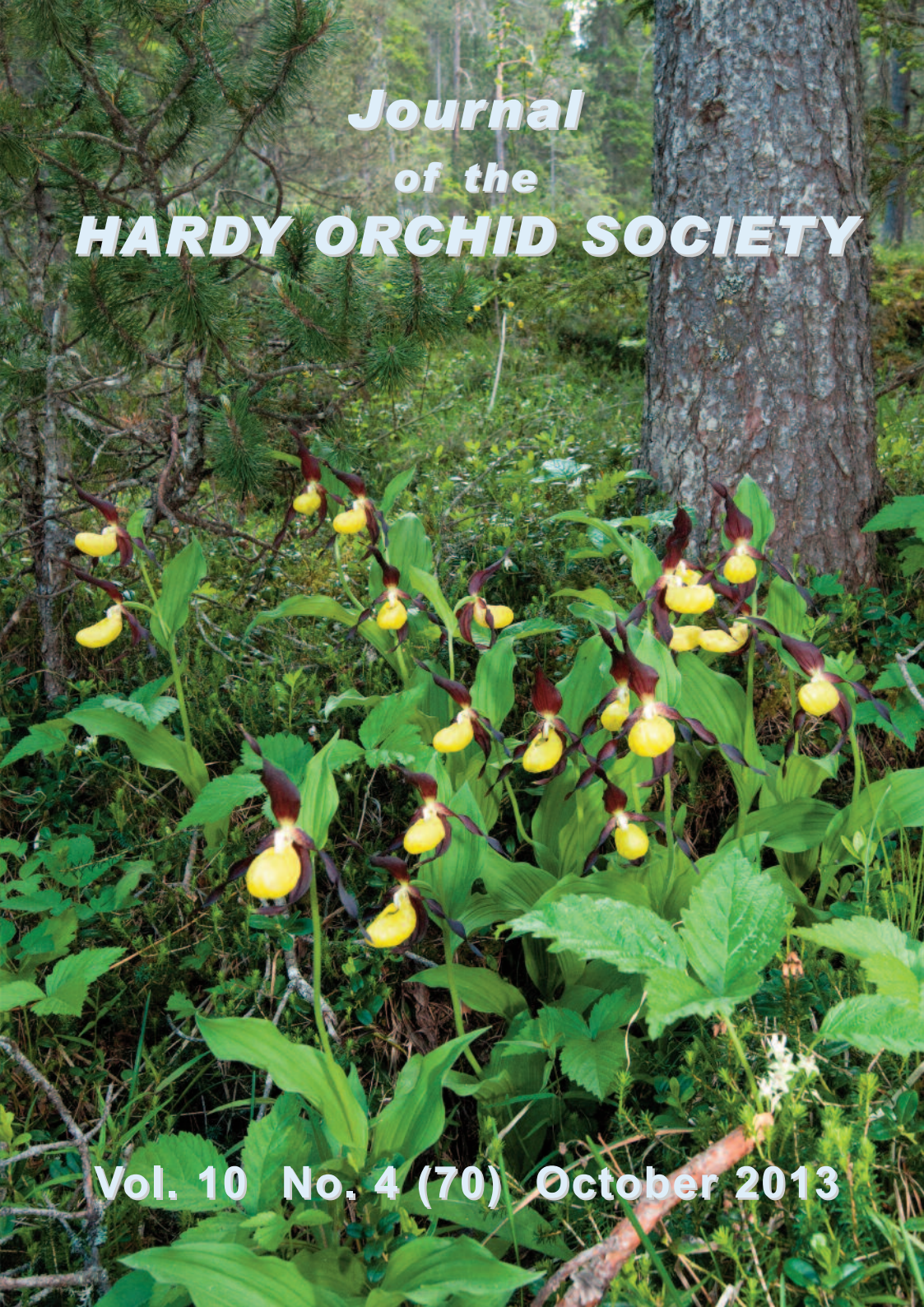

Journal of the HARDY ORCHID SOCIETY

Vol. 10 No. 4 (70) October 2013

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**, 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.

The Hardy Orchid Society Committee

Cover Photographs

Front Page: *Cypripedium calceolus* at Scuol (Switzerland), 15th June 2012.

Back Page: A bumblebee *Bombus terrestris* carrying pollinia from *Dactylorhiza praetermissa* at Bunde, The Netherlands on 16th June 2008.

Photographs taken by Jean Claessens and Jacques Kleynen
See article about pollination on page 114

Contents

Erratum

In the July 2013 *JHOS* species details in the caption for the cover photograph on page 75 are incorrect. Correct details for the cover photograph are: "A honey bee (*Apis mellifera*) pollinates *Orchis militaris*. Photograph taken by Jean Claessens and Jacques Kleynen." Also, the orchid name in the caption for Fig. 2 on page 103 should be "Common Twayblade".

Editorial Note

Doubtless many members will have noticed the caption error with respect to the cover photograph used in the last *JHOS.* The correct details are provided in the *erratum* above. Apologies for this major editorial blunder and by way of compensation the photograph that should have adorned that front cover is carried on the back cover of this issue. Maybe this will start a trend for using a second full page cover image in future issues!

In this issue we have a second instalment of the pollination biology series from Jean Claessens and Jacques Kleynen with more of their superb photography. This time they focus on *Cypripedium* and *Cephalanthera*. There are more great photographs in another Italian piece from Paul Harcourt Davies, including several of his innovative white background gems. Paul's article concentrates on Sicily.

Thanks to several people who have sent in new articles and photographs for inclusion in *JHOS*. Some material is included in this issue. Tom Turner has contributed a different sort of article with a detailed look at one of his local sites, with a suggested walking route. There may be interest in more of this type of article from other parts of the country, so do let me know if you like (or indeed don't like) this approach. Several submitted contributions could not be accommodated in this issue but more will be published next time. Do keep sending in material as it is the essential life blood for the journal!

Chairman's Note
Celia Wright

Greetings. I am writing this just after another successful Northern Meeting in Leeds. Once again, it was organised impeccably by Ken Kitchen (with Ann's help). John and Shelagh Temporal will be stepping into this role, so my special thanks to Ken and Ann for all their help with HOS. I would like to take the opportunity to thank Andrew Wells and Lesley Goode for their excellent management of the HOS sound system. It was essential for the Steve Nicholls film "Orchids – Sex & Lies" which started the Leeds meeting in spectacular fashion. Our thanks to Steve for sharing it. If you have an innovative way of talking about hardy orchids, please get in touch with me as it could make a good meeting presentation in the future.

The Leeds meeting included an Extraordinary General Meeting when the motion to increase subscription rates from May 2014 was passed unanimously. Included with this issue of *JHOS* is a letter from Moira Tarrant concerning the mechanism of the change, especially for those who pay by standing order. Please take note of what she says and change your standing order amount now so that everything will be ready for the correct payment next May.

Our next meeting is at Kidlington on Sunday November 17th. We have a good set of speakers lined up and I hope to see lots of people there. Don't forget to get your digital entries for the photographic competition in to Ann Kitchen (knak@kenak.plus.com) by 14th October. The closing date for print entries is 4th November.

Finally, Iain and I have changed our email addresses. The Committee contact details list inside the front cover of this issue of *JHOS* reflects this. From now on, to contact me, please use celia.wright@windmill.me.uk and for Iain, use iaincwright@windmill.me.uk. My best wishes to you all.

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The Pollination of European Orchids: Part 2: *Cypripedium* and *Cephalanthera*

Jean Claessens & Jacques Kleynen

Introduction

In the first part of this series we discussed and illustrated the construction of an average European orchid flower. Much of this applies to many European orchids. In this part we will show two orchid genera that deviate from the general pattern.

Cypripedium calceolus, the Lady's slipper orchid

This orchid certainly is the orchid lover's favourite with its brownish perianth and the beautifully contrasting yellow slipper. The Lady's Slipper is a primitive orchid, the only European species that has two anthers. The pollen is not mealy, but instead the loose pollen grains are packed into a viscid fluid. The stigma is quite large, dry and covered with minute pointing papillae (Figure 1). The yellow slipper serves as a means of attraction from afar. The flower emits a scent, but colour is the key attraction mechanism. The crimson spots on the white staminode and on the veins in the bottom of the lip (Figure 2) are false nectar guides (Nilsson 1981). *C. calceolus* is above all visited and pollinated by *Andrena* bees. Visitors generally land on the lip which has margins covered with an oily substance. They either fall into the pouch losing their balance or they fly into the flower searching for nectar. Once inside the bees find out there is no nectar and show a disturbed behaviour, making efforts to escape. They try to climb the inside of the pouch, but this is covered with a film of oil as well, preventing them from getting out. They also try to escape by climbing the slippery staminode, but always fall back into the flower. There are only two exits from the flower, two small orifices left and right of the column (Figure 3). Near the lip base are various translucent spots on both sides of the slipper. They help to guide the bees towards the exits.

Fig. 1: *Cypripedium calceolus*, column showing the large, shield-like stigma. Behind it is the staminode; under the stigma are the two anthers with the pollen smear.
Fig. 2: *Cypripedium calceolus*, lip. The visiting insect leaves through one of the two openings behind the staminode.
Fig. 3: Longitudinal section of the slipper showing the translucent sections and the arching stigma and staminode. Near the base of the stigma is one of the two anthers.
Fig. 4: A female of *Andrena carantonica* leaving the slipper with stigmatic smear on its back

Photos by Jean Claessens & Jacques Kleynen


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After discovering the way out, there is hard labour ahead for the insect. In order to get out it first has to pass the stigma. If the insect has already visited another flower, it will carry some pollen smear on its back which now is scraped off by the pointed papillae of the stigma. Then it encounters one of the anthers, which partly block the exit. The insect must have enough power to push back the flower tissue to fight its way past the sticky anther. It inevitably touches the surface of the anther and some pollen smear will stick on its back (Figure 4). We often saw the bees grabbing the hairs on the bases of the petals in order to pull themselves out. When the insect is halfway things go very quickly. It climbs out and rests for some moments or disappears at once. We never saw them visiting another nearby flower directly after climbing out of the flower. The whole pollination process is quite stressful for the insects and revisits leading to pollination are quite low. The Lady's Slipper-orchid mainly propagates vegetatively.

The genus *Cephalanthera*

Three species of *Cephalanthera* grow in Great Britain − the Sword-leaved Helleborine (*C. longifolia*), the Red Helleborine (*C. rubra*) and the White Helleborine (*C. damasonium*). The first two species are allogamous, that is they rely on insects for pollination, whereas the third species is autogamous, self-pollinating. We will discuss the pollination mode of the Sword-leaved Helleborine, which also applies to the Red Helleborine.

The perianth segments of the Sword-leaved Helleborine do not open wide. Generally the lateral sepals spread a bit more. All *Cephalanthera* species have a long column with a large stigma and a hinged anther with two bipartite pollinia (Figure 5). The lip consists of two parts: the front part or epichile and the rear part or hypochile. The connection between epichile and hypochile is hinged. On its tip the epichile is ornamented with yellow-orange longitudinal ridges. They imitate pollen and are meant to tempt insects to visit the flower. Also, the rear part of the hypochile is equally coloured yellow-orange. The column is long and slender and more or less horizontal. The pollinia are banana-shaped, have no caudicles or viscidia and lie free in the anther (Figure 8, left column). The stigma is placed near the anther, on the underside of the column and is large and rounded.

Fig. 5: *Cephalanthera longifolia*, longitudinal section. The orange parts are imitations of pollen. A=anther, L=lip, St=stigma, O=ovary
Fig. 6: A female *Lasioglossum laeve* that has just left the flower. The banana-shaped pollinia stick to its back.
Photos by Jean Claessens & Jacques Kleynen


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An insect visitor, attracted by the pseudo-pollen of the lip, will have to bend forward in order to reach the rear part of the hypochile, searching for nectar. When it finds out there is no nectar, it retreats and lifts its body. In doing so it touches the stigmatic surface. It scrapes off some of the stigmatic fluid. When it continues its bow-shaped retreat it touches the pollinia which remain in the anther. Due to the stigmatic fluid on the back of the insect the pollinia are pulled out of the anther and stick to the insect's back (Figure 6). The two little banana-shaped pollinia cannot be removed by the insect. When it visits another flower, the forward sticking pollinia are pushed against the stigma and pollination is completed. Regular pollinators are small *Halictus* or *Lasioglossum* bees. Pollination of the Red Helleborine takes place in the same way as described. Pollinators are various small bees like *Chelostoma*, *Dufourea*, *Heriades* or *Osmia*.

The White Helleborine has flowers that hardly open. The epichile and hypochile are similarly coloured and ornamented as in the previous species (Figure 9). The column closely resembles that of the Sword-leaved Helleborine, but there is one small but decisive difference. The upper rim of the stigma of the Sword-leaved Helleborine is covered with a thin layer of tissue, preventing the contact between pollinia and stigmatic fluid. The White Helleborine lacks this tissue and as a result the pollinia can directly contact the stigmatic fluid as soon as the anther opens (Figure 8, right column). This takes place before the flower opens, making this species totally autogamous. Even if an insect enters the flower, it will not be able to collect any pollen, because this is already soaked with stigmatic fluid and can no longer be transported (Figures 9 and 10). If there are hybrids with one of the other species, then the pollen most likely was imported from the allogamous species. For this species autogamy is an advantage, because it means that it can grow in unfavourable conditions (dark woods and heavy shade) where few pollinators are available.

Fig. 7: *Cephalanthera longifolia*
Fig. 8: Columns of *C. longifolia* (left) and *C. damasonium* (right). In *C. longifolia* the contact between pollinia and stigma is prevented by a thin membrane covering the upper stigmatic rim. The pollinia of *C. damasonium* are already soaked with stigmatic fluid.
Fig. 9: *Cephalanthera damasonium*, flower opened manually to show the pollinia sticking onto the stigma.
Fig. 10: *C. damasonium*, column. The pollinia have fallen out of the anther and stick to the stigma

Photos by Jean Claessens & Jacques Kleynen

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The Oxwich Epipactis

Mike Clark

In July 2012, I surveyed the Oxwich Burrows NNR for *Epipactis* as I had heard that historically *E. phyllanthes* had grown in the slacks. I discovered large numbers of *Epipactis helleborine* var. *neerlandica* in certain areas, and in a remote spot I found 13 plants in open-ground keying down to *E. phyllanthes* var. *cambrensis*, described by Charles Thomas (Thomas 1941, 1950). I returned to the site this August and found 5 more plants in open-ground on a 40m north-east facing slope growing in Early Hair-grass with Round-leaved Wintergreen, Yellow Rattle, Restharrow and a small amount of Dewberry. Figures 1 and 2 are of one of the plants, which was 25.5 cm tall, with a 7cm inflorescence made up of eleven flowers. The plants have a definite 'jizz' and tend to be more yellowish than the woodland *phyllanthes* plants, with undulate margins to the leaves which are long, well-keeled and convexing. The flowers are also greenish yellow with pale greenish white *hypochile* and the *epichile* can reflex quite early into flowering, looking like a small white boxing glove. The height of the plants seems to depend on the surrounding sward and age of the plant but most are under 21cm. My own personal observation of this plant is that it is a woodland plant that has adapted itself to surviving in open ground and has altered its appearance accordingly. I appreciate this view is not accepted by every one and that it is a good taxon and not just an ecotype.

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Thomas, C. (1941) An addition to the native British Orchidaceae. *Journal of Botany* 79: 200-205.
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Fig. 1: Spike close-up of *E. phyllanthes* var. *cambrensis*
Fig. 2: Whole plant of *E. phyllanthes* var. *cambrensis*
Fig. 3: Habitat of *E. phyllanthes* var. *cambrensis*
Photos by Mike Clark


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Brockham Lime Works

Tom Turner

If you drive between Dorking and Redhill along the A25 and look towards the North Downs you will see chalk cliffs. This is the vertical face of Brockham Lime Works. Chalk extraction ceased around 1935 and the quarry has since reverted to a natural habitat, though with attention from Surrey Wildlife Trust who ensure that the open areas do not get overgrown. The history of the quarry is very interesting, but not the subject of this article. The area has developed to be of interest as birds of prey nest on the chalk face and butterflies are plentiful everywhere. So too are orchids, and many of the common southern species are present in good numbers. Access to the quarry, which is an SSSI and SAC, is not easy as there are no convenient car parks, so I shall describe a possible walk through the lime works from Box Hill by a direct route, although there are nicer approaches for you to discover. Also, I'm assuming you know when it is best to look out for various orchids.

Leave the car parks (TQ178514) and main visitors' centre and walk along a good path beside the road to Box Hill Village. You might find a few Violet Helleborines beside this path. Go as far as the pub (Smith and Western; TQ187533) and from the car park find a track on your right at one time used for carriages. After 50m turn left along a clear footpath marked "North Downs Way" and generally heading downhill. Go up some steps and then on sloping downwards. The clear path takes a dogleg right, but go ahead down some steps then on down to the foot of the hill. Turn left along the track of the old railway that brought coke to the kilns and lime away. The broad path into the quarry is uphill on your left, but go ahead first and see the old furnaces (TQ198510) which are now a reserve for bats; there are good notice boards about the area. Return and enter the quarry.

Fig. 1: Overlooking the lime works
Fig. 2: A view in the quarry
Fig. 3: Common Twayblades are abundant
Photos by Tom Turner

Just over a stile, the path we will be taking is on the right, but ahead of you lies the main area of the quarry, so spend some time exploring it. You can scramble up steep banks or keep to safer paths but there are often superb displays of Fragrant Orchids. Common Spotted Orchids and Common Twayblades. Pyramidal Orchids are also present in good numbers. Occasional Fly Orchids and Autumn Lady's Tresses can be found by the keen observer. Bee Orchids too were once abundant but are now almost absent.

Eventually return to the path, which I think of as 'Twayblade Alley'. Try to spot the occasional Fly Orchids and frequent Common Spotted Orchids. Our route twists and turns but is quite clear. After a brief uphill stretch look out for Man Orchids which are present in a good range of colours, particularly on a steep bank down on the left of the path. Also, just before entering dense Yew woodland observe a bank up on your left with many Man Orchids in the open and extending into the woods. In some years Autumn Lady's Tresses flower beside this path too. The clear woodland path takes a steep uphill route to a 'T' junction where we turn left and upwards, passing a fine bank of Common Spotted Orchids, to an open area with a fine view over the quarry (TQ200513), with the South Downs on the horizon. Onwards and upwards, turning left up some steps then on, down and left again to complete a circuit through and over the quarry. Look out for the steps on your right to return to the pub!

A map of the route is available and a HOS field trip is possible next year if there is sufficient interest – contact tomturner@ntlworld.com.

Fig. 4 (above): A fine many-stemmed Fly Orchid
Fig. 5: A Violet Helleborine beside the path
Fig. 6: Man Orchid beside the path
Fig.7: A bank of Common Spotted Orchids
Fig. 8 (page 126): Autumn Lady's Tresses
Fig. 9 (page 126): Fly Orchid being pollinated
Fig. 10 (page 126: Common Spotted and Fragrant Orchids on a ledge

Photos by Tom Turner


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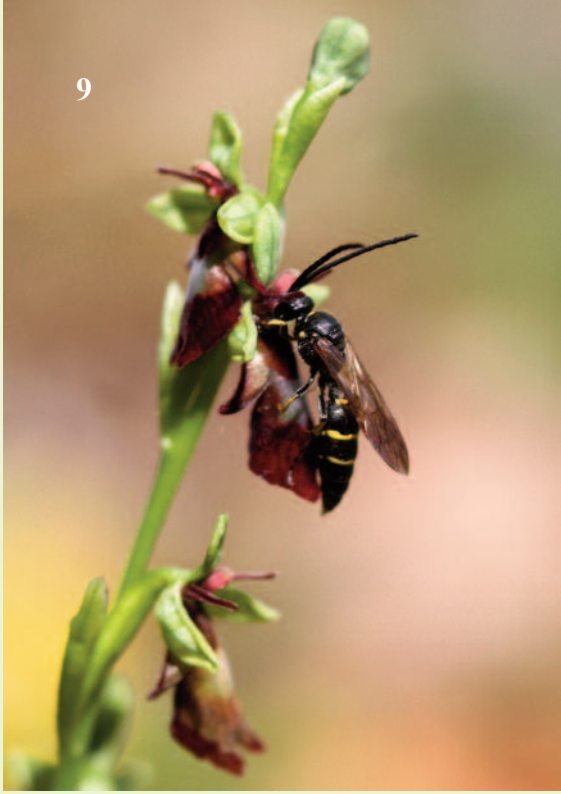
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Hybrid Orchid New to the UK in Cumbria

Alan Gendle

After completing conservation work pulling up bracken on a threatened orchid site in early July I decided to visit another site on my way home. This damp upland acid grassland site supports a multitude of different orchid species: *Dactylorhiza, Gymnadenia, Neottia, Pseudorchis* & *Orchis mascula*. Over the years it has produced many interesting infra- and inter-generic hybrids so is always worth a look around.

Several years ago I found a few plants of *Dactylorhiza traunsteinerioides* (Pugsley) Landwehr *ex* RM Bateman & Denholm on this particular site. During this visit I found the same species but in a new location some 400m from the previous find. In the same area were many flowering spikes of *Gymnadenia borealis* (Druce) RM Bateman, Pridgeon & MW Chase and *Dactylorhiza purpurella* (T. & T. A. Stephenson) Soo. Adjacent to the *D traunsteinerioides*, a strange looking plant caught my eye. Initially, it appeared similar to the *D. purpurella* × *G. borealis* hybrids that have previously been recorded on the site. Closer examination revealed typical ×*Dactylodenia* characteristics: long narrow spur, spreading lateral sepals and of course that typical *Gymnadenia* scent. The labellum contained a series of loops and dots on a deep purple background. The lip was wider than those seen on *D. purpurella* × *G. borealis* hybrids and had a more pronounced central lobe. The most striking feature was the shape of the inflorescence. It was very similar to that of *D. traunsteinerioides*: compact, with few flowers crowded at the top of the stem. The leaves were unspotted with slight purple staining on the upper sheathing leaf. Searching the surrounding area I found a *D. purpurella* × *G. borealis* hybrid and comparing the two hybrids convinced me that *Gymnadenia borealis* had indeed hybridised with two different species of *Dactylorhiza*.

Richard Bateman agreed with my conclusion that this plant was a *Gymnadenia borealis* × *Dactylorhiza traunsteinerioides* hybrid. Subsequent communication with David Pearman, co-author of the New Atlas of British & Irish Flora, and now completing a British hybrids atlas, confirmed that this is the first formal record for this hybrid in the UK.

Thanks to Richard Bateman for his comments on this article prior to publication.

Fig. 1: *Gymnadenia borealis*
Fig. 2: *D traunsteinerioides*
Figs. 3 & 4: *Gymnadenia borealis* × *Dactylorhiza traunsteinerioides* hybrid
Photos by Alan Gendle


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Sicily

Paul Harcourt Davies

The abiding memories of my first contact with Sicily, the largest of the Mediterranean islands, are of the astonishing Greek temples in spring – Segesta and Selinunte. They seemingly floated in a sea of crown daisies that breathed new life into those ancient stones and columns. It is ironic that the very best 'Greek' ruins are outside modern day Greece in southern Italy (Magna Graeca) and in western Turkey, both parts of the classical empire that was Greek.

That encounter was back in April 1980 when driving from Sicily, crossing the straits of Messina and then heading up the toe of Italy and finally across to Gargano. It was a long haul by car and the south of Italy then was not geared to tourism of any sort with accommodation scarce in April. The memories are a reminder of what one did then in the pursuit of wild orchids for a proposed publication that saw the light of day three years further on – *Wild Orchids of Britain & Europe.*

Several return visits were planned and abandoned until serendipity reared its pretty head and Lois was asked to do one of her inspection jaunts for the excellent Sawday's '*Special Places to Stay*' guides to Sicily in April 2007. For me, this was a welcome chance to escape from the building site and, in return for co-driving, I was promised that I might be granted a few orchid hours en route. Born of long necessity, I work quickly with my cameras and can do a huge amount in a short time rather than run the risk of boring any companions.

Accordingly, I dug into my two great red boxes of orchid sites (much more interesting than those the UK government might have) filled with correspondence from friends in many countries. I needed to find a letter from an old friend, Dr Tom Norman where, in his doctor's near-illegible writing, he had written that, for my researches for the book *Wild Orchids of Britain & Europe* there was one place in Sicily not to miss. Well, miss it I did when I went in April 1980 as part of the long drive from Sicily up the toe of Italy and across to Gargano. This time, however, a delicate tweak of the itinerary could take us, only 27 years later, to where Tom had discovered a colony of *Ophrys lacaitae*. It was a case of better late, and all that, and we have been back each year since for a much wider exploration of what, for me, is an area of orchid richness comparable to Gargano.

It is no secret that I adore *Ophrys* and *Ophrys lacaitae,* with its remarkable, triangular yellow lip and reduced basal pattern, has always been a favourite. I first learned of its existence through a photograph in Hans Sundermann's delightful pocket book *Orchideen*. What a day that was – a Saturday in Wendover when the postman brought the small package and I also discovered the existence of *Comperia* and

Fig. 1: Temple at Selinunte
Photo by Paul Harcourt Davies

Steveniella – both species on the same page of the book. *O. lacaitae* was once cited as very rare (an obvious attraction) and contemporaneous researches through the library at Kew, and letters sent hither and thither, revealed that it was known only from one or two places in Sicily and a site near Naples, where the great Italian tradition of illegal building has ruined it.

O. lacaitae has long misled botanists, both because it flowers much later than most Mediterranean *Ophrys* (May) and it also occurs at higher altitudes, two factors putting it out of time and position for most orchid enthusiasts. However, in recent years it has also been discovered in Gargano, parts of S. Lazio, the Cilento and near Potenza, as well as in a few other localities.

Clearly, a trip to Sicily was both attractive but also potentially a 'risk' for 27 years is a long time in a part of Italy where criminal activities control the building industries – and they say that much of the land (and the brave critics) lie buried beneath the concrete. Most people outside Italy do not realize that the country lacks a sense of unity – it is a young country, effectively a confederation of states where people have a strong sense of being from a particular town or village, first and foremost. They hardly ever think of being Italian. Sicilians, as islanders, think of themselves as a country apart shaped by centuries of invasions by Greeks, Arabs, Normans. That diversity is reflected in the incredible architecture, colourful and vibrant art and perhaps the best cuisine in all of Italy – fruit and vegetables bursting with colour and flavour, fresh fish, spices and amazing sweets and ice-creams.

Fig. 2: Orchid fields near Ferla
Fig. 3: Old railway line near Ferla, an excellent limestone habitat
Fig. 4: Ferla *Ophrys* – Top left: Calliantha's Orchid (*Ophrys calliantha*) possible hybrid with *Ophrys lacaitae*
Top right: Calliantha's Orchid (*Ophrys calliantha*)
Centre left and right: *Ophrys oxyrrynchos*
Bottom left: Lacaita's Ophrys (*Ophrys lacaitae*)
Bottom right: *Ophrys lunulata*
Photos by Paul Harcourt Davies


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After my first visit in 1980 I realized why every gangster film seemed to have a Sicilian as a get-away driver (and I was living in Nicosia, Cyprus at that stage). I was reminded of that when a few years ago the car I was driving had ignition problems outside Palermo and refused to start after a long sojourn in a queue. I have driven in Athens, Nicosia and Istanbul but I chill, even writing those words.

I love Sicily for there is an incredible range of scenery from coast to high mountains and there exists a true vibrancy of life there and a palpable sense of warmth from the people. For me, with my varied passions for nature, classical history, dramatic landscapes and good food it approaches Nirvana.

After two days of driving around, whizzing between hotels and agriturismos, we were in a part of Sicily's southeast where the landscape both looked and felt ancient – green in spring but desiccated in summer. This is a part close to where the TV series for Inspector Montalbano was filmed. My antennae always twitch in limestone regions where there are old tombs, for they are often dug in the friable limestone ground where excavation was easiest and, now they are, to a large extent, protected for their historical value. Although it might be tempting to search for metaphysical links between old burial sites and orchids, since many of my favourite sites have been found thus (*Orchis punctulata* in Cyprus, *Comperia comperiana* in Turkey), the reasons are always far more solid. Usually, it is down to soil type – a sparsity of soil cover on limestone with little competition where ground has not been disturbed and 'enriched' by agriculture or grazing. The apparent predilection of orchids (and other plants that interest me) for places with Doric and Ionic columns in the background has fed those long-held passions for botany and classical history.

We followed an old road to a necropolis near Ferla: Lois was driving for safety's sake since I could already 'smell' the orchids. I suggested suddenly that it was time to stop, leaped out – well as much as I can leap with the permanent aches of the building site upon me, clambered over a wall and scrambled down a slope to where *Ophrys lacaitae* grew in substantial numbers. I was delighted but not surprised. It often happens like this and many people find that, after a few years of hunting orchids, you get to read the signs. You notice, almost subliminally, the surrounding vegetation types, slopes, aspects, levels of grazing and then begin to 'see' orchids behind bushes and astonish your friends.

Fig. 5: More *Ophrys* – Top left: *Ophrys pallida*
Top right: *Ophrys speculum*
Centre left: *Ophrys biancae*
Centre right: *Ophrys lacaitae*
Bottom left: *Ophrys oxyrrynchos*
Bottom right: *Ophrys calliantha*
Photos by Paul Harcourt Davies

In fact, I still generally eschew the use of a GPS system – no I am not a Luddite and certainly not in the way I embraced and have used digital cameras for all my work for the past dozen and more years. However, I have seen groups diligently following directions from others, hardly watching where they walk and passing numerous orchids enroute. That is fine if you enjoy finding someone else's discoveries but there is still much to be said for reading the land and finding one's own plants or some happy combination of the two as I found on a Ghost orchid hunt this summer when the GPS failed to turn up plants but *il naso* (the nose) did!

In the long-established places where numbers of 'rarities' grow there will almost always be populations of other orchid taxa, often with a clutch of indeterminable 'oddities' that it is tempting to try and identify as varieties and hybrids, as well as rich collections of other plants. Many of these curious orchids have taken long years to reach maturity and then decades to cross and back cross and lack of disturbance has allowed this.

Near Ferla, in the Karst region of the Monte Iblei (Hyblaean Mountains), we quickly found 15 or so taxa (real species not Delforgian ones) for the season is quite late. There were several plants of *Ophrys ciliata (speculum)* still just in flower on 7th May and a few *Ophrys apifera* verging on the borders of 'vars.' *bicolor* and *trollii*. Elsewhere, the displays of *Serapias* were astounding with recognisable *S. lingua, S. vomeracea* and *S. orientalis* plus the "mix and match" element that often accompanies the genus. Also, there were seven species of broomrape, the red and white parasite (*Cytinus ruber*) under *Cistus* bushes and a host of small annuals. Various 2GB memory cards were quickly filled (and replaced) both before and after our picnic lunch – we have become very Italian and need time to savour our finds!

There were other Sicilian gems in the area too and the first we found was another endemic, *Ophrys biancae*. This belongs under the '*holoserica'* umbrella (as do so many Italian *Ophrys*), possessing a small lip that has a complete marginal 'indumentum' around it. But it is not always easy to distinguish it from small pink-tepalled flowers of another species *Ophrys oxyrrynchos* (found in Sicily, Puglia and on the Amalfi Peninsula south of Naples). A solitary photographable flower remained on a single spike of the Crescent Ophrys (*Ophrys lunulata),* another Sicilian endemic. Other spikes were identifiable but desiccated though just one flower was enough.
Just a few kilometers away we took another small road past a series of roadside fields contained within crumbling low stone walls where stony soils were bright with drifts of wild flowers. There grew *Ophrys lacaitae* in abundance with plants of

Fig. 6: Ferla *Serapias* – Left: Small-flowered Serapias (*Serapias parviflora*)
Centre: Tongue Orchid (*Serapias lingua*)
Right: Eastern Serapias (*Serapias orientalis*)
Photos by Paul Harcourt Davies

Ophrys speculum but something else quickly caught my eye. I first thought to be an 'odd' taxon of the late spider group *(O. fuciflora*) remarkably like *Ophrys candica*, something I had found both in Crete and in the far south of Italy near Lecce years before. I had read about *Ophrys calliantha* some years earlier when it appeared as a 'new' species: the flowers were large, highly variable in pattern and I spent several hours recording a wide variety of 'faces'. *Ophrys oxyrrynchos* also grew here – the green-tepalled forms are distinctive but there is no mistaking, when you seem them side by side, that there are close links between *Ophrys lacaitae, O. calliantha* and *O. oxyrrynchos*. In such spots you get a snaphot of evolution in progress and a confusing business it is.

Whenever I have needed to illustrate books and articles I have always been careful to choose pictures where the flowers look distinctive and fit published descriptions so that a reader can say yes, these look very different. If I had more space then I would include a wide range of more confusing forms more representative of a field of several hectares and the ragbag of variation that this little genetic package called an *Ophrys* 'species' can manifest. Remy Souch has shown a wide variety of *Ophrys* faces in his sumptuous book. This innate capacity for variation within a taxon is something I have marvelled at many times – in Crete, Cyprus, mainland Greece and Italy and thus, I could never be a disciple of species proliferation.

In that field I could and did photograph a plethora of *Ophrys* faces that could seemingly belong to a host of different 'species' if one went on morphological characteristics alone. But have you ever pondered just what miniscule proportion of the DNA controls pattern? To sit in such a field is something I feel we all need to do just to assert a sense of proportion. Dedicated research into pollinators might help for when a taxon has acquired a different species of pollinator then we are well on the way to separation thanks to interaction of plant and pollinator. But this is not easy – and there are very few people around who have the entomological expertise to distinguish closely-related species of hymenoptera: identification takes dedicated work literally counting the hairs on the bees' knees and other parts of the anatomy. Photographing pollination is never easy. I have spent long hours in the field sitting and waiting, well aware of optimal temperatures (usually above 17°C) and have seen and photographed pollination just a few times. Chances are you will always be looking at the wrong flower when the little devils whizz in and it's wham, bang thank you mam. I have built a rig with an infra-red beam that will trigger flash and camera when an insect flies in but this last Italian spring, when I took it out to test it, was far too wet on the chosen days!

Fig. 7: Ferla *Orchis* – Left: *Anacamptis longicornu*
Centre: *Anacamptis papilionacea* var. *grandiflora*
Right: *Orchis italica*
Photos by Paul Harcourt Davies

I am not going to apologise for comments and observations in my articles for I have studied *Ophrys* pollination and taxonomy seriously for several decades: I don't have the answers but I am certain that proliferation of species is both philosophically naive and not scientifically founded. There is much to be said for Occam's Razor where, when presented with a number of theories, you go for the most elegant. Nature is elegant – and I realised a while ago that it is the search for pattern and elegance that has underlined, albeit subliminally, everything that has ever interested me from mathematics to the scales on butterfly wings, to orchid taxonomy. Complexity and mess tend to come to a dead-end – perhaps not quickly enough. Just find a hillside full of *Ophrys* and you will see what I mean.

On my last two visits I have been able to cross the island almost diagonally to reach the south-east by taking an overnight ferry from Civitavecchia to Palermo – an experience: noisy but good food, this being an Italian boat! I usually avoided Palermo by flying to Catania airport but this time, gritting teeth and growing horns and a forked tail, I negotiated the local traffic and climbed south to the Piano degli Albanese, a region that Othmar Danesch had found rich in orchids when working on his remarkable illustrated books. There and in hills both west of Palermo and at sites as I travelled south east there were numerous plants of *Ophrys speculum* and *O. lunulata* and a few of less well-known species such as *Ophrys panormitana* and one of the '*arachnitiformis'* group. I managed to stay for a couple of nights in the reserve at Bosco di Ficuzza, a delightful, orchid rich area with *Anacamptis longicornu, Dactylorhiza markusii* and numerous plants of the tiny and highly distinctive *Ophrys pallida*. It is clearly related to the '*fusca*' group but has a distinctly angled lip. I was chatting with the warden who revealed that they had an English group the following day. Now, I am no Italian when it comes to seeking out groups of my fellow countrymen and so I felt it better to do my usual thing and head off – a pity because the leader was Phil Cribb and we had not seen one another for a while.

Fig. 8: More *Ophrys* – Left: *Ophrys oxyrrynchos*
Centre: *Ophrys calliantha*
Right: *Ophrys lacaitae*
Fig. 9 (above):*Dactylorhiza markusii*
Photos by Paul Harcourt Davies

This year there were other demands on my time but I am organising a tour for 2014 – one of our all-in Hidden Worlds trips - where we have done our homework thoroughly both as far as seeing plants and wonderful places goes and in securing decent accommodation and meals far better than price would suggest. It helps to speak the lingo and have a partner who seeks such things out with avidity! [Details of this and other trips are in our downloadable brochure.]