, but I only use a very modest subset of the features available. Normally the only function I use is the ability to record one's current location, and retrieve that data subsequently. That sounds very simple, but is in fact quite sophisticated, as there are two parameter ranges that need to be set according to where in the world one happens to be. The first is Position Format, which allows the GPS to display a position as Latitude and Longitude, in UTM (Universal Transverse Mercator), or one of a number of National Grid systems. Secondly, one needs to choose a Datum suitable to one's location. The number of these available is over a hundred, and with names like European 1979 Mean, a bit of trial and error can be called for. When I arrive in a new region, I find it pays to test what I consider the best settings. This is done by comparing the GPS reading for a location that I can accurately locate on a map with its position on the map's grid. If I am in an area for which I possess a good quality large scale map, with a National Grid displayed, e.g. Sweden, , I can ensure

a pretty high level of accuracy. In a country like Greece, where maps are rather more unreliable, I have less ability to hone the accuracy of my GPS.

Having adjusted the regional settings, I am ready to use my GPS in the field. My normal practice is to switch the GPS on when we arrive at a potentially interesting site for orchids, and allow the GPS to find its position. The first time in a new region of the world will take it several minutes. Once it has acquired its position, I will then store it in memory, and make a note of the unique "Waypoint" number the GPS assigns to it. I'll then switch the machine off, and get on with enjoying the orchids. Over the course of a holiday I then build up a database of locations which can be found again at any time, and identified on the map. If I want to pinpoint a particular plant or group of plants, I will take another reading specific to their immediate area.

One is warned not to rely on the GPS as one's primary source of navigation, but on more than one occasion it has saved our bacon when used in conjunction with a good map. The most recent instance was when we visited the Ulla Hau nature reserve on the Swedish island of Gotland. The reserve consists of wooded sand dunes, and after walking for a while we become completely disorientated. We knew the entrance was on the southern side of the reserve, and with the aid of the map we could determine its grid reference, so it was a relatively straightforward exercise to monitor our current location as displayed on the GPS and walk in a southerly direction with the grid reference being displayed getting closer to our target until the entrance came in sight.

To improve the usefulness of the data obtained, I set out a couple of years ago to explore ways of transferring the data to a computer. The manual supplied with the GPS suggested that this should be possible, but not how to achieve it. After a few false leads I tracked down via the internet a mail-order supplier in the States, from whom I bought a kit consisting of a cable to connect the GPS to the serial port of my PC, and a simple bit of software into which the data can be downloaded. It can then be saved as a text file, and read in any word processor.

Once you have such information, it is a simple matter to share it with like-minded individuals. As with any information about orchid sites, it is a matter of personal discretion to decide with whom to share the information, but it can allow you to save yourself and your friends a lot of time and trouble. Rather than go into detailed directions to drive half a mile past the junction, and stop near a large tree, and walk two hundred metres to the left, you can simply say "Go to TL 0563532E 0216232N".

Supplier of GPS receivers: Field and Trek (www.fieldandtrek.com)

Supplier of accessories for Eagle: Lei Extras Inc (www.lei-extras.com)

Seed and Fungus Bank Ted Weeks

Can I please ask members who may have excess seeds from this years plants to remember the Seed and Fungus Bank. I would be grateful to receive any donation to add to this year's list. A full list will be available later on. Please send s.a.e with request to Ted Weeks, 74 Over Lane, Almondsbury, Bristol, BS32 4BT.

A Member Asks

Do you grow Helleborines?

I am interested in obtaining more varieties by swap or purchase.

I have the commoner types *Epipactis palustris*, *E. gigantea*, *E. veratrifolia*, *E. gigantea x palustris*, *E. gigantea x veratrifolia*.

I would like to obtain *E. helleborine*, *E. thunbergii*, *E. royalanea*, etc

Contact Mick Peck direct at 7 Beacon Lane, Little Bealings, Woodbridge, Suffolk, IP13 6LZ

Tel: 01473 625077

From the Newsletter Editor

Following the publication of our President Richard Bateman's work on orchid evolution we have decided to adopt a naming convention in the HOS Newsletter as follows:

Scientific name following Richard's evolutionary tree, followed by (*traditional Scientific name*)

Eg. *Dactylorhiza viridis* (*Coeloglossum viride*) Frog Orchid

Newsletter Advertising Rates

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Please send a cheque (made payable to the Hardy Orchid Society) with the advert to the Newsletter Editor indicating the size and rate required.

Orchids by Post

Orchids By Post is a joint venture made up of both amateur and professional growers. Our aim is to supply seed raised plants grown wherever possible in association with Mycorrhizal fungi. The production of high quality seed raised plants is vital for the protection of wild populations and over the coming seasons we aim to expand the range of material available.

Please send a S.A.E. to receive our new seed raised **WINTER** list, to include Ophrys, Orchis, Dactylorhiza, Serapias & others.

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Have you the space to grow a few of these beautiful and undemanding little gems? We produce them from seed in a laboratory, usually with the assistance of a symbiotic fungus, weaning them out into pots, and growing on for a further three to eight years depending upon the species or hybrid concerned to raise them to flowering size. Some are produced vegetatively. We have a comprehensive list produced in the early Spring and early Autumn each year.

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Visit the Hardy Orchid Society Website

www.drover.demon.co.uk/HOS