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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, 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 Cover: *Spiranthes spiralis* by Tony Hughes
Back Cover: *Spiranthes odorata* at Enschede (Netherlands) by Jean Claessens & Jacques Kleynen
See page 54 for their article on *Spiranthes* and *Goodyera* pollination

Contents

Editorial Note

We have some new contributors in this varied issue of *JHOS*. Many thanks to those who have put together material for the journal, some are published here and there are more to come in future issues. It is especially pleasing to have Neil Evans' article with its horticultural theme. Do keep up the good work as we always need material for the journal.

There is another great article from Jean Claessens and Jacques Kleynen, continuing their pollination series. This time it features Lady's-tresses and gave me the perfect opportunity to again remember our former chairman and use a Tony Hughes photograph on the front cover. I've also included an account of Andrew Brown's discovery of the first Lizard Orchid in Norfolk since 1956, having fortuitously met him at a recent orchid talk I did for Butterfly Conservation. It is good to see the enthusiasm of a naturalist yet to specialise in orchids.

Chairman's Note

John Wallington

By the time these words reach you all, the AGM will probably be over. Those of you who were there will know if there was a challenge for the position of Chairman and it is possible that I no longer hold the post. However, I do not think this is a serious possibility. But there is a serious point hidden in here. The Committee is full of members who have spent many years serving the Society. Our constitution states that Committee members should only serve for a maximum of 6 years and that a

member should only fulfil a particular role on the Committee for three years. I have spent 7 years on the Committee, 6 as Treasurer and, so far, one as Chairman. There are several other Committee members who have served for more than the allotted 6 years. Every year we have to invoke the clause in the Constitution that states "- not serve more than six consecutive years except in exceptional circumstances". Every AGM that I have attended has taken place in "exceptional circumstances" and I have no doubt that the 2016 AGM will be the same.

This then is the background to the oft repeated requests from members of the Committee for more volunteers. Whatever the role you take on there are always more experienced members to provide advice and assistance. There are three Committee meetings a year, held in Oxfordshire on a Sunday. Travelling expenses are reimbursed. So, once again I am asking all members of the Society to consider how they could help to run the Society and how they could bring some new ideas onto the Committee. Please talk to any Committee member and see where it is that you can contribute your knowledge and skills.

Those of you who were at the Kidlington meeting last November will remember a small display in the main hall of entries that would be suitable for a new "scientific image competition". This idea has been the subject of much discussion and debate and the Committee has decided to hold a similar event at the November 2016 Kidlington meeting. This will be a non-competitive event and members are encouraged to bring a display consisting of a photograph and up to 200 words of description/explanation. These contributions will be displayed on tables in the main hall so they can be viewed throughout the day. The contributions should be of a scientific nature and examples of such images may include, but are not restricted to:

- An ultra-close image showing features not readily seen by the human eye
- A pollinator visiting a flower
- A predator consuming a pollinator
- A herbivore consuming a plant
- Mycorrhizal fungi infecting orchid roots
- Seeds and seedlings; germinating pollen
- Anatomical sections
- Stained chromosomes

Please give some thought to what you might enter to make this an interesting exhibition and an additional attraction for the Kidlington meeting.

And a final thought. As we get into the "Orchid Hunting" season please remember to be careful when photographing or just inspecting the orchids and do not damage other plants.

I Will Have to Come Back Next Year: Cyprus

Rosemary Webb

Most wild orchid enthusiasts will try to make their journeys at the optimum time to see the plants at their best. However, this can be quite a problem in Europe, as much will depend on the influence of the winter weather on the beginning of spring. This will also determine the summer too. Over the years, I have come to find myself saying 'I will have to come back next year!' because two seasons are rarely the same. The more years devoted to one's passion, the greater number of experiences they will have had. Sometimes it is excitement and great joy, sometimes it is disappointment and frustration.

My first experience of this was when I had the opportunity to work in Cyprus for a short time. I had never been there before but I was familiar with the orchids in Crete and I knew that the spring flora would be superb. I arrived at the beginning of the penultimate week in March. I found that my working day started very early, leaving plenty of time to hunt for orchids. I was based at the British Forces Establishment at Episkopi and quickly found other people who shared my interest. I had a car and set off to make the most of each afternoon. The Episkopi base includes some local countryside and stretches down to the promontory of Akrotiri which is noted for orchids.

Fig. 1: View of Akrotiri saltmarsh in February
Photo by Rosemary Webb

I spent many afternoons down on Akrotiri. It is an area of open pine woods, wet flushes and open spaces, running from the western side of the large salt lake, along the southern side and up the eastern edge to Lemessos (Limasol). This is an area of reed beds, shallow lagoons and low-growing, wet, sandy spaces. It is home to a large colony of flamingos in winter and some were still there. As I turned onto the track, heading east, along the south side of the lake, three flamingos flew in front of me, just ahead of the car. Somehow three flying flamingos seem more exotic than three flying ducks!

I stopped at an open area which was covered in bright, colourful flowers. There were many *Anemone coronaria* in every colour I have ever seen except red. There were also masses of yellow *Ranunculus asiaticus*, and a few orange ones with the odd red flower. From this wonderfully colourful field one could look north, across the milky blue of the salt lake and see the snow-capped peaks of the Troodos mountains way to the north. I was beginning to feel that there could be few better places to work in. I knew I had to make the most of my time here. I arrived in Cyprus with a 'most want to see' list. I soon started to find orchids including *Ophrys astarte* (*attica*), *Ophrys umbilicata*, *Ophrys levantina* and *Anacamptis syriaca*. Under some cistus bushes I found the small, red and yellow, parasitic plant *Cytinus hippocistus* – I had never seen this before (it flowers later in Crete) and yet it always fired my imagination when I saw pictures of it. It is related to the largest flower in the world, the *Raffellesia* of tropical Asia, which I have also never seen.

Growing along the edge of a damp ditch between the edge of the road and forested / meadow area, I found a large colony of *Ophrys apifera*, most in bud but some with a flower open. I was delighted to find that some were the variety *bicolor* which I had never seen. I did not even have *Ophrys apifera* on my list. My list included *Ophrys elegans* which I found was over (I will have to come back next year!) and *Orchis punctulata*. That evening, someone at dinner asked me if I had seen 'the large yellow orchid' growing by the roadside to the west of the Episkopi base. The area is chalky – my heart missed a beat, could this be *Orchis punctulata*? We jumped in my car and set off, heading down the hill, round the rather nasty bend to an area of wet cliff by the roadside.

It was not *Orchis punctulata* – this was not even on my list, I did not imagine that I would ever see this. It was a quantity of *Epipactis veratrifolia* in full flower and

Fig. 2: *Ophrys umbilicata* - Souni, Cyprus
Fig. 3: *Ophrys elegans* - Akrotiri, Cyprus
Fig. 4: *Ophrys levantina* - Akrotiri Cyprus
Fig. 5: *Anacamptis syriaca* - Neo Chorio, Smiges, Cyprus
Photos by Rosemary Webb


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perfect condition. I am aware that it grows high in the Troodos but up there it does not flower until summer (late June). For a moment, I forgot all about *Orchis punctulata,* this was very exciting. This is a hot, south facing cliff. I was told that it is almost permanently damp as it is watered by the run-off from the playing fields at the top, which use recycled, treated water from the surface sewerage system. As soon as I approached the site, I realised that it could not be *Orchis punctulata* growing there, as it is just not the type of terrain in which one would find it. My search goes on!

The next day, I was told that a number of orchids grow in the phrygana near the garrison church. I decided to have a look there as someone mentioned another yellow orchid growing nearby. As I approached, I saw the church was in an area of open pine woods. I thought that if there was a yellow orchid there, could it be *Dactylorhiza romana*, a pinewood orchid, which is always only yellow in Cyprus? I immediately realised that we were too near sea level for it to be this.

I searched around and out into the open phrygana beyond the trees. I was very pleased to find some plants of another orchid on my list; *Ophrys bornmuelleri* in fresh flower. I had been given some directions to the yellow orchid and in a fairly bare, chalky place, I saw it – large green leaves and a sturdy spike of yellowish-brown flowers. As I approached, I saw that every flower was faded and in fact the yellow-ochre colour was the shrivelled flowers. How sad I felt, how frustrated to be so near. This is a hot area and it was a very warm, early spring. It was *Orchis punctulata*. I will have to come back next year!

When I did return, I decided to make it earlier – nearly 3 weeks earlier. I came back in the last few days of February. Was I going to be lucky this time? It was a much cooler spring and it followed a wet, cold winter. There was no sign of the orchid at Episkopi. I decided to go east, up into the low Troodos foothills to Kato Drys which is a well-known site though

Fig. 6 (above): *Ophrys bornmuelleri* - Drousia, Cyprus
Fig. 7: *Epipactis veratrifolia* - Episkopi, Cyprus
Fig. 8: *Himantoglossum robertianum* - Fasoula, Cyprus
Fig. 9: *Epipactis veratrifolia* - Episkopi, Cyprus
Photos by Rosemary Webb


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under severe pressure from development. There is a large, open, chalky hillside with paths leading into the area. There was a quantity of *Himantoglossum robertianum* and I discovered colonies of *Orchis punctulata* away from the development. I set off to search. Quite quickly I found a group of sturdy plants but they were all in bud! I was only there for a week and they were not going to be out in that time. Surely, I will not have to come back next year! I walked on, along some other paths. The weather was closing in and it was becoming very cold. The wind was from the north and it was icy. I was surprised to find it could be this cold in Cyprus, even if it was February, especially as I was not in the high mountains.

I decided to return to the car but took a different path. There was more shrubbery here and it blocked the north wind but was open to the south. I had not gone far when I found some wonderful *Orchis punctulata* in perfect flower. What a fabulous plant it is, sturdy, with massive spikes of wonderful, golden-yellow flowers. I felt as rich as Croesus, the ancient Greek king of Lydia who funded the temple of Artemis at Ephesus, one of the ancient wonders of the world. He adorned the temple with gold – I was amassing gold in my camera. I thought this golden orchid had to be one of the wonders of the orchid world!

By now something was beginning to fall from the sky – it was snow. I even managed to photograph *Orchis punctulata* with snowflakes resting on the flowers! What an experience, it was cold but I did not expect this. What a time to pick to come back to see a special orchid. I returned to the site on my last day. By now it was quite warm and sunny. I found many more *Orchis punctulata* in perfect flower. I can see that by the end of March they would be pale, shrivelled relics of their former selves. It was the right time to come back after all.

Fig. 10 Faded *Orchis punctulata* - March 23rd
Fig. 11: *Orchis punctulata* in bud - February 26th
Fig. 12: Group of *Orchis punctulata* - Kato Drys, Cyprus
Fig. 13 (above): *Orchis punctulata* close up - Kato Drys, Cyprus
Fig 14 (next page): *Orchis punctulata* habitat
Fig 15 & 16 (next page): *Orchis punctulata* - Kato Drys, Cyprus
Photos by Rosemary Webb


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Norfolk Lizard Orchid

Andrew Brown

The Lizard Orchid was last recorded in Norfolk at Newton Flotman in 1956 – that is until last year! Writing about the discovery of the first Lizard Orchid in Norfolk for nearly sixty years, Robin Chittenden said "By bizarre coincidence (or was it good luck mixed with skilled observation?) the finder also found the first Yellow Legged Tortoiseshell butterfly in Norfolk last year" (Chittenden 2015). I, or rather my fellow enthusiast, Matt Casey and I, were the lucky people fortunate to make both of these discoveries. The comment made me stop and think about whether it was luck or skilled observation or was there a third factor, extensive effort resulting in us being in the right place at the right time.

Matt's first love is moths, with butterflies a close second. His powers of observation are astonishing, probably equivalent to me using binoculars. He can spot and identify moths, extremely well camouflaged caterpillars and distant specks in the sky long before I can see them. Since we started covering the area around Costessey in Norfolk together about four years ago, he has become interested in birds and we share a common interest in fauna and wild plants. When we cover the area we have a wide range of interests and finding the Lizard Orchid was an offshoot of our interest in butterflies.

In the area close to Norwich, where we found the Lizard Orchid, we had found a small surviving colony of Small Heath butterflies and were monitoring their numbers. They were confined to a small area so we decided to check out the hundred acres or so of the site, primarily in an attempt to locate other colonies. Matt was particularly adept at finding orchid leaves, even before the stalk appeared. In the case of the Lizard Orchid it was I who found a pair of large, heavy duty, opposite basal leaves next to a buddleia bush during our wider inspection of the site. I doubt whether I would have found it had it not been necessary for me to compete with Matt in spotting things that were not obvious. I am by no means an orchid expert but we do not find it difficult to find orchid leaves at an early stage in their development, particularly when looking for small butterflies. We tend to walk around with our eyes scanning the ground in front of us. The plant, which we found in May 2014, was partly shaded by a large buddleia bush, which we had checked regularly and it was in a mixed woodland clearing away from, but close to, the dog walking routes. The area was short, rough grassland which was not cut, nor grazed, nor nibbled by animals. The site was at the top of quite a steep valley side and open to the south east. The area is held as a speculative investment and the owner granted public access to it. Some conservation work had been carried out on the wider site but not in the locality where we found the Lizard Orchid. The very light sandy soil overlies chalk and has not seen fertiliser or weed killer for many years.

My research led me to believe that we had found a Butterfly Orchid and I sent several pictures on a regular basis to an expert I met frequently at the bridge table. The two leaves grew bigger in the summer of 2014 but no stalk or flower appeared, so we marked the spot and continued to monitor it in spring 2015. In early March sizeable pointed and ribbed leaves emanated from a circular whorl with the newest leaf in the centre. It was obvious that it was not a Butterfly Orchid and we had no idea what it might be. I continued to send regular pictures to my contact as we watched what seemed to be a very slow and laborious development process. By mid to late May the plant had produced a stalk with flower buds and small leaves at regular intervals. The dozen or so basal leaves lost their colour and partially died back.

We checked the plant every two or three days, believing that the next time we visited the flowers would be evident and that we would be able to identify it or it would be identified for us. Our main concern was the molehills moving increasingly closer to the plant but in the end they were not a problem as the mole seemed to go round the plant. The exposed soil forming the molehills gave a good indication of how dry and poor the soil was in the vicinity.

The plant was in the open, hidden to a certain extent by the buddleia so we decided not to erect posts around it as it would draw attention to it. We monitored the plant and sent photographs of it for the first two weeks in June until suddenly my contact, who was in Madeira on orchid business at the time, emailed me to give me the identification of the plant. At this stage the buds began to open revealing the red coiled spring inside. It then took what seemed another age for the first flower to uncoil and emerge rather like a clock spring.

The plant reached a height of around 70cm and contained more than 80 flowers. For the first three weeks or so no smell was detectable and insects took no interest in it, at least during the day. My contact visited the site and carried out limited manual pollination. Soon after, a number of flies, small and black with a white triangle on their head, appeared but seemed to loll about rather than pollinating the plant. Why should an insect recognise the signals it emitted when it has not encountered that plant before or for many years? Nevertheless, during mid to late July the seed pods developed seemingly on virtually every flower and were browning up nicely.

And then the orchid which had given us so much intrigue and pleasure was gone! Somebody had removed our beloved Lizard Orchid to which we had become quite attached, partly due to the pleasure we had given other people. Our enquiries failed to identify anyone who had taken it. As with the Yellow Legged Tortoiseshell, we

Lizard Orchid *Himantoglossum hircinum* in Norfolk
Photos by Mike McCarthy




encountered a strange lack of interest in the early stages from those organisations who I thought might advise and help us know what we should do with this exciting rarity. I let it be known that I would appreciate some input but none was forthcoming until the plant had been in flower for several weeks. I shared the location with some close confidantes and then invited the members of the Birdwatching Club to which I belong to visit the site after which the location became more widely known. It became apparent to me much later that there are several different organisations both local and national which have interests in different types of orchid.

As I was writing this article, Mike Gasson advised me that if only the above ground plant had been taken without the tuber, then it is possible that it would flower again. Imagine my pleasure when late on a wet Saturday afternoon in early March I returned to the site to find six new leaves pushing themselves above the ground. Here we go again!

Reference

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The Pollination of European Orchids Part 4: *Goodyera* and *Spiranthes*

Jean Claessens and Jacques Kleynen

In the third part of this series (Claessens & Kleynen, 2014) we discussed the development of the viscidium, a special organ for attachment of the pollinia to the pollinator. Now we will introduce two genera with a flower and column structure, specially adapted to their main pollinators.

Goodyera

In Europe the genus only comprises two species, *G. repens*, the Creeping Lady's-tresses and *G. macrophylla*, a species only found in Madeira. Here we will only discuss the common species, *G. repens*. It has no tubers but instead creeping rhizomes, hence its name. The plants are about 10-20 cm high and have rosettes with oval shaped, net-shaped, veined leaves (Fig. 1). The rosettes can be found all through the year. The stem is hairy and the small, creamy white flowers are in a single spiral row. The perianth is covered with long, whitish hairs (Fig. 2). The flowers do not open wide, sepals and petals forming a narrow tube. The lip consists of two parts, a pointed, triangular, gutter-shaped epichile and a round, sack-shaped hypochile, where nectar is secreted (Fig. 3). The flowers emit a sweet scent. The column consists of an anther with two yellow pollinia and a large, rounded stigma on its underside. Part of the stigma is transformed into an oval viscidium, covered by a thin membrane. It lies between two fork-like, protruding parts of the rostellum, the modified part of the stigma that forms the viscidium. The anther opens at the front, and when the pollinia fall out of the anther, they can contact the viscidium.

Main pollinators of *G. repens* are bumblebees. When visiting a plant, they always follow the same visiting pattern: they start at the bottom of the inflorescence and creep upward, inspecting all open flowers. The flower structure is well adapted to this behaviour. The oldest flowers (the ones at the bottom) are open and allow the bumblebees to enter the flower. If they had any pollinia attached to their proboscis, they will push them against the sticky stigma while licking the nectar. But the newly open flowers, higher up the stem, open only slightly, leaving little space between lip and viscidium. When creeping up the stem, the bumblebee can no longer freely enter the flower, but while searching for nectar it will almost certainly touch the forward

Fig. 1: *G. repens*, habitat, Mechernich (Germany) 20-07-2013
Fig. 2: *G. repens*, flower spike. Brunssum (Netherlands) 17-07-2008
Fig. 3: *G. repens*, longitudinal section showing the sac-like hypochile and structure of the column


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sticking viscidium, partly blocking the entrance to the flower (Fig. 4). This gradual opening of the flowers ensures cross-pollination: first the pollinia are deposited on the stigma and then new pollinia are attached to the insect. Unlike other pollinators, bumblebees rarely revisit a plant, so cross-pollination is highly promoted.

We mainly observed various species of bumblebees as pollinators like the buff-tailed bumblebee (*Bombus terrestris*), the common carder bee (*Bombus pascuorum*) or the red-tailed bumblebee (*Bombus lapidarius*) (Figs. 5 & 6). Bumblebees are very fast and efficient pollinators which can visit and inspect many flowers in a short time. Moreover, they can fly in much lower temperatures than honeybees, making them excellent pollinators. In a large site in Germany in one year the role of main pollinator was taken over by honeybees (*Apis mellifera*). The rigid proboscis of bumblebees is well suited to firm attachment of the viscidium with the adhering pollinia. This load does bother them, but it cannot be removed by grooming. The lip of *G. repens* is far too small to act as a landing platform for the comparatively large pollinators, so they use the inflorescence to gain a hold.

Although fruit set is high (we noted a mean of almost 70%) the plants mainly reproduce by means of long, slender runners and eventually form large cushions of rosettes. Because they only grow in the upper layer of humus or needles, the plants almost behave like an epiphytic orchid. They depend on a constant, moist environment. In the Eifel (Germany) and in the Dolomites (Italy) we saw plants growing under pines on rocks, covered with a thick layer of needles. The plants grow in shaded habitats which could be a disadvantage, because there are less potential pollinators available. But then there is less competition from other plants and once the bumblebees have found *G. repens* with its large supplies of nectar, they are regular visitors to the orchid.

Spiranthes

In Europe four *Spiranthes* species can be found. For illustration of the pollination process we will use the Autumn Lady's-tresses (*Spiranthes spiralis*) as an example (Fig. 8). In contrast to the genus *Goodyera*, the genus *Spiranthes* has tuberous roots, producing a rosette. The flower stem of *S. spiralis* is 10-25 cm high and covered with hairs and glandular hairs. The flowers are small, white and in a more or less

Fig. 4: *G. repens*, front view. The sepals and petals are removed. The protruding viscidium only leaves a small opening to the hypochile
Fig. 5: *Bombus lapidarius* pollinating *G. repens*, Mechernich (Germany), 11-07-2009
Fig. 6: *Bombus pascuorum* pollinating *G. repens*, Mechernich (Germany), 24-07-2010
Fig. 7: *Bombus terrestris* pollinating *G. repens*, Fontanazzo (Italy), 31-07-2011


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spiral row (Fig. 9). Sepals, petals and lip form a narrow tube. The lip is oblong, gutter-shaped with upwards curving margins and a broad crystalline margin. In this way the column is completely wrapped up in the lip and perianth segments, forcing visiting insects to enter the flower from the front (Fig. 10). The column is elongated but shows principally the same structure as *G. repens*: anther with pollinia which are attached to a long, narrow viscidium. On both sides of the viscidium are also two fork-like elongations of the rostellum. The stigma is shield-shaped, glistening with stigmatic fluid. There is no spur, instead at the back of the lip are two globose nectaries. The nectar they secrete accumulates on the bottom of the lip.

Visiting insects are also Hymenoptera as in *Goodyera*, but it seems that *S. spiralis* attracts a larger pollinator spectrum. Pollination goes the same way as described for *G. repens*. Spiral placement of the flowers and their gradual opening promote cross-pollination. We observed various bumblebees (*Bombus terrestris*, *Bombus lapidarius*, *Bombus sylvarum*), honeybees and also small solitary bees (Fig. 11, *Halictus simplex*). The bumblebees and honeybees carry the pollinia on their proboscis (Figs. 12 & 13). We could confirm the preference for a certain flower when observing the visiting behaviour of honeybees. Some bees totally ignored the orchids, only visiting the surrounding Common bird's-foot-trefoil (*Lotus corniculatus*), whereas other bees intentionally visited and searched for *S. spiralis*, even if the plants were covered by grass or other herbs. Bumblebees also were very swift and efficient pollinators. They can fly at much lower temperatures than the honeybees and thus are excellent pollinators even in less favourable weather conditions. The *Halictus* bees have an ingenious, articulated proboscis which enables these small bees to reach the end of the flower tube of the flowers. A video showing pollination is on YouTube (Claessens, 2011)

Fig. 8 (above): *S. spiralis*, habitat, Garmisch-Partenkirchen (D), 30-08-2010
Fig. 9: *S. spiralis*, flower spikes, Garmisch-Partenkirchen (D), 30-08-2010
Fig. 10: *S. spiralis*, flower, view from above; sepals and petals removed. The column is shrouded in the lip margins.
Fig. 11: *Halictus simplex* has a hinged tongue which enables it to reach the nectar at the back of the lip. The pollinia are sticking to the tip of the tongue. Garmisch-Partenkirchen (D), 29-08-2010
Fig. 12: *Bombus pascuorum* pollinating *S. spiralis*, Garmisch-Partenkirchen (D), 27-08-2010


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Fig. 13: Honebee (*Apis mellifera*) pollinating *S. spiralis*, Wijlre (NL), 23-08-2008

S. spiralis is an orchid that needs open grassland and short turf, for it is shade-intolerant. Experiments showed that the orchid disappears if there is too much shade from competing high grass. Site management should aim at mowing and removing biomass in July to create maximum light conditions and to reduce competition from other nectar plants. If there are few competing nectar plants, the rate of fruit set is augmented.

In the last few years various exotic *Spiranthes* species were found in the Netherlands, including *S. odorata* (back cover)*, S. romanzoffiana, S. lucida* and *S. cernua.* It is not certain where they come from, but they could well have escaped from cultivation in gardens. Their occurrence raises questions about the need for protection or the threat they could mean to the local flora.

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For more info see our book "The flower of the European orchid – Form and function" or visit our website www.europeanorchids. com."

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We would like to thank Mike Gasson for his great help in improving the manuscript.

West Yorkshire HOS Field Trip 2015 and a Bit More

Charlie Philpotts

A nice sized group of 13 people met at Ledston Luck car park to begin the field trip. This site is an old coal pit which closed in 1986 after more than 100 years of production. The site was levelled and seeded, then left to develop. It is on two main levels with several ponds and is mainly waste material from the pits and poor clay soil. The first orchids to be seen should have been 30 Bee Orchids scattered around the car park but the local maintenance team gave them a "tuppenny all off" a couple of days earlier. However, before we left the car park we saw two Kestrel chicks on a ledge about 30 feet away. Both parents were also seen around and the chicks successfully fledged within the next two weeks. A short walk took us into the reserve and we soon started seeing what we came to see. Southern Marsh-orchid, Common Spotted-orchid and their hybrids were in abundance, some being over two feet tall and very healthy.

Walking along the main pond we saw more magnificent specimens and then went to the upper level. The same orchids continued in their thousands and a small patch of what I believe to be Northern Marsh-orchid was also seen. This species is not included on a list of plants on this site but other members agreed with my view. On the return to the car park we saw around 75 Bee Orchids and nine Pyramidal Orchids. The latter are recent arrivals and last year there was only one recorded, so

it will be interesting to monitor their number in the future. A later report for the site gave the number of flowering orchids as 5,800 but was probably even higher. It was interesting to see the difference in the *Dactylorhiza* hybrids and also seeing them growing alongside the true species. The vast majority were in excellent health which was good considering that a lot had been flooded the previous year.

Members at Townclose Hills Reserve

The second site we visited was Townclose Hills, notified as a SSSI in 1984 due to it being the largest example of a magnesian limestone grassland in the county. This is a species rich site having many plants not common to this area and provides a good contrast to the first site. Common Spotted-orchids were seen in their thousands as well as hybrids between these and Southern Marsh-orchid, although the latter species is rare. Bee Orchids are present across the site and a small but healthy population of Twayblades was seen. There are around a thousand Pyramidal Orchids across the site now which have increased from less than a hundred a few years ago.

The two sites we visited are owned by Leeds Council and looked after by the Yorkshire Wildlife Trust (YWT). This is a good working relationship and produces excellent results, despite reduced funds. This was my first field trip for HOS and it proved to be a very enjoyable day. It was good to show other people the sites and I

learnt more about the wild flowers from the other members on the trip.
Later in the year I started to do volunteer work for the YWT one day a week on sites local to me. Jobs include woodland thinning, coppicing, scrub removal, path clearing, pond cleaning, tree planting as well as the boring but necessary litter picking and general tidying up. Work at Townclose Hills has involved coppicing woodland to create more diversity, one different area to be cleared every year over a seven year cycle. This will greatly increase the number of plants as well as improve the site for birds and butterflies. Ledston Luck reserve has only recently come under the control of the YWT and has had a lot of work done after the summer. Contractors have fenced off large sections to allow grazing by cattle in the future. This was financed by a levy imposed on a waste management company who are using a nearby landfill site. There is a possibility that this may in turn be limed and turned into calcareous

grassland when the site is filled. Maybe another nature reserve to look after?

Ledston Luck reserve viewed from the main entrance

Work such as this obviously does some initial damage to the site as can be seen in the above picture. The machinery churned up the water-logged site to a depth of around 18 inches along the fencing. This area had around 30 Bee Orchids as well a number of Southern Marsh-orchids, Common Spotted-orchids and hybrids, so it will be interesting to see what comes up in a couple of years. I suspect the long term

benefits will vastly outweigh the short term damage and there will be great numbers of orchids springing up where the ground has been affected. The adjacent area in the photo below was largely untouched by the work but scrub clearance can be seen being carried out to prevent hawthorn and alder swamping the orchids. This area had around 75 Bee Orchids, *Dactylorhiza* and some of the pioneer Pyramidal Orchids. The mixture of the *Dactylorhiza* and their hybrids was particularly impressive around

this area.

Scrub clearance being carried out at Ledston Luck reserve

Work is still ongoing and further wood clearance, pond clearance, installation of benches, visitor signs and a possible weir or sluice system to control the level of the main pond are planned. Whilst the site was already a good nature reserve it should be even better as it develops over the next few years.

Working on these reserves as a volunteer has many benefits for me. Working outdoors with like-minded people, learning new skills and increasing my knowledge of nature are among them. However, finding new orchid sites and helping improve them for the future has to be the most enjoyable. I will run another field trip in 2017 and it will be interesting for others to see the changes on this site and also look around other sites I have found.

Orchid Hunting in NW Greece (Part 1)

Alan Gendle

When I joined the HOS many years ago I purchased a number of back issues of the journal including the July 2003 edition. Browsing through it I came across an article by Bill Temple, our Conservation Officer, on a trip he made to NW Greece in 2001. His finds list included many orchid species that I had not seen on previous trips into southern Europe. Bill kindly gave me some advice on travelling to Greece and provided some information on interesting orchid sites.

May 1st 2011 saw the Gendle tribe, Eric, his wife Maureen, myself and Stan Jordan arrive in Prevesa on the first package holiday flight of the season. Picking up a 4×4 we headed north to the town of Konitsa. Konitsa is situated on the north western side of the Pindus mountain range and was our base for the week. Monday 2nd May saw us heading NE along the main road following the river Sarantaporus upstream into the Pindus Mountains. We turned off for the village of Kastania and after leaving the main road we explored an area of light scrub above the river. Here we found two species of *Ophrys* that were new to us, *Ophrys epirotica* and *Ophrys macedonica.* We also noted *Anacamptis morio, Orchis provincialis* and *Orchis purpurea.*

Another excursion from the main road near Langada saw us finding more *An. morio* and *Orchis simia.* During our final diversion, near the village of Plagia, we came across the first spikes of *Ophrys helenae*, a species which subsequently we came across every day during the rest of the trip. A single spike of *Orchis pauciflora* was seen on the edge of some woodland. Returning towards Konitsa we stopped at a likely looking roadside orchid site, having spotted some *An. morio* spikes. Also in the area were *Ophrys grammica, Ophrys mammosa* and *Ophrys cephalonica.* We made our final stop by a road junction sign posted to Trapeza. On the top of the roadside bank we found hybrids between *O. simia* and *O. purpurea,* more *Op. grammica* and the first *Orchis quadripunctata*, which proved to be a common orchid in NW Greece.

A count of 12 orchid species and a hybrid was a good start for the first day out. The morning of Tuesday 3rd May saw rain pouring down; Konitsa main street looked more like a river. Looking to the south it looked brighter. We drove to Kalpaki and turned east into an area of low lying hills. The rain eased off, so we explored an area around the turn off for Geroplatanos. We found *O. quadripunctata*, *Op. mammosa*, *Op. helenae*, *O. simia* and *O. pauciflora*. *Neotinea tridentata* and *Neotinea ustulata* were seen for the first time. An orchid new to us appeared at the roadside, described on Greek orchid web sites as *Ophrys zeusii*.

Around Geroplatanos we found *Anacamptis pyramidalis* and *Serapias vomeracea.* Returning towards Kalpaki we stopped at a likely looking area of light scrub in which we found *Ophrys spruneri* and *Ophrys ferrum-equinum.* Our final stop was about 1.5km from Konitsa, where an old disused track beside the main road added *Ophrys sicula* and *Neotinea commutata* to the growing list of species recorded.

Wednesday 4th May saw us heading south again towards Kalpaki, then turning NE. The object was get to Teriachi where Bill's notes indicated some potentially good orchid sites. We weren't disappointed. Stopping about 1km before the village there was an area of woodland interspersed with flower filled glades. We found *An. morio, An. pyramidalis, O. quadripunctata, O. provincialis*, *Cephalanthera longifolia, Cephalanthera damasonium,* a *Cephalanthera* hybrid, *Op. helenae, Op. macedonica*, *Op. sicula* and *Neotinea ustulata*.

We drove on through Teriachi towards Stavrodromi, the habitat turned to open pasture and all the usual orchids seemed to be present. Exploring a track leading towards a farm we came across the only *Op. helenae* we found with two bluish streaks on the speculum. Further on we stopped at some oak woodland, where we found *Epipactis helleborine* in bud, some *Platanthera chlorantha* with a strong green tint to the flowers and *Ophrys negadensis*.

Thursday 5th May saw us heading to Kalpaki and after travelling west, turned south towards Kerasovo. An area of terraced pasture a few kilometres before the village proved excellent for orchids. Added to the list of regular finds at this site were *Anacamptis laxiflora, Ophrys lutea, Ophrys attica, Ophrys cerastes*, *Anacamptis papilionacea* and *Serapias bergonii.* Nearer the village in amongst a population of *O. simia* we found a plant with pure white flowers.

Searching an area below the road we found some *Ophrys heldreichii*, including a plant with a beautiful marbled pattern on the labellum. A new horned cornuta type find was *Ophrys crassicornis.* After passing through the village and whilst walking along the verges we spotted some *Ophrys insectifera.* On the slope below the Fly Orchids was a population of *Op. cerastes.* Unknown to us at the time, Fly Orchids are very rare in Greece, we just stumbled on the site by chance. Our final stop by some marshy ground saw us looking at a pure white version of *An. laxiflora.*

Fig. 1: *Ophrys heldreichii* Fig. 2: *Ophrys macedonica*
Fig. 3: *Ophrys ferrum-equinum* Fig. 4: *Ophrys attica*
Fig. 5: *Ophrys crassicornis* Fig. 6: *Orchis ovalis*
Fig. 7: *Orchis simia* var. *alba* Fig. 8: *Ophrys cerastes*

Photos by Alan Gendle


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Friday 6th May saw a continuation of the blue skies and sunny weather we had experienced over the previous few days, we decide to head into the Pindus Mountains and try and find *Ophrys hebes* and *Orchis spitzelii*. Above the village of Vrisochori we came into an area of pine woods. The eastern version of the Early-purple Orchid *Orchis ovalis* was seen here and there. *Dactylorhiza sambucina* in both its red and yellow forms were in flower but we failed to find *Op. hebes* or *O. spitzelii.*

Saturday 7th May was our last day of orchid hunting. We headed into the mountains again, Negades was our destination passing the head of the Vikos gorge. It was a disappointing day, the only new find was *Neottia nidus-avis* on the edge of some oak woods. Having enjoyed NW Greece we decided to return the next year and explore the area to the east of the Pindus range and at a later period.

Norfolk Field Trip 2016

RSPB have again invited HOS members to their Norfolk fenland site. The event is likely to be a little different this year with a broader focus and access to more of the site. There will be the opportunity to see Fen Orchid. The open days are planned for the weekend of June 11th and 12th. Please contact Mike Gasson (moorend@globalnet.co.uk) to express interest and I will keep you informed of details when they emerge.

How to Bulk Up Your Wintergreen Orchids for Free

Neil Evans

I am going to show you the simple method that I use to bulk up my collection of tuberous wintergreen orchids. I began to use this method in 2011, starting out on *Anacamptis sancta*, which I had plenty of so could afford to experiment on. It did not go wrong and I ended up with double the number of tubers at the end of the growing season. So in 2012 I started on the orchids that I had only one or two of. Although I cannot guarantee that it will work 100% of the time, I have managed to bulk up these orchids successfully.

The process is quite easy, and I only do it on orchids that are of flowering size, in October and November once the plant has produced its rosette (Figure 1). I carefully lift the orchid out of its pot and ensure that there are enough roots on the orchid for it to survive with the tuber (Figure 2). If the orchid has not produced enough of a root system, I re-pot it and will try it again in a month's time. I clear off as much as possible of the soil, making sure that I do not damage any of the roots in the process (Figure 2).

Figure 1

Figure 2

As you can see in Figure 2, I have marked where the new tuber for the following season has started to grow, make sure you do not damage this. The next stage is to remove the tuber from the plant: this can be done in two ways. I used to do this by using a scalpel, a sharp knife will also do, and cut at the point indicated in Figure 3, but I sometimes ended up cutting some of the roots off the plant. I then found out that by carefully twisting the tuber whilst holding the rosette (Figure 4) I could achieve the same result. I then dust the exposed parts with cinnamon to reduce the risk of infection to the tuber and the plant. I have also used activated charcoal but I find this is quite a messy process but is another option.

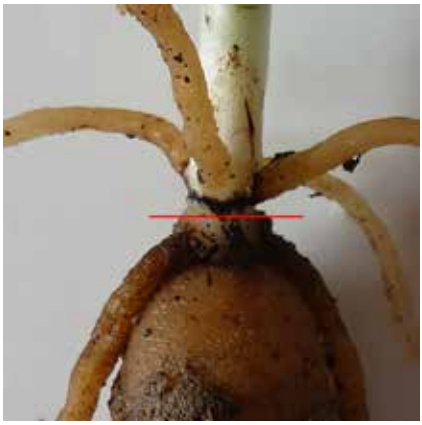

Figure 3

Figure 4

I then pot the plant and the tuber I have removed back into the pot they came from, at the depth that they were originally growing (Figure 5). The plant will then continue to grow and produce a flowering size tuber for the following year. The final thing is to put a label into the pot showing that I have removed the tuber and the date of when it was done (Figure 6), to prevent me doing the same pot again. The removed tuber will not produce another rosette, but will, hopefully, put all of its energy into producing another tuber. This tuber will be of a smaller size than the original. I don't remove the flower that is produced in this growing season, it is unnecessary.

Figure 5

Figure 6

I have done this on species of the following genera, *Anacamptis*, *Himantoglossum*, *Ophrys*, *Orchis*, *Neotinea* and *Serapias*. Some of the tubers flower the following year but the majority take another year and the *Himantoglossum* took three years to flower. In November 2015 I tried this on a couple of *Spiranthes spiralis*, so will have to see how this progresses.

For information I grow my wintergreen orchids in an unheated greenhouse, in a heated sand plunge, which will come on if the air temperature drops below 0°C, which is kept damp all through the growing season. Once a month I feed them with Akerne's Rain Mix at a dosage of 0.5g per litre of rain water: http://www.akerneorchids.com/shop/index.php?route=product/category&path=40

Another Site for *Ophrys apifera* var. *cambrensis*

Mike Gasson

Quite often, the Hardy Orchid Society receives orchid identification requests via the website. These range from species that aren't orchids at all to things of considerable interest. One such came from Allan Ward who was curious about an unusual Bee Orchid he had found

Ophrys apifera Huds. var. *cambrensis*
in Dorset
Photo by Allan Ward

To quote Allan: "I found this particular plant with a group of 3-4 normal Bee Orchids at a Quarry on Portland, Dorset earlier this year. It was in fine fettle, with another full bloom on the other side, one bud and one slightly deformed flower. They all showed these distinct markings, and don't look like any of the varieties that I know. Could any of you good people shed any light on this plant?"

It seemed a very well timed request as Mike Clark's description of *Ophrys apifera* Huds. var. *cambrensis* in Wales had just recently been published (Clark 2014; 2015). Seemingly the new variety has another site in the UK.

References

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Clark, M. (2015) *Ophrys apifera* Huds. var. *cambrensis* M.J.Clark, var. nov. To name or not to name. *Journal of the Hardy Orchid Society* 12: 66-67.