

**Journal**  
**of the**  
**HARDY ORCHID SOCIETY**



**Vol 2. No.1 (35) January 2005**

## The Hardy Orchid Society

Our aim is to promote interest in the study of Native European Orchids and those from similar temperate climates throughout the world. We cover such varied aspects as field study, cultivation and propagation, photography, taxonomy and systematics, and practical conservation. We welcome articles relating to any of these subjects, which will be considered for publication by the editorial committee. Please send your submissions to the Editor, and please structure your text according to the 'Advice for Authors' (see website, January 2004 journal or contact the editor).

### HOS Programme 2005

Bookings for field trips should be made in advance with the leader, Numbers may have to be limited, so "first come – first served" applies.

Sun 24 Apr            Spring Meeting (inc. AGM, and Plant Show) at Exeter Hall,  
Kidlington.

Contact: Roger Gelder, 01865-436081, [roger.gelder@ntlworld.com](mailto:roger.gelder@ntlworld.com).

Sat 30 Apr            Field Trip to South Dorset for Early Spiders and Dartford Warblers.

Leader: Norman Heywood, 01747-838750, [hardyorchids@supanet.com](mailto:hardyorchids@supanet.com).

30 Apr – 2 May      HOS Display at Raby Castle Orchid Fair, County Durham.

Offers of help to Maren Talbot, 01628-486640, [mtalbot@onetel.net.uk](mailto:mtalbot@onetel.net.uk).

End May             Field Trip to Kent - details later.

Sat 25 June           Field Trip to South Cumbria.

Leader: Alan Gendle, 01539-824691, [alan.gendle@btopenworld.com](mailto:alan.gendle@btopenworld.com).

Sat 3 Sept            Northern Meeting at Harlow Carr, Harrogate.

Contact: Tony Hughes, 01996-832647, [tonyhughes3@btinternet.com](mailto:tonyhughes3@btinternet.com).

Sun 13 Nov           Autumn Meeting and Photo Show at RHS Gardens, Wisley.

Contact: Maren Talbot, 01628-486640, [mtalbot@onetel.net.uk](mailto:mtalbot@onetel.net.uk).

### European Orchid Conference - Ophrys 2005

A European Orchid Conference is to be held in Chios town on the Isle of Chios, 13<sup>th</sup> – 17<sup>th</sup> April 2005. The Conference Chairman is Pantelis Saliaris, P.O. Box 75, Chios 82100, Greece. If interested one can email Giorgos Mizetis at [sylogos@internet.gr](mailto:sylogos@internet.gr).

**Visit the new Hardy Orchid Society Website**

[www.hardyorchidsociety.org.uk](http://www.hardyorchidsociety.org.uk)

## Contents

|   |    |
|---|----|
| Programme for 2005 .....  | 2  |
| European Orchid Conference - Ophrys 2005.....                           | 2  |
| Editorial.....  | 3  |
| Results of the Photographic Competition - Oct 2004.....                 | 4  |
| Orchid Hunting around Geneva - Report on a talk by Les Lewis.....       | 8  |
| Composts - Summary of a talk given at Capel Manor by Richard Manuel.... | 9  |
| Spanish Miscellany, 1967 - 2004: Part 1.....                            | 11 |
| Propagation of Tricky species of Temperate Orchids -Peter Scott.....    | 16 |
| Dactyloglossum - Graham Giles.....                                      | 21 |
| Britain's Orchids by David Lang - reviewed by Brian Allen.....          | 22 |
| North America 2004 - Bill Temple.....                                   | 23 |
| Orchid Photography - Tony Hughes.....                                   | 25 |
| Some Interesting Scottish Orchid Finds - Patrick Marks.....             | 29 |

## Editorial

If an organisation is to grow and flourish it needs to regularly review and improve the services which it offers to its members. The Hardy Orchid Society is no exception, with the past year seeing a number of changes and improvements. This journal is one example of the ongoing development and the web site changes are another example, that demonstrate the commitment of the committee members to such improvements. As Editor, I hope that the decision to go for an all colour journal is viewed by members as worthwhile. In my view a well produced journal with topical, well written articles can contribute to improving the profile of the Society. It is therefore vital that I get feedback from members on the content, and I am more than willing to look at members' requests for specific types of material in the journal. Would a regular section profiling individual hardy orchid species with good quality pictures be useful? Would members like more illustrations of native species, hybrids and varieties? We have a lot of excellent photographers in the Society, as you can see from the results of the Photographic Competition, so it shouldn't be difficult to find material to illustrate! Email me with your thoughts, or put pen to paper please!

The last year saw the publication of the first new book on British native orchids for nearly fifteen years and this year will see yet another. Hopefully both will be successful, and will find their respective niches in the market for such books. Brian Allan has kindly reviewed David Lang's new book, and we look forward to hearing from the author himself at the Society's Spring Meeting. You should also receive an advert for the new book from Mike Fowley and Syd Clarke due for publication this spring. Knowing the photographer, the pictures will be first class. The text will no doubt prove fascinating as it will incorporate much of the up to date thinking on orchids. Having looked at various tomes about orchids in different areas of Europe which have been published in the past few years, British orchids deserve the same detailed treatment.

## Photographic Competition 2004

Eric Webster – Show Secretary

Once again members showed their photographic expertise with a wonderful display of their pictures. The quality as usual was extremely good and the variety made it all the more interesting and enjoyable.

The Judge this year was Peter Jones ARPS, an experienced photographer and photographic judge who, during the post-lunch discussion of the results, commented on the various aspects of photographing plants. This information, I am sure, was of great interest and value to those who have recently started to take photos of orchids and other plants. In all there were 21 exhibitors presenting a total of 158 entries, of which 126 were prints and 32 were slides. A pleasing aspect of this was the presence of several new exhibitors. The members who exhibited need to be thanked for sharing their images with us and hopefully they will do so again next year, when, we hope, other members may be encouraged to join them. Best entry in the Show went to Tony Hughes for *Dactylorhiza markusii*.

**Do not forget that in photographic terms an exciting image may outweigh a technically good photograph.**

Once again, thanks to the exhibitors and all those who helped in the Show Hall to make the Photographic Competition a success.



Class 2: *Dactylorhiza* at Tatton Park Show

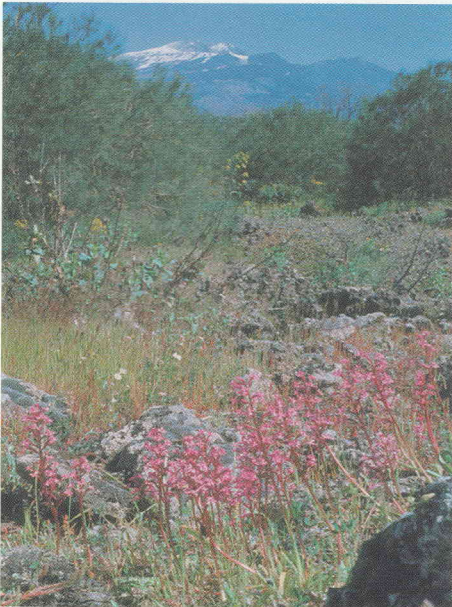
Chris Barker



Class 6: *Ophrys tenthredinifera*, Spain  
Simon Andrew



Class 11: *Liparis loeseli*  
Richard Robinson



Class 1: *Orchis brancifortii*  
Tony Hughes



Class 7: *Orchis mascula*  
Don Tait

## Photographic Competition Winners

Class 1 An orchidaceous landscape, print up to 7x5 – 7 entries

- |                              |   |
|------------------------------|---|
| 1 <sup>st</sup> Tony Hughes  | <i>Orchis brancifortii</i> , Sicily         |
| 2 <sup>nd</sup> Chris Barker | Landscape at Cressbrookdale                 |
| 3 <sup>rd</sup> Bill Temple  | <i>Anacamptis (Orchis) morio</i> , Portugal |

Class 2 A group of orchids, print up to 7x5 – 9 entries

- |                              |   |
|------------------------------|---|
| 1 <sup>st</sup> Chris Barker | <i>Dactylorhizas</i> at Tatton Park Show  |
| 2 <sup>nd</sup> Alan Gendle  | <i>Cypripedium calceolus</i> , Silverdale |
| 3 <sup>rd</sup> Bill temple  | <i>Dactylorhiza fuchsii</i> , Oxfordshire |

Class 3 A single orchid plant, print up to 7x5 – 13 entries

- |                             |                                      |
|-----------------------------|--------------------------------------|
| 1 <sup>st</sup> Tony Hughes | <i>Orchis provincialis</i> , Sicily  |
| 2 <sup>nd</sup> Walter Kemp | <i>Dactylorhiza coccinea</i> , Devon |
| 3 <sup>rd</sup> Alan Gendle | <i>Ophrys minoa</i>                  |

Class 4 A close-up, print up to 7x5 – 30 entries

- |                                   |  |
|-----------------------------------|--|
| 1 <sup>st</sup> = Neville Roberts | <i>Platanthera chlorantha</i> , Badbury Rings, Dorset          |
| 1 <sup>st</sup> = Tony Hughes     | <i>Dactylorhiza markusii</i> , Sicily                          |
| 2 <sup>nd</sup> Patrick Marks     | <i>Dactylorhiza fuchsii</i> var. <i>rhodochila</i> , Kirkcaldy |
| 3 <sup>rd</sup> Joseph Ford       | <i>Cypripedium calceolus</i>                                   |

Class 5 An orchidaceous landscape, print up to A4 – 11 entries

- |                              |   |
|------------------------------|---|
| 1 <sup>st</sup> Colin Clay   | <i>Gym. borealis</i> & <i>Dact. maculata</i> , New Forest |
| 2 <sup>nd</sup> Tony Hughes  | <i>Orchis italica</i> , Sicily                            |
| 3 <sup>rd</sup> Simon Andrew | <i>Orchis purpurea</i> , Spain                            |

Class 6 A group of orchids, print up to A4 – 13 entries

- |                                  |  |
|----------------------------------|--|
| 1 <sup>st</sup> Simon Andrew     | <i>Ophrys tenthredinifera</i> , Spain    |
| 2 <sup>nd</sup> Simon Pugh-Jones | <i>Anacamptis (Orchis) morio</i>         |
| 3 <sup>rd</sup> Patrick Marks    | <i>Dactylorhiza fuchsii</i> , St Andrews |

Class 7 A single orchid plant, print up to A4 – 14 entries

- |                              |                                  |
|------------------------------|----------------------------------|
| 1 <sup>st</sup> Don Tait     | <i>Orchis mascula</i>            |
| 2 <sup>nd</sup> Mike Gasson  | <i>Anacamptis (Orchis) morio</i> |
| 3 <sup>rd</sup> Chris Barker | <i>Listera ovata</i>             |

Class 8 A close-up, print up to A4 – 29 entries

- |                               |   |
|-------------------------------|---|
| 1 <sup>st</sup> Don Tait      | <i>Spiranthes spiralis</i>              |
| 2 <sup>nd</sup> Chris Barker  | <i>Dactylorhiza elata</i> in his garden |
| 3 <sup>rd</sup> Patrick Marks | <i>Dactylorhiza traunsteineroides</i>   |

Class 9 An orchidaceous landscape, 35mm colour slide – 9 entries

- |                               |   |
|-------------------------------|---|
| 1 <sup>st</sup> Patrick Marks | <i>Gymnadenia borealis</i> , Lomond Hills |
| 2 <sup>nd</sup> Tony Hughes   | <i>Orchis italica</i> , Sicily            |
| 3 <sup>rd</sup> Rosemary Webb | <i>Orchis mascula</i>                     |

Class 10 A group of orchids, 35mm colour slide – 5 entries

- |                                |                                     |
|--------------------------------|-------------------------------------|
| 1 <sup>st</sup> Michael Upward | <i>Dactylorhiza sambucina</i>       |
| 2 <sup>nd</sup> Kath Tait      | <i>Dactylorhiza majalis</i>         |
| 3 <sup>rd</sup> Tony Hughes    | <i>Orchis brancifortii</i> , Sicily |

Class 11 A single orchid plant, 35mm colour slide – 8 entries

- |                                  |  |
|----------------------------------|--|
| 1 <sup>st</sup> Richard Robinson | <i>Liparis loeselii</i> , Fen orchid   |
| 2 <sup>nd</sup> Alan Gendle      | <i>Cephalanthera longifolia</i>        |
| 3 <sup>rd</sup> Patrick Marks    | <i>Cephalanthera cucullata</i> , Crete |

Class 12 A close-up, 35mm colour slide – 10 entries

- |                               |                            |
|-------------------------------|----------------------------|
| 1 <sup>st</sup> Alan Blackman | <i>Ophrys speculum</i>     |
| 2 <sup>nd</sup> Kath Tait     | <i>Ophrys scolopax</i>     |
| 3 <sup>rd</sup> Chris Barker  | <i>Cypripedium reginae</i> |



Class 8: *Spiranthes spiralis*  
Don Tait



Class 12: *Ophrys speculum*  
Alan Blackman

## Orchid Hunting around Geneva

### Report on a talk by Les Lewis at Capel Manor

For several years Les has spent a lot of time working in Geneva, making the most of his opportunities to explore the good orchid sites in the nearby regions of France and Switzerland.

Les Bailleys is a small nature reserve with numerous orchid species near the foothills of the Jura mountains, close to the French border. Although all are found in the UK, many, such as the Late Spider Orchid (*Ophrys fuciflora*) are much more common on the continental mainland. Another good area is on a forest track just behind the town of Divonne in France. Here may be found the Violet Limodore (*Limodorum abortivum*) plus several Helleborine species, including Mueller's Helleborine (*Epipactis muelleri*). To see one of the specialities of the Jura, a good hunting place is the Sabot de Frotey nature reserve near Versoul. Here the beautiful Bee Orchid variety, *Ophrys apifera* var. *jurana*, can be found, notable for its two upper petals which are expanded like pink sepals.

The ridge of the High Jura, which rises to 1700m overlooking Geneva, is not always very accessible, but contains many orchids with high altitude preference. These include the Globe Orchid (*Traunsteinera globosa*), the Small White Orchid (*Leucorchis albi-da*), the Black Vanilla Orchid (*Nigritella rhellicani*) and both colour forms of the Elder-flowered Orchid (*Dactylorhiza sambucina*).

The area around Lake le Bourget, SW of Geneva near Aix-les-Bains, was mentioned as a good place to see the recently named *Epipactis stellifera*, a form of *E. phyllanthes* with white, star-like flowers.

The French Alps, to the south of Geneva, provide many readily accessible areas favoured by orchids. The Col de Lauteret is noted for its alpine garden, but on the surrounding slopes can be found a pale pink form of Vanilla Orchid, *Nigritella corneliana*. The village of Champex, situated on a lake above the road leading to the Grand St Bernard Pass, is an excellent centre for exploration, particularly if you enjoy *Dactylorhiza* hybrids! Les described many interesting species found in the surrounding woods and meadows, and on the higher slopes reached by chair-lift, as well as the North American *Cypripediums* in the alpine garden..

Les also enthused about the area some way to the east of Geneva around Kandersteg, (described in Newsletter 27 by Gwynne and Nigel Johnson) and about various parts of the Vercors (described in Newsletters 18 and 27 by Richard Manuel and in Journal Vol 1 No 1 by Tony Hughes).



## **Composts – Summary of a talk given at Capel Manor**

**Richard Manuel**

Wherever orchidists gather together the talk always seems to get around to composts, in particular, those composts that are used in pots. Yet, within a few basic parameters, the composition of the compost itself is not important; what is important is the way you manage it. The main message is to know your plants, their life cycles, and their needs at the different stages within the life cycle. Management is basically how often and how much you water.

Any orchid compost must incorporate those two apparently contradictory characteristics of free drainage and good water retention. To these ends there is typically a balance between the organic (water retentive) components – soil, leaf mould, etc – and the mineral (drainage) elements – sand, grits, or manufactured pellets.

I will show you here the recipes for the four composts that I use most. These are this year's recipes: I change the different components according to what is available, and the performance of the previous year's composts in growing orchids.

It would appear to be logical, at first, that the ideal compost to use is the same as the soil in which the orchids grow in nature. But soils in pots behave very differently from natural soils and, although I make no claim to be a soil scientist, I can observe what happens and how the plants are affected by the various happenings deep within the pot.

Probably the most obvious difference between pot and garden culture is that a pot is very much smaller. This may seem a statement of the bleedin' obvious, but it is a very important point. Because of this the water content and temperature in a pot must go up and down dramatically compared to a given patch of soil. Likewise there is no broad exchange of water and nutrients from outside areas such as occurs in the garden. And perhaps most importantly, the compost in a pot breaks down – it composts! – quite quickly, and this causes important changes in structure (which affects drainage) and the pH of the soil. It becomes acidic as plant growth proceeds, due to the breakdown of nutrients and release of CO<sub>2</sub>. This is why it is necessary to renew the compost annually. In the garden there must be a natural buffering effect from the larger quantities of water flowing around, and probably from worms and micro-organisms in the soil.

From the above it is obvious that growing in pots requires some thought and care. I am fairly convinced that the best way to grow potted orchids is in clay pots plunged into damp sand, but this is very uneconomical of space and the grower will probably have to compromise. As I have a lot of plants to house, I use a plunge for my 'best' plants and grow the others mostly in square plastic pots which nestle closely together and provide a bit of mutual shelter from sun heat. Plastic pots also dry out much more slowly than clays, even plunged clays, and so take a little less management time.

NEWMIX 04

For Mediterranean calciphiles such as *Ophrys*, *Anacamptis*, *Serapias*, etc.

*All measures by volume*

- 2 pts calcareous, or at least not acidic, loam; fibrous if possible  
(1.5 pts coir fibre [coconut fibre]: added this year as experiment; otherwise use more loam)
- 3 pts beech leafmould, rubbed through 1cm seive
- 2 pts medium sharp grit (3 – 5mm)
- 3 pts coarse sharp grit (5 – 6mm)
- 1 pt chicken/poultry grit (crushed shell + limestone grit)
- 1 pt coarse perlite (optional)
- Blood/fish/bone meal approx 12 teaspoons per 50 Litres (optional – I am not convinced it makes any difference!)

WOODSYMIX 04

For Mediterranean calciphobes (e.g. *Serapias neglecta*, *cordigera*, *olbia*, *Gennaria*) and others – e.g. Australian and South African terrestrials.

- 4 - 6 pts pine duff
- 1 - 2 pts neutral/acid loam or composted ground pine bark\* or fine moss peat
- 1 - 2 pts fine pine bark ('seedling bark')\*
- 4 - 5 pts sharp grit; this can be a mixture of types above but I like to include 2 or 3pts of 3 – 5mm Cornish grit in this
- 1 - 3 pts sharp sand or 'grit sand' depending on how open you want the mix to be
- 1 pt coarse perlite (optional)
- \* = available from Melcourt Industries Ltd, Eight Bells House, Tetbury, Glos GL8 8JG. 01666 503919.

CYPMIX 04

For all N.American Cypripediums except *C. acaule*; for Asiatic spp. double or even treble the grit and pumice fraction

- 2 pts pine duff
- 2 pts rotted wood chips (fine bark as above is acceptable substitute)
- 2 pts 5mm pumice (3 – 10mm mix is fine)
- 2 pts coarse sharp grit
- 1 pt loam pellets (seive woodland loam through 10mm and 4mm sieves and use what is retained between the two)
- 1-2 pts coarse perlite
- If the ingredients are obviously rather acidic, add a little dolomite lime or poultry grit to the mix.
- A neutral pH is the ideal.

For *Dactylorhiza* spp. and similar things: *Gymnadenia*, *Platanthera*, etc.

3pts fibrous loam

4pts coir fibre or pine duff

2pts ground composted bark

3 – 5 pts coarse grit

2pts perlite

## Spanish Miscellany, 1967-2004: Part 1

Simon Andrew

Spain, in many manifestations, has been on our agenda since our earliest ‘orchid hunting’ times (mid 1960’s), and it is a pleasure to share some of our experiences and observations with our friends in the HOS. Looking back over some 37 years we have made eight visits to Spain in which orchids have played a part, covering five distinct areas of the country with widely differing characteristics. I will say something about each of these in turn, noting how they and their respective orchid floras differ, as well as some ‘Spanish’ features which they appear to have in common. Spain is a very large country with wide variations in landscape and altitude, and I found it particularly interesting to note the relative abundance of ‘Mediterranean’ and more ‘Northern’ varieties in different regions. The five ‘areas’ considered, in increasing order of ‘Mediterraneanness’, are: the Picos de Europa, the Northern and Southern Iberian mountains, the upper Ebro valley, Catalonia and Andalucia. Not all conventional geographical subdivisions, but representative in our eyes of particular variations of orchid flora. Our choice of areas to visit was largely influenced, at least in the first place, by the excellent book *Flowers of South-West Europe, a field guide* by Oleg Polunin and B E Smythies published by the Oxford University Press in 1973. I shall be referring to this several times, and will abbreviate it to P&S. For identification purposes our guide in the 1970’s and 1980’s was Hans Sundermann’s very attractive book *Europäische und mediterrane Orchideen eine Bestimmungsflorea*, second edition 1975, the first comprehensive book about the European Orchid flora we had come across. Of course orchid classification and taxonomy has moved on a lot since then, so we have had to revise our views on some of our earlier identifications, which has led some extra interest to ‘writing up’ our visits quite a few years later!

As the talk contained so much material I am splitting this ‘write-up’ into two parts. The first covers the three areas of the Picos, Iberian mountains and Upper Ebro. The second, which will appear in a later edition of this Journal, will deal with the more fully Mediterranean areas of Catalonia and Andalucia.

I will start with the **Picos de Europa**, a favourite with P&S, though we did not actually get there till 2001. The Picos is part of the Cordillera Cantabrica, a range of moun-

tains extending westwards from the Pyrenees a short distance inland from the north coast of Spain. It is quite easy to reach from the UK via the ferries to Bilbao or Santander, and a central and accessible point is the parador at Fuente Dé at the head of a valley about 1100 metres up and surrounded by high limestone crags some 800 metres higher which can be ascended by cable car. P&S referred to many interesting plants growing in the 'pastures and screes near the parador', and this did indeed prove a happy hunting ground. I would have expected to find there, in May and June, mainly northern or upland species, and many were there in abundance, especially the 'Spotted' Orchids (the 'common' and 'heath' varieties did not seem nearly so distinct there as at home), Early Purple, Fragrant and Burnt, and suggesting perhaps slightly warmer climes, Fly, Early Spider and Man Orchids. All species with decent English names and reminiscent of home, though we wouldn't often find them all growing together here. But, more of a surprise, was the presence of a number of essentially Mediterranean species, such as we would normally expect to find two months earlier and near sea level. These included *Serapias lingua*, *Ophrys fusca* and, most surprisingly, *Ophrys tenthredinifera*, a plant I had always associated with the more southern Mediterranean habitats. But we were to find *O tenthredinifera* cropping up in all sorts of different places in our Spanish travels, and now think of it as having a special affinity with Spain. A few miles from Fuente Dé, but at a similar altitude, we came across a very fine group of *Orchis papilionacea* - a Mediterranean species we have not found anywhere else in the northern half of Spain. *Himantoglossum hircinum* was also growing nearby - the Lizard Orchid seems widely scattered in Spain, though usually in our experience in small numbers.

The second area is a wide one, which I shall call '**the Iberian mountains**'. Essentially this is two 'mountainous' areas south of the Ebro which are separated from each other by the eastern part of the 'meseta' of Old Castile and Aragon, the huge and somewhat monotonous plateau at about 1000m altitude which occupies much of the upper basin of the River Duero, a mixture of arable and desolate rocky land with few opportunities for interesting flora. But north and south of the meseta are more elevated areas of considerable interest which have a number of features in common. Both are noted in P&S as of interest for orchids. The more northerly lies on either side of the Burgos to Soria highway, and includes the Sierra de la Demanda and the Sierra de Urbión to the north. These two ranges are mostly non-limestone, which obviously affects the flora, and here



*Orchis spitzelii*

Photo: Simon Andrew

we have seen some of the finest colonies of *Dactylorhiza sambucina* (both colours) we have come across anywhere, accompanied by *Orchis mascula* and *O ustulata*, with a scattering of *Orchis morio* and *Ophrys sphegodes* types. In the Sierra de la Demanda *Dactylorhiza insularis*, a western version of the yellow Mediterranean *D romana*, seemed particularly abundant, and there were also attractive plants of *Cephalanthera longifolia*.

South of the Sierra de la Demanda the Soria to Burgos Road passes through gently mountainous limestone country, and it was in a wooded area on this near the town of Navaleno that we came across *Orchis spitzelii*, an uncommon species which has a scattered distribution in various different parts of southern Europe and north Africa. It is unmistakable with its striking dark purple look and wide red-dotted lip - perhaps the most interesting orchid we were to find in this area in our 1978 visit. Here it was accompanied by *O mascula* and *Cephalanthera longifolia*, and *Orchis militaris* and *O coriophora* also grew alongside this road nearby, though we found later that *O coriophora* was commoner in the more southerly hills in the Cuenca region. Just south of this main road, further east, the picturesque old town of Covarrubias proved a good centre for orchid seeking, and the road over a small pass from Covarrubias towards the



*Dactylorhiza insularis*

Photo: Simon Andrew

splendid old Abbey of Santo Domingo de Silos proved particularly fruitful. Here, in a scrubby glade just south of the pass, were *Orchis spitzelii* (again) and *O mascula*, apparently in two very different forms, one tall, dark with unspotted leaves, the other shorter, pale and spotted - we found the different varieties of *O mascula*-type orchids in Spain very difficult to sort out. Nearby, *Orchis purpurea*, *Cephalanthera rubra*, *C damasonium*, *Limodorum abortivum*, *Ophrys scolopax* and *Dactylorhiza sambucina* were also in flower, and a strongly purple-tinted helleborine in bud made a strange sight struggling up through the tarmac at the edge of the road. That was on 1 June, and I doubt it will have made it to flowering without being run over. Presumably it was *Epipactis purpurata*. This was in 1978, and I have to say that efforts to find this very rich spot again in 1997 and 2002 were unsuccessful. The immediate area remained equally wild and uncultivated, but was extremely dry, and no we found no trace of orchids there. I suspect 1978

was a year of particularly high rainfall in the region.

The southern half of the 'Iberian Mountain' area, the Serrania de Cuenca and Montes Universales, both recommended by P&S, we were to visit much later, in 2001 and

2002. Here we were based on Teruel and Cuenca, both interesting and well-preserved old cities with comfortable paradors, and we had some useful notes from Michael Lowe to add to the P&S guidance. We saw sufficient here to indicate that the orchid flora was quite similar to that in the mountains further north, though our time there was limited by an unfortunate accident resulting in a broken leg - which was very sympathetically treated at Cuenca hospital. The commonest orchid (in May/June) was *Dactylorhiza fuchsii*, but, more interestingly, *Orchis coriophora* proved quite frequent, along with *O ustulata* and, in the more wooded areas, *Orchis langei* (one of the *mascula* group) and *Dactylorhiza insularis*. In wet places *Dactylorhiza elata* was quite common, but the most interesting individual orchid we saw was what is now known as *Orchis cazorlensis*, which, if we had found it years before, we would have been happy to identify as a relatively pale specimen of *Orchis spitzelii*. It seems that recent botanical splitting has separated these two regional variations into different species - something to confuse amateurs who have been pursuing orchid interests for a long time! This southern mountain area is one we would like to visit again - later May or earlier June looks like being the best time.



*Orchis cazorlensis*  
Photo: Simon Andrew

My third 'area' I have summarised as the 'Upper Ebro', which does not correspond to any specific geographical division, nor does it get any mention in P&S. Essentially it is the somewhat less elevated region between the

Northern Iberian mountains on the south and the Cordillera Cantabrica and western Pyrenees on the north, and includes the upper reaches of the River Ebro and some of its tributaries, following the river downstream as far as the boundary between Navarre and Aragon where it enters the vast, arid plain of Aragon. The flora encompasses both Mediterranean and semi-montane species, and it is home to as wide a range of European orchid species as we have seen anywhere. Our first encounter was on our 1978 visit, but we have 'topped up' several times since 1997, and are happy to report that it seems as rich now as it was 25 years ago. Much of it is well off the normal tourist routes, but centres to stay at include Sos del Rey Catolico (very attractive old town and parador) to the east, Vitoria in the middle and Villarcayo towards the west. The last of these was our base for very productive local tours back in 1978. The western area round Sos was rich in *Orchis* species, including *O purpurea* (specially abundant, and clearly treated by the local verge-tending authorities as a weed), *O simia* and *O ustulata*, along with *Ophrys insectifera*, *sphegodes*, *fusca*, *lutea* and *scolopax*, and a little to the south on a roadside verge was the finest group of *Himantoglossum*

*hircinum* we have seen in Spain.

But richer still is the little-visited limestone area north and north-west of Miranda de Ebro, on the borders of Old Castile and the Basque country. A drive up the former main road between Miranda and Bilbao (now by-passed by the motorway) proved particularly rewarding - as much so in 2004 as in 1978. The best part is between the village of Osma and the Puerto de Orduña, with a roadside verge flora second to none we have seen anywhere. The crowning glory here was the beautiful *Ophrys tenthredinifera*, present in great abundance and in a specially vivid colour form. A close runner-up was *Aceras anthropophorum*, a strongly coloured variety which liked to grow here in big clumps. Large colonies of *Orchis morio* types were also in evidence, mainly I think the (?) subspecies *champagneuxii*, which has an unspotted lip and spreads vegetatively underground rather like the Marsh Helleborine, often forming groups covering considerable areas; this is a south west European variety, which we saw quite often in Spain. There was also plenty of 'ordinary' *O. morio* around. Other orchids on this road included *Orchis purpurea* and *Ophrys lutea*, both abundant, and more moderate quantities of *Ophrys fusca* and *O. sphegodes*. Masses of *Anacamptis pyramidalis* were beginning to show themselves, but at this date (late May) few were yet in flower.

To the west of the Bilbao to Miranda road, the picturesque, rocky limestone country holds numerous attractive orchid spots, far too many to list individually. All the species mentioned in the preceding paragraph appeared elsewhere in this area, and many others were to be seen as well. These included *Ophrys scolopax* (frequent), *O. apifera* (just beginning to flower), *Orchis italica*, *O. militaris*, *O. ustulata*, *O. provincialis* and *O. coriophora* (probably *fragrans*), plus *Platanthera bifolia*, *Himantoglossum hircinum*, *Serapias lingua*, *S. vomeracea* and *Dactylorhiza elata*. *Ophrys fusca* was specially frequent and seemed to come in several different forms. A particularly striking one, in scrub near the hermitage of San Pantaleon de Losa, had a very dark lip with a distinct white W (or omega) pattern on it. When we first found it in 1978 I was happy to think of it as *Ophrys fusca* ssp *omegaifera*, but modern classification of *fusca* types has made life so complicated that I can't attempt to name it properly now. And quite close to these '*omegaiferas*' was another most striking sight - a large meadow, apparently recently ploughed and reseeded, positively bristling with handsome plants of *Orchis purpurea*. Are their tubers deep enough to avoid the plough, or are they very fast growers?

One final comment on this 'Ebro area' as I have defined it. Towards its western end is a flat and monotonous plateau about 1000m up which is reached by a steep climb from the small town of Poza de la Sal. The obvious feature here is a forest of hundreds of wind-generators, but look down and there is by far the greatest gathering of *Orchis mascula* I have ever seen. To compensate for the apparently monospecific orchid flora here, *O. mascula* comes in a bewildering range of different colours, ranging from the normal darkish purple to pure white, with every possible shade in between. I am sure some interesting studies on orchid taxonomy could be carried out here - the sample is

so large. Meanwhile they are a joy to behold - until you look up and see what has happened to the scenery. I will conclude this first article with some simple 'statistics' which may be of interest to other potential 'orchid tourists' and help to indicate the tremendous variety to be found in northern Spain. These relate to what we saw in our one week tour at the turn of May and June in 1978, starting and finishing in Bilbao and embracing parts of both 'Northern Iberian mountains' and 'Upper Ebro' areas. We recorded two or more orchid species in flower – 28 different ones in all – at 38 different 'sites', and the list below indicates how many times we saw each one, an idea we have borrowed from Sundermann. A + indicates they were also spotted at other roadside places additional to our 38 'recorded sites'.

*Ophrys sphegodes* 18+; *Orchis morio* (incl *champagneuxii*) 12+; *Orchis mascula* 10+; *Dactylorhiza sambucina* (incl *insularis*) 9+; *Orchis purpurea* 9+; *Ophrys lutea* 9; *Anacamptis pyramidalis* 7; *Aceras anthropophorum* 7; *Cephalanthera longifolia* 6+; *Ophrys scolopax* 6; *Orchis militaris* 6; *Ophrys fusca* 4; *Ophrys tenthredinifera* 4; *Platanthera bifolia* 4; *Ophrys apifera* 3; *Orchis coriophora* 2; *Orchis ustulata* 2; *Orchis spitzelii* 2; *Orchis italica* 2; *Dactylorhiza elata* 2; *Cephalanthera damasonium* 2; *Serapias vomeracea* 1; *Serapias lingua* 1; *Himantoglossum hircinum* 1; *Orchis provincialis* 1; *Dactylorhiza maculata* 1; *Limodorum abortivum* 1; *Cephalanthera rubra* 1.

## **Propagation of Tricky species of Temperate Orchids.**

**Peter Scott**

### **The Problem**

No matter how long a particular hardy orchid specimen survives in cultivation, its existence is finite and one day it will die. This is not a problem with many genera such as *Dactylorhiza*, *Epipactis*, or *Cypripediums*. These species can routinely divide and gradually form large clonal colonies. Such species are readily propagated and are not the subject of this article. The subjects of this article are those orchid genera which do not routinely divide asexually such as *Anacamptis*, *Ophrys* and *Orchis*. In cultivation, if these species are not being propagated then they are dying, perhaps slowly but surely, but have no doubts they are dying!

### **What strategies are available for the cloning of these plants?**

There is a pervading feeling that these species cannot be propagated other than through seed. But this is no longer true and there are four basic strategies for growing and propagating these plants:

- i) Choose the right species
- ii) Growing them from seed
- iii) Sequential harvesting of tubers
- iv) Chemical treatment of plants.

### **i) Choose the right species**

Species choice can be one of the most important decisions concerning the growing of



temperate orchids. Put simply, some species are more difficult to grow than others and with each of these difficult genera, the easy and difficult species are not clearly identified in articles on temperate orchids.

*Anacamptis*: In this genus there are several species which routinely form more than one tuber each year. *A. (Orchis) champagneuxii* and *longicornu* both form multiple stolons in cultivation and therefore can be propagated asexually (Delforge, 1995). However, *A. coriophora*, *morio* and *pyramidalis* will also form multiple stolons but with a probability of around 33% under favourable conditions. As a consequence, under good growing conditions, a collection of certain *Anacamptis* species can be propagated if care is taken.

*Ophrys*: *O. bombyliflora* is the only *Ophrys* listed to form more than one stolon in a growing season (Delforge, 1995). However, this has to rate as being one of the ugliest of any of the temperate orchids. Surprisingly, the other *Ophrys* orchids do propagate asexually but at a very low rate. Measurements from my lab suggest that the probability of secondary stolons forming is around 15%. This is too low for a serious propagation strategy since the mortality of such species in cultivation is likely to be around the same figure.

*Orchis*: This is possibly the most desirable of the temperate orchid genera and probably the most difficult in cultivation. *O. mascula* routinely forms 2 stolons in cultivation once the parent tuber size exceeds around 5g. However, it can be difficult to increase the tuber size to the required weight. Other species such as the man, lady and military orchid do not propagate asexually.

## ii) Growing them from seed

A logical answer to propagation of orchids is to use seeds. For species such as *A. (Orchis) morio* and *laxiflora* the availability of mycorrhizal fungi makes this an attractive option, but many growers do not have access to, or courage to try, tissue culture. The same goes for symbiotic tissue culture of *Ophrys* seeds. Other articles have been written to cover this area so only a passing mention will be made here. There are other options of sowing seeds in pots with established mature orchids. There have been many instances of success with this procedure but it invariably involves the introduction of soil from a source which contains a fungus that can act as a mycorrhizal partner to both the mature orchid and the seed.

## iii) Serial harvesting of tubers

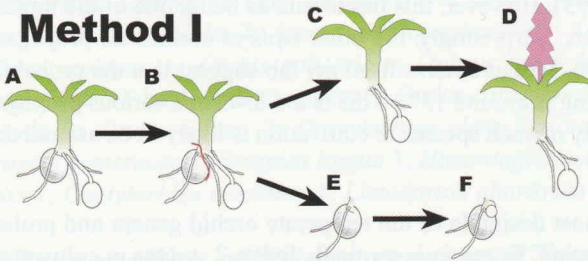
This method is routinely used for *Dactylorhizas* and can be a very effective means of division (see earlier Journal editions). Serial harvesting can be used for other orchids but it is much more difficult. There are three major variations to the method that can be used but they all rely on the orchid suddenly losing the new developing tuber and therefore responding by initiating new ones.

**Method I.** The dominant one relies on the orchid forming a new tuber by mid-winter

(December- January) and then, using a scalpel, the base of the plant is cut so that the old tuber has 2-3 roots still attached to it and the new tuber is excised with the leaves (Figure 1). The primary tuber is harvested early and is small but this allows the carbohydrate supply remaining in the old tuber to be converted into 1-2 new tubers thus giving a doubling to trebling of the orchid. The remainder of the plant can then be left for flowering. Therefore this method appears to allow multiplication and flowering but this does have its hazards. If the orchid maintains vascular links with the primary tuber then this can be used as a carbohydrate source to supply energy for flowering. Hence the primary tuber can be reabsorbed. This method should only be used with larger tubers, as the new tubers are all likely to be small.

**Figure1. Serial Harvesting Method I.** An orchid is taken in December/ January (A).

**Method I**



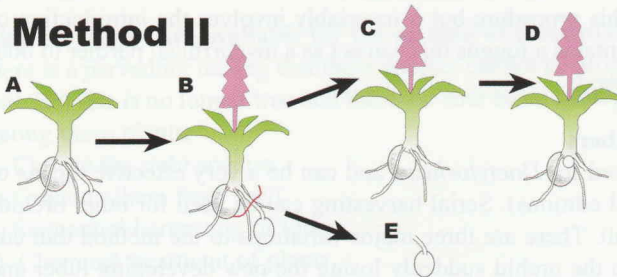
A cut is made at the base of the stem (B) so that the old tuber and at least 2 roots are removed (E) leaving C which can be left to flower (D). It would probably be wisest not to let D flower. E should go on to produce

additional small tubers F.

**Method II.** This method relies on harvesting the primary tuber in the early summer at flowering (Figure 2). The advantage of this method is that the primary tuber is likely to be large since its growth is likely to be complete. Sometimes the removal of the primary tuber can cause the initiation of further small tubers. However, the time for these to form is small and is dependent upon keeping the plant in leaf for as long as possible. In most instances this fails and no further tubers initiate.

**Figure2. Serial Harvesting Method II.** An orchid is taken in March/ April just around flowering time (A). When flowering begins (B) the new tuber is removed and stored in the pot (E). The remainder of the orchid is left to flower (C) and sometimes new tubers form on this plant (D). To optimise this method, seed set on D should be restricted.

**Method II**



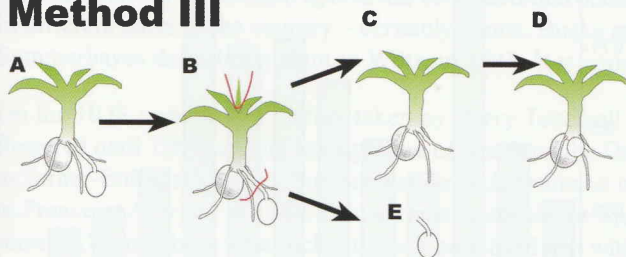
the pot (E). The remainder of the orchid is left to flower (C) and sometimes new tubers form on this plant (D). To optimise this method, seed set on D should be restricted.

**Method III.** Methods I and II try to have the cake and eat it and could be considered greedy. To allow the plant to flower is expensive on yield and if the primary intention

is to propagate the plant then flowering should be prevented (Figure 3). This is precisely what method III does. This method involves the removal of the flowering spike very early in its development and the primary tuber. If this is done before the leaves show any signs of yellowing then the old tuber will initiate a secondary tuber. From experience only one extra tuber will be initiated. If the flowering spike is not removed this method does not work and it is better to chop off all of the aerial tissues completely than to not touch the flowering spike.

**Figure 3. Serial Harvesting Method III.** In February/ March when the orchid is just beginning to flower but the leaves have *not yet started to turn yellow* (A) The new tuber should be removed along with the flower spike. If this is difficult the aerial parts of the plant can be completely removed. The new tuber (E) can be stored in the pot and the remainder of the plant is left (C). The plant should

### Method III



be kept in leaf for as long as possible by reducing the light intensity and maintaining a high humidity (D). New tubers should form at the base of the stem

be kept in leaf for as long as possible by reducing the light intensity and maintaining a high humidity (D). New tubers should form at the base of the stem

#### iv) Chemical treatment of plants.

The methods mentioned so far are all potentially damaging to the plant or have a very low chance of success. Is there an easier method which is more predictable? This what I have been working on at University of Sussex. The chemical solutions used are being kept secret at present as they may have other benefits to other plant species. I have developed two separate methods which will work together and a third treatment is in the pipeline.

**Treatment I:** FLOM - causes mature orchids to form multiple tubers (usually 2) and thus propagate. For smaller plants larger tubers are formed.

**Treatment II:** Solution P - causes the plants to grow larger and faster.

**Treatment III:** Solution S - will hopefully cause the plants to grow larger and faster and will complement the other treatments.



Figure 4. *Orchis italica* bearing 2 tubers after treatment with FLOM. 1. Old tuber, 2. Primary new tuber, 3. Secondary tuber, 4. Stem base.

**FLOM.** This treatment causes tuber multiplication. Put in its most basic terms, the plant devotes more of the carbohydrate made to producing below ground material than above ground material. The early experiments with *Orchis italica* are shown in

Figure 4.

There is an obvious problem with this strategy since if a plant grows too much below ground then it does not produce enough leaf area to maximise below ground growth therefore finding an optimum concentration of FLOM is critical. For most species FLOM1 has been successful for tuber doubling, but concentrations up to FLOM3 look promising. Data for

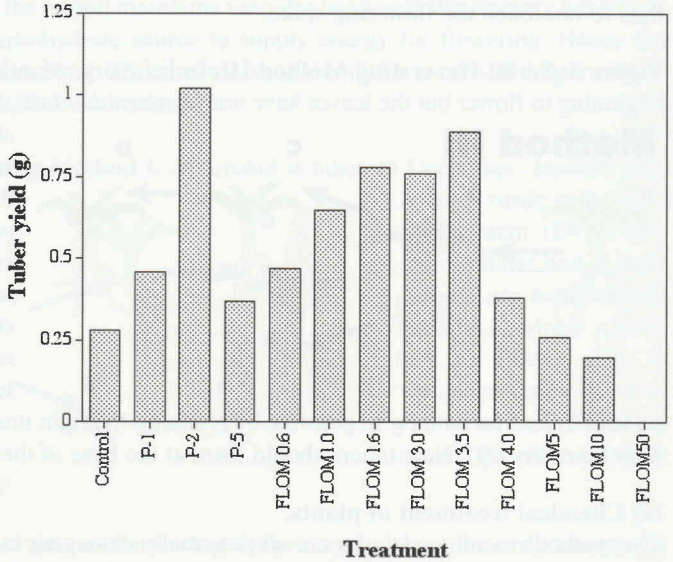


Figure 5. Tuber yield of *A. morio* seedlings subjected to different chemical treatments in the soil over the growth period.

seedlings of *A. morio* treated with various FLOM concentrations and solution P are shown in Figure 5. It is clear that high FLOM concentrations are inhibitory to orchid growth, but low concentrations can give up to a doubling in tuber yield. Solution P in high concentrations is also toxic to the plants but, at an optimum of P2, tuber yield is trebled. Evidence suggests FLOM and P will complement each other and should cause major changes in orchid growth. Thus it should be possible to increase the rate at which many orchids grow and also propagate them once maturity is reached.

Can all orchids be propagated this way? Changes in growth of several orchid species have now been recorded e.g. *A. morio*, *A. pyramidalis*, *A. laxiflora*, *S. lingua*, *O. italica*, *Ophrys* hybrid. It has not worked for *O. apifera* but early predictions suggest that this species requires higher concentrations than other orchid species. Thus the technique looks like a general one, but care is needed with each species to ensure optimum treatments. FLOM1 and Solution P1 can be purchased in batches for 5 plants by contacting me.

Solution P1 is not toxic, but FLOM1 should not come into contact with skin and is a nervous system toxin. This toxic component is a common compound used in gardening for years and is probably already in most of your sheds already (but at far higher concentrations than FLOM1).

**References:** Delforge P. (1995) *Orchids of Britain and Europe*. Collins Publishers.

## Dactyloglossum

### Graham Giles

That's how Delforge refers to it. English Nature have called it a 'mixtum' though that was the name given to a cross between Frog and Heath Spotted Orchid (Aschers & Gräeben). As far as I can see it doesn't have any other name. It is a cross between Frog orchid and Common Spotted orchid. That is *Dactylorhiza fuchsii* x *Dactylorhiza (Coeloglossum) viride*. New classification has put the Frog orchid into the *Dactylorhiza* group, and this cross reinforces the connection. So this plant is an intra-generic hybrid. This unusual hybrid has been recorded occasionally for many years and in different parts of the country – certainly Hants, Bucks and even Co. Down in 1986. Summerhayes describes a plant in Wilts. in 1948. It is considered quite rare.

On the HOS website is a picture taken by Barry Tattersall in Hants in 1994 (where it flowered until 1997) and he has a picture of one from the Outer Hebrides taken in 1991 in Turner-Ettlinger's book – but that was a *ssp. hebridensis* cross. It has also been found in France at Averyon in 1988. Last summer a specimen was again found in Hants and some HOS members were lucky to see it on a field trip with the Conservation Officer. I understand it was quite small.

A superb specimen was found in Oxfordshire in 2001 and it has flowered for the past three years. This year it was 140 mm high and had a flower spike 80 mm long. The colour is an attractive pale creamy-brown with striking pink markings. The lip is well elongated and trilobed, and the stigmatic cavity is wide and quadrangular. The hood is a greenish pink. It is a more attractive flower than those in the pictures already published. Flowering takes place earlier than the general period for Frog orchids at the time when *D. fuchsii* is at its peak. Many of these are growing in close proximity. By August just one seed pod had been produced. By then there were several flowering Frog orchids nearby.

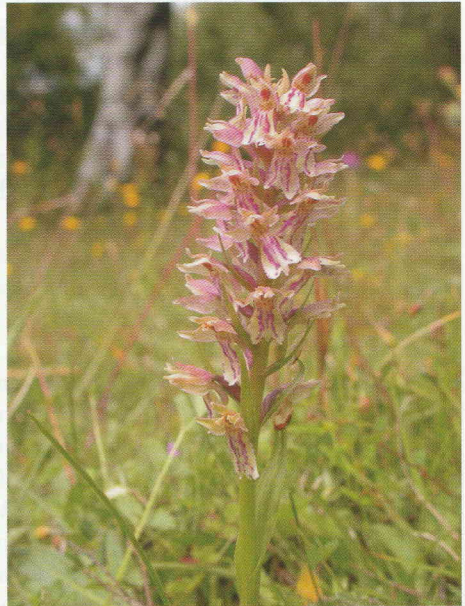


Photo: Graham Giles

With such a wide world distribution it is surprising that this hybrid is found so rarely, especially as the flowers are nectariferous and there is a wide variety of pollinating insects. Anyone interested to know if this plant reappears in 2005 should email me at [wentworthclose@mac.com](mailto:wentworthclose@mac.com). I will be visiting the site in June and will let you know.

## “Britain’s Orchids” by David Lang

Reviewed by Brian Allan

This book by David Lang produced in association with English Nature by **WILD** Guides, sees a new format by the author compared with his two previous volumes on British Orchids (1980, 1989). These previous books had more detail about each species but the photographs blocked together in the middle of the volume and un-named, were a little difficult to link to the text.

At the start of his latest book, following a brief introduction, there are two chapters, one an introduction to orchids, and another describing orchid habitats, both clear and concise. There then follows a couple of nice innovations. Firstly an introduction to the species, which describes each of the species in turn by way of a very brief general description coupled with a small close-up photograph of the flower. You are then directed to the main species page for a fuller description and further photographs. Secondly there is a bar graph with the flowering periods of each of the species set against the months of the year.

When the main species chapters are reached, it is here that the new book takes a completely different approach from David Lang’s previous books, with a little less text but the relevant photographs on adjacent pages making species identification considerably simpler. The photographs are also coded to further aid the reader. A typical species page shows paragraphs on the following: Identification, Confusing Species, Hybrids, Pollination, and Conservation, together with a narrower column down the right hand side of the page showing, at a glance, the abundance, height, number of flowers, flowering period, a distribution map of Great Britain & Ireland, distribution details and finally habitat description. The photographs on the opposite page then show variations within the species where appropriate. This combines to give a nice format to assist the novice to identify a given species found in the field.

There following chapters show hybrids found to date and discuss, legislation and protection, conservation and finally notes on recording and photographing. On the whole I liked the new format as an easy to use field guide, and it should prove useful to all who take pleasure from seeking and identifying orchids in the wild. The punchy layout in the now well-established style of **WILD**Guides is attractive and well thought out. My only real criticism is that the nomenclature is a little dated with no mention of the recent work done by Richard Bateman et al, which has proved, using DNA, that certain species are better placed in other genera. There is also no indication as to when and in which vice-county each plant photograph was taken. I have previously found this to be a great help when deciding where to search for a particular plant. Britain’s Orchids by David Lang is published by **WILD**Guides Ltd., 2004 and is priced at £15.00. ISBN 1-903657-06-7. The Guide is available from [www.wildguides.co.uk](http://www.wildguides.co.uk) or English Nature Mail-order Hotline 0870 1214 177 and all are post free.

## America 2004

### Bill Temple

Sylvia and I flew to Boston at the end of July for several reasons, one of which was the offer of guided tours by our friends Sam & Linda around Connecticut and New Jersey to photograph the fringed *Platantheras* and other local orchids. While in Connecticut we saw *Platanthera ciliaris*, *P. blephariglottis*, *P. x bicolor* (a hybrid of *P. ciliaris* & *P. blephariglottis*), *P. lacera*, *P. clavellata*, *P. psycodes*, *P. aquilonis*, *Goodyera tessellata* and *Spiranthes vernalis*. We also saw *Lilium superbum*, *Rhexia virginiana*, *Lobelia cardinalis*, *Impatiens capensis*, the magnificent Emerald jewel wing damselfly, Eastern black tiger swallowtail, and the Eastern yellow tiger swallowtail among many butterflies. In New Jersey we saw *P. cristata* & *P. blephariglottis* on the roadside beside a cranberry bog.

After this orchid extravaganza, we then made our way south in order to attend the 3<sup>rd</sup> American Native Orchid Conference, which was held in Conway, South Carolina from the 7<sup>th</sup> - 12<sup>th</sup> August. On our journey from Delaware to North Carolina via the Chesapeake Bridge we experienced strong winds and torrential rain as a parting gift from Hurricane Alex. At the conference we met up with Mike Parsons who also attended.

The format of the conference was four days of alternate talks and field trips, a free day for travelling to Virginia, and then a field trip in Virginia. The talks were very interesting and covered such topics as DNA investigations, growing orchids in your garden, recovery of orchid populations after herbivory by deer, micro-propagation, orchids found in various areas of USA, and a panel discussion on the ethics of re-introduction and relocation of threatened orchids.

Those attending the conference divided into two groups for the field trips, one going north and the other going south on the first field trip, and the groups going the opposite way for the second field trip. The southern trip was to the Francis Marion National Forest, where the visitors' centre provided the first orchids - *Habenaria repens* growing on the margins



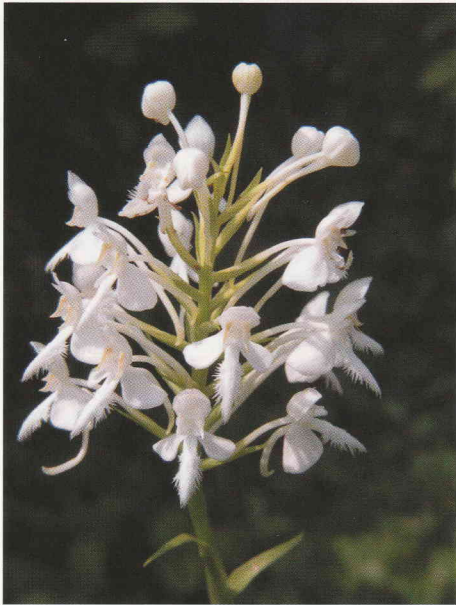
*Platanthera ciliaris*  
Photo: Bill Temple



*Platanthera lacera*  
Photo: Bill Temple



*Spiranthes lacera* var *gracilis*  
Photo: Bill Temple



*Platanthera blephariglottis*  
Photo: Bill Temple



*Platanthera psycodes*  
Photo: Bill Temple



of the lake, which also contained a six-foot alligator. Some avid photographers failed to see the latter! The other finds on this trip were *Platanthera ciliaris*, *P. blephariglotis*, *P. cristata*, *P. flava*, *Tipularia discolor*, *Lilium catesbyi*, *Sarracenia minor*, *Asclepias lanceolatum* and *Asclepias perennis*.

The northern trip was to the Green Swamp area in North Carolina where the finds were *Platanthera ciliaris*, *P. blephariglotis*, *P. integra*, *Tipularia discolor*, *Epidendrum magnoliae*, *Calopogon tuberosus*, *Habenaria repens*, *Sarracenia purpurea*, *S. lutea* and *Dionaea muscipula* (Venus flytrap). This area was devastated a couple of days after our departure by Hurricane Charlie. The field trip in the Appalachians was a bit on the wet side due to the influence of Hurricane Bonnie. However, we did see *Corallorhiza bentleyi*, *C. maculata*, *C. odontorhiza*, *Goodyera pubescens*, *G. repens* var *ophioides* (which has attractively variegated leaves), *Spiranthes lacera* var *gracilis* and *Platanthera peramoena*. That field trip marked the end of the conference so we all went our separate ways. After that we then headed north along the Appalachians and Blue Ridge Parkway. Although we did not see any orchids along this route, we did see *Aquilegia canadensis*, *Commelina communis*, *Allium cernuum*, *Asclepias syriaca* (complete with Monarch caterpillar), many White-tailed deer and butterflies. We then dallied for a few days in New Jersey where we saw *Platanthera integra*, *Lobelia notal-lii*, *Lobelia symphilitica*, *Sabacia dicornis* and a Chipmunk, before heading off to Boston for the last couple of days of our holiday. It was an **excellent** conference and holiday. If anyone is interested; the next conference is scheduled for mid July 2005 in Winnipeg.

## Orchid Photography

### Part 3: The Orchidaceous Landscape

Tony Hughes

The Objective is to produce a picture of an interesting landscape in which multitudes of orchids extend from the foreground out into the distance. In my experience, this is the most challenging type of picture but, if successful, can be intensely rewarding. The challenges are two-fold - such an idyllic scene must first be found, then justice must be done it, both artistically and photographically.

“Choice of Subject” is really a very poor heading, because one is rarely fortunate enough to have a choice! Far more often it is a matter of touring around the countryside of whatever part of the world one happens to be visiting, hoping that something spectacularly suitable will appear. The ideal situation requires orchids, lots of them, preferably big colourful ones that will stand out from their surroundings, and they should all be in the peak of condition. Around the Mediterranean, *Orchis italica* is likely to oblige; in the British Isles, various species of *Dactylorhiza* produce massed ranks of spikes in favoured situations; in the Alps, *Dactylorhiza sambucina* can be quite spectacular; in North America, *Cypripediums* are everyone’s favourites, and so on - in theory there are loads of possibilities. Then you need a view, preferably without pylons,

power cables or sheds with rusty corrugated roofs. A blue sky is nice with a few fluffy white clouds, but wall-to-wall cumulo-nimbus presents difficulties. Sunshine is the real essential to add some brilliance and life to the picture and to keep the exposure time down, but it must be shining from a sensible direction. And it is a lot easier if there is no wind. With all these requirements, it is not surprising that really good photos of this type are few and far between.

Composition of the picture initially involves selection of a viewpoint that puts one or more high-quality plants in the foreground. Then, if you have a zoom or interchangeable lenses, what focal length is best? This is a key decision which I shall deal with in more detail later. Finally, does the picture look best if the foreground is pin-sharp but the distant scene is marginally out of focus, or is the “picture postcard” approach better, where absolutely everything is in focus? This final decision is rather a matter of personal taste, though in windy conditions with indifferent light, the slightly blurred background may be the only option. However, when conditions permit, it is worth attempting both approaches, just to see which is the more effective.

The Blurred Background approach is technically much the simpler. The camera is placed close to the foreground plants so that they will dominate the picture, and the lens is focused a little behind the nearest flowers. A small lens aperture (large f-number) is selected, consistent with a sufficiently short exposure time that subject movement will not be appreciable. Then the depth-of-field-preview button is used to confirm that the nearest flowers are in focus and to check on the clarity of the background. If the lens aperture is too large, or if the camera is too close to the foreground plants, the distant scene may be so blurred that it is effectively lost. In that case, a smaller aperture or a slightly greater camera distance may improve things enormously. In my opinion (which you may not agree with!) an acceptable result is a scene where all the components of the background are recognisable, but their fine detail only has been lost. However, if the background is almost (but not quite) pin-sharp, the resulting picture may look like a failed attempt at an absolutely clear background!

The Sharp Background approach, on which the remainder of this article concentrates, is technically rather more tricky, but is often well worth the effort. In the good old days of manual lenses, lens barrels usually had markings which indicated not only the focus distance, but also the nearest and furthest points of sharpness (i.e. the depth of field) for each lens aperture. One merely selected a small aperture, adjusted the focus so that the far-point mark for that aperture was set at infinity, read off the distance to the near point, and then held the camera at that distance from the nearest plant. Unfortunately, many modern “improved” lenses do not have such markings so, for any focal length and lens aperture, one needs to know the optimum place to set the focus. This is where the concept of the “Hyperfocal Distance”, HD, helps. When the lens is focused at HD, all points in the scene from a distance of one half of HD out to infinity should appear sharply focused.

The hyperfocal distance is determined by three factors. Firstly, there is the aperture setting (or f-number) of the lens where, as one might expect, the smaller the aperture (i.e. the larger the f-number) the shorter is HD. Secondly, there is the focal length of the lens where, for a particular aperture setting, the shorter the focal length the shorter the hyperfocal distance. Taken together, a short focal length lens (i.e. a wide-angle lens) and a small aperture yield the shortest value of HD (i.e. the greatest depth of field). Interestingly, when a camera is focused at HD, objects at the near-point (1/2 HD) appear larger with wide-angle lenses than with standard focal lengths, although the reverse is true for distant objects.

The third factor is more subjective, namely, how much blurring can be tolerated at the near and far points. This final factor depends strongly on how the resulting pictures are to be used. For example, if the pictures are to be displayed through a slide projector or printed at A4 size or larger, even the slightest blurring will be appreciable (the equivalent of a few thousand pixels may be needed across the picture) so values of HD will necessarily be quite large. However, if the pictures will be used only for small prints (say 6"x4"), put on a web page or displayed through a digital projector, great sharpness is not required (only about 1000 pixels or less may be required across the picture) so HD can be significantly smaller.

To avoid guesswork, the Tables give suggested values of HD as a function of lens focal length and aperture for 35mm cameras. The first table is for a "high resolution" situation (3000 resolvable pixels), while the second table is for "low resolution" (1000 resolvable pixels). Values of HD are given in centimetres, the figures in the "Mag" columns indicate the magnification of objects located at the near-point (i.e. at a distance of 1/2 HD from the lens).

| FL<br>NA | 24mm  |       | 28mm  |       | 35mm |       | 50mm |       | 70mm  |       |
|----------|-------|-------|-------|-------|------|-------|------|-------|-------|-------|
|          | HD    | Mag   | HD    | Mag   | HD   | Mag   | HD   | Mag   | HD    | Mag   |
| 32       | 0.62m | 0.08  | 0.85m | 0.069 | 1.3m | 0.055 | 2.7m | 0.038 | 5.2m  | 0.027 |
| 22       | 0.90m | 0.055 | 1.22m | 0.047 | 1.9m | 0.038 | 3.8m | 0.026 | 7.5m  | 0.019 |
| 16       | 1.22m | 0.04  | 1.66m | 0.034 | 2.6m | 0.027 | 5.3m | 0.019 | 10.3m | 0.014 |
| 11       | 1.77m | 0.028 | 2.4m  | 0.024 | 3.7m | 0.019 | 7.6m | 0.013 | 14.9m | 0.009 |

**Table 1:** High resolution pictures (3000 pixels). Values of Hyperfocal Distance (HD) and Magnification of near-point objects (Mag) for a selection of Focal Lengths (FL) and Numerical Apertures (NA).

| FL<br>NA | 24mm  |       | 28mm  |       | 35mm  |       | 50mm |       | 70mm |       |
|----------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|
|          | HD    | Mag   | HD    | Mag   | HD    | Mag   | HD   | Mag   | HD   | Mag   |
| 32       | 0.38m | 0.133 | 0.52m | 0.114 | 0.80m | 0.091 | 1.6m | 0.064 | 3.1m | 0.046 |
| 22       | 0.55m | 0.092 | 0.74m | 0.078 | 1.2m  | 0.063 | 2.3m | 0.044 | 4.5m | 0.031 |
| 16       | 0.74m | 0.067 | 1.0m  | 0.057 | 1.6m  | 0.046 | 3.2m | 0.032 | 6.2m | 0.023 |
| 11       | 1.07m | 0.046 | 1.45m | 0.039 | 2.3m  | 0.031 | 4.6m | 0.022 | 9.0m | 0.016 |

**Table 2:** Low resolution pictures (1000 pixels). Values of Hyperfocal Distance (HD) and Magnification of near-point objects (Mag) for a selection of Focal Lengths (FL)

For digital cameras the figures are different, since the camera sensor is much smaller than a 35mm film frame. Since so many different sensor diameters are available, I'm afraid you will have to do the calculations. The formula for the hyperfocal distance, HD, (derived from elementary geometric optics learnt rather a long time ago at school!) is:

$$HD = FL ( FL \times PX / DS \times NA + 1 )$$

where FL is the focal length of the lens, PX is the number of pixels required across the final image, DS is the diameter of the camera's sensor, and NA is the numerical aperture (f-number) of the lens. It doesn't matter what units (mm or cm) the various distances are measured in, provided they are all the same!

The illustration (which has little artistic merit!) is included to demonstrate both the good and bad aspects of the extreme depth of field that can be achieved with a 28mm wide-angle lens. The picture was taken in a meadow of Green-winged Orchids, *Anacamptis (Orchis) morio*, with a little bit of the Malvern Hills in the background. The "low resolution" option was taken with the lens stopped down to f/22. The central large orchid was set at the near-point (1/2 HD), less than 40cm from the lens. The result is that both the nearest orchid and the distant scene are acceptably sharp. The good aspect is that the dominant orchid appears quite large, but this is achieved at the cost of the low impact of the background scenery due to the exaggerated perspective produced by the wide-angle lens. Sometimes a less extreme focal length lens will produce



*Anacamptis (Orchis) morio* Photo: Tony Hughes

more satisfying results. It is advisable to have a well-defined procedure for taking this type of picture. The following is my recommendation, but no doubt others will adopt their own preferences. Having selected the background scenery and the foreground plants, the rest is rather mechanical, but a tripod is almost essential, a fast film makes it much easier, while polarising filters may have to be reserved for bright conditions only:

1. Switch off Auto-focus and select either Aperture Priority or Manual exposure.
2. Consult the exposure meter. A compromise must be sought that gives a fast enough shutter speed to freeze movement of the closer objects, while allowing the smallest possible aperture.
3. If you have a choice of lens, use the chart to select the focal length that gives the required magnification at the near-point. Then check the field of view to confirm that the picture has all the elements you desire. Frequently this requires the wide angle lens, but it is worth experimenting with several!
4. Set the lens aperture as selected in (2), and set the focal distance on the lens barrel to the hyperfocal distance given in the chart for that aperture. Resist all temptation to alter either of these settings later!
5. With the camera on the tripod, place it so that the front of the lens is exactly 1/2 HD from the nearest part of the chosen foreground plant.
6. Picture composition can now be adjusted by rotating the camera either horizontally or vertically, but not by moving it forwards or backwards.
7. Use the Depth of Field Preview button to check that everything comes into focus. At f/22 this is not easy because the viewfinder picture is awfully dark, but gross errors should be obvious.
8. Now is a good time for a bit of 'gardening', particularly of tall growths nearer to the camera than your near point, because they will appear on the photograph as eye-catching blurs. Dead grass and the like can be removed, while living material should be bent gently aside.
9. Wait for the sun to come out, re-check the exposure meter, wait for the wind to drop, then release the shutter. Then take a few more shots, possibly with other lenses, in the hope that one may work.
10. When the resulting masterpieces have been developed, select the best and enter them in the next HOS Photo Competition.

## Some Interesting Scottish Orchid finds

Patrick Marks

In 2003 two Hardy Orchid Society members, Brian Laney and Paul Stanley discovered the first confirmed plant of *Ophrys apifera* in Scotland for nearly a quarter of a century. In the April issue of the Journal they detailed this discovery. Brian Allen and I paid a visit to the site on the 25th June 2004. The site is a large one, formerly a colliery but now carpeted by a mixture of scrubby, developing woodland and large open expanses of ground with varying amounts of vegetation. Using GPS references, Brian Allen pin-

pointed the location of the original plant but there was nothing immediately evident, apart from the remains of last year's plant. We eventually discovered a plant within 50 yards of the old site. This plant was already well in flower with the bottom flowers already going over, but some upper flowers were still fresh. We explored the site for a couple of hours and discovered another five plants, mostly in or around the edge of scrubby woodland. Given the nature of the site, we could have missed other specimens. I haven't heard whether all these plants set seed, but given the number flowering, there must be potential for a good sized colony to become established.

Another interesting urban site is much closer to my home, a public park in the old industrial town of Kirkcaldy in Fife. The council to their credit have recognised the value of leaving an area of meadow, but it took a non botanist to bring it to the attention of a local botanist, Ron Stevenson, who is also a Society member. The site hosts hundreds of *Dactylorhiza fuchsii* flowering in a wide range of colours from pure white to varying degrees of patterning and up to the intense, dark shades of var *rhodochila*. This site hosts an average of a dozen plants of this variety, which vary in size with the leaves varying from shades of green to those with the distinctive dark purple shading expected in the variety. 2004 saw a unique addition to the *rhodochila* range with one plant which I discovered in late June in which the labellums varied from pure white to half white and half purple. The plant was a healthy specimen with a good head of flowers and dark stained leaves. It is curious what nature can throw up and why has it appeared in this park and in no other known sites in Fife and very few in Scotland.



*Ophrys apifera* - Ayrshire 2004  
Photo - Patrick Marks



*Dactylorhiza fuchsii* var *rhodochila*  
Kirkcaldy 2004 - Photo: Patrick Marks

## Wild Orchids in the Southern Lot, S.W. France

**Beautiful Quercynoise farmhouse B & B with swimming pool, in  
Peaceful environment within Quercy Regional Park**

Over 20 species of orchids abundant locally between April and July.  
Details of self-led walks around the Lot, Célé and Aveyron river  
valleys available. Close up to the region's tourist attractions,  
including St-Cirq-Lapopie, Peche Merle cave and Cahors.

Packed lunches and evening meals by reservation.

Sheila and Gary Tucknott  
Mas de Guerre  
46260 Beauregard  
France

Tel:0033565243286

Email: [mesdeguerre@freesurf.fr](mailto:mesdeguerre@freesurf.fr) Web:<http://masdeguerre.com>



## Hardy Orchids



---

New Gate Farm, Scotchey Lane, Stour Provost, Nr Gillingham, Dorset SP8 5LT  
Telephone: 01747 838368 Fax: 01747 838308

---

E-mail : [hardyorchids@supanet.com](mailto:hardyorchids@supanet.com)

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 trays, and growing on for a further three to eight years, depending upon the species of hybrid concerned to raise them to flowering size. Some are vegetatively reproduced. We have a comprehensive catalogue, produced each Autumn.

The catalogue includes plant lists with details, growing instructions, etc.

The nursery is open to visitors, but only by prior appointment.

Send two first class stamps for our current catalogue, or visit our web site which is regularly updated, at:- [www.hardyorchids.supanet.com](http://www.hardyorchids.supanet.com)

***ORCHIDS AND WILD FLOWERS  
OF THE PELOPONNESE SOUTHERN GREECE***

**12 - 19 March and 26 March - 2 April 2005  
£350, including accommodation and full board**

**There are over 6000 species of wild flowers in Greece with more than 100 varieties of orchid. Join us to peer under bushes for Mirror Orchids, part blades of grass for Bee Orchids and share the excitement of finding the first of the season's Pink Butterfly Orchids along a rocky track.**

**Please contact us for further information:**

**Email: [info@galiniholidays.co.uk](mailto:info@galiniholidays.co.uk)**

**Website: [www.galiniholidays.co.uk](http://www.galiniholidays.co.uk)**

**Tel: 0030 6947 887342**

**WESTONBIRT PLANTS**

We offer over 300 bulbs and woodland plants, many unavailable elsewhere. All with free postage and packing worldwide.

**BULBS FOR WINTER – SPRING DELIVERY**

Arisaema, Asarum, Paeonia, Roscoea and Trillium

**ORCHIDS**

Calanthe, Cephalanthera, Cremastra appendiculata, Cypripedium (C. californicum to C. yunnanense), Dactylorhiza aristata, Epipactis (E. 'Irene' to E. veratrifolia), Liparis and Ponerorchis graminifolia

(Please note: Orchids sales to EU countries only)

Send a 1<sup>st</sup> class stamp, 1 Euro, 1 IRC or 1 US\$ bill for list to:

**Westonbirt Plants**

**9 Westonbirt Close, Worcester, WR5 3RX, England**