

Journal
of the
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 www.hardyorchidsociety.org.uk, the January 2004 Journal, Members' Handbook or contact the Editor). Views expressed in journal articles are those of their author(s) and may not reflect those of HOS.

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Front Cover Photograph

Praying mantis camouflaged on *O. italica* and awaiting its prey, photographed by Robert Thompson. See the article on page 14

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Editorial Note

The first journal for 2009 features some excellent photography, starting out with Robert Thompson's exceptional cover shot of a praying mantis hiding in a Naked Man Orchid. Richard Bateman has submitted two articles on botanical names that build on the recent debate that started out with an article by Karel Kreutz (January 2008) followed by contributions from Sean Cole (July 2008) and Les Lewis (October 2008). We will run Richard's first article in the next journal as space was too limited for another major article this time out. The bonus is that we do have space for another Richard Bateman article that speculates on the how the exploitation of DNA based data may develop, eventually, to aid the field botanist with species identification. The journal has a growing number of submitted articles and the promise of more with a cultivation focus. We are not getting many smaller contributions at present but these are very welcome and very useful when compiling the journal layout! Please refer to the inserts circulated with this journal for details of the 2009 Kidlington Meeting that includes the AGM and the Plant Show. A booking form for the meeting is enclosed and the website carries further information, including entry details and rules for the Plant Show.

HOS Meetings 2009

Sunday 19th April: Spring Meeting, including AGM at 10.30 and Plant Show, at Exeter Hall, Kidlington. Contact Maren Talbot.

Saturday 12th September: Northern Meeting at Field Study Centre, Harlow Carr, Harrogate. Contact David Hughes.

Sunday 8th November: Autumn Meeting, including Photographic Competition, at Hillside Centre, RHS Wisley. Contact to be appointed at AGM

HOS Field Trips 2009

David Hughes

We are offering an extended programme of field meetings this year and I am grateful for the support of our “hardy perennials” and delighted to welcome some new leaders. The field trips are listed below but contact the individual leaders for detailed arrangements and remember to make a booking - this is essential. Contact me (David Hughes) in the event of any difficulty. Numbers on each trip are limited as we are very concerned to prevent trampling, so book early to avoid disappointment. If you have booked and are subsequently unable to attend, please inform the leader who will be holding a reserve list. Keep a watch on the HOS website where late details can be found. These arrangements are provisional.

Sunday 26th April: Purbeck, Dorset, for Early Spider orchid and Green Winged Orchid. Contact Norman Heywood - nandaatngf@tiscali.co.uk or 01747 838750.

Sunday 24th May: Park Gate Down and elsewhere in Eastern Kent for Monkey and Lady Orchids; a repeat of a very popular trip Contact Alan Blackman - alanophrys@aol.com

Sunday 7th June: Aston Clinton Ragpits, Bucks., for profuse Fragrant Orchids, Pyramidal, Greater Butterfly Orchid, grass snakes, *Daphne mezereum* and much more. Contact Malcolm Brownsword - malcolm.brownsword@tesco.net

Saturday 13th June: Warwickshire, starting at Ufton Fields for Man Orchid and much more, Ettington for *Ophrys apifera* var. *bicolor* and Stretton on Fosse for the Wasp variant of Bee Orchid, *Ophrys apifera* var. *trollii*. Contact Brian Laney - brian.laney@gmail.com

Sunday 14th June: Howell Hill Nature Reserve, Surrey at 2pm for Bee Orchid and massed Common Spotted Orchids and Fragrant Orchids. A chance for the Londoners to see to orchids growing close to the smoke! Contact Richard Denny - rgdenny@yahoo.co.uk or 02083959186.

Sunday 14th June: The Cotswolds, probably Painswick Beacon, Sheepscombe Common and Swift's Hill, for Bee, Frog, Musk and Fly Orchids. Stout boots for steep walking required. Contact John Spencer - john@roffo67.fsnet.co.uk

Friday 19th June: North of Carnforth, Lancashire, afternoon.

Saturday 20th June: Near Tebay on the Cumbrian limestone, with so much to see from Bee Orchid to all three species of Fragrant Orchid, Southern and Northern Marsh Orchids, including *Dactylorhiza* var. *junialis*, several subspecies of *Dactylorhiza incarnata*, including *D. incarnata* var. *gemmana* and a variety of inter-specific and intergeneric hybrids. Contact Alan Gendle - alan@gendle.plus.com

Saturday & Sunday 20-21st June: Cambridgeshire for two field trips to coincide with the weekend of the Peterborough International Orchid Show. An evening walk on Saturday 21st June at 7pm and a longer session on Sunday 21st June 10.30am - 4pm at Hills and Holes National Nature Reserve for nine species of orchid. Contact Jean Stowe - jean.stowe@abelgratis.com or 01778 346779

Sunday 21st June: Noar Hill, North Hampshire for excellent downland orchids including Fly Orchid and massed Musk Orchids.
Contact Nigel Johnson - cassandene@waitrose.com

Sunday 28th June: Kenfig Burrows, South Wales, for Fen Orchid, Northern Marsh Orchid and Pyramidal Orchid in quantity, with dark green fritillary and small pearl bordered fritillary. Led by Michael Clark but contact David Hughes - cchughes1.@onetel.com

Some additional informal contacts for field trips:

Mike Parsons is happy for members to contact him direct regarding guidance to sites for Early Spider Orchids, Late Spider Orchids and Bog Orchids.
Contact - mikeparsons30@talktalk.net

Jean Stowe invites members in the Peterborough area to contact her for guidance.
Contact - jean.stowe@abelgratis.com or 01778 346779

David Hughes offers help with Bog orchid and Autumn Ladies Tresses in the New Forest/Purbeck area.
Contact - cchughes1.@onetel.com

Report on Autumn Meeting at Wisley

David Hughes

The meeting on 2nd November 2008 played to a packed house, starting with a presentation by Tony Hughes on the Orchids of Corsica. The first slides were mouth watering but unfortunately Tony suffered from the presenter's worst nightmare when he found the full contents of his lecture hadn't transferred to his memory stick. As a result he had to resort to talking without pictures; Tony has promised to return next year with the full talk. The next event gave opportunity to the audience to ask questions of the panel of experts, comprising our President Richard Bateman, our Conservation Officer, Bill Temple and Richard Manuel, well known for his skills in orchid cultivation. The questions and comments came fast and furious from around the hall. This included road verge management and the seeding of motorway verges, the flowering cycle of bee orchids, (next year's flowering depending on adequate rain the previous flowering season), the determination of *Ophrys* species and sub-species distinction and the nature of *Dactylorhiza incarnata* subsp. *pulchella*.

Members' short presentations attracted a splendid range of talks, with some new faces very welcome on the podium. Mike Gasson showed a microphotography study of the Lady Orchid, distinguishing microscopic characteristics of green and straw varieties. Matti Nissalo persuaded us that we needed to visit Finland to see the thirty species of orchids there, including *Cypripedium* and *Epipogium*. Pietro Rosseo took us to Iran to see some attractively spotted *Stevenella satyroides* and *Cephalanthera caucasica*. Ann Kitchen brought us home to Arnside and Silverdale in Cumbria, showing us the results of studies of 1km squares in this limestone area with a range of fine orchids. Finally, Barry Chambers took us away again to an area of Turkey with a fine range of locally specific *Ophrys*.

After lunch Brian Most briefly reviewed the judging of the photographic competition. Once again the standard was outstanding, with an increasing number of prints but still a few stalwarts taking only slides. However, more of the slides in the competition had been taken in previous years. We are open to suggestions on how to introduce a projected digital image class and need to consider how to adapt to the rapidly increasing entry. The winning pictures will be shown elsewhere in the journal, but congratulations to Mike Gasson for winning The Maren Talbot Trophy for the best photo in show with his fine close up of *Ophrys drumana* in the Vercors. I would like to thank Christine Hughes for running this competition, Malcolm Brownsword for his help on the day and Brian Most for judging.

We then returned to lecture format, delighted to welcome back former chairman Paul Harcourt Davies who is well known for his expertise in wildlife photography. Paul lives in Italy now and took us around this country, showing stunning pictures of plants, mainly orchids. Finally Peter Sheasby, who only returned from Morocco the previous day, lectured on the orchids of Turkey. Peter holds the AGS slide collection and still takes perfect slides. He took us all around Turkey and into the centre showing the range of habitats, from Mediterranean to arid desert and from temperate woodland to mountain. The list of orchids he showed was delectable, including *Himantoglossum caprinum*, *Orchis spitzellii*, *Cephalanthera kurdica* and *Serapias feldwegiana* to name but a few.

In all we were entertained by a good range of topics. We must apologize for the digital glitches which interrupted the programme and would be delighted to have a volunteer from the society to help with digital presentations. I would like to thank all the speakers and panel participants and particularly Maren Talbot, whose organization of the day was perfect and who worked so hard to make the day a success.

Lost & found at the Wisley Meeting

Someone left behind a taupe coloured, unisex, waterproof jacket. Maren Talbot took it home so if anyone claims it, she'll post it to them (contact details on p2).

WESTONBIRT PLANTS

9 Westonbirt Close, Worcester, WR5 3RX, England

Email: office@westonbirtplants.co.uk

We offer a wide range of orchids, bulbs and woodland plants, many unavailable elsewhere and all with free postage and packing worldwide. This autumn we have increased our range of nursery propagated Japanese hardy orchids. Most do well in moist, well-drained soil in part shade. For our full list email or send 3 first class stamps, 3 Euro or 3 \$ to the address above.

Japanese Hardy Orchids



Amitostigma x enomotoe 'Kou Itten'

This is the new hybrid between *A. keiskei* and *A. kinoshitae*. This small bulbous deciduous orchid is one of the best selections of the cross with a white flower with purple centre.



Bletilla striata 'Soryu'

'Soryu' (Blue Dragon) is a new selection of a form found in Honshu with lavender-blue, widely flared flowers. Propagated from seed but selected to ensure consistency in flower colour.



B. striata 'Tri-Lips'

There are a few examples of 'tri-lip' forms of orchids but this is the only one found in *Bletilla*. Purplish pink with white inside the lips. Vigorous and as easy to grow as the species.

Cremastra appendiculata

Woodland orchid from Japan with 30cm spikes of showy peach/buff-coloured flowers.



Dactylorhiza aristata and D. aristata f. alba

Terrestrial orchid with rose-purple flowers in late spring. The white flower form is very rare.



Eleorchis japonica and E. japonica f. alba

This is a moisture loving bulbous orchid with dark pink flowers, closely related to *Pogonia japonica*. The white flowered form is very rare even in Japan.



Gymnadenia camtschatica f. alba and G. conopsea

Very rare white selection of the species with attractive compact flower spikes.

G. conopsea is similar but with longer spikes of pale pink flowers.

Liparis kumokiri

Widespread Asian species with medium green leaves ruffled at the edges and tall spikes of greenish-white flowers in summer.



Platanthera metabolia

White flowered elegant hardy *Platanthera* species from Northern Japan.



L. makinoamia 'Kuro Suzu'

Spectacular dark flowered dwarf species clone with bright green leaves.



Cypripediums

Cypripedium x columbianum, *C. debile*, *C. montanum*, *C. parviflorum* var. *pubescens*, *C. x ventricosum* 'Pastel', *C. Sebastian*, Frosch Hybrids

Essex Orchids

Mike Parsons

On a birding walk on 23rd June 2008 in East Tilbury, by the flood water plains of the Thames, I met a ranger who showed me the orchids of the area. There were over 300 *Ophrys apifera*, two *Anacamptis pyramidalis*, loads of *Dactylorhiza fuchsii* but the surprise was one *Gymnadenia conopsea* - not seen in Essex for 35 years. Another strange observation was the absence of *D. praetermissa* as this orchid does occur nearby. We reported the *G. conopsea* to the county recorder Ken Adams and we both went to see it the following day. Strangely, I was on a field trip with Ken over 25 years ago looking for this orchid at the last known site - the Warren near Tilbury, before it was built on for a housing estate. We did not find any that day. At the new Tilbury site, we also found a few *Anacamptis morio* and one *Dactylorhiza incarnata* (both over). The latter is extremely rare in Essex and the nearest site would be in Kent near Snodland, where it is also rare as it is hybridizing with *Dactylorhiza praetermissa*. The next nearest site is in the Lea valley, a long way off, where it is also being hybridized out and not being conserved very well. However, this new site looks as if it may have a good future and it is well looked after by the local ranger.

Photographic Competition Winners

Class 1. An orchidaceous landscape, print size up to 7x5 inches (11 entries)

- 1st Patrick Marks - *Dactylorhiza fuchsii* (Fife, Scotland) [1-1]
- 2nd Tony Hughes - *Serapias lingua* (Corsica) [1-2]
- 3rd Rosemary Webb - *Orchis italica* (Crete)

Class 2. A group of orchid plants, print size up to 7x5 inches (10 entries)

- =1st Malcolm Brownsword - *Neottia nidus-avis* (Hampshire) [2-1a]
- =1st John Spencer - *Anacamptis papilionacea* x *longicornu* (Sicily) [2-1b]
- 3rd Karen Gregory - *Serapias volmeracea* (S.W France)

Class 3. A single orchid plant, print size up to 7x5 inches (12 entries)

- 1st Ron Harrison - *Himantoglossum hircinium* (France)
- 2nd Tony Hughes - *Dactylorhiza fuchsii* (Bristol Botanic Garden)
- 3rd Patrick Marks - *Anacamptis papillionacea* (Sardinia)

Class 4. A close-up, print size up to 7x5 inches (18 entries)

- =1st Graham Giles - *Ophrys apifera* subsp. *trollii* (Gloucestershire) [4-1a]
- =1st Alan Blackman - *Orchis tenthredinifera* (S.W. France) [4-1b]
- 2nd Pietro Roseo - *Himantoglossum caprinum* (S. Bulgaria)
- 3rd David Hughes - *Ophrys dyris* (Morocco)

Class 5. An orchidaceous landscape, print size up to A4 (8 entries)

- =1st Ron Harrison - *Orchis italica* (Gargano, Italy) [5-1a]
- =1st Tony Hughes - *Gymnadenia conopsea* (Switzerland) [5-1b]
- 3rd Patrick Marks - *Dactylorhiza fuchsii* (Fife, Scotland)

Class 6. A group of orchid plants, print size up to A4 (10 entries)

- 1st John Spencer - *Orchis italica* (Sicily) [6-1]
=2nd Tony Heys - *Dactylorhiza praetermissa* (Lee Valley)
=2nd Sean Cole - *Neotinea ustula* (Derbyshire)

Class 7. A single orchid plant, print size up to A4 (13 entries)

- =1st Ron Harrison - *Anacamptis coriophora* subsp. *fragrans* (Crete) [7-1a]
=1st Sean Cole - *Calypso bulbosa* (Finland) [7-1b]
3rd Tony Heys - *Dactylorhiza xgrandis* (Sussex)

Class 8. A close-up, print size up to A4 (16 entries)

- 1st Ken Kitchen - *Himantoglossum hircinium* (Auvergne, France) [8-1]
2nd Tony Hughes - *Ophrys apifera* (Worcestershire)
3rd Neville Roberts - *Habenaria radiata* (cultivated plant)

Class 9. An orchidaceous landscape, 35 mm colour slide (7 entries)

- 1st Rosemary Webb - *Gymnadenia conopsea* (Gastental, Switzerland) [9-1]
2nd Alan Blackman - *Orchis mascula* (Kent)
3rd Not awarded

Class 10. A group of orchid plants, 35 mm colour slide (9 entries)

- 1st Nigel Johnson - *Neotinea (Orchis) ustula* (Wiltshire) [10-1]
2nd John Spencer - *Ophrys apulica* (Gargano, Italy)
3rd Patrick Marks - *Dactylorhiza* hybrid (near Dundee, Scotland)

Class 11. A single orchid plant, 35 mm colour slide (11 entries)

- 1st Rosemary Webb - *Orchis punctulata* (Cyprus) [11-1]
2nd Nigel Johnson - *Ophrys israelitica* (Cyprus)
3rd John Spencer - *Orchis italica* (Peloponnese, Greece)

Class 12. A close-up, 35 mm colour slide (14 entries)

- 1st Mike Gasson - *Ophrys drumana* (Vercors, France) [12-1]
2nd Rosemary Webb - *Cephalanthera longifolia* (Hampshire)
3rd Patrick Marks - *Platanthera bifolia* (Dolomites)

Class 13. Novice Class: a hardy orchid picture, print size up to A4 (5 entries)

- 1st Peter Fleckney - *Anacamptis pyramidalis* (Porton Down, Wiltshire)
=2nd Pietro Roseo - *Spiranthes spiralis* (Box Hill, Surrey)
=2nd Lorne Edwards - *Orchis italica* (Mallorca)

Maren Talbot Trophy

Mike Gasson - *Ophrys drumana* in the Vercors, France [12-1]

A selection of winning photographs is shown on the following pages. They are identified by a number that is equivalent to the class, followed by the place. (e.g. Class 1 first place is 1-1 and second place is 1-2). Where two images share a place they are differentiated by a letter (e.g. 2-1a and 2-1b). These codes are included in squared brackets at the end of the details in the preceding list.







4-1a



5-1a



2-1a



1-2



Italian Orchid Year 2008 - Annus Pretty Blooming Mirabilis Paul Harcourt Davies

These articles are unashamedly dedicated to Dott. Pier Luigi Pacetti and Pino Ratini, two excellent Italian naturalists and orchid enthusiasts, whose company, humour and overt generosity have known no bounds. I have had the culminated benefits of years of searching on their part. My friends are dedicated members of GIROS, the Italian national society dedicated to orchids, but are not just “orchidiots”- the local term - for they are very knowledgeable naturalists with a wide appreciation of nature. They are thus, inevitably, not “Delforgian” in outlook and we share a sense of proportion which came as a relief to all of us. And whilst we have searched hillsides for orchids, Lois has found wild asparagus - this is Italy, where nothing can be enjoyed without a level of culinary interest!

So, here beginneth a kind of orchid diary - with inevitable liberties, since I have never been a keeper of diaries beyond about January 2nd. The text covers, in the main, the orchid season of 2008. This was a remarkable year for me, in which I finally discovered the riches of central Italy and encountered species such as *Ophrys tyrrhena* and *Ophrys crabronifera* that may be unfamiliar to many and a few hybrids that may intrigue. This was a return to sanity after four hard years “breaking rocks” and plastering acres of walls and watching the seasons fly by.

Around and under the hillside we call home there are Etruscan tombs and there is a perpetual sense of wonder and privilege in knowing that, for at least 3000 years, people have occupied this land. The Etruscans sculpted and hollowed it for their tombs and, though mineral rich, it is that compacted volcanic ash known as “tuff” and essentially neutral to acid in nature. Thus, there are no “spontaneous” orchids, as they are known throughout Europe, but many grow within easy reach - depending upon your definition of easy. I accept that it might be a little churlish to complain that orchids do not grow outside the door when, by way of recompense, we have nesting golden orioles (two pairs), nightingales (six and more pairs), hoopoes and numerous butterflies. Then there are those incredible displays of cornfield weeds in early summer with sweeps of poppies and cornflowers. All it takes is to turn over the land anytime from December to February and leave it “fallow”.

In March, we made the first of numerous forays in central Italy - a mix of the parts of Umbria, Tuscany and Lazio to which we have ready access. Pino is from Terni and so we found ourselves one grey, cold, windy day high above a cemetery (just to set the scene) with Terni, not one of Italy’s most ravishing cities, spread out below.

Figure 1: *Ophrys sphegodes* Figure 2: *Ophrys sphegodes* pink form
Figure 3: *Ophrys crabronifera* var. *chlorantha* Figure 4: *Ophrys crabronifera*
Photos by Paul Harcourt Davies

1



2



3



4



It was a jolt to find that there were already hundreds, if not thousands, of *Ophrys* spikes already in flower - mostly *Ophrys tyrrhena* and *Ophrys crabronifera*, with more than a few that were evidently hybrids showing a range of intermediate characteristics. I had not seen *O. tyrrhena* before - it is a very handsome (and variable) taxon, widespread in Umbria and one of those that once was placed under the umbrella of *Ophrys arachnitiformis* (spider like) as a “catch all”. *O. arachnitiformis*, *Ophrys archipelagi*, *Ophrys aveyronensis*, *Ophrys exaltata*, *Ophrys morisii*, *Ophrys splendida* and *O. tyrrhena* are a few of those that have been extracted from that motley crew to be hailed, justifiably I think, as species (different areas of distribution, different pollinators and so on). What is clear in all of them is an affinity to *Ophrys sphegodes* from which, by various complex routes of hybridization and backcrossing, they most probably arose. All of them are highly variable and the range of “fragmented” labellum patterns suggests something that has not yet “settled down”.

O. crabronifera is a handsome species - literally the “hornet-bearing *Ophrys*”. It has flowers with a rounded labellum, bearing a central area that is a smooth chestnut-brown, surrounded by a marginal skirt covered with a lighter brownish-yellowish indumentum and carrying a pronounced greenish/yellow apex. The pattern is simple - just two lines or even “eyes”, very much like (and possibly synonymous with) *Ophrys biscutella*, the “spectacle *Ophrys*”, from Gargano whose name derives from the *scutella* or small saucer shapes on the lip. Through knowing both I can see there are clear differences - most noticeably that the indumentum of *O. biscutella* covers more of the lip and is much darker in colour, as is the lip surface - though not always and that’s the dilemma!



We slowly made our way upwards over soils strewn with limestone and the blackened twigs of macchie, for the hillside had been ravaged the previous year by fires. It had lost much of its bush cover and orchid plants were exposed. Fires may rage in the Mediterranean but they tend to occur when orchids are safely aestivating below ground. Neither of my guides had realised that *Neotinea maculata* (Dense-flowered Orchid) grew there but the distinctive rosettes and spikes in bud were in evidence.

Figure 5 (above): *Neotinea maculata*
 Figures 6-9 (opposite): *Ophrys tyrrhena*
 Photos by Paul Harcourt Davies



Formerly, they had been hidden by the cover. A few low, creamy-yellow spikes of *Orchis pauciflora* (Few-flowered Orchid) were braving the cold and *O. sphegodes* seemed well advanced and its usual, variable self. The only other person outside our group on that hill was eagerly searching out the spikes of wild asparagus: being Italian (either by birth or adoption) we naturally did the same between photographs. Why not celebrate the day with fresh asparagus risotto or a frittata of the same. Orchids should not go with denial; the pursuit is about celebration if you are successful and compensation if not.

Terni itself might not be prepossessing (here I use the powers of understatement). It was once the centre of the steel industry, was bombed into oblivion in the second world war and is famed for having produced the gun that was used in the assassination of President Kennedy. It is also the place that St Valentine lived and preached. But Terni sits at the gateway to what has become for me one of the finest areas in Italy, the Sibillini, much of which is now national park. The walks are wonderful and the orchids stupendous. Both Lois and I had, together and independently, visited many of the spots we went to on the following weekends, and later that same day. But always this was further on in the year when we were oblivious to what had grown there earlier.

Deep valleys incised into limestone and a heavy cover of scrubby, oak woodland (famous for truffles) characterise much of the area between Terni and Spoleto, but in clearings and at roadsides orchids grow in profusion. We stopped several times, as peripheral vision glimpsed tall spikes of *O. sphegodes*, but the real prize was to come later that afternoon in a small open woodland, delightful in itself, but even more so when we noticed the abundance of orchid rosettes on the lower slopes. Solitary spikes of *O. crabronifera* began to appear, particularly fine forms, more protected than their cousins on the open hill. And another first - " var. *chlorantha*" - one of those occasional *Ophrys* forms free of colour on the lip that are strikingly attractive as well as rare. When I had accepted that I could not take any more shots of the yellow *O. crabronifera* without repetition, I was alerted to the fact that the first flowers were beginning to appear on the Fly Orchids (*Ophrys insectifera*) under the woodland canopy. I would have thought they might have been later, but who's complaining.

Time and time again when out photographing orchids I rejoice in the fact that we can use digital photography. For me, in the kind of professional macro work I do, experimentation is of the essence and it is great to see a result and then to be able to tweak

Figure 10: hybrid *Ophrys crabronifera* x *tyrrhena*

Figure 11: *Ophrys sphegodes* Figure 12: *Ophrys crabronifera*

Figure 13: hybrid *Ophrys crabronifera* x *sphegodes*

Photos by Paul Harcourt Davies



it without waiting for film to be processed. Over the years I have shot whole films on a single orchid or insect, hedging bets and bracketing exposures. As I write these notes, another aspect of the photographer's life that digital has made easy is the recording of dates and camera data. I do not know a single author of photographic books (and I know a few) who has faithfully recorded every detail - aperture, exposure and so on. You get experienced enough to make them up but now they are created at the time.

One thing I learned from living in the Mediterranean region once before was how you can wait for what seems to be ages whilst orchid rosettes do nothing but then, turn your gaze away, and they flower. The floral explosion that is a Mediterranean spring begins when there is always something else you need to do (like make money to live) that legislates against going off with friends who have come to see orchids. But then, fortunately, there is always the next year, though with orchids no two years will ever be the same.

April of this year was a case in point; a book to revise and some furniture to make for a commission, relegated orchids to weekends but we covered some ground. One evening, the 12th April my computer says, came a phone call from Pier Luigi wondering if I'd like to meet up and see some plants of *Ophrys ciliata* (*O. speculum*). In fact this is the only population that has been discovered within a 50km radius of home. To the question there was but one answer and so we met at a roadside I had passed by a hundred times and never imagined the small gems that grew there. This was close to home and my thoughts of being in a bit of an orchid "desert" had to be revised, for in the complex geology of this once volcanic area there are deposits of marine clays, rich in calcareous material from the remains of long dead marine molluscs. The location is carefully guarded, for there are those who would remove the plants for "research" purposes - it happens everywhere. When we got down to plant level there was a small clump of several stems and a group of flowers that could be captured in the viewfinder. Further along the same roadside grew the ubiquitous *O. sphegodes* and intensely-coloured *Orchis morio*.

I missed spring (in the strict British sense of the appearance of snowdrops then crocus) until this year when, escaping from the building site, we discovered a woodland where, in March, there were snowdrops, hellebores, crocus and the lovely *Romulea bulbocodium* (sand crocuses) screaming to us that spring was already here, even if it tends to by-pass our hillside and leap into early summer. Now, in mid-April, began the flowering of numerous familiar orchids. Of particular note at this time was the

Figure 14: *Ophrys ciliata* (*O. speculum*)

Figure 15: aberrant form of *Ophrys sphegodes*

Figure 16: *Orchis purpurea*

Figure 17: *Ophrys insectifera*

Photos by Paul Harcourt Davies

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profuse flowering of a small colony of Lady Orchids almost outside our front door. These were rescued (with permission) from the devastation of a road-widening scheme and now flourish in a bed specially prepared according to a very helpful article published by Richard Manuel.

Around this time (third week in April) I tentatively suggested to Lois that, if we left food for the mogs, we could do a down and back to Gargano - just for a quick look. She was game and the brief visit is the subject of a separate instalment.

Sicily 9th - 19th April 2008 Mike Parsons

Sicily, the home of some of the best Greek and Roman architecture (and the Mafia), was the choice for our annual orchid holiday. This was my third trip to the island, the others being to see the wonders of their culture followed by a visit to look for orchids in April 1997. So it was interesting to see what had changed after 11 years, find some different species and try to unravel the awkward “*fusca - lutea*” complex. Together with my friends Robert Thompson and John Spencer, we flew from Stansted to Palermo, arriving in the morning. This allowed us time to cross the busy conurbation of Palermo and to visit at least one orchid site before finding a hotel for the night. Cape Zafferino was our first stop and after parking at the Hotel Kafera we followed a small winding track up the slopes to the top of the hill. On the way we found some *Himantoglossum (Barlia) robertianum* and good examples of *Neotinea (Orchis) commutata*. The area at the top is well known for the elusive *Ophrys explanata* which normally blooms about three weeks earlier than the more common *Ophrys bertolonii*. We did find a few but they were practically over. Fortunately we found a superb one in full bloom hidden in a quarry at the end of our holiday. Also at the top of the Cape we found some beautiful *Ophrys lutea*, *Ophrys tenthredinifera*, *Orchis italica*, *Orchis (Aceras) anthropophora*, one *Neotinea (Orchis) tridentata* and some emerging *Serapias parviflora*. Time was now getting on so we headed south to the Ficuzza Forest.

Unfortunately our first choice of accommodation was closed for the night but thanks to satellite navigation we located the Railway Hotel. We could only stay here for one night as they were fully booked afterwards so we went back the next day to our original choice, and drove down an unmade road into the wilds of the forest to the Rifugio Alpe Cucco Ficuzza. We used this hotel for two nights as a base to visit many parts of the forest and surrounding countryside, especially around Albanesi.

Figure 1: *Ophrys tenthredinifera* Figure 2: *Anacamptis longicornu*
Figure 3: Ficuzza Forest
Photos by Robert Thompson



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It was here that I found a large *Ophrys speculum* x *tenthredinifera* hybrid on my last visit, but not this time. By a large bend in the road close to a quarry we found a host of *O. tenthredinifera* and many *Anacamptis longicornu*. This orchid is quite common throughout Sicily and Robert was delighted to find the “*alba*” forms. Other orchids nearby were *O. lutea*, *Ophrys bombyliflora*, *Ophrys sicula*, *O. speculum*, *O. italica* and *Serapias vomeracea*. Further afield *Ophrys pallida*, the speciality of the area, was revealed as well as a few hybrids with the early *Ophrys lupercalis*. A further two more “*fuscas*” were identified as *Ophrys sabulosa* and the rarer *Ophrys obaesa* which were hidden in the woods.

The centre of the Ficuzza Forest produced a similar range of species along with an exceptional array of *Neotinea lactea* together with a few “*alba*” forms. Next to the roadside were quite a few *Ophrys exaltata*, an early form of early spider orchid, which were reasonably fresh. Higher altitudes revealed the rarish Sicilian orchid *Dactylorhiza markusii*, but only in its yellow form, as well as some beautiful *Paeonia mascula* and *Peonia russii*. The “*fusca* - *lutea*” complex really tested us here. We feel that we found *Ophrys numida* and *Ophrys archimedeae* (probably recorded previously as *Ophrys melena*) together with more obvious species. *Orchis provincialis* was abundant in some areas where it was just emerging, as was *O. bombyliflora*. Other species we found were more numerous and seen in better condition at other locations.

We headed to the centre of the island and stayed at the Hotel Pomara at San Michele de Gazaria. This proved an ideal base for the surrounding district and our first outing was to Mount Formaggio, mainly to find the elusive *Ophrys mirabilis*. We were out of luck but did find some fantastic stands of *Ophrys lunulata*, *Ophrys incubacea* and *Ophrys oxyrrhynchos* (originally some of them would probably have come under the heading of *Ophrys ibleica*) as well as our first sighting of *Ophrys apifera* in bloom. There were other orchids and another “*fusca*” type that we believe was *Ophrys flammeola*. To the south of our hotel was Niscemi and a roadside bank where hundreds of *O. italica* stopped us in our tracks. Here we spent a lovely evening with Robert again in his element. He had discovered a praying-mantis camouflaged on an *O. italica* awaiting its prey (cover photograph). It was here that we found some unusual orchids that John assures me were *Ophrys biancae* but these had red tepals, unlike any I had seen before, and they were more like a small *O oxyrrhynchos*. Maybe they were hybrids. The “*fusca*” family again tested our abilities as here they looked remarkably like *Ophrys caesiella*, more usually found in Malta. Other common orchids were in attendance with our first sighting of *Anacamptis collina*, which

Figure 4: *Neotinea lactea* Figure 5: *Dactylorhiza markusii*
 Figure 6: *Ophrys pallida* Figure 7: *Ophrys lunulata*
 Photos by Robert Thompson

had gone over, and some remarkable stands of *Serapias*. There was a mixture of *Serapias orientalis* var. *siciliensis*, *Serapias cordigera* and some that looked like *Serapias neglecta* as well as some obvious hybrids. Further down the road in a field were some more *O. oxyrrhynchos* with our first view of *Limodorum abortivum*. In another area full of the parasitic plant *Cytinus hypocistis*, the only orchids we could find were *S. parviflora*. We also went to Ragusa, another well known site for *O. mirabilis*, but the only new orchids found here were *Anacamptis pyramidalis* still in bud and some *Himantoglossum hircinum*.



Figure 8: *Ophrys oxyrrhynchos*
Photo by Robert Thompson

To keep to our schedule we then headed towards the best known area for orchids on Sicily. On the way we visited Mount Lauro finding *Ophrys laurensis*, another “*fusca*” type. This was unmistakable because of its very yellow border and of course the known location. *Ophrys grandiflora* was also found here, an orchid that has just been named because of its remarkable size for an *O. tenthredinifera*. Other orchids present in reasonable numbers were *N. lactea*, *O. provincialis*, *A. longicornu*, *Anacamptis papilionacea*, *O. speculum* and a few hybrids of *A. longicornu* with *A. papilionacea* (see John Spencer’s Photo Show winning picture 2-1b on page 10). We stayed at the Hotel Oasi Don Bosco which had been recommended to us. It proved justly so as it was at the crossroads to

all our known sites, as well as the motorway north. In the evening we took a stroll a few miles away which provided a most valuable site that was the first to have *O. biancae* in its usual colouring and surroundings. We were delighted to find some wonderful *Ophrys calliantha*, which probably came originally under the heading *Ophrys candica*. There were so many that we had the whole range from *Ophrys holserica* to *O. candica* and some that may have hybridized with *O. biancae* and *O. oxyrrhynchos*. In the area were *Serapias bergonii*, *O. grandiflora* and yet more “*fusca*” in the form of *Ophrys calocaerina* and hundreds of *Ophrys gackiae*.

On the following day we spent our time between Ferla and Palazzola. At M Grosso we found at least 30 different species of orchid. John returned to this area at the end

Figure 9: *Ophrys biancae* with red petals Figure 10: *Ophrys biancae* normal
Figure 11: *Ophrys lutea* Figure 12: *Ophrys laurensis*
Photos by Robert Thompson

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of our trip and stayed for an additional four days, adding *Ophrys lacaitae* which had eluded us during our stay. I cannot really say what was the highlight of the area except that there were some extraordinary hybrids of *O. speculum* with *O. incubacea* and *O. bertolonii* with *O. incubacea*. Other new orchids were *Ophrys phryganae* and one *Serapias lingua*. Along the road beyond Ferla we were looking out for *O. lacaitae* when we saw some great hybrids between *O. italica* and *O. anthropophora*. They were extremely difficult to photograph in the wind so we did not stay long. At this point a Belgian couple (who were also botanizing in the area) told us to go to Cava Grande to see *Ophrys lucifera*, yet another “*fusca*”. We were not convinced but the views were outstanding in the whole area. We later went back towards Ferla to a site that I knew from a previous visit would show some convincing *Ophrys panormitana*. We liked the area and found lots of *O. anthropophora* not that far from where the hybrids were. There were many other orchids there too, including *O. lunulata*, *O. biancae*, *N. tridentata*, *O. lutea*, *O. sicula*, *O. italica* with some “*alba*” forms, plus some hybrids between *O. biancae* and *O. oxyrrhychos*. Up the hill towards Monte San Venere we had our first sight of *Neotinea maculata* together with some convincing *O. flammeola*.

Having covered the area pretty well, we headed along the motorway towards Ragalna mainly to see *Orchis brancifortii*, an orchid normally found only on Sicily and Sardinia. We did find some on the south side of Mount Etna but not as many as



Figure 13 (above): Mount Etna

Figure 14: *Ophrys calliantha* Figure 15: *Ophrys lacaitae*

Figure 16: Hybrid *Orchis anthropophora* x *italica* (*Orchis xbivonae*)

Figure 17: *Serapias nurrica*

Photos by Robert Thompson (Figs. 13, 14, 16, 17) & John Spencer (Fig. 15)

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I had seen on my previous visit. After that we headed to the north side of Etna and booked into the Etna Quota Mille, a small hotel which presented great views of the volcano. This hotel was on the upper road so the driving was a lot easier as we did not have to navigate our way through the small villages and towns. Most of the hotels we booked were on a half board basis; this hotel was the same, but it was the staff day off, similar to our first stop. They did not want to lose our business, so they took us down to a local town restaurant and offered us the menu which was unusual but quite acceptable.

Further down the road near Linguaglossa was the well known site for *Dactylorhiza romana* and *Dactylorhiza sambucina*. We found lots of *D. romana* in all colour forms but it looked as if the *D. sambucina* had been more or less hybridized out with *D. romana*. There were even some that looked remarkably like *Dactylorhiza insularis*, found mainly in Corsica and Sardinia. We failed to find any *D. markusii* in its red form, which I had seen on my last excursion to the area, but we did see *Anacamptis (Orchis) morio* var. *picta*. They were scattered around but not in abundance.

The following day we spent around Roccella Valderone, a well known site for *O. lacaitae*. In the search we found the usual array of orchids, including some more “*fusca*” types ranging from the rare *O. obaesa* and *O. archimedia* to the more common *O. gackiae*, *O. sabulosa* and *O. flammeola*. Other species included *O. italica*, *O. bombyliflora*, *A. papilionacea*, *A. longicornu*, *A. morio* var. *picta*, *O. exaltata*, *O. incubacea*, *O. lutea*, *O. speculum*, *O. sicula*, *O. grandiflora*, *O. tenthredinifera* and a few *Serapias lingua* and *S. vomeracea*. Near the town of Castiglione di Sicilia was an interesting area where it was reported that *Orchis mascula* had been found. Here were the most convincing plants of *Ophrys passionis* var. *garganica* with more *N. maculata*, *O. sabulosa* and abundant *N. lactea*. This was the only day we had rain and it was quite miserable. We consoled ourselves with some coffee in a nearby town while planning our return trip. The view of Etna was hidden in a blanket of cloud, but we had taken most of our pictures earlier.

We had to navigate to the other side of Palermo before the rush hour and hopefully visit some well-known sites near the airport. There was one orchid en route which was a rarity and has a late blooming schedule which we had not seen earlier. This was *Serapias nurrica*, found on the North coast near Tyndaris and normally only seen on Corsica and Sardinia. With the GPS we eventually found some emerging plants which had the narrow white band around the lip. After a short trip on the motorway we arrived at the Hotel Rose Garden at Montelepre, another hotel I had stayed at before. After booking in we went to a local quarry and found some of the best *O. bertolonii*, along with *N. maculata* and one very fine example of *O. explanata* - a spectacular find to round off a very successful trip.

Field-based Molecular Identification Within the Next Decade? **Richard M Bateman**

An astonishing 11 years have passed since I gave my first talk on DNA-based studies of terrestrial orchids to the HOS (at the old Pershore College venue in May 1997). At that time, DNA sequencing had recently undergone a major advance from a labour-intensive and technically challenging venture that required the use of both carcinogenic chemicals and radionuclides to a labour-intensive and technically challenging venture that required the use of carcinogenic chemicals only! Most of the technology needed to conduct the analysis had been compressed from an entire laboratory into a sleek grey box the size of an (old-fashioned, cathode ray tube-based) wide-screen TV. And the data output from this miraculous grey box could be downloaded directly to a suitably robust desktop computer, from whence they could be refined and distributed across the Internet (via copper cables, though these would soon be replaced by the broadband-facilitating fibre optics). Two international databases, the US-based Genbank and its European equivalent, European Molecular Biology Laboratory (EMBL), had recently been established to collate DNA sequence data. These databases could be quizzed electronically (without cost) to see how closely the 'known' sequences in the databases matched the new sequences that were being generated in the enquirer's own laboratory. When giving conference talks, I showed with considerable pride slides (35 mm rather than Powerpoint) that illustrated this cutting-edge end-20th Century technology.

A year ago, at a scientific conference that I had co-organised in Edinburgh, I listened with increasing astonishment to a talk by a researcher working on contract to the American military. He showed the audience of professional comparative biologists the blueprints for a new analytical device that was the size of a laptop computer. Ideally sited in the back of a field vehicle, it could generate single DNA sequences of modest length from a set of 96 samples of any kind of organism within ten minutes of the samples having been taken. The device (whose emergence had been predicted years previously, with Wellsian prescience, by former government Chief Scientist Sir Robert May) could then beam the resulting DNA data to a satellite and thence to databases such as Genbank or EMBL, permitting effectively instantaneous comparison with "known" DNA sequences previously deposited in the databases by other analysts. Were it to exist, such a device would open the door to near-instant field identification of living organisms through representative DNA sequences – an approach termed DNA barcoding (e.g. Savolainen *et al.* 2005). The lecturer then further startled the assembled company by stating that the device did indeed already exist, and that within a year (i.e. by today), it would have been slimmed down to the size of a palmtop computer. It would seem that personal DNA barcoding has already become a reality – at least, if you are an officially sanctioned member of the American military.

Our lecturer left out of his talk a few minor details, such as when (a) DNA specialists and (b) field surveyors monitoring biodiversity might be granted access to this technology, and what the commercial costs of (c) the device itself and (d) the necessary chemical reagents might be. I think that we may best answer these questions by considering the recent history of GPS technology. Originally developed by the American military for their own use, GPS was even more reliant on satellite technology. It too underwent a series of steps of both miniaturisation and price reduction, to the point where it has become an integral part of Apple's new, readily affordable 3G i-Phone. And original stipulations by the military, that the accuracy of publicly available GPS systems would be artificially capped, have given way to common sense, so that we can now pinpoint individual orchids to within 1 m and pass the resulting ten-figure UTM coordinates on to any trustworthy colleague. There is no denying that modern GPS technology has considerably enhanced botanical fieldwork, especially in remote areas poor in roads and other man-made landmarks. Could *al fresco* DNA sequencing have a similar or greater impact on our orchidological activities?

Well, automating and miniaturising the “wet” phase of DNA analysis (extracting the DNA from the plant, multiplying the region or regions of interest and determining the sequences of base-pairs in that region) is only the first part of the challenge. Satellite-mediated comparison of the sequences generated by the hand-held device with the vast body of sequences data held in Genbank and/or EMBL must also be automated. Here, the field botanist whose only goal is to identify an unknown or uncertain plant will gain a significant practical advantage over the evolutionary biologist who primarily wishes to use the DNA sequences to generate evolutionary trees – a rather more ambitious venture that, though increasingly automated, still benefits greatly from the intervention of an experienced human brain pre-programmed with the requisite specialist knowledge. In contrast, identification of plants via DNA barcoding simply requires the newly generated DNA sequence to be statistically compared by computer with all known sequences. Admittedly, the number of comparisons that must be computed is mind-bogglingly large, but then so is the number of comparisons made each time one runs a keyword search in Google and obtains millions of hits in a split second – numbers are no longer a practical handicap. The greater challenge is actually understanding the advantages and especially the limitations of the approach.

Of course, ideally one would obtain a single perfect (100%) match between the DNA of the unknown plant in the field and a known plant in the database, but often this will not happen. Under such circumstances, the sequences on the database will be re-organised for the enquirer in order of progressively decreasing similarity to the unknown DNA, and the enquirer will be shown only the very best tip of the iceberg (e.g. the ten “banked” sequences most similar to the unknown sequence). For exam-

ple, our “unknown” ITS sequence for a suspected *O. sphegodes* plant from a Sussex down might realistically show 99.9% similarity with an *O. sphegodes* from Kent, 99.8% similarity with an *O. sphegodes* from Dorset, 99.6% similarity with an *O. sphegodes* from Normandy, and 99.2% similarity with an *O. mammosa* from Crete. Were we to dig deeper into the database, we would find perhaps an 85% similarity of our *Ophrys* with co-occurring plants of *Anacamptis pyramidalis*. We would therefore conclude that our unknown plant was most likely a true *O. sphegodes* and that it was most likely native to Sussex, where it was found. On the other hand, because it did not provide a precise match, we might seriously consider the possibility that we had found a taxon not previously described – certainly, we would be tempted to examine the morphology of the orchid more carefully than otherwise. And of course we could do this easily, because when our DNA identification arrived we would still be standing on the relevant piece of downland, a mere five or ten minutes having elapsed since we first discovered the suspect plant.

What other problems might we encounter? Well, firstly we might have found a plant of a species that is already known to science but has not yet been sequenced for the region(s) of DNA that interest us (or, rather, that have been pre-programmed into our hand-held sequencer). Partly as a result of the activities of myself and my research colleagues, aided by HOS members, this outcome is becoming less likely; European orchids have been better documented than most other groups of plants. The amount of data in the relevant internet databases is increasing exponentially, so these problems of lack of knowledge should decrease rapidly. Indeed, this process should be greatly accelerated once a whole legion of fieldworkers are able to use their hand-held sequencers to add morphologically verified DNA data to the international databases. The main problem with the yardstick sequences already deposited in Genbank (by ‘professional’ scientists!) is that, by my calculation, about 10% of the DNA sequences have been attributed to the wrong species, most as a result of misidentifications based on knowledge (or, more accurately, ignorance) of the morphology of the species. There are few more damaging items in science than an inaccurate yardstick! Fortunately, the larger the number of correctly identified sequences of a particular species that are deposited in Genbank, the more obvious such errors will become.

A less readily surmountable problem is that some pairs of morphologically distinguishable species appear to yield indistinguishable DNAs: examples include *Platanthera chlorantha* versus *P. bifolia*, *Serapias orientalis* versus *S. neglecta*, and *Ophrys spruneri* versus *O. cretensis* (e.g. Bateman 2005). This does not necessarily mean that these pairs are not distinct species; when two species split, first principles suggest that morphology (and the few genes that control it) diverge sooner than most of the other genes, including those that are used most commonly in DNA barcoding; in other words, the DNA data lag behind the actual cutting-edge of evolution. The

converse problem is that some bona fide species show genetic differences among individuals, the amount of difference often being roughly proportional to the geographical distance separating the respective samples. So a precise DNA match doesn't necessarily mean that the two DNAs are from the same species, and a (very small) difference doesn't necessarily mean that they are from different species. Moreover, in taxonomic groups where morphological identification is most problematic, so often is DNA-based identification. DNA is clearly no panacea, and has been subject to exaggerated claims by some members of the scientific community.

Perhaps we would be better off ditching our erstwhile pocket sequencers and sticking with tried and tested morphology? Or perhaps not. Every summer I deal with a plethora of identification requests in my long-standing role as Botanical Society of the British Isles co-referee for orchids. And the majority of those requests concern suspected hybrids, especially in genera such as *Dactylorhiza* and *Gymnadenia*. What if our hand-held sequences were capable of simultaneously sequencing a fast-changing region of the nuclear genome (such as ITS), which is inherited from both parents, and a fast-changing region of the plastids, which are inherited only from the mother? Well, then we could state with confidence that our unknown plant was a primary hybrid, we could identify with confidence both its parents, and as an added bonus, we could determine which parental species was the mother and which was the father (Bateman 2006). And how many times have we all found in the course of fieldwork fascinating looking leaves or seed capsules and attempted to guess which species we had discovered? Or spotted an insect bearing pollinia, and speculated regarding which orchid species those pollinia belonged to? Our hand-held sequencer will identify such plant remains (and, indeed, insect remains!) with every bit as much reliability as plants in full flower. So maybe it will deserve pride of place in our backpacks after all? I am certain that automated portable sequencing technology will be available to readers of *HOS Journal* within the next decade, and probably rather sooner. Its initial cost will most likely be prohibitive to most of us, but I believe that, like GPS, this will not be true for long. I confidently expect to be able to listen to field-oriented HOS members give DNA-based talks before what little remains of my hair has turned completely grey.

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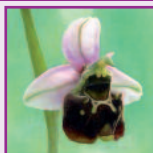
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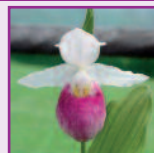
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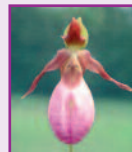
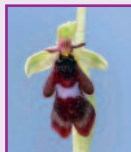


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