

Journal
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HARDY ORCHID SOCIETY



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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 to Authors" (see website, January 2004 Journal or contact the Editor).

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Front Cover Photograph

Hybrid between *Ophrys argolica* and *Ophrys speculum* (*Ophrys* × *rasbachii*) in the Peloponnese, photographed by Robert Thompson (see article on page 118).

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Editorial Note

In my brief period editing the Journal I have found that a few problems tend to get raised immediately following the publication of an issue. These are usually resolved fairly readily, but the last issue caused some difficulty for at least one of our overseas members. At the request of Pamela Scraton, I have included a “letter to the editor” on page 127, raising concern about site disclosure. This is not a new issue for the Journal, and it is something that we have discussed in Committee. We do not intend to publish precise site details in the case of rare orchids, and it is my responsibility as Editor to ensure that we adhere to this policy. In practice it is not always so easy as both “rarity” and “details” can involve a rather subjective judgement. The case in point did not provide a precise location, but it did give hints on the whereabouts of a vulnerable site. In addition to Pamela’s letter, a reply from Richard Bateman is published on page 128.

The issue of site secrecy as an effective approach to conservation has several dimensions. Clearly there is a risk from trowel-wielding idiots, and this remains a concern as evidenced by a recent theft from a Nature Reserve in the Czech Republic (The Orchid Review 2006, 114: 247). Also, well-meaning enthusiasts can put pressure on a site, as was experienced by hybrids between the Monkey and Lady Orchids in the UK earlier this year. Despite this, there are some excellent examples where active conservation (e.g. assisted pollination and herbivore exclusion) has allowed vulnerable orchids to flourish and become openly available to an admiring audience. As Richard argues in his response, wider awareness might provide early warning of threats to a vulnerable habitat and an opportunity to protect it. If you have additional thoughts on the general issue of site confidentiality and conservation then do send them in, and I will try to include some in a future Journal.

The HOS Autumn Meeting Sunday 12th November 2006

The Autumn Meeting and Photographic Competition are being held at RHS Wisley once again. Advance booking is essential and a Booking Form with full details of the cost and location is included with the Journal. Please return it with your cheque to Maren Talbot by 1st November. The provisional programme is as follows (details subject to change):

9.00 a.m.	Set Up Trade and Members' Plant Sales Tables
9.30 a.m.	Doors Open; Tea / Coffee; Photo Comp Entries; Plant Sales
10.30 a.m.	Chairman's Introduction
10.35 a.m.	Prof. Richard Bateman: "Orchids of Tuscany"
11.25 a.m.	John Haggart: "Hardy Orchid Hybrids"
12.15 p.m.	Alan Blackman: "Orchids of Southern France"
1.00 p.m.	LUNCH
2.00 p.m.	Photographic Show Judge
2.30 p.m.	Colin Clay: "Orchid Propagation - an Amateur's Perspective"
3.20 p.m.	Tea / Coffee
3.35 p.m.	Les Lewis: "Orchids of Chios"
4.20 p.m.	Any Other Business
5.00 p.m.	Meeting Closes

Please note some **changes to the photographic competition** this year due to the pressure of increased entry numbers. To allow Eric and Doreen Webster to run the competition properly, the maximum number of entries in **Classes 1-8** is being reduced to **two prints** per class (one slide per class in Classes 9-12). Also, all entries must be **notified in advance** by Thursday 9th November 2006 using e-mail (dozzer@lobro24.freemove.co.uk), telephone (0771 3409743), or post (Eric Webster, 25 Highfields Drive, Loughborough, Leics., LE11 3JS).

Photographic Show Classes

1. An orchidaceous landscape, print size up to 7x5 inches.
2. A group of orchids, print size up to 7x5 inches.
3. A single orchid plant, print size up to 7x5 inches (see Rule 10).
4. A close-up, print size up to 7x5 inches (see Rule 9).
5. An orchidaceous landscape, print size up to A4.
6. A group of orchids, print size up to A4.
7. A single plant, print size up to A4 (see Rule 10).
8. A close-up print size up to A4 (see Rule 9)
9. An orchidaceous landscape, 35mm colour slide.
10. A group of orchids, 35mm colour slide.
11. A single orchid plant, 35mm colour slide (see Rule 10).
12. A close-up, 35mm colour slide (see Rule 9).

(see HOS web site www.hardyorchidsociety.org.uk for the detailed rules)

Some New Discoveries on the Greek Island of Chios Les Lewis

Chios is a relatively large Greek island lying in the eastern Aegean Sea between Lesbos and Samos, a few miles off the Cesme peninsula on the Turkish mainland. Although other Greek islands, in particular Crete and Rhodes, are well-known for their orchid flora, it is only in the last few years (following studies by Pantelis Saliaris, author of *"The Orchids of Chios"* and Mike Taylor of the World Museum Liverpool, author of *"Illustrated Checklist : Orchids of Chios, Inouses & Psara"*) that the importance and richness of the Chios flora has become appreciated. In recognition of this importance, *"Ophrys 2005"* the 2nd European Congress on Hardy Orchids was held on the island in April 2005. A report of the Congress by Mike Parsons, together with a report of the field trips he made with John Spencer, was published in the July 2005 issue of the Journal.



Plate 1 *Ophrys calypsus*,
Kalamoti, Chios, 9th April 2006
Photo by Graham Giles

Since the island is relatively large and, until recently, has been little visited by people interested in orchids, it has not been fully investigated. It was therefore not surprising that significant discoveries are continuing to be made, including several in April this year. The most significant of these was by HOS member Ron Harrison, while on a Greentours holiday with his wife Trish. On a hillside at Kalamoti, he found a single showy *Ophrys* which neither he nor the tour leader recognised. This was subsequently identified as *Ophrys calypsus* with its characteristic pink perianth, strongly domed lip and large speculum. Although this species is known from many other Aegean islands, as well as Cesme and elsewhere in Turkey (Kreutz, 1998; 2002), this was the first time it had been recorded on Chios.

Some other discoveries were made by Joan Franklin, Graham Giles and myself while on an independent trip to the island. Although we did not appreciate it until several months later, we also found a species which previously had not been recorded on the island. This was the little known *Ophrys cesmeensis* (Delforge, 2005) which we came across at three separate locations near Emporios on the south-eastern tip of the island, and possibly also at Pirgi nearby. The identity of the Emporios plants was subsequently confirmed by Karel Kreutz (pers. comm., 2006), who first



Plate 2 *Ophrys cesmeensis*,
Emporios, Chios, 3rd April 2006
Photo by Les Lewis



Plate 3 *Ophrys dodekanensis*,
Pelinaeon, Chios, 5th April 2006
Photo by Les Lewis

described the species as a new subspecies *O. attaviria* ssp. *cesmeensis* (Kreutz, 2003). Prior to this, the species had been recorded at only two locations, both on the Turkish Cesme peninsula after which it is named. However, it had been suggested that it could be present on Chios (*Ophrys News*) and plants found on the island in previous years by Mike Taylor, Joan Franklin and others may have been this species, although not identified as such because of the difficulty of distinguishing it from other similar looking species and hybrids.

We also discovered two new populations of *Ophrys dodekanensis* on different parts of the island. This species is a small flowered member of the *O. scolopax* group with a metallic speculum, pale (on Chios, usually whitish) sepals and an exceptionally large leaf rosette for the size of the plant. When first described (Kretzschmar & Kreutz, 2001), this species was thought to be endemic to Rhodes (Kreutz, 2002). However, Pantelis Saliaris realised that some pale-sepaled plants which he had previously found growing in a rocky meadow on the northern slopes of Mount Pelinaeon in the north of Chios were in fact *O. dodekanensis* (Saliaris, 2002), not *O. heterochila* as originally thought. This identification was subsequently confirmed by delegates to *Ophrys 2005* (Taylor, 2005 and pers. comm. 2006). Although it has been speculated that the species probably also grows in south-west Turkey (Kreutz, 2002; Delforge, 2005), up until this year, Saliaris' site was the only confirmed record other than on Rhodes. However, Joan Franklin with Mike Taylor discovered six plants growing with *O. ferum-equinum* and *O. omegaifera* on a rocky hillside at Psiles on the west of Chios.

Several days later, we also discovered a dozen or so more plants growing on the northern slopes of Mount Pelinaeon about 1km from Saliaris' earlier site.

The precise identification of *Ophrys* on the island can often be extremely problematic. This was very much in evidence with our discovery of about 25 plants growing rather precariously (for us) amongst a similar number of beehives at Lithi on the south-west of the island. These *Ophrys* all had the large, curved, speckled brown-yellow lip and shiny, marbled speculum characteristic of *O. phaseliana*. This species was thought to be endemic to south-west Turkey (Kreutz, 1998) until its discovery at Olympi on Chios by Mike Taylor in 2003, (Taylor, 2005 and pers. comm. 2006). However, since not all of the plants possessed the reddish edge to the basal area which is normally another characteristic of *O. phaseliana*, there was some doubt as to whether they were that species or an exceptionally large form of *O. leucadica* (Kreutz, per. comm. 2006).



Plate 4 Possible *Ophrys phaseliana*, Lithi, Chios,
2nd April 2006
Photo by Graham Giles

I would like to thank Mike Taylor, Joan Franklin and Graham Giles for finding so many orchids while we were in Chios, and for their assistance with this article. I would also like to thank Karel Kreutz for his confirmation of the identification of *O. calypsus* and *O. cesmeensis*, and for his opinion on the plants we found at Lithi.

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2006 Field Trip Reports

David Hughes

The field trips have always been an important part of the Society's curriculum, giving the opportunity for locals to introduce travelling members to their specialties, as well as the sharing of our enthusiasm. This year we planned an increased programme which, due to the short peak orchid flowering season, meant a busy May and June. The late season caused the organisers some headaches and, although some dates needed changing, all meetings eventually went ahead. The meetings proved popular and they were well attended. I am very grateful to the leaders at each event who took trouble over research and organization. Their individual reports follow.

I will be compiling a programme for 2007, and welcome suggestions and volunteers. I am particularly keen that we should extend our field visits over a wider area of the UK and also later in the season. Often there is a conflict between easy accessibility to avoid problems for the less agile, and the need to walk further over rough terrain to enjoy particular sites. Some trips will be all day but single interesting sites may justify only a half day visit, so participants are then free to explore independently after the group meeting.

Field Trip to Dorset 7th May led by Norman Heywood: As usual we met up at Worth Matravers car park, and left at 10.00am, following the normal route. Unfortunately with the change of date we were reduced to only eleven walkers as others had prior commitments. We found plenty of Early Spider Orchids and Green Winged Orchids, and the only let down was when we got down from the Priest's Path to Dancing Ledge to find thirty beef cattle happily grazing on the orchids. The quantity of seed for future years must have been considerably reduced and letters have been sent by Bill Temple and others to the National Trust.

From there we proceeded to our two Datford Warbler bird hides, but for the first time ever we were not successful in seeing even one! Could this also have been caused by the weather? After that it was time for some exercise and a stroll around Arne Peninsula RSPB reserve: not a great deal of bird life, but large quantities of Sika Deer. From the e-mails I have received, the day was enjoyed by all.

Field Trip to the Chilterns 26th May led by Malcolm Brownsword: On what was probably the only dry day in May, a party of 14 HOS members visited three nature reserves in the Chilterns. In addition, a smaller party had done a similar trip two days earlier on the 24th. The orchid species seen in flower were: *Cephalanthera damasodium*, *Neottia nidus-avis*, *Listera ovata*, *Platanthera chlorantha*, *Orchis militaris*

Plates 1 & 4 Field trip to Suffolk; **Plate 2** *Orchis militaris* in Suffolk; **Plates 3 & 5** Likely *Dactylorhiza traunsteinerioides*; **Plates 6 & 7** *Dactylorhiza incarnata* ssp. *ochroleuca*. Photos by Mike Gasson



(Plates 10 & 13), *Ophrys insectifera*, *Orchis simia* and *Orchis purpurea*. In addition, many *Dactylorhiza fuchsii* and a possible *Platanthera bifolia* were not quite in flower.

The highlight of each visit was undoubtedly the presence of six flowering *Orchis purpurea* × *simia* hybrids (Plate 12). Both Kew and the British Museum Natural History were present on Friday the 26th to make measurements and take samples for DNA analysis. Other interesting plants were seen, including *Pulsatilla vulgaris* and *Atropa belladonna*, both of which were in flower.

Field Trip to Suffolk 4th June led by Mike Gasson: We were blessed with a lovely sunny morning for the start of this visit to Suffolk Wildlife Trust (SWT) Nature Reserves. We found the Military Orchids in perfect condition, better in fact than for the public open day held a week earlier. As is well documented, the Suffolk site for *Orchis militaris* occupies a disused chalk pit (Plates 1, 2 & 4) that was discovered by M. Southwell in 1954. The East Anglian Military Orchids (Plates 8 & 9) differ from their Chiltern cousins (Plate 10) in a variety of small features. The Suffolk plants are considered to be taller with broader leaves and larger, looser-flowered spikes. The anthropomorphic lip has paler, narrower “legs”, and it appears rather elongated by comparison. These distinctions led to their assignment to separate varieties; the Suffolk plants joining the bulk of “continentals” in *O. militaris* var. *militaris*, whilst the Chiltern plants are designated *O. militaris* var. *tenuifrons*.

Following a picnic lunch at the site, we drove on to a nearby fenland site that is noted for the presence of the “yellow” form of the Early Marsh Orchid, *Dactylorhiza incarnata* ssp. *ochroleuca* (Plates 6, 7 & 11). With the late season we were fortunate to find several plants that had recently opened their flowers. Large numbers of other Marsh Orchids were also present at the site, and we had fun debating the true identity of individual members of a population that seemed to include Pugsley’s Marsh Orchid, *D. traunsteinerioides* (Plates 3 & 5) and Southern Marsh Orchid, *D. praetermissa*. Many of these plants failed to meet the textbook description of either species, and although none of us could claim to be Marsh Orchid experts we concluded that some hybridisation was probably involved. A few precocious Common Spotted Orchids, *D. fuchsii* were also just coming into flower. Special thanks are due to SWT for granting access to the Military Orchids, and also to the attending members who contributed £64 to HOS and SWT funds.

Field Trip to Box Hill 18th June led by David Slimming: A group of 14 members of the society joined the visit to find the particular orchids of the site. Warnings of a

Plates 8 & 9 *Orchis militaris* in Suffolk; **Plate 10** *Orchis militaris* in the Chilterns; **Plate 11** *Dactylorhiza incarnata* ssp. *ochroleuca*. Photos by Mike Gasson



dearth of the special rarities were soon proved unfounded. Nine orchid species were found including *Orchis (Aceras) anthropophora* from top to bottom of the hill and a good area of *Herminium monorchis*. *Ophrys apifera* was particularly abundant and widespread, so a very successful day.

Field Trip to Cumbria 1st July led by Alan Gendle: A party of 16 members assembled within site of Hadrian's Wall on a bright sunny Saturday morning. After travelling 5 miles along single track roads we arrived at a National Nature Reserve on Cumbria's north-eastern border. The reserve, a traditionally managed hay meadow, has been granted NATURA 2000 status under the EU habitats directive. After entering the reserve the party moved east along the flat upper section of the reserve where 4 Small White Orchids, *Pseudorchis albida* (Plate 14) were seen in declining condition. Dropping down the slope produced the following orchids: Common twayblade, *Neottia (Listera) ovata*; Frog Orchid, *Dactylorhiza (Coeloglossum) viride*; Heath Spotted Orchid, *Dactylorhiza maculata*; Northern Fragrant Orchid, *Gymnadenia borealis*. On a nearby grassy bank, the first of several bi-generic hybrids between Northern Marsh Orchid and Northern Fragrant Orchid, *Dactylorhiza purpurella* × *Gymnadenia borealis* (Plate 15) were in flower.

The wetter western side of the reserve has a population of several thousand Heath Spotted Orchids. Other members of the *Dactylorhiza* family were represented: Northern Marsh Orchid, *D. purpurella*, and a few scattered Common Spotted Orchids, *Dactylorhiza fuchsii*. Even scarcer were members of the Early Marsh Orchid group: 3 or 4 spikes of *Dactylorhiza incarnata* ssp. *coccinea* (Plate 16) and a single spike of *D. incarnata* ssp. *pulchella* were still recognisable

Bi-generic hybrids between Heath Spotted Orchid and Northern Fragrant Orchid, *Dactylorhiza maculata* × *Gymnadenia borealis* (Plates 17, 18 & 19) were found in several locations. Intra-generic hybrids between the two dominant *Dactylorhiza* species, *Dactylorhiza maculata* × *purpurella*, occurred frequently. Finally towards the end of the visit near the lunch time picnic site we made two more interesting finds. A bi-generic hybrid *Dactylorhiza fuchsii* × *Gymnadenia borealis* was seen, and this was unusual as there are so few *Dactylorhiza fuchsii* on the site. Also, two spikes of pure white *Dactylorhiza maculata* (Plate 20) were located to complete the visit. Many thanks to the attending members who contributed £50 to HOS funds.

Plate 12 *Orchis purpurea* × *simia* hybrid; **Plate 13** *Orchis militaris* in the Chilterns; **Plate 14** *Pseudorchis albida*; **Plate 15** *Dactylorhiza purpurella* × *Gymnadenia borealis*; **Plates 16** *Dactylorhiza incarnata* ssp. *coccinea*; **Plates 17 -19** *Dactylorhiza maculata* × *Gymnadenia borealis*; **Plate 20** white *Dactylorhiza maculata*. Photos by Malcolm Brownsword (Plate 12), Mike Gasson (Plate 13), and Alan Gendle (Plates 14-20)

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Some Easy to Grow Hardy Orchids Malcolm Brownsword

I grow lots of hardy orchid species in a cool greenhouse, but the only ones I grow outside at the moment are *Dactylorhiza majalis*, *D. praetermissa*, *D. fuchsii*, *Epipactis palustris*, *E. gigantea*, and *E. gigantea* × *veratrifolia*.

Most of us do not have a natural marshy area in our garden in which to plant moisture-loving orchids, so we must create conditions that will ensure that the roots are kept moist. The clay component of the soil in my garden is more suitable for making pottery than growing orchids, so the simplest way to provide good growing conditions on a small scale is probably the “buried bucket” technique shown to me by Bill Temple nearly 10 years ago.



Dactylorhiza praetermissa
grown using the “buried bucket”
technique in my garden.

Photo by Malcolm Brownsword

For *Dactylorhiza*, in late August when the foliage is about to start dying down, acquire a plant and twist the newly-formed tubers carefully. They should separate easily. You are likely to get two new large tubers, and possibly one or two small ones as well. Discard the dying current year’s growth.

For *Epipactis*, cut sections of root during the winter, ensuring that two or three new shoots are present on each root mass. They have roots that look remarkably like Couch Grass and spread at a similar rate. Most shoots will hopefully produce a flower spike. They are quite prolific and can become rampant weeds! A clump will at least double in area each year.

We are now ready to plant. First dig a hole to fully accommodate a large plastic bucket. Drill 1cm. diameter holes in the side of the

bucket, each about 10 cm. from the base. Then pour in gravel to a depth of approximately 12-15cm. Place the bucket in the hole so that the top is just below the soil surface. Next mix the components of the growing medium. I use roughly equal volumes of composted bark (“Mulch’n’Mix”), alpine grit and John Innes number 1 compost. This has been very satisfactory, but Perlite can be substituted for some of the grit. I don’t believe the species I grow are particularly fussy about composts, so use your own recipe.

Pour in sufficient growing medium to half-fill the bucket, and then add the tubers or rhizomes, spreading out the roots. Almost fill the bucket with the growing medium, finally topping up with gravel to the level of the soil surface. This will deter slugs and snails, which are quite partial to *Dactylorhizas*.

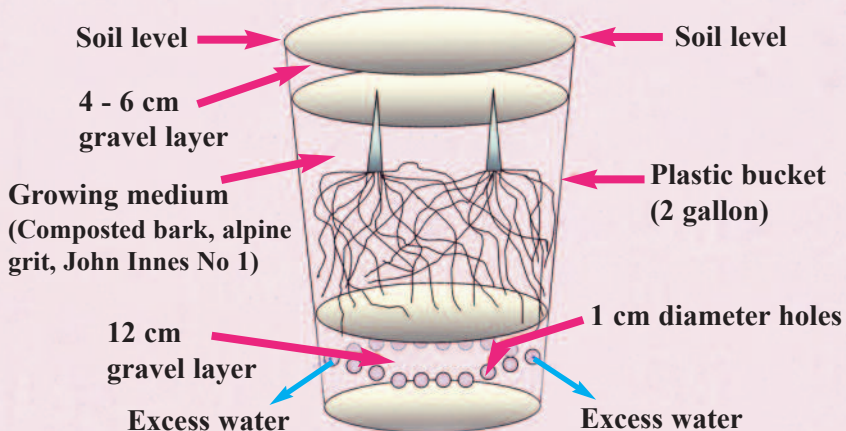
Note that the drainage holes are not in the base, but 10 cm above it. When it rains, or when you use your watering can, the bottom 10 cm. of the bucket get very wet and the excess water drains through the holes into the surrounding soil. The growing medium above the wet region should stay moist enough for the plants to thrive. The grit gives good drainage, so in wet weather the growing medium does not get stale. The composted bark helps hold moisture, and the John Innes Number 1 compost gives low levels of nutrients. You will need to water during dry spells in the summer, and re-pot (or rather re-bucket?) every two years.



Epipactis gigantea x veratrifolia grown using the "buried bucket" technique in my garden.

Photo by Malcolm Brownsword

Growing Moisture-loving Hardy Orchids in the Garden



An Orchid Excursion in the Dordogne

Nick Carthey

Originally, I wanted to go the Vercors plateau to find *Orchis spitzelii*, but my wife, who's not obsessed with orchids, suggested the Dordogne instead. We've already been to the Vercors twice, she pointed out, and you'll enjoy the Dordogne; I went there as a child, and it's a new area of France for you. So, somewhat reluctantly, I agreed. The Dordogne, as you know of course, is a chalky region, and so perfect territory for a wide variety of orchids.

A search on Google for "Dordogne orchids" brought up three interesting things: firstly, a novel by Michelle Wann, "Deadly Slipper", all about a murder over orchids in the Dordogne! (I subsequently bought it and am in the process of reading it). Secondly, the Naturetrek website, which suggested some interesting places to visit. And thirdly, "Maison la Tourache", a B&B run by an English couple (James and Shirley) in the right area, with some nice pictures of countryside and promises of orchids in the garden, of which more later.

So having booked "Maison la Tourache", we set off on May 20th, 2006, ferry cancelled due to unseasonable high seas, and a last minute Eurotunnel booking. From Calais we took two days to drive to the Dordogne, with the odd sighting of Lady, Butterfly and Common Spotted-type orchids on the roadside verges. Eventually we found the B&B at about 8 pm, located in an idyllic spot near to the little village of Mauzens Miremont, about 20 km from Bergerac, with just a few other houses in the vicinity, and meadows evidently full of Butterfly and Pyramidal Orchids, among others.

The house was set in spacious grounds with woodland, and the next day I reconnoitred the garden. I must point out here that James has to mow his lawn before the end of May, which involves mowing down a lot of orchids. However, it doesn't seem to do much harm, because we found at least twelve species in the uncut areas or the immediate vicinity, significantly more than in the surrounding flowery meadows: Lizard Orchids, Twayblade (only one), Pyramidal Orchids (lots), Early Spider Orchids (going over),



Beetle on Marsh Orchid
Photo by Nick Carthey

Bee Orchids, Woodcock Orchids, Fly Orchids, Man Orchids (lots), Lady Orchids (gone over), Violet Limodores in the woodland, Burnt Tip Orchids (lots), and some others which were completely gone over, probably Early Purple Orchids. There were Greater Butterfly Orchids in the meadows around the house, with others already mentioned.

We drove down to Sarlat and then Les Eyzies, spotting some Red and White Helleborines on the roadside near Sarlat and, almost everywhere, the typical chalk-loving orchids. We ended up at the ruined Chateau de Commarque, with a splendid view over the marshy areas of the Beune valley. Apparently good marshy areas are quite rare here. A stroll along the valley revealed an expanse of rushes with the unmistakable purple of marsh orchids (in profusion). Some of these were clearly Early Marsh, but the more robust specimens had a confusingly wide range of colours and markings. I think, after much pondering over the photographs, that they may be Robust Marsh Orchid, *Dactylorhiza elata* ssp. *sesquipedalis*, and hybrids with the Early Marsh (but I wouldn't swear to it). An extensive search turned up a single specimen of what I believe to be an orchid new to me, *Anacamptis palustris*, the rare "Orchis de Marais". Subsequently we found another marshy area a few miles away, with more of the "Robust" type of marsh orchid.

Next day we visited the "suspended gardens" of Marquayssac, with a view 190 meters above the Dordogne River. There were more Greater Butterfly Orchids in the woodlands here. On the 25th we visited the underground cave paintings at Rouffignac,



Marsh Orchid, Beune Valley
Photo by Nick Carthey



Anacamptis palustris,
Beune Valley
Photo by Nick Carthey

and then drove in the direction of Vergt, with a nice colony of white Common Spotted Orchids on the roadside of the D45. Further on, the roadside verges yielded Early Purple Orchids in flower, and some Fragrant Orchids (strangely absent from everywhere else).

The following day, we paid a visit to the picturesque town of Monpazier, and then to the village of Biron. A rather unpromising area of waste ground at a crossroads just outside Biron proved to be rather rich: a colony of *Serapias lingua*, Lizard Orchids, and an odd Bee Orchid, looking somewhat like variety *trollii* (Wasp Orchid) on one flower. This may have been damaged by herbicide, as it was on the edge of a field of cereal. On the way back, we stopped at a small village called Campagne (the restaurant here recommended by James and Shirley), and noticed, intriguingly, a “Red Helleborine” walk on a sign in the car park. Having found the start with some difficulty, we encountered a single plant, but the walk was comparatively orchid free.

Then it was time for our trip back to England, with a stop in the Loir region (not the Loire!) to break up the journey. Here we stayed in a partially restored Chateau at Rocheaux, not far from Vendome. Not very promising orchid country, as there are lots of massive cereal fields, but the woodland roadsides did in fact have innumerable Greater Butterfly orchids. Our final excursion (not particularly to look for orchids) was to the village of Lavardin near Vendome, and the castle. In fact the castle grounds had splendid specimens of Lizard Orchid (still in bud), Lady Orchid in full flower, and many Military Orchids. These latter were also noticeable on the roadside verges. To sum up then, I can thoroughly recommend the area, and in particular the hospitality



White Common Spotted Orchid,
Dactylorhiza fuchsii
Photo by Nick Carthey



Wasp Orchid
Ophrys apifera var. *trollii*
Photo by Nick Carthey

we encountered at the Maison la Tourache. Lots of orchids, lots of historical sites, all set in beautiful wooded hill country.

Orchid Mycorrhiza – In Intimate Association **Colin Clay's Kidlington Talk**

In nature, terrestrial orchids cannot germinate without the assistance of mycorrhizal fungi. Hence orchid plants in the wild can only grow where seed falls onto soil with a suitable fungus present. Artificial propagation of orchids has great potential for success, when germination is facilitated by a cultured mycorrhizal fungus. This report is based upon brief observations of *Dactylorhiza majalis* protocorms that had germinated *in vitro* in the presence of “B1”, a cultured mycorrhizal fungus. The *D. majalis* protocorms were a gift from Alan Dash. The “B1” fungus had originally been isolated from *Dactylorhiza* roots by Jim Hill. Protocorms were prepared either for low temperature scanning electron microscopy (LtSEM) or conventional light microscopy (LM).

For LtSEM, protocorms still attached to their agar substrate, were rapidly lifted out of the petri dish and glued to a metal ‘cryo-stub’ using Leit-C conducting carbon cement (Neubauer, Münster, Germany). This was then plunged into supercooled liquid nitrogen ‘slush’ at *ca* minus 210°C and inserted into the preparation chamber of a Cambridge Instruments S200 SEM fitted with a Hexland CT1000 cold stage. After sublimation of surface water (ice) at *ca* minus 85°C in the high vacuum, the sample was “sputter-coated” with gold and viewed frozen-hydrated in the cryo-SEM at minus 180°C.

At low power (Fig. 1) the shoot and rhizoids (arrows) of the protocorm were clearly seen. At higher magnification (Fig. 2), each rhizoid was seen to be an elongated single cell, originating in the epidermis of the protocorm (arrows). Several rhizoids (diameter *ca* 20µm) were seen in intimate contact with the finer (diameter < 4µm) mycorrhizal fungus (Fig. 3). In places (Fig. 4), the finer fungal hyphae were seen emerging from a rhizoid. False colour has been applied to Figures 3 & 4 using Photoshop.

For LM, protocorms were placed upon a glass microscope slide and squashed using another slide. Two drops of 1% (w/v) aqueous trypan blue stain were added to each squashed protocorm and heated to 60°C for 10 minutes on a hotplate. Excess stain was rinsed away with distilled water, a coverslip added and each slide was sealed. The internal structure of the rhizoids was seen. Figure 5 is a LM image showing a single rhizoid. Hyphae of mycorrhizal fungus were seen within the rhizoid and in places passing out through the cell wall (arrows). The fungus was stained by the trypan blue. In Figure 6 blue-stained hyphae were clearly seen inside the rhizoid (*)

and branching outside of it (#). Constriction of the hypha, where it passed through the rhizoid wall, was evident (arrow).

The two imaging techniques complement each other well. The monochrome SEM images show very fine surface detail with great depth of focus, whilst the LM images reveal internal structure. Rasmussen (1995) published a dissecting LM image of a protocorm and described hyphae growing along the rhizoids and passing in and out through their surface. The mycorrhizal fungus, living outside and inside of the orchid protocorm is obviously very well placed to bring nutrients into the developing cells. No “peletons” were seen in this very brief study. “Peletons” are coils of mycorrhizal fungus, found in the cortical (sub-epidermal) cells of orchid roots or protocorms, which the orchid actually digests to obtain nutrition. It would be interesting to visualize these in the future, and also to make isolations of useful fungi from them.

Reference

Rasmussen, H.N. 1995. *Terrestrial Orchids from Seed to Mycotropic Plant*. Cambridge University Press, Cambridge, UK.

Legends to Figures on opposite page

Figures 1-4 Scanning electron micrographs of a *D. majalis* protocorm, grown *in vitro* with mycorrhizal fungus “B1”. Bars represent 2mm, 1mm, 100µm and 20µm respectively.

Fig. 1 Side view of a protocorm with a developing shoot. Numerous rhizoids (arrows) link the protocorm with its agar substrate.

Fig. 2 Each rhizoid is a single elongated cell with its origin in the protocorm epidermis (arrows).

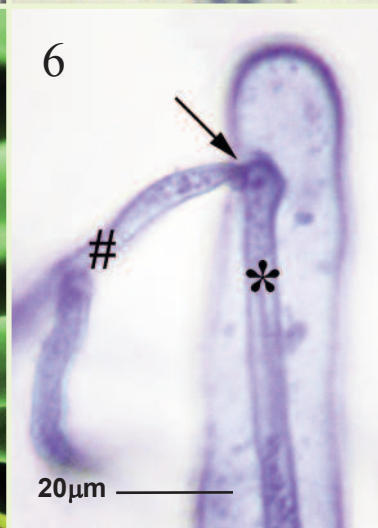
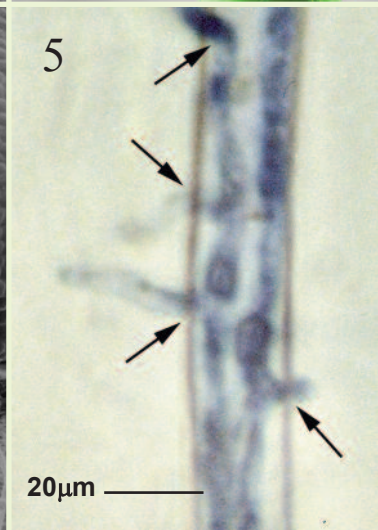
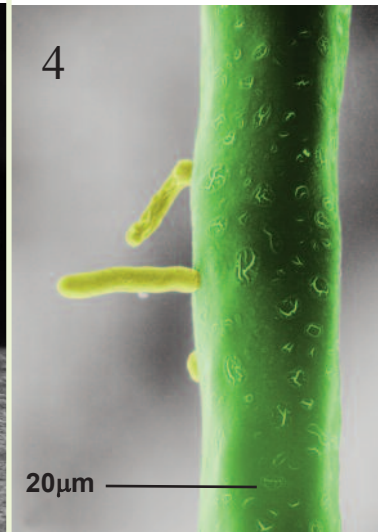
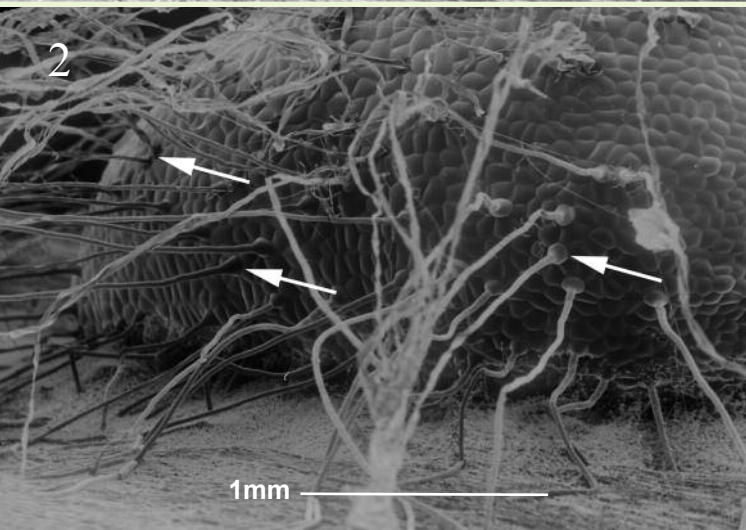
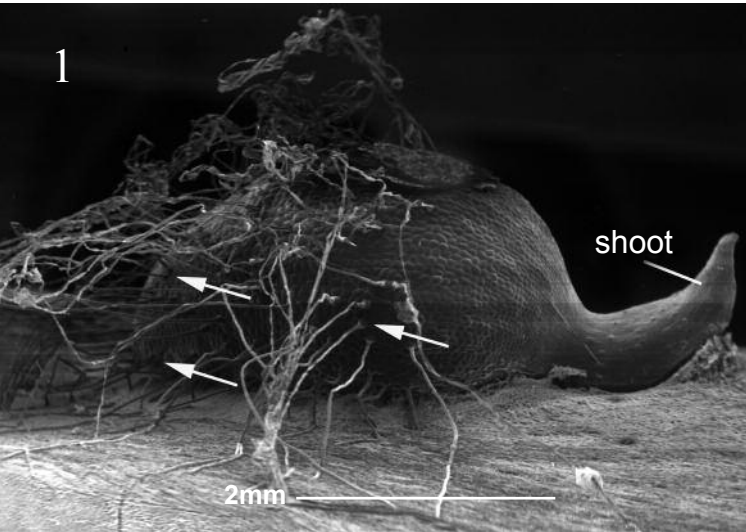
Fig. 3 False colour image showing fine hyphae of mycorrhizal fungus (yellow) in intimate contact with orchid rhizoids (green).

Fig. 4 False colour image showing a single orchid rhizoid (green), with emerging hyphae of mycorrhizal fungus (yellow).

Figures 5-6 Light micrographs of *D. majalis* rhizoids associated with mycorrhizal fungus ‘B1’. Bars represent 20µm.

Fig. 5 Blue-stained mycorrhizal fungus seen within an orchid rhizoid, also emerging from the rhizoid (arrows).

Fig. 6 The tip of an orchid rhizoid with blue-stained mycorrhizal fungus both within (*) and branching externally (#). The fungal hypha is constricted where it passes through the rhizoid wall (arrow).



The Best Greek “Island”? A Peloponnese Circuit

John Spencer

In ancient times the most southerly part of the Greek mainland was known as the island of Pelops and you could argue that the cutting of the Corinth canal made the Peloponnese an island proper. So, how does it compare with, say, Crete, Corfu or Rhodes for an orchid trip? Very well, in our opinion (my friends Mike Parsons and Robert Thompson making up the “our”). Thanks to a rescheduled flight which ran late, we found ourselves landing at Athens as dusk was falling on the 6th of April. Rather than make our way through Athens after dark in our hire car, we stayed in Attica and headed south east for Sounion, where the famed Temple of Poseidon appeals to both lovers of antiquity and lovers of orchids. We found out that there is only one hotel operating in the area, and it charges accordingly. The next morning we were soon at The Temple. Mike and I were admitted to the grounds without a problem but Robert, laden with an impressive amount of kit, was held up by officials who found it hard to believe that all he wanted to do was photograph plants. Another problem was that, although the slopes down to the sea were bedecked with a dazzling display of Spring flowers, there were no orchids to be seen. This was puzzling, since we knew that previous visitors had compiled a long list.



Plate 1 *Ophrys speculum*
Photo by John Spencer

Eventually we found a group of *Ophrys ferrum-equinum*. No sooner had we erected our tripods, than two Japanese women approached carrying a huge bouquet of wild flowers that they had collected. They eyed our orchids with interest. We assumed a defensive formation. They went away. When we came to leave, it was not with the previously mentioned long list. In addition to the *Op. ferrum-equinum*, we saw only *Ophrys bombyliflora*, *Ophrys attica* (Plate 2) and *Ophrys leucadica*. Not a good start but things looked up once we crossed the Corinth canal. Our second site adjoined a disused railway station near Dervenakia just off the road from Ag Vasilius to Argos. I finally got to see my first *Ophrys speculum*

in the wild (Plate 1). The flowers were inconspicuous from a distance but really did reward close examination. Here the last *Ophrys tenthredinifera* and *Ophrys cinereophila* were flowering along with a host of emerging *Orchis quadripunctata*.

Plate 2 *Ophrys attica*; **Plate 3** *Ophrys argolica*; **Plate 4** *Ophrys heldreichii* var. *schlechterana*; **Plate 5** *Ophrys aesculapii*. Photos by Robert Thompson.

2



3



4



5



Neotinea maculata was in bud but *Orchis italica* was in full flower, growing with fritillaries. *Ophrys sicula* was present, as it tended to be at most sites.

Our base for the next two nights was a former capital of Greece, the city of Nafplion, the old part of which occupies a rocky promontory below the Venetian fortress of Palamidi. Nafplion is a good place to stay for those visiting the ancient sites, and the next morning found us taking the road for Epidavros. However, we stopped short a little beyond the village of Aria where we explored some old terracing. Now in Argolis, we found our first *Ophrys argolica*, an eyed Ophrys with green shoulders to the lip (Plate 3). Also here were the long horned *Ophrys heldreichii* var. *schlechterana* (Plate 4), more *Op. speculum*, emerging *Serapias vomeracea* and *Serapias bergonii*, gone over *Himantoglossum (Barlia) robertianum*, going over *Anacamptis (Orchis) papilionacea*, *Anacamptis pyramidalis* in bud, and a few more *Op. bombyliflora*. When you add *Ophrys lutea*, *Ophrys melena*, *Op. sicula*, *Op. attica* and *Ophrys leucadica* you can understand why we stayed at the site until mid-afternoon. Growing with over one hundred ordinary *Ophrys argolica* was a hybrid with *Op. speculum*: *Ophrys* × *rasbachii* (see Front Cover Photograph). The plant and its flowers were the same size as *Op. argolica*, but the blue speculum had been replaced by one which was mostly brown but with little islands of blue. A second, less obvious hybrid we put down as *Ophrys argolica* × *heldreichii*.

We paid a visit to the huge amphitheatre at Epidavros and then took the road for Didyma, stopping near the junction for Rado. By now the wind had got up, the light was failing, and rain was on the way. The land, mostly arable, looked unpromising but here beside a drainage ditch we found *Ophrys aesculapii*, new to all of us, and a much more attractive orchid than it appears in the books. The lilac speculum in the dark centre of the lip is surrounded by a bright yellow margin. The occasional plant had a light brown margin but this was unusual. Some plants featured a central eye spot (Plate 5). Our target for the next day was to find *Ophrys hebes*. We headed south and explored the lanes to the east of the Tripoli to Sparta road near the village of Vourvoura. At an altitude of over 900m it was still early spring with *Cyclamen repandum* ssp. *peloponnesiacum*, *Iris cretensis* and *Anemone blanda* all in flower. After much searching we found the plants growing under oak in partial shade above a steep bank. Again the lip had a yellow margin, but these flowers had an overall pale look combined with a fragmented and irregular speculum (Plates 6 and 7). We made several stops in the area, but there was little else in the way of orchids: *O. quadripunctata*, of course, a few *Orchis pauciflora*, more *Op. argolica*, and *Op. sicula* near the main road. Under chestnut trees on the edge of cultivation we found *Hermodactylus tuberosus* (Widow Iris), growing with *Gagea arvensis* and *Tulipa praecox*. Another Iris growing in this area was the yellow form of *Iris attica*.

Plates 6 & 7 *Ophrys hebes*; **Plates 8 & 9** *Ophrys candica*. Photos by Robert Thompson.

6



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We journeyed on to Gythio where we were able to book in to a sea front hotel which charged about one third of the high season tariff. Before it got dark we visited a site I had found during a previous visit on the road from Gythio to Areopolis. There are few sites for members of the fuciflora tribe in Southern Greece, but this is one of them. We found plants which were pure *Ophrys candica* (Plates 8 and 9) and plants which were pure *Ophrys lacaena* (Plate 10) together with intermediates which had the simple lip pattern of *Op. candica* but the horns of *Op. lacaena*. With *Op. fuciflora* itself also recorded from the site, each plant warranted close examination. The wooded, well-watered site boasts some very robust Ophrys. One *Ophrys reinholdii* spike was 28 inches tall with 13 flowers (Plates 12 and 13). There were hundreds of *Orchis italica* which caught our eye from the road. The most numerous Ophrys was *Op. argolica*, but *Op. reinholdii*, *Op. tenthredinifera* and *Op. spruneri* were also present in small numbers. I found a solitary *Anacamptis laxiflora* in a drainage ditch near the road whilst Mike found *Limodorum* spikes, well short of flowering, at the top of the slope. There were also about a dozen gone over *Himantoglossum* (*Barlia robertianum*) together with a pair of *Serapias lingua*.

The following day we backtracked on the road to Sparta and checked an area near the junction with the dirt road for Asimi. Our target was the mainland form of *Anacamptis* (*Orchis*) *boryi*, and we found a scattering of the plants almost immediately. For those familiar with *A. boryi* on Crete, the mainland form has smaller flowers which are more clearly tri-lobed. The dominant orchid at this site was another *Anacamptis*: *A. papilionacea*, and Robert turned up two clear hybrids between them (Plate 14). In addition to several Ophrys that we had seen previously, we found attractive examples of *Ophrys spruneri*; the dark lips decorated with silver and with



Plate 10 *Ophrys lacaena*
Photo by John Spencer

bright two tone sepals. With *A. boryi* in the bag, we returned to the Gythio to Areopolis road. One site had been destroyed, but another not far from Areopolis yielded not only *Op. ferrum-equinum* but also its relative *Ophrys gottfriediana*. In addition to *Serapias orientalis*, we found our first *Serapias cordigera*. Our last stop for the day was Skoutari beach where *Anacamptis laxiflora* grew in profusion along with *Serapias orientalis*.

After an encounter with a rogue pork chop, I took a day off from orchid hunting. Mike and Robert decided to explore the mountain road

Plate 11 Landscape around the the village of Karitena; **Plates 12 & 13** *Ophrys reinholdii*. Photos by Robert Thompson

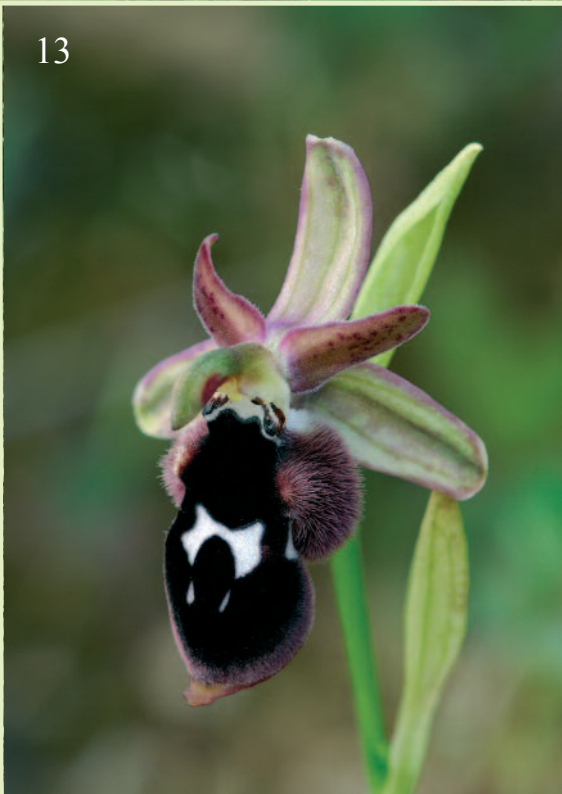
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13



from Sparta to Kalamata. In doing so they crossed the Taygetos Mountains which are the spine of The Peloponnese. In early April snow was still visible on the peaks. Probably the area around Artemisio would be worth visiting in mid-May, but at the time of our visit there was little to see. Pickings were thin, but *Orchis simia* and *Orchis anthropophora* were seen in bud along with *Ophrys oestrifera*, *O. pauciflora* and *Neotinia maculata* in flower. The slow road from Kalamata to Areopolis was unrewarding, but *Ophrys mammosa* and *Serapius cordigera* were both recorded.



Plate 18 *Orchis simia*
Photo by Robert Thompson

I rejoined the fray the following day for a drive down to Pylos, which proved to be a waste of time, the site having been destroyed. We then headed north for the aptly named Paradisio. To the South of the town, near a disused quarry we were privileged to see a delightful rock garden with at least ten orchid species. *Orchis simia* was in flower (Plate 18) and Mike found three *Himantoglossum caprinum* rosettes, obviously some way from flowering. On the quarry floor *Op. ferrum-equinum*, *Op. spruneri* and the hybrid between them were all in flower. Another site on the north of the town was a flat rocky grazing area, with no protection from a gale force wind. Photography proved impossible with Robert's diffuser / windbreak threatening to take flight, but the site was the best we saw

for *Op. aesculapii*. A common plant in this area was the small and spiny *Anchusa variegata*, its white petals dotted with purple.

Away from the coast, hotel accommodation can be difficult. Our attempts to find rooms in Megalopoli were unsuccessful and we were forced to go to Tripoli. However, the next day we were quickly back at Megalopoli to explore sites on the road to Andritsena. The mysterious *Ophrys crassicornis* was thought to be growing in the area, and in a determined effort to locate it we found just about every other local orchid. This day proved to be the highlight of the trip with around 20 orchid species seen and good photographic conditions. Our first stop not far from the village of Plaka had the unlikely backdrop of the local power station belching smoke into the air. Here there were *Op. spruneri* by the thousand. A wooded section had a

Plate 14 *Anacamptis boryi* x *papilionacea*; **Plate 15** *Ophrys delphinensis*; **Plate 16** Possible hybrid *Ophrys delphinensis* x *spruneri*; **Plate 17** *Ophrys spruneri*.
Photos by Robert Thompson

14



15



16



17

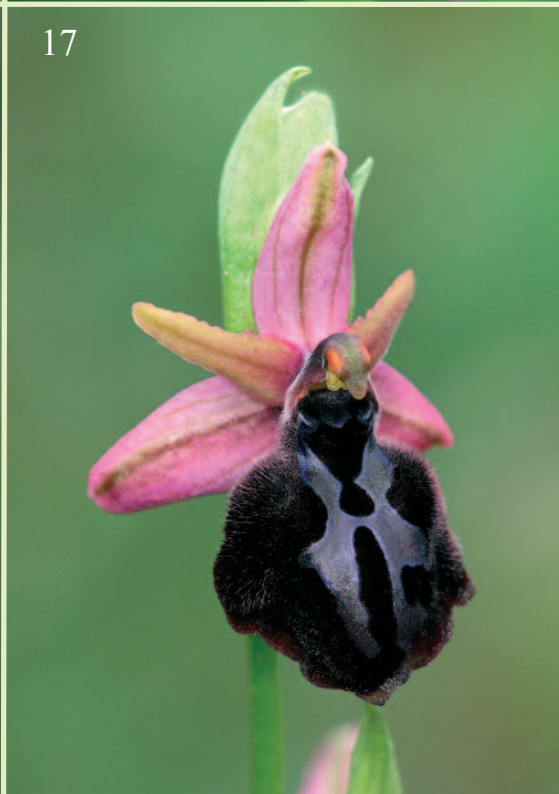




Plate 19 *Orchis provincialis*
Photo by Robert Thompson



Plate 20 *Ophrys aesculapi x mammosa*
Photo by John Spencer

was arguably a hybrid between the two (Plate 16). As we sped east, we got good views of the spectacular new Patra bridge leading to Northern Greece where, no doubt, *Ophrys helenae* was in flower. Maybe next time!

mix of *Orchis simia* and *Orchis provincialis* (plate 19) in flower. In addition to the normal *Ophrys mammosa* we saw its smaller relative *Op. herae*; easy to differentiate not only by size but also by its golden brown basal lip. Further up the road we found *Neotinea (Orchis) lactea*, mostly going over, but with some fresh plants. The landscape improved. To our north the village of Karitena, with its Frankish castle, high on a hill dominated the low ground (Plate 11). The sheer number of orchids seen this day meant that hybrids were inevitable, and we saw *Ophrys aesculapi x mammosa* (Plate 20) and *Ophrys reinholdii x spruneri*. We also saw a solitary *Cephalanthera longifolia* which broke our duck as up to this point we had seen no *Cephalanthera* or *Epipactis* at all.

As an experiment we decided to use the back roads on our drive to Olympia. A couple of hours dodging the potholes was quite long enough for Mike, so we switched back to the better roads. Nearing Olympia, at Louvro, we actually got to see roadside *Limodorum abortivum* in flower. On our last day, April 15th, we joined the tourists at the ancient site of Olympia which was ablaze with Judas trees. There were still *Orchis simia* on the hill overlooking the stadium, but not as many as in the past. It was time to head back to Athens.

The last site we visited just inland from the fast coastal road had a population of about fifty *Ophrys delphinensis* (Plate 15), a species owing its origin to a fusion of *Op. argolica* and *Op. scolopax*. Here also was *Op. spruneri* (Plate 17) and one plant which

Acknowledgements: Mike received site information from Barry Chambers, Alan Gendle and Graham Goodfellow, but special thanks must go to Nikos Petrou for the quantity and quality of his leads.

Letter to the Editor **Pamela Scraton**

I was dismayed to see that the article “*The Origin of (Pseudo)Species by Means of Natural Selection: a Cypriot Conundrum*” (Bateman, 2006) contained detailed reference to the only Cypriot site of *Anacamptis (Orchis) papilionacea / caspia* (Hubbard & Scraton, 2001; Scraton, 2001; 2002; Kreutz & Scraton, 2002). Was it necessary to be quite so explicit?

When I first found the orchid in March 2001, and published details in the book “*The Orchids of Cyprus and where to Find Them*” (Hubbard & Scraton, 2001), and later in the HOS Newsletter (Scraton, 2001; 2002), I was careful to be somewhat ambiguous about the site details and, as Richard Bateman points out, Kreutz followed this practice in the book he published in 2004. All orchid enthusiasts, including several members of HOS and Kreutz himself who made their interest known, were given the necessary information, or in most cases shared a trip to the site, since not all visitors have access to a four-wheel drive vehicle.

The reasons for this protective stance are not difficult to deduce. This orchid and its hybrids are vulnerable, because of their rarity / curiosity value. Keeping observation of many sites and species in Cyprus, I am aware that even visitors who are well-intentioned (and not all are) can cause damage and loss, simply by over-visiting a site. Regrettably, this has just been made rather more probable.

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Reply to Pamela Scraton Richard Bateman

To respond to Pamela Scraton's heartfelt letter, I admit that I am certainly guilty of failing to cite her articles on the occurrence of *Anacamptis (Orchis) caspia* in Cyprus, and for this I apologise. I would also like to state that I am grateful to her for reopening the long-running debate on the important issue of the relationship between site secrecy and conservation, thereby offering me an opportunity to air my own strongly-held views.

Firstly, I note that the information given in the text of my *JHOS* article on *A. caspia* and its hybrids, which did not specify the location of the plants in relation to Dhyptamos Lake, narrows the site of *A. caspia* down to perhaps four hectads (10 x 10 km squares), thus making the information less precise than that on the distributions of all the rare UK orchids published in the 2002 UK *Plant Atlas*. My decision to name the correct lake was in part prompted by the desire to remedy the misleading reference given for this *A. caspia* site in C.A.J. Kreutz "*Orchids of Cyprus*" (2004, p. 305): "*Orchis caspia* grows in a former agricultural area near a large reservoir (Kalavastos Dam)" [the Kalavastos reservoir is located 10 km SW of the true site]. In addition, the Dhyptamos site is remote and access is decidedly poor; a visitor would *really* have to want to see it to take the risk of entering the basin on the basis of such vague information as I provided. It could be argued that my photograph, plus that in Kreutz (2002, p. 349) depicting the habitat of the associated small population of *Orchis punctulata* that occurs in the vicinity of *A. caspia*, could allow especially dedicated orchidologists to home in on the precise site, though frankly they would be as likely to find a new population of *A. caspia*. Thus, even if I took a conservative view of releasing site information, I believe that I would have no case to answer with regard to having mentioned the Dhyptamos Dam in my article.

However, I do not take a conservative view. My opinion (and here I write in a personal capacity, rather than as HOS President) is that *JHOS* is unnecessarily cautious with regard to disclosure of site information. If I am told an orchid site in confidence, I reluctantly keep the confidence, but if not, I do not. Certainly, I never treat my own finds as confidential. In my opinion, orchids exist primarily to be seen by enthusiasts (and preferably to be properly researched), and their value is greatly diminished if they are not. Hence, for example, I applaud the decision taken by the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust to not only admit to but also actively *advertise* the hybrids between the Lady and Monkey Orchids discovered in May 2006 at their Hartslock Reserve near Goring (<http://hartslock.org.uk/>; see *Orchid Review* 2006, 114: 202–7). Over the last decade, this stunning site has become a beacon for orchid conservation, has justly been showcased by BBOWT (as have their other rare orchid sites), and has in turn improved their national profile.

Let us return to the Dhyptomamos site. To revisit the main point of my (unexpectedly contentious) article, during my visit I was unable to find even a single plant of *Anacamptis caspia* that had not suffered gene flow from the co-existing population of *A. syriaca*. Thus, it would seem that the “hands off” approach applied to this site has already permitted the failure of this valuable population, without any need to invoke over-visiting by orchid enthusiasts, let alone trowel-wielding maniacs. The clandestine “cold war” approach to conservation has long been superseded in Britain, and indeed in much of the rest of Europe. It has been replaced by a contrasting, often highly interventionist approach. For example, it would likely have resulted in large-scale propagation of *A. caspia* in captivity, followed by replanting of the progeny at the source locality. I confess that I am not a great fan of such radical intervention, which can complicate scientific research. Nonetheless, a reintroduction programme would likely have prevented the apparent loss of *A. caspia* from Cyprus (I note here in passing that HOS is relatively rich in members well-qualified to successfully complete this task).

Taking a broader view, surely the main threat to the well-being of orchid populations in both Britain and Cyprus is site destruction? In my experience, the more frequently someone visits a charismatic site, the more committed that person becomes to ensuring its future. Moreover, frequent visits also act as vital early-warning systems to detect activities likely to destroy the site (e.g. ploughing, herbicide spraying and, most invidious of all, construction of buildings and roads). So to conclude, yes, I recognise that orchid sites are sometimes damaged, either deliberately or inadvertently, by visitors. However, in my opinion, this risk is compensated for, many times over, by the pleasure and education gained by genuinely interested folk, and by the consequent deep attachment that many visitors develop for such sites. I therefore view clandestine sites as a luxury that orchid conservation can no longer afford.

Conservation News

Bill Temple

The Society now has a project with BBOWT which involves the growing of *Orchis militaris* from seed under licence from English Nature. Seed for this project has already been collected from two sites and distributed to a number of volunteers. A further seed collection is scheduled for next year and BBOWT hope to receive 80% of the two year old plants to introduce to an existing site and possibly new sites (subject to English Nature consent). As usual with this type of project a number of stringent conditions apply. In this case I will have to keep records of the location of every plant raised by this project that is not returned to BBOWT, and the plants must be retained within the Society for exhibiting, educational or research purposes. In the event of a natural catastrophe at their natural sites, BBOWT could also negotiate for the return of the remaining plants.

Gift Membership - Christmas 2006 to April 2008

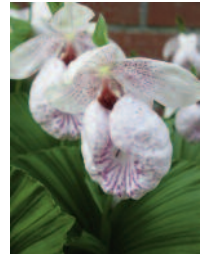
A Gift Pack consisting of a welcome letter from the Hardy Orchid Society, a Membership Card for 2006/07, copies of the April, July and October 2006 Journals, an attractive orchid notelet on which to write a message to the recipient (or your message can be written for you if to be sent direct to the recipient), and a further Membership Card for 2007/08 sent on 1st May 2007.

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