Journal of the HARDY ORCHID SOCIETY

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The Hardy Orchid Society Committee

Front Cover Photograph

Ivar Edvinsen's photograph of *Calypso bulbosa* which was placed first in Class 13 during the 2018 HOS Photographic Competition. See page 8 for a full list of the winners and more photographs.

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 Members' Handbook, website www.hardyorchidsociety.org.uk, 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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Editorial Note

Mike Gasson

Something of a catch up issue this time with an opportunity for some book reviews and a couple of field trip reports. Note that there is a another chance to join Nigel Johnson & Rosemary Webb at Noar Hill in one of the 2019 field trips. Also, we have a talk on the East Anglian Fen Orchids by Plantlife's Tim Pankhurst scheduled for the spring Kidlington meeting which will nicely complement Mike Clark's piece here on their Welsh cousins. As always please do keep sending in material for *JHOS*. We still have a small pool of articles waiting to get published but the backlog is getting a good deal smaller. Although there is often an inevitable delay with finding a slot, do let me know if you think I have missed something that you have sent in.

Chairman's Note

Colin Scrutton

A Happy New Year to you all. I hope you will all agree with me that we have had a very successful 25th Anniversary year, with an interesting and varied series of talks at our three meetings, including a truly fascinating and thought-provoking Anniversary Address from our President, Richard Bateman. Our thanks are due to our Speaker Secretary, Celia Wright, for organising the 25th Anniversary programmes of talks for these meetings. Let's hope that the next 25 years are as successful for the Society as the first have been.

It was good to see Richard's Address published in the last part of *JHOS* for 2018. I'm sure many of us have had the frustrating experience of trying to identify field photographs of *Ophrys* from the pages of Delforge (2006, 2016), particularly within the *fusca*, *sphegodes* and *scolopax* groups. Among a cluster of pictures of putative species varying in relatively minor aspects of form or colour in the book, the photographs don't precisely match any of them, although they are clearly related to the group as a whole! The same variation can be found in the field among a close cluster of spikes, clearly all of the same species. So the results of genetic analyses reported by Richard, which may ultimately lead to some reorganisation of the vexed question of species delimitation in *Ophrys*, is a significant development. A substantial reduction in the number of recognised species would certainly be welcomed by me! Perhaps then I can have another look at the vast collection of *Ophrys* photographs I have accumulated over the years from all over Europe and the Middle East.

Turning to other matters, I must mention important posts in the running of the Society for which we need members to offer their services. First, we need a new Plant Show Secretary. Our Treasurer, Colin Rainbow, is currently covering this post but wishes to resign at the Annual General Meeting as it clashes with his financial responsibilities.

Secondly, our PA equipment for meetings is run by John Temporal, supported by his wife Shelagh. John has also organised safety checks on the Society's electrical equipment since 2016. John and Shelagh have done sterling work for the Society, organising the Leeds meeting from 2014 until 2017 and overseeing microphones and loudspeakers at all meetings since 2016. They wish to stand down by 2020 and those of you who attend our meetings will understand well the importance of a working PA system. If you would like more information on what is involved in either of these posts, contact Colin (car.northaston@btopenworld.com) for Plant Show Secretary and John (john.temporal@btinternet.com) for the PA system and electrical safety checks. Otherwise please contact me if you could contribute to the running of the Society's meetings by taking on one or other of these important jobs.

It is still not too late to offer field trips for the 2019 season. Alan Bousfield, our Field Meetings Co-ordinator, is anxious to increase the variety and geographic spread of field trips for members, so if you think you can organise a field trip in your local area, please contact Alan (alan.bousfield@ukgateway.net). Alan will be happy to advise on setting up a field meeting.

References:
Delforge, P. (2006) *Orchids of Europe, North Africa and the Middle East*. A & C Black, London.
Delforge, P. (2016) *Orchidées d'Europe, d'Afrique du Nord et du Proche-Orient*. Delachaux et Niestlé. Paris.

HOS Field Trips for 2019

Saturday 27th April: Purbeck, Dorset
Leader: David Hughes, email: davidcchughes@btinternet.com
Primarily to see *Ophrys sphegodes* which are there in their tens of thousands.

Saturday 18th May: Chappett's Copse, Hampshire
Leaders: Rosemary Webb & Nigel Johnson, e-mail: cassandene@waitrose.com
To see Narrow-leaved Helleborine, Large-white Helleborine and perhaps their hybrid, Bird's-nest Orchid and Fly Orchid.

Saturday 8th June: Bedfordshire
Leader: Richard & Geraldine Hogg, e-mail: geraldine_dick@hoggie49.plus.com
We will probably visit three sites to see Common Spotted-orchids (CSO), Southern Marsh-orchids (SMO), hybrid CSO × SMO, Bee Orchids, Common Twayblades, plus some rarer orchids (depending on the sites visited).

Saturday 15th June: Minchinhampton & Rodborough Commons, Gloucestershire
Leaders: Colin & Angela Scrutton and Maureen & Nigel Denman,
e-mail: Colin.Scrutton@dunelm.org.uk
The commons support a rich flora of orchids including Common Spotted, Common Twayblade, Common Fragrant, Bee, Pyramidal, and Frog. Musk Orchid is a possibility and the *belgarum* and *trolli* varieties of Bee Orchid may also be found. If time permits we may also visit Selsley Common.
https://www.nationaltrust.org.uk/minchinhampton-and-rodborough-commons

Saturday 22nd June: Hartlepool, Co. Durham
Leader: Alan Gendle, e-mail: alan@gendle.plus.com
This site contains the only site for *Dactylorhiza purpurella* var. *atrata* in England. The numbers of this variety seem to be decreasing as the zinc contamination is diluted by rain water. The Zinc works shutdown 50 years ago and Hartlepool Nuclear

Power station was built on the site. There are four Marsh-orchids on the site, also Pyramidal Orchid, Common Twayblade, Common Spotted-orchid and if you are lucky Bee Orchid.

Sunday 23rd June: Cumbria.
Leader: Alan Gendle, e-mail: alan@gendle.plus.com
I intend to be on home ground with a trip to Little Asby SSSI for Small-white Orchid and lots of *Dactylorhiza* species and their hybrids. Then we will visit Waitby Greenriggs Reserve where I am the Hon. Manager. Here we should manage to see at least eight species and sub species.

Sunday 30th June: Noar Hill, Hampshire
Leaders Rosemary Webb & Nigel Johnson, email: cassandene@waitrose.com
To see Common Spotted-orchid, Chalk Fragrant-orchid, Pyramidal Orchid, Frog Orchid, Fly Orchid and Musk Orchid.

HOS Field Trip Report: Noar Hill
Nigel Johnson & Rosemary Webb

Fourteen members joined Nigel and Rosemary on 2nd July 2017 for the visit to the Hampshire and Isle of Wight Wildlife Trust Reserve of Noar Hill near Selborne. The weather had been hot and sunny for some time and this morning was no exception. Noar Hill is the site of old chalk workings which provide a variety of habitats on the ridges, banks and hollows where chalk-loving plants, especially orchids, thrive. It is also a special site for butterflies. The speciality here is Musk Orchid (*Herminium monorchis*) in profusion, accompanied by thousands of Common Spotted-orchids (*Dactylorhiza fuchsii*), Chalk Fragrant-orchids (*Gymnadenia conopsea*) and Pyramidal Orchids (*Anacamptis pyramidalis*). There are also masses of Twayblade (*Neottia ovata*) flowering earlier and a variable number of Frog Orchids (*Dactylorhiza viridis*) which are just coming, at this time of year, on this site.

The end of June/beginning of July is usually the best time to see the Musk Orchids and also the Frog Orchids but in most years, many of the other orchids can all be found in flower. This year has been extraordinary. We have had a warm winter, drier and sunnier than usual and after a cold dry April, there was some very hot, sunny weather through most of May and June. Of course trips are planned much earlier in the year, making it difficult to be specific for the season to come.

We walked up the track to the reserve entrance. As soon as we went through the gate there were a few orchids to greet us. We planned to lead the group through most of the pits and ridges as a few of the specialities can only be found in certain places. The Twayblades were completely over and in seed. The warm, dry weather had shrivelled the leaves and it was only in shaded places that one could see any in their familiar

shape. Barely three weeks ago many of the Fragrant-orchids were in bud but most were now sporting seed heads, with just a few flowers left at the top of the spike. The Common Spotted-orchids were in the same condition.

However, all was not lost. It did not take long before we started to find the Musk Orchids. This year was truly amazing for them. They were everywhere, flowering in profusion, giving wonderful photographic opportunities. We found some out in May which we had never seen before and wondered what they would be like by the time of this trip. We need not have worried, they just kept coming, getting better and better. We also found a few Frog Orchids. These were just coming and were in fine condition for photographs. Most of them were not so much tiny as minute – little more than an inch high – but there were a few that were a more normal size. They are never very big here as it is hot and dry and the soil is very thin.

As we moved on we were accompanied by thousands of Pyramidal Orchids. If one is looking for colour variation or lip shape, this is the place to be. A little further on Rosemary proudly showed the group a Fly Orchid in fine seed! The Fly Orchids are confined to one shady spot on the reserve which has become very well-known. White flowered specimens can sometimes be found here. Today they were long since gone.

There was one other plant – not an orchid – which interested some. It is a rare plant known as Dragon's Teeth (*Tetragonolobus maritimus*). It is a member of the pea family with long stalks and single, large lemon yellow flowers with fine red veins. It gets its common name from the triangular, spiky, lobed leaves which are supposed to resemble dragon's teeth, that is if you have ever seen a dragon, let alone its teeth! Several members rightly thought it worth photographing. On the opposite side of the path was a pure white-flowered spike of *Gymnadenia conopsea* in good condition, also of interest to the group.

HOS Field Trip Report: Hale Moss & Helsington Barrows

Alan Gendle

This trip to Cumbria took place on 30th June 2018, starting at the Cumbria Wildlife Trust Reserve Hale Moss. The recent dry hot weather had completely dried out the moss. The orchid population was considerably reduced from the normal numbers expected but we did manage to see the following orchids in flower: *Dactylorhiza incarnata* ssp *pulchella*; *Dactylorhiza fucshii*; *Dactylorhiza purpurella*; *Neottia ovata; Gymnadenia densiflora*.

As we walked up onto Helsington Barrows, a large open area of limestone grassland, it became obvious that the hot dry weather had decimated the orchid population. We did manage to find *Epipactis atrorubens* in flower and the last flowers on some

Gymnadenia borealis and *Ophrys insectifera*. All the *Platanthera* species we expected to see were just seeded spikes. In view of the disappointment the members were happy to head north and see a recent exciting find, the hybrid *Dactylorhiza ×viridella* (cross between Northern Marsh-orchid and Frog Orchid). The plant was still in flower with a few recognisable flowers at the top of the spike. In the general area the following species were also in flower: *Gymnadenia borealis*; *Neottia ovata*; *Dactylorhiza viridis*; *Dactylorhiza purpurella*.

Dactylorhiza ×viridella the hybrid between Northern Marsh-orchid and Frog Orchid. Photo by Alan Gendle

Results of Photographic Competition 2018

Class 1. A view of an area (landscape or habitat) showing orchids in their natural environment, print size up to 7×5 inches (7 entries)

1st Alan Blackman – *Orchis mascula*
2nd Hilary Pickersgill – *Orchis purpurea*
3rd Karen Gregory – *Chamorchis alpina*

Class 2. A group of orchids containing at least three flower spikes. These can be all the same species/hybrid or a mixed group, print size up to 7×5 inches (10 entries)

1st Hilary Pickersgill – *Thelymitra crinita*
2nd Steve Pickersgill – *Ophrys umbilicata*
3rd David Pearce – *Neotinea ustulata*

Class 3. A single orchid spike, print size up to 7×5 inches (13 entries)

1st David Pearce – *Spiranthes spiralis* (Best Print)
2nd Alan Blackman – *Orchis olbiensis*
3rd Colin Rainbow – *Caladenia arrecta*

Class 4. A close-up of an orchid, showing one or more entire inflorescence(s), print size up to 7×5 inches (16 entries)

1st Colin Rainbow – *Drakaea livida*
2nd Alan Blackman – *Neotinea conica*
3rd Hilary Pickersgill – *Pterostylis barbata*

Class 5. A close-up of an orchid showing part of an inflorescence, print size up to 7×5 inches (16 entries)

1st Gillian Elsom – *Orchis anthropophora*
2nd David Pearce – *Ophrys apifera*
3rd Colin Rainbow – *Lyperanthus serratus*

Class 6. A view of an area (landscape or habitat) showing orchids in their natural environment, print size up to A4 (8 entries)

1st Alan Blackman – *Orchis mascula*
2nd Karen Gregory – *Anacamptis morio*
3rd David Hughes – *Orchis mascula*

Class 7. A group of orchids containing at least three flower spikes. These can be all the same species/hybrid or a mixed group, print size up to A4 (12 entries)

1st Alan Blackman – *Neotinea conica*
2nd David Pearce – *Spiranthes spiralis*
3rd Phil Smith – *Dactylorhiza ×venusta*

Class 8. A single orchid spike, print size up to A4 (13 entries)

1st Gillian Elsom – *Orchis olbiensis*
2nd David Pearce – *Neottia nidus-avis*
3rd Steve Pickersgill – *Orchis italica*

Class 9. A close-up of an orchid, showing one or more entire inflorescence(s), print size up to A4 (17 entries)

1st Gillian Elsom – *Dactylorhiza fuchsii*
2nd David Pearce – *Spiranthes spiralis*
3rd Hilary Pickersgill – *Drakaea glyptodon*

Class 10. A close-up of an orchid showing part of an inflorescence, print size up to A4 (14 entries)

1st Gillian Elsom – *Dactylorhiza incarnata* subsp. *incarnata*
2nd Hilary Pickersgill – *Caladenia discoidea*
3rd Alan Blackman – *Ophrys bombyliflora*

Class 11. A view of an area (landscape or habitat) showing orchids in their natural environment, in jpeg form (16 entries)

1st Terry Swainbank – *Liparis loeselii* (Best projected image)
2nd Pamela Crawford – *Orchis italica*
3rd Chris Nicholson – *Orchis mascula*

Class 12. A group of orchids containing at least three flower spikes. These can be all the same species/hybrids or a mixed group, in jpeg form (17 entries)

1st Ivar Edvinsen – *Himantoglossum robertianum* & *Orchis italica*
2nd David Pearce – *Ophrys sphegodes*
3rd Mike Waller – *Neotinea ustulata*

Class 13. A single orchid spike, in jpeg form (18 entries)

1st Ivar Edvinsen – *Calypso bulbosa*
2nd Tom Turner – *Dactylorhiza fuchsii*
3rd Phil Smith – *Dactylorhiza ×venusta*

Class 14. A close-up of an orchid, showing one or more entire inflorescence(s), in jpeg form (26 entries)

1st Gillian Elsom – *Neotinea ustulata*
2nd Phil Smith – *Dactylorhiza ×venusta*
3rd Mike Waller – *Ophrys fuciflora* & *Neotinea ustulata*

Class 15. A close-up of an orchid showing part of an inflorescence, in jpeg form (24 entries)

1st David Pearce – *Ophrys apifera*
2nd Mike Waller – *Ophrys lacaitae*
3rd Jon Dunn – *Ophrys ×arachnitiformis*

Class 16. Novice Class, any hardy orchid print, size up to A4 (3 entries)

1st Catriona Campbell – *Dactylorhiza fuchsii*

Class17. A hardy orchid subject that has been manipulated creatively using any advanced software technique to create an artistic image. Print maximum size A4 (7 entries)

1st Gillian Elsom – *Epipactis palustris*
2nd Alan Blackman – *Neottia conica*
3rd Steve Tandy – "Art Class"

Maren Talbot Photographic Trophy:
Terry Swainbank for his projected image of *Liparis loeselii* in Class 11

Best Print:
David Pearce for *Spiranthes spiralis* in Class 3

Our thanks to the Competition Judge:
Jon Evans

The following three pages feature a selection of winning images from the 2017 HOS Photographic Competition. Figure numbers indicate the Class followed by the position (e.g. 11-2 is second place in Class 11). All of the winning photographs are now on the HOS website.


11-1


3-1


6-1


12-1


11-2


9-1


14-1


5-1


10-1

Fen Orchid *Liparis loeselii* var. *ovata* at Kenfig NNR, South Wales: Field Based Observations 1997-2017

Michael Clark

Liparis loeselii var. *ovata* was first noted as a variant and described because of its broad oval leaves. Genetic analysis shows virtually no difference between them and the Norfolk plants with narrower pointed leaves. In the last 20 years at Kenfig I have only found one plant with a narrow looking leaf and that was in 2002 (Figure 1). The Welsh plants were first brought to the attention of botanists by Rev. Harry Joseph Riddelsdell in 1905-06 and apparently he suggested the name var. *ovata* in 1906 (see holotype in Figure 2).

In the 1970s and 1980s counts of *Liparis* were up to about 10,000 plants at Kenfig but in the 1990s it was apparent that the species was under threat with numbers down to just double figures. Work to recover populations at Kenfig began in 1994; grazing was introduced and numbers of plants were erratic from around 60 to 650 up to the year 2006. Now in 2017 numbers have increased, probably because of turf-stripping between 2001and 2010 with some close to the known *Liparis* slacks. Figures 3 and 4 show two turf stripping sites in 2012 and Figure 5 shows a light sward starting at the stripped area (left side of the photo). Plants started to show in good numbers and a 2017 survey revealed around 1,000 plants. In 2018 the total recorded was 1,572.

Fig. 1: Narrow leaved plant
Fig. 2: Fen Orchid holotype
Fig. 3 & Fig. 4: Turf stripping sites
Fig. 5: Light sward developing
Fig. 6: Orchids on newly stripped area
Photos by Mike Clark


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There was a reintroduction of *Liparis* seed from Kenfig to Whiteford Burrows in 2014 and apparently two small plants were found there in 2017. Figure 6 shows five flowering plants and one non-flowering plant on a new stripped area at Kenfig. It is worth noting that a rare liverwort *Petalophyllum ralfsii* is also found on the bare sand at Kenfig. Of course you cannot create a vacuum with nature and the work will have to be followed up with grazing or cutting. *Liparis* does show a preference for a tight sward and even bare sand, although I do find the odd plant in Creeping Willow, *Salix repens* (Figure 7).

The details of germination and growth are still largely unknown. It is thought by some that its fungal partner is one that lives on a decaying moss species, but the plant can live on what looks like bare sand so that might not be fully understood. The plants, being self-pollinating, are assisted by dew and rain which drags the pollinia to the stigma. Raindrops splashing onto the upturned lip may also help deflect water to the anther; whether air movement plays a part is not known. Figure 8 shows the pollinia on the move to the stigma. Seed set looks high on most plants (Figure 10). However, I think the number that ultimately produce a flowering plant is low. Plants can be as small as 2.5cm (Figure 9) and one tall flower spike had 17 flowers in 1999 (Figure 11).

Fig. 7: Fen Orchid amongst Creeping Willow
Fig. 8: Pollinia moving towards the stigma
Fig. 9: Fen Orchid plants can be very small
Fig. 10: Seed set appears good on most plants
Fig. 11: Tall spike with 17 flowers
Fig. 12: Clusters of Fen Orchids Fig. 13: Plant with three leaves
Photos by Mike Clark


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Fig. 14: Exposed pseudobulb
Photo by Mike Clark

Liparis like *Hammarbya* and *Coeloglossum* is easily trampled, especially the non-flowering plants; they are not easily seen especially in sunlight. My macro images make it look like they are easily seen but that is not the case in reality. The plants do have protection under the EU Habitats and Species Directive and the species is in Schedule 8 of the Wildlife & Countryside Act 1981. Clusters are not uncommon (Figure 12). Unusual sightings include two plants flowering underwater in a wet July in 2007 and a plant with three leaves (Figure 13). The only pseudobulb I have seen was lying above ground after being disturbed by a scrambler bike with possibly next year's shoot showing along with roots (Figure 14). It is common to see the next year's follow up plant as two leaves alongside a flowering plant. Figures 15 and 16 show sward height in June on the old established cut slacks. One hopes the future is looking better for the Fen Orchid.

Figs. 15 & 16: Sward height in June on the old established cut slacks
Photos by Mike Clark

I would like to thank Sally Whyman of the National Museum of Wales for her assistance regarding the holotype and the National Museum of Wales for permission to publish an illustration of the holotype.

References

Davies, P & Davies, J. & Huxley, A. (1983) *Wild Orchids of Britain and Europe* Chatto & Windus. Hogarth Press.

Foley, M. & Clarke, S. (2005) *Orchids of the British Isles* Griffin Press in association with Royal Botanic Garden, Edinburgh

Harrap, A. & Harrap, S. (2016) *Orchids of Britain and Ireland* Bloomsbury Natural History

The Orchids of Hoy

Alan Parfitt

The island of Hoy is the second largest of the Orkney Islands situated off the north east coast of Scotland. The word Hoy is said to be derived from a Nordic term for "high" as unlike the other Orkney Islands, which are low and generally fertile, it is made up of high sparsely clad hills rising to the highest point in Orkney at just over 1500ft. on Ward Hill. On the west coast of the island, facing the raging Atlantic Ocean, are enormous perpendicular red sandstone cliffs rising to 1128ft. at St. John's Head, the highest sea cliff in the UK. This includes the fantastic geological wonder for which Hoy is most well known, the "Old Man of Hoy".

Its climate and situation in the North Atlantic ensure that virtually no trees are able to grow apart from the one tiny wood of "Berriedale" protected in a deep glen at the north of the island and said to be the most northerly native woodland in the UK. On Hoy, unlike mainland Scotland, alpine plants can be found growing to near sea level in this severe maritime climate. Considering what has just been described, Hoy is not the sort of location one might choose to go orchid hunting yet the island contains a surprisingly rich assembly.

I have been spending holidays on Hoy since 1977 but as a teacher with a young family they were restricted for many years to the school summer holidays, far too late for orchid spotting. A few years ago I was able to spend a wonderful week on the island at the end of June, which turned out for me to be a revelation orchid wise. At the very southern tip of the Island is an area known as the South Walls where the terrain is more gentle and fertile. Here can be found the wonderfully named "Hill of White Hamars" nature reserve. Much of the reserve is very wet and on my late June visit thousands of Northern Marsh-orchids *Dactylorhiza purpurella* were to be seen over a wide area. Frog Orchids *Dactylorhiza viridis* are said to be present though I was not lucky enough to spot one in what is quite an extensive area. This reserve also has a non-orchid speciality, which any plant enthusiast is compelled to hunt down when there. The tiny and beautiful Scottish Primrose hugs the shortest of turf close to the cliff edges while inland a little way Grass of Parnassus is quite common.

Heath Spotted-orchids *Dactylorhiza maculata* grow widely across the island as scattered individuals from quite low levels to the uplands at the north of the island. I was surprised to find that some of these plants could survive quite close to the cliff

Fig. 1: Northern Marsh-orchid *Dactylorhiza purpurella*
Fig. 2: Putative hybrid between Northern Marsh-orchid and Early Marsh-orchid
Fig. 3: Grass of Parnassus Fig. 4: Scottish Primrose
Photos by Alan Parfitt


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edges where one might think the salt spray would harm them. The fact that the cliffs are several hundred feet high I can only suggest may help in this matter, though how they survive the ferocious winds, which are not uncommon, is yet another challenge they have to overcome.

Another small orchid rarely seen in the southern UK was fortunately easily spotted when I found two plants in flower growing in a peat road verge while I was on my way to search for Early Marsh-orchids. These were the elusive Small-white Orchid *Pseudorchis albida,* which although they were slightly past their best on my visit, were still very pleasing to find.

I have to thank the BSBI Orkney recorder, John Crossley, for putting me on to the Early Marsh-orchid *Dactylorhiza incarnata.* He told me that the colony might be of particular interest because the plants not only regularly flower several weeks later than is usual but possess completely unmarked flowers. Using John's detailed guidance I found about 15 plants in a small marsh just coming into full flower. Exactly as he described, the plants nearly all had consistently unmarked flowers with just the one exception having the faint lip markings typical of Early Marsh-orchids. They were to my eyes especially beautiful flowers and the peak of my orchid hunting on Hoy. Nearby I also found several vigorous orchid specimens which clearly looked like hybrids. I assumed the parents to be the Northern and Early Marsh-orchids as both species could be found close by. I am afraid I do not have the expertise to be sure but the vigour of the plants and flowers themselves surely pointed that way.

Other members of the Hoy orchid assemblage are the Lesser Twayblade *Neottia cordata* and Heath Fragrant-orchid *Gymnadenia borealis.* The latter is recorded not too far from the Early Marsh-orchid colony. The former grows more widely on the heather clad parts of Orkney's main island but is also found on Hoy. Despite grid references from John I never did find one on Hoy though those who have hunted for this diminutive jewel will, I am sure, sympathise with my lack of success. The Heath Fragrant-orchid also evaded me but I may have been a little early this far north as they don't usually come into flower until the last week of June in Mid Wales.

So there you have it. A very brief introduction to Hoy orchids but I may add that the main purpose of this particular visit to Hoy had been to fly fish for sea trout with two good friends. Such is the pull of these wonderful plants that I am afraid my companions were abandoned for much of the time while I roamed the hills.

Link: https://scottishwildlifetrust.org.uk/reserve/hill-of-white-hamars/

Figs. 5 & 6: Early Marsh-orchid with unmarked flowers
Figs. 7 & 8: Small-white Orchid
Photos by Alan Parfitt


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AN INVITATION TO JOIN US ON AN EXCEPTIONAL WILD ORCHID STUDY HOLIDAY IN SW FRANCE LED BY DR HENRIK PEDERSEN THURSDAY 23rd MAY – WEDNESDAY 29th MAY 2019





After a recce visit in May 2018, Dr Henrik Pederesen concluded that this part of SW France had something very special to offer any orchid enthusiast thanks to the sheer variety (24 varieties seen in 2 days) and the huge populations of orchids available.





This holiday is based on the luxury traditional gites at Manzac d'en Bas, set in the truly spectacular country overlooking the Pyrenees. For much more information and pictures, please visit our website

www.manzac.com **contact@manzac.com**

Book Review: *Orchids* by Mossberg & Pedersen

Sue Parker

Orchids by Bo Mossberg & Henrik Ærenlund Pedersen
HarperCollins, 2017
ISBN-13: 9780008210694
208 pages; RRP £29.99
Currently available from Amazon at £13.99
or NHBS at £23.99

In the tangle of confusion and frustration often associated with attempting accurate identification of a particular orchid *via* field guides, it's all too easy to forget to stop, stare and marvel at Mother Nature's ability to provide such miracles for our enjoyment. A vital reason for our love of wild orchids is their exquisite beauty. This lovely book by Henrik Pedersen, illustrated by internationally acclaimed botanical artist Bo Mossberg, pays tribute to the beauty of wild orchids as well as providing a wealth of other information for committed orchid enthusiasts and newcomers to this beguiling world.

The geographical coverage of the book is Europe (foreign language editions are entitled '*Orchids of Europe*'). There are sections on Structure and Systematics, describing the characteristics of orchids both above and below the ground; Orchids and the Environment, including comments on conservation; as well as the Orchid Portraits, which constitute the main bulk of the book. Sections on pollination biology and associated fungal relationships throughout the life of the plants provide extra guidance for those who want to further their understanding of how these complex wildflowers grow and propagate.

Each genus is introduced by a page of text and illustrated by one or more colour plates. Further text covers identification, distribution and flowering times. My favourite feature of this book is the delightful scenic illustrations of typical landscapes where particular species grow and also, more precisely, their favoured habitats such as grassland, mossy banks or bogs. Whilst not a field guide, *Orchids* is a book filled with the kind of precise information required to identify species during the orchid flowering season. Off season, leafing through Mossberg's exquisite illustrations serves as a wonderful trip down the memory lane of past European orchid trips and a delicious appetiser for forthcoming ones. Mossberg and Pedersen's *Orchids* is a unique combination of sound science *and* a work of art. It will be a treasured addition to any orchid-lover's library.

Bo Mossberg, Sweden's foremost botanical illustrator, has achieved worldwide recognition. He has won several awards, including the 1992 Rosen Prize and the Jill Smythies Award from the Linnean Society of London. In 2003 he received the Artdatabanken Conservation Prize. Mossberg has illustrated numerous botanical publications including the best-selling *The New Nordic Flora* (2003), and many of his books have been published in several languages.

Henrik Æ. Pedersen is Associate Professor at the Natural History Museum of Denmark. He has studied orchids for more than 25 years, largely focussing on the systematics, ecology and conservation of orchids in Europe and tropical Asia. Pedersen is a popular lecturer and has (co-)authored more than 150 publications including several books. He also runs Select Nature, a consultancy that engages in research and public outreach.

Book Review: *Orchid Summer* by Jon Dunn

Celia Wright

Orchid Summer – In search of the Wildest Flowers of the British Isles by Jon Dunn
Bloomsbury Publishing, 2018
ISBN-13: 978-1408880883
361 pages; RRP: £18.99
Currently available from Amazon at £15.28
or £14.99 from NHBS
Paperback due May 2019 RRP £9.99
(pre-order £9.99 from Amazon or £7.99 from NHBS)

Orchid Summer is the second of two books to be published in the last 18 months based on the authors' determination to see all the UK orchids in flower during a single season. It was preceded by "The Orchid Hunter" by Leif Bersweden, a young man's light-hearted romp through a single summer with the orchids as his guide, reviewed by Mike Gasson and Simon Creed in *JHOS* January 2018.

Jon and Leif may have seen the same species of orchid but "Orchid Summer" takes over where "The Orchid Hunter" leaves off. This book is not a quick read as Jon finds time for the history of his subjects, their place in folklore and details of the characters, controversies and sometimes scandals involved in their discovery, as well as describing the plants themselves. Before his journey began, he must have searched the orchid and botanical literature through many long Shetland winter evenings (he lives on the small island of Whalsay) to gather the detail he explains so eloquently. His role is often that of storyteller, bringing tales of discovery, intrigue and deception

to life as when he writes at some length of Heslop-Harrison's probable botanical fraud on Rhum and wonders whether the recent appearance of the sawfly orchid in Dorset was due to natural causes.

Researching the plants themselves must have taken just as long, gathering details of locations and probable flowering times and modifying his plans constantly as flowering seasons changed and some sites proved less fruitful than he had hoped. The role of many other orchid enthusiasts in his quest becomes clear as the season unfolds and he changes his plans on their reports of sightings and arranges to meet many of them on his journey. It can't have made life any easier that his home base is nearer the Arctic Circle than London. When he found the species he was seeking, his description of the plants, their flowers and their habitat is detailed and sometimes quite emotional, drawing us into his wonder at what he sees. His words paint pictures as when he writes in his description of "a patch of bee orchids and, glowing an ethereal white amongst them, three flowering spikes of var. *chlorantha*."

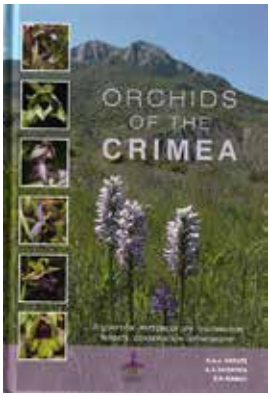
There is something for all UK orchid lovers in this book, from his description of the large white epichiles of Marsh Helleborine flowers as having "the grace of a bridal meringue", to his discussion of the addictive nature of the narcotic chemicals produced by the broad-leaved helleborine that leave its pollinating wasps befuddled and sluggish.

Some reviewers have expressed surprise that Jon's book contains no photographs, especially as he is known as an excellent wildlife photographer. The inclusion of enough photographs to illustrate the plants and their habitats fully would have made this quite a weighty (and expensive) tome. Instead, Jon's artistic prose paints a picture of each flower that almost renders photographs redundant, but he does offer a series of orchid photographs on his website: orchid-summer.com. Unless your knowledge of UK orchids is extensive, I suggest that you complement Jon's book by having a field guide such as Simon Harrap's "Pocket Guide to the Orchids of Britain and Ireland" to hand while you read.

At the end of the book I had read many interwoven stories of the flowers themselves, the other plants and animals on which they rely for life and of the many famous and less well-known orchid lovers for whom they can be an obsession. We are fortunate to have Jon as a Hardy Orchid Society member and I am pleased to announce that he will speak at our Leeds meeting in 2019, both about his book and about the orchids of his beloved Shetland Isles. I'm looking forward to that.

Book Review: *Orchids of the Crimea*

Mike Gasson



Orchids of the Crimea by C. A. J. Kreutz, A. V. Fateryga & S. P. Ivanov
Kreutz Publishers, 2018
ISBN: 978-90-806626-7-4
576 pages; RRP €39
To order direct email: c.kreutz@hccnet.nl
Currently available from NHBS at £49.99 or for pre-order from Summerfield Books at £41.00

The Crimean Peninsula is one of the most beautiful regions in Eastern Europe. It has diverse landscapes within a relatively small area, and a rich flora that has been of special interest to Russian and foreign naturalists for more than 230 years. Many natural history books on Crimea have been published, most of them in Russian but this book is the first to be entirely devoted to the orchids of the Crimean Peninsula. It covers all of the 45 orchid species that are known and the 5 infraspecific taxa that occur there.

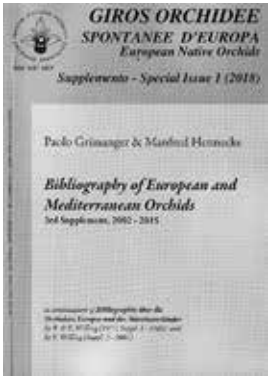
As is the norm with orchid books published by Karel Kreutz this is an impressive product with a comprehensive text and beautiful photographs. It is printed on paper of the highest quality and with its 576 pages constitutes a large book probably best consulted at leisure rather than in the midst of a field trip. The two additional authors are based in Crimea and have individual expertise, making specific contributions to the book.

Individual orchid accounts make up a large part of the publication. These are detailed descriptions covering habitat, flowering time, geographical and altitudinal distribution, known pollinators, each accompanied by a range of photographs and a useful distribution map at the 5km grid scale. A shorter photographic section covers some of the 16 known hybrids found in Crimea. Although understandably not comprehensive there are some lovely photographs of anthropomorphic *Orchis* hybrids, including two involving *Orchis punctulata*. As well as its coverage of Crimean orchids the book includes some more general accounts of Crimea including its geography, history, vegetation, general flora, conservation and orchid exploration.

Overall this is an excellent publication that would be of interest to the general hardy orchid enthusiast and essential for anyone having the good fortune to visit this interesting part of the world. It seems fairly priced, especially for something so well researched and so sumptuously presented.

Book Review: *Bibliography of European and Mediterranean Orchids 3rd Supplement 2002-2015*

Mike Gasson



Bibliography of European and Mediterranean Orchids 3rd Supplement by Paolo Grünanger & Manfred Hennecke
GIROS Special Issue, 2018
ISSN 2281-6437
256 pages; RRP €25
Contact: kleinsteuber-books@kabelbw.de

Anyone with an interest in the academic orchid literature will find this to be a very useful reference source. As the title suggests it lists the complete literature on European and Mediterranean orchids from 2002 to 2015 and continues two earlier publications by Barbara & Eckhard Willing that cover 1744-1984 and 1985-2002. Papers have an identifying number continuing the sequence from these earlier compilations and they are listed alphabetically by first author in conventional reference list style. Well worth having as a route into the more scientific literature although actually accessing the cited papers might prove to be more of a challenge!

HOS Seed Sowing Workshop 2019
Sunday 18th August 2019
Hagbourne Village Hall, East Hagbourne, Oxfordshire

Booking is now open for the HOS Seed Sowing Workshop 2019. The Tutor will be John Haggar, renowned for his skill at hardy orchid seed propagation. The workshop will cover sowing and after care of both summer and winter green orchids. A booking form and more details are on the HOS website:
www.hardyorchidsociety.org.uk

Please send any queries to Moira Tarrant at moira.tarrant@outlook.com

A Possible Small White Orchid var. *tricuspis* in Scotland

Grahame Preston

'Orchids of Britain and Ireland' by Anne and Simon Harrap states that "the British Small White Orchid belongs to the nominate subspecies *Pseudorchis albida* subsp. *albida* which is in turn divided into two varieties, var. *albida* and var. *tricuspis*, but that the distribution and abundance of these two varieties in the British Isles has not been studied." I like a challenge, and despite carefully poring over my own photos from previous years, studying images of British *Pseudorchis* on the internet, posting a question to the HOS discussion group asking whether anyone had seen one, and enquiring of BSBI and Scottish Wildlife Trust, I could find no evidence of a var. *tricuspis* ever being recorded in the British Isles.

I decided to head north in June 2017 to have a look at a few Scottish sites for *Pseudorchis*, as well as other flora and fauna. At the time, I dismissed all the plants that I found as var. *albida*, but on studying the photos a week later back home, one particular plant caught my eye. It was from a site in the Cairngorms that I had assumed was too acidic for var. *tricuspis*. It had fewer, more widely-spaced florets that were subtly yellow-white, rather than the typical green-white. Most striking of all were the longer and wider lateral lobes to the lip. I was now 500 miles away from the plant, so could not take accurate measurements or note further details, but it may show that var. *tricuspis* does exist in the British Isles and is easily overlooked due to the small size of the individual florets, as well as the subtle differences from var. *albida*. It may also indicate that subspecies *straminea* could be lurking undetected in northern Scotland too, so keep your eyes peeled!

I am grateful to Alan Gendle for his encouragement and Prof Richard Bateman for his comments.

Reference

Harrap, A. & Harrap S. 2005 *Orchids of Britain and Ireland*, A&C Black

var. *albida* possible var. *tricuspis*

Differences in the possible var. *tricuspis*:

Fewer and more widely-spaced flowers

Yellow-white rather than green-white flowers (both images taken without flash)

Lateral lobes almost as long as central lobe rather than noticeably shorter.

Photos by Grahame Preston

Impact of climate change on potential Bee Orchid distribution

Dave Trudgill

This article explores whether the UK has warmed sufficiently for Bee Orchid (*Ophrys apifera*) to be able to colonise our orchid meadow (latitude 56.59) in eastern Scotland. The approach I have taken is to relate the distribution of Bee Orchid in the latter half of the 1800's to average temperatures at that time. I then examine how temperatures have increased and explore some of the implications for potential future Bee Orchid distributions. The distribution of Pyramidal Orchid (*Anacamptis pyramidalis*) is considered for comparison.

Temperature trends

Durham (latitude 54.77, altitude 102m) and Oxford (lat. 51.77, alt. 63m) are two of the six meteorological stations (met. stations) in the UK for which long-term (prior to the 1900's) temperature records are available. The others are Southampton (closed 2000), Sheffield, Stornoway, and Armagh. Durham started in 1880 and Oxford even earlier. Oxford has been consistently *ca*. 1.5^{0}C warmer that Durham (Fig. 1). Although there is some variation, including a cooling around the 1960's, average temperatures since the 1930's have tended to progressively increase at both Durham and Oxford. In the 1880's average temperatures were 8.01^{0}C and 9.48^{0}C for Durham and Oxford respectively. In the 10-year period 2007 to 2016 they were 9.48^{0}C and 10.96^{0}C respectively, an increase of *ca*. 1.5^{0}C. Temperatures recorded by the met. station at Stornoway (lat. 58.21, alt. 15m) followed a similar trend; an average of 7.47^{0}C during the 1880's increasing to 8.79^{0}C for the period 2007 to 2016 inclusive. Temperature records for Leuchars (lat. 56.38, alt. 10m), the met. station nearest to our orchid meadow by Blairgowrie, are available for the 1960's onwards and show a similar warming trend. On average, temperatures at Leuchars are *ca.* 0.5^{0}C lower than Durham and 2^{0}C lower than Oxford (Fig. 1). However, it should be noted that Oxford sometimes has severe frosts. The average monthly minimum temperature for February 1986 at Oxford was -4.4^{0}C, lower than any average minimum temperatures recorded over the last 60 years at either Durham or Leuchars. On one night in 1986 the temperature at Oxford was -15.3^{0}C, and in 1980 it fell to -26^{0}C, but only the tips of the leaves of Bee Orchid were damaged (Bill Temple, *pers.comm.*).

Bee Orchid at Oxford and Durham in the 1800s

In 1664 Wm. Coles reported that Bee Orchids were 'found in many places about Oxford' (see Druce, 1886). In 1867 Bee Orchid was also reported by Baker and Tate from several sites in Northumberland (see John Durkin, 2012. County of Durham Check List of Vascular Plants). However, as far as I can determine almost all early records for Bee Orchid in Northumberland were from sites close to the coast. The most inland site for Bee Orchid was Middleton-in-Row (lat. 54.29, alt. ca. 36m). However, since the 1980's Bee Orchid has greatly extended its range in Northumberland (Durkin, *pers. comm.*).

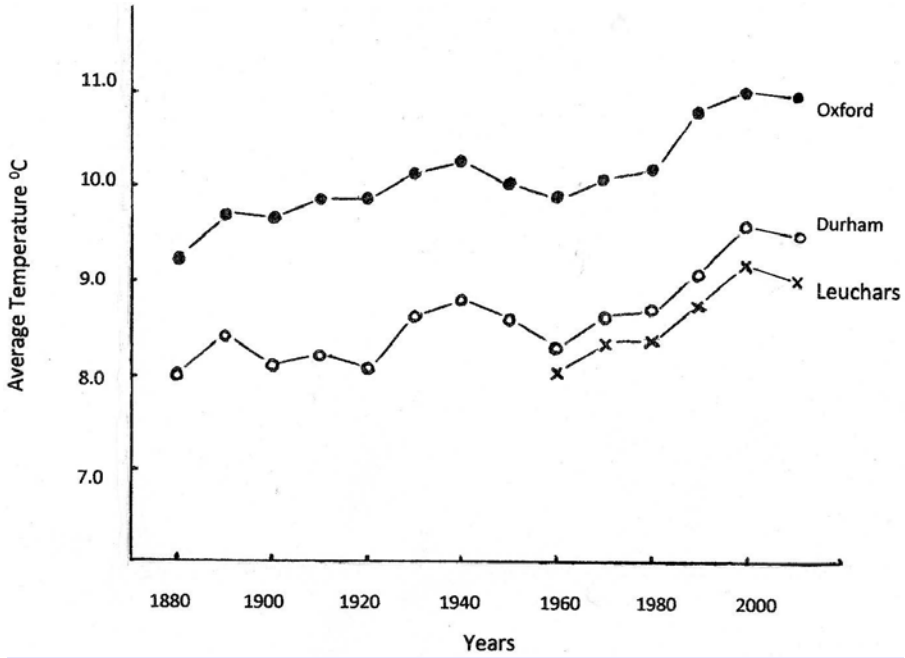


Fig. 1: Average temperatures for each decade from 1880 for the met. stations at Durham and Oxford and from the 1960's for Leuchars. When calculating these averages, months with negative average values were modified to a value of 0^0C.

Altitude, Temperature and Bee Orchid

Altitude is relevant to this analysis because the met. station at Durham is 102m above sea level, and temperature decreases by *ca*. 0.65^0C for every increase of 100m in altitude. Consequently, an average annual temperature in the 1880's of 8.01^0C at Durham probably represented *ca*. 8.7^0C on the Northumberland coast and 8.4^0C at Middleton-in-Row. On this basis, I am assuming in this article that an average annual temperature of 8.4^0C is close to the lower threshold for Bee Orchid. Average temperatures at Leuchars did not exceed 8.4^0C until the 1990's, but have exceeded 9.0^0C in the 2000's (Fig. 1). The met. station at Leuchars is on the east coast at an altitude of 10m and between 2007 and 2016 it had a 10-year average annual temperature of 8.97^0C. Our meadow near Blairgowrie (lat.56.58) is at an altitude of 50m so it would be expected to have an average temperature for the same period of *ca*. 8.71^0C, probably still warm enough for Bee Orchid. However, a comparison in 2016 of the forecasted daily temperatures for Blairgowrie and Leuchars indicated that between January and September our meadow might be *ca*. 0.6^0C cooler than Leuchars. Consequently, the average temperature of our meadow during the last decade might have been only 8.37^0C, perhaps not quite warm enough for Bee Orchid?

Wider Implications and Conclusions

This analysis does not take account of the possible effects of year to year differences in annual average temperatures. Average temperature at Leuchars in 2010 was 8.15^{0}C compared with 9.75^{0}C in 2014. Also, it is based on the assumption that the growth of Bee Orchid is directly temperature dependent and that 0^{o}C is the appropriate base for the temperature calculations produced here. This assumption seems unlikely as the growth of Bee Orchid almost certainly requires temperatures higher than 0^{0}C. However, using a higher temperature of 5^{0}C as the base for calculating average temperatures only marginally affected the overall conclusions. Other factors besides temperature may affect the northward distribution of orchids, especially winter-green species. Winter day-length decreases with increasing latitude and there are other differences including soils e.g. chalk grassland and magnesian limestone are almost entirely absent from Scotland. Also, although Bee Orchid is widespread throughout most of England, it is relatively uncommon in the South West and in Wales, pointing to edaphic factors influencing its occurrence (see BSBI distribution map).

Even so, Bee Orchid distribution appears to be moving northwards in response to increasing temperatures (Bell, 2015). Prior to the year 2000 it had not been reported from anywhere in Scotland. But since then it has been found at several sites including near Port Seton (lat. 55.94, altitude *ca*. 10m) just south-east of Edinburgh (BSBI distribution map). In 2017, a thriving colony was discovered in Berwickshire (19 July 2017. www.berwickshirenews.co.uk), close to the A1. It seems highly probable that it is now warm enough for it to colonize the eastern coastal strip of Scotland as far as Leuchars and probably beyond. The met. station at Nairn (lat. 57.95, altitude 23m) recorded an average of 8.79^{0}C in the period 2007 to 2016, and Wick (lat. 58.45, altitude 36m), in the far north of Scotland, recorded an average of 8.28^{0}C for the same period. On the west side of Scotland Bee Orchid has only been reported as far north as near Ochiltree (Ayrshire, lat.55.43, altitude *ca*. 95m).

Several other orchids not found in Scotland have been reported on the east coast of Northumberland and north Yorkshire prior to the 1930's i.e. before temperatures started to increase (see Fig. 1). They include Fly (*Ophrys insectifera*), Burnt (*Neotinea ustulata*), and Southern Marsh (*Dactylorhiza praetermissa*) Orchids (BSBI distribution maps), none of which has been reported from Scotland. Green-winged (*Anacamptis morio*) and Pyramidal (*Anacamptis pyramidalis*) Orchids were present near Durham in the 1880's and both are now present in Scotland. Green-winged Orchid has now disappeared from the Durham area and is confined to one small area on the south-west coast of Scotland, whereas Pyramidal Orchid has a much wider distribution. It has been found on the east coast of Scotland near Arbroath (lat. 56.55), and on the west coast it is now found as far north as the Isle of Lewis (lat.58.16). Pyramidal Orchid was recorded from south west Scotland prior to the 1930s but Green-winged Orchid is a more recent arrival. Pyramidal Orchid is now growing and flowering in our meadow near Blairgowrie growing from seed introduced in 2015.

The more northerly distribution of Pyramidal Orchid on the west coast of Scotland compared with the east coast was probably facilitated by the west being warmer than the east. For example, Dunstaffnage (lat. 56.45, altitude 3m) is at almost the same latitude as Leuchars but between 2007 and 2016 had an average temperature of 9.56^{0}C, 0.6^{0}C warmer than Leuchars. Similarly, Stornaway (lat. 58.21, altitude 15m) between 2007 and 2016 had an average temperature of 8.79^{0}C. This is 0.5^{0}C warmer than Wick which is on a similar latitude. It is surprising, therefore, that Bee Orchid has only been found in the west as far north as Ochiltree (lat.55.43, alt. *ca*. 95m). Inevitably, there will be a time-lag between when an area becomes favourable and its colonization. However, even in the 1960's the average temperature slightly further north at Paisley (lat. 55.85. alt. 32m) was 8.92^{0}C and, in the decade 1972 -1981 (the first full decade for which data is available) Dunstaffnage had an average of 8.9^{0}C – more than adequate for Bee Orchid? The restricted, southerly distribution of Bee Orchid in western Scotland is a reflection, perhaps, of the low probability associated with the natural long-distance spread of orchids (Trudgill, 2015). In this context, it is interesting to note that the second most northerly, east coast population of Bee Orchid is on the grass verge of the A1 near Torness (Brian Allan, *pers. comm.*) and may, therefore, have been assisted in its northerly movement.

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[This article first appeared in BSBI News **136**: 31-33]

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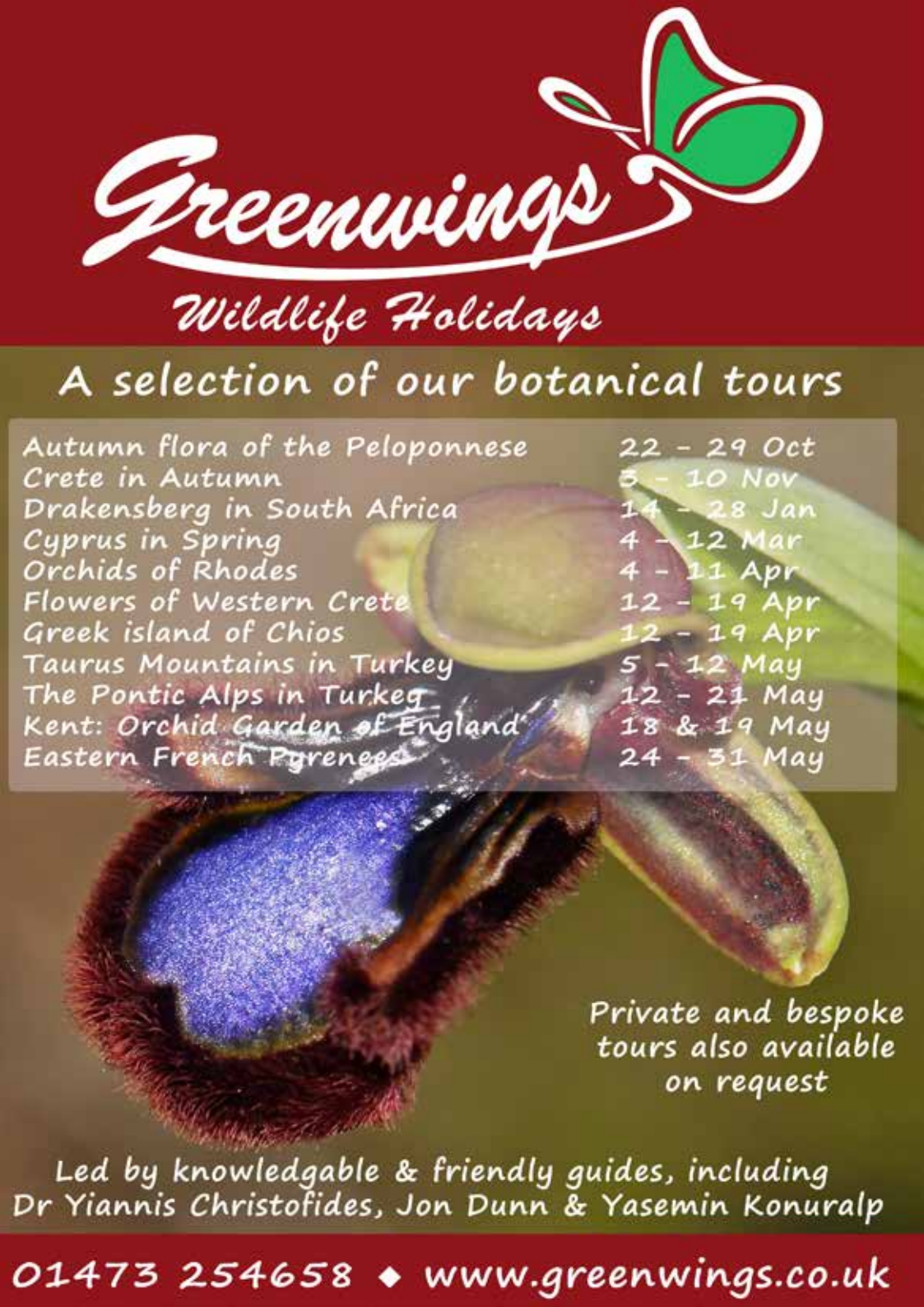
The Pontic Alps in Turkey	12 - 21 May
Kent: Orchid Garden of England	18 & 19 May
Eastern French Pyrenees	24 - 31 May



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