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of the
HARDY ORCHID SOCIETY***



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Cover Photographs

Front Cover: *Neotinea ustulata* by Michael Lutener from Class 12 in the 2016 Photographic Competition

Back Cover: *Epipactis leptochila* by Mike Waller, which won Class 13 in the 2016 Photographic Competition & the Maren Talbot Photographic Trophy

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

The January *JHOS* is always a joy to work on as it can draw on the winning entries from the annual Photographic Competition. This year generated an especially rich array of quality images and I have taken the opportunity to make a feature of some of the best.

Moira Tarrant has come up with an imaginative way to give *JHOS* more material on orchid cultivation, by visiting and interviewing some of our top growers. So it is great to have a second instalment from Moira, this time featuring the current Plant Show Secretary, Michael Powell. I know there is at least one more of these in the pipeline to look forward to in a future issue!

Sorry if you are waiting to see submitted articles appear in the journal. Following a rather poor period for copy, more material is being sent in and there is a more healthy pool. I will get everything in the journal as soon as space allows and do keep up the good work as it makes production much easier and generates a better, more rewarding *JHOS*.

HOS Meetings 2017

Sunday 26th March

Spring Meeting, AGM & Plant Show at Kidlington

Sunday 13th August

Seed Sowing Workshop at East Hagbourne, Oxfordshire

Saturday 2nd September

Northern Meeting at St. Chad's, Leeds

Sunday 19th November

Southern Meeting & Photographic Show at Kidlington

Chairman's Note

John Wallington

The Orchid season for this year is now well and truly over and it is the time when we all look forward to the new season. So I would like to talk about some of the activities on offer and suggest that participation might well enhance your enjoyment of the coming season.

Chronologically the first event I want to highlight is the Plant Show that will take place at Kidlington on March 26th. I know that many more of our members grow hardy orchids than enter them for the Plant Show. I would like to encourage you to enter plants. There is a wide range of classes and one, or more, of them will cover the plants that you grow. Of course you may not win – but so what? Your plants will have been admired by other members and you will have had an opportunity to discuss the finer points of cultivation and presentation with other competitors. What's not to enjoy? If you are still reluctant to enter the competitive part of the Show there is always space for non-competitive entries and there is no restriction there on the variety or number of plants that can be exhibited. And for all of those members who have attended the Seed Sowing Workshops – don't forget that there is now a class for plants grown from seed.

At the same meeting, of course, we will hold the 2017 AGM. At the risk of repeating myself this is an opportunity for you to volunteer your services as a Committee Member or just to take on one of the many organisational roles within the Society.

Starting soon after the Kidlington Meeting will be the first of the 2017 programme of Field Trips. Every year the Society tries to run a programme of Field Trips. These are usually led by members to their local orchid sites and they provide an opportunity for other members to visit sites that they may not be aware of or that are some distance from their base. I am writing this piece long before the Journal is published and I do not know what programme of trips will be available and included in this issue. Over the past few years a small number of people have run most of the Field

Trips with the result that the same sites have been covered several times. We need new volunteers to lead Field Trips. It would be a great shame if not enough members volunteer to be leaders as then, obviously, there will be very few trips. Field Trips are an important part of the social activities of the Society. Leading a Field Trip is not difficult. It involves:-

- Selecting one or more sites to visit and choosing a suitable date for a visit and a suitable meeting place.
- Keeping a record of those members that wish to attend.
- Visiting the sites a week or so in advance to check that the orchids will be in flower on the chosen day.
- Waiting at the meeting place and escorting other members, usually in their own transport, to those sites.

So I am asking all of you to think about where and when you could lead a Field Trip for some of your fellow members. Remember, what is a nearby and familiar orchid site to you may be a new and splendid experience for other members. So, when you have pondered and decided on your Field Trip for 2017, please get in touch with Alan Bousfield (alan.bousfield@ukgateway.net) as there is still time for your trip to be included in the 2017 programme. There is more information about Field Trips elsewhere within this copy of the Journal.

Later in the year, at the Leeds meeting (September 2nd) we will be trialling a new competition for short video sequences showing something of interest to fellow hardy orchid lovers. The competition will be known as “The Tony Hughes Video Competition”. The rules for this competition are being prepared by Celia Wright and more information is available elsewhere within this copy of the Journal.

As I said earlier, this piece is being written well in advance as I am off to look for flowers, including orchids, in the Southern Hemisphere immediately after the Kidlington Meeting. So, I hope you all enjoyed that meeting including the Photographic Competition and the new Scientific Show.

Additions to

“The Flower of the European Orchid – Form and Function”

Jacques Kleynen and Jean Claessens

In 2011 we published our book, and since then we have gathered additional information which we would like to share with all buyers of our book. If you are interested in receiving the additions to all appendices and the references, please contact us at info@europeanorchids.com and we will send the additions as a PDF.

HOS Field Trips 2017

These Field Trips are for Members Only. Accompanying spouses/partners must also be members; it only costs £3 to upgrade to family membership. You may be asked to show your membership card so please take it with you.

Saturday 10th June: Bedfordshire

Leaders: Richard & Geraldine Hogg, e-mail: Geraldine_dick@hoggie49.plus.com

We would hope to take in 2 locations in the morning and a third in the afternoon. We would certainly see Common Spotted Orchids, Southern Marsh Orchids, Bee Orchids, Twayblades, White Helleborines, and a number of rarer orchids (depending on which sites we go to).

Monday 26th June: Gowk Bank NNR North Cumbria

Leader: Alan Gendle, e-mail: alan@gendle.plus.com

Gymnadenia, *Dactylorhiza* and hybrids.

Tuesday 27th June: Tebay, South Cumbria

Leader: Alan Gendle, e-mail: alan@gendle.plus.com

Gymnadenia, *Dactylorhiza* and hybrids.

Sunday 2nd July: Noar Hill, Hampshire

Leaders: Nigel Johnson & Rosemary Webb, e-mail: cassandene@waitrose.com

Saturday 8th July: West Yorkshire

Leader Charlie Philpotts, e-mail: charlie.philpotts@btinternet.com

Sunday 16th July: Killiecrankie area

Leader: Martin Robinson, e-mail: davetrudgill@googlemail.com

We plan to visit two sites and hope to see Marsh Helleborine, Marsh and Heath Fragrant Orchids, and several species of spotted orchid and their hybrids. Numbers will be limited to 10 as one site is on private land.

Saturday 26th August: The New Forest, Hampshire

Leader: David Hughes, e-mail: davidcchughes@btinternet.com

See huge numbers of *Spiranthes spiralis* (Autumn Lady's-tresses).

FIELD TRIPS - YOUR HELP REQUIRED!

Alan Bousfield

I try to arrange about 10 Field Trips each year to various locations across the country. From the low attendances at some Field Trips some new locations are required. At present I have only the above trips for 2017, so I desperately need your help with some new locations. If you feel you can help please contact me:

alan.bousfield@ukgateway.net

The Tony Hughes Video Competition

The use of members' videos to illustrate talks at HOS meetings has been increasing over the last few years. Many cameras, mobile phones and tablets can now capture an orchidaceous subject in video format. Following discussion in committee, it has been decided that we will hold an annual video competition, to be known as the Tony Hughes Video Competition in memory of Tony, who mentioned the idea to Celia Wright some time ago and would doubtless have submitted an entry. The competition will be held at the Leeds meeting, starting in 2017, when the Tony Hughes Trophy will be awarded to the winner.

Each HOS member (other than professional video makers) is entitled to enter one video into the competition. The videos can be on any topic relevant to hardy orchids, must have a title, and can last a maximum of 3 minutes. They can include sound but do not have to do so. Entries will be shown as part of the Leeds meeting and those attending will vote for the winner. In the event of too many entries for a one hour session, committee members will view the material and reduce the entry to the required number.

Entrants will need to submit their entries in advance in a format that can be read by VLC Media Player. This covers most video formats in use in the UK. See <http://www.videolan.org/vlc/> for details. The formal Rules will be published on the website and in the April *JHOS*, together with dates and arrangements for submitting an entry. So start filming and let's have some beautiful and interesting videos to watch at Leeds this year.

Results of Photographic Competition 2016

Class 1. A wide area view (landscape or habitat) showing orchids in their natural environment, print size up to 7×5 inches (16 entries)

- 1st Karen Gregory – *Orchis militaris*
- 2nd David Pearce – *Anacamptis pyramidalis*
- 3rd Sandra Clements – *Anacamptis morio*

Class 2. A group of at least three orchid plants. These can be all the same species/hybrid or a mixed group, print size up to 7×5 inches (16 entries)

- 1st David Pearce – *Ophrys sphegodes*
- 2nd Karen Gregory – *Ophrys tenthredinifera*
- 3rd David Hughes – *Platanthera dilatata*

Class 3. A single orchid plant, usually the single stem arising from one tuber/rhizome, print size up to 7×5 inches (15 entries)

- 1st Steve Clements – *Orchis militaris*
- 2nd Ken Elsom – *Goodyera repens*
- 3rd David Pearce – *Platanthera chlorantha*

Class 4. A close-up of an orchid, showing one or more entire inflorescence(s), print size up to 7×5 inches (18 entries)

- 1st Gillian Elsom – *Goodyera repens*
- 2nd Alan Blackman – *Anacamptis morio*
- 3rd Steve Clements – *Myrmechila platypterus*

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

- 1st Sandra Clements – *Thelymitra*
- 2nd Ken Elsom – *Epipactis palustris*
- 3rd Steve Clements – *Platanthera chlorantha*

Class 6. A wide area view (landscape or habitat) showing orchids in their natural environment, print size up to A4 (16 entries)

- 1st Ken Elsom – *Neottia nidus-avis*
- 2nd Neville Henderson – *Dactylorhiza fuchsii*
- 3rd Sandra Clements – *Anacamptis pyramidalis*

Class 7. A group of at least three orchid plants. These can be all the same species/hybrid or a mixed group, print size up to A4 (19 entries)

- 1st Ken Elsom – *Gymnadenia conopsea* (Best Print)
- 2nd Sandra Clements – *Orchis mascula*
- 3rd David Hughes – *Dactylorhiza purpurella*

Class 8. A single orchid plant, usually the single stem arising from one tuber/rhizome, print size up to A4 (18 entries)

- 1st Hilary Pickersgill – *Limodorum abortivum* var. *rubrum*
- 2nd Karen Gregory – *Cypripedium calceolus*
- 3rd Phil Smith – *Dactylorhiza incarnata*

Class 9. A close-up of an orchid, showing one or more entire inflorescence(s), print size up to A4 (19 entries)

- 1st Phil Smith – *Dactylorhiza* ×*transiens*
- 2nd Gillian Elsom – *Gymnadenia conopsea*
- 3rd Alan Gendle – *Dactylorhiza* ×*formosa*

Class 10. A close-up of an orchid showing part of an inflorescence, print size up to A4 (19 entries)

- 1st Eleanor Coate – *Ophrys insectifera*
- 2nd Gillian Elsom – *Serapias lingua*
- 3rd= Alan Blackman – *Epipactis palustris*
- 3rd= Karen Gregory – *Himantoglossum hircinum*

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

- 1st Ivar Edvinsen – *Dactylorhiza incarnata*
- 2nd Phil Smith – *Orchis mascula*
- 3rd Andrew Armstrong – *Anacamptis morio*

Class 12. A group of at least three orchid plants. These can be all the same species/hybrids or a mixed group, in jpeg form (22 entries)

1st Ivar Edvinsen – *Orchis anthropophora* & *Orchis italica*

2nd Michael Lutener – *Neotinea ustulata*

3rd Karen Gregory – *Neottia nidus-avis*

Class 13. A single orchid plant, usually the single stem arising from one tuber/rhizome, in jpeg form (23 entries)

1st Mike Waller – *Epipactis leptochila* (Maren Talbot Photographic Trophy)

2nd Hilary Pickersgill – *Limodorum abortivum* var. *rubrum*

3rd James Langiewicz – *Spiranthes spiralis*

Class 14. A close-up of an orchid, showing one or more entire inflorescence(s), in jpeg form (27 entries)

1st Mike Waller – *Orchis* × *bergonii*

2nd Steve Pickersgill – *Orchis anthropophora*

3rd Sandra Clements – *Diuris longifolia*

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

1st Gillian Elsom – *Ophrys apifera*

2nd Anita Allsopp – *Ophrys aveyronensis*

3rd Nigel Johnson – *Neottia cordata*

Class 16. Novice Class, any hardy orchid print, size up to A4 (4 entries)

1st Sandra Clements – *Ophrys bombyliflora*

2nd David Livermore – *Dactylorhiza maculata*

3rd Steve Tandy – *Serapias lingua*

Class 17. A hardy orchid subject that has been manipulated creatively using any advanced software technique to create an artistic image. Print maximum size A4 (4 entries)

1st Alan Blackman – “Lizard Orchid”

2nd Gillian Elsom – *Anacamptis pyramidalis* var. *albiflora*

3rd David Pearce – “Sunrise over *Ophrys*”

Maren Talbot Photographic Trophy: Mike Waller for projected image in Class 13

Best Print: Ken Elsom for *Gymnadenia conopsea* in Class 7

Our thanks to the Competition Judge: Jon Evans

The following four pages include a selection of winning images from the 2016 HOS Photographic Competition. Figure numbers indicate the Class followed by the position (e.g. 4-2 is second place in Class 4). All winning photographs are on the HOS website.

12-1



14-1



14-2



2-1



2-2



4-2



7-1



8-3



8-2



9-3



10-3



9-1



10-1



1-1



13-2



10-2





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Ten Years of Monitoring Butterfly Orchids on Wolstonbury Hill David Pearce and Katherine Stott

It's a little over 10 years since Richard Bateman requested morphology data to be collected from either of the two British native butterfly orchids, *Platanthera chlorantha* and *Platanthera bifolia* (Bateman & Sexton 2007). At that time the society, Friends of Wolstonbury, had been working at the request of National Trust to clear an area of scrub from Wellcombe Bottom on the northeast side of Wolstonbury Hill in Sussex. The scrub clearance, which progressed over a period of three years, had given rise to the reappearance of several orchid species. One of these orchids, *P. chlorantha*, had shown an increasing population year on year. Now enter David Pearce, Katherine Stott and Neville Henderson who thought they would like to provide some of the necessary data for Richard, not realising this activity would eventually span a period of 10 years.

Wolstonbury Hill is an area of grassy chalk-land situated on the South Downs seven miles north of Brighton and within the South Downs National Park. The summit of Wolstonbury reaches an altitude of a little over 200m and offers impressive views across the Sussex Weald. Wolstonbury has twelve species of native orchids, of which seven can be found at Wellcombe Bottom in an area locally known as the 'Orchid Bank' (Figures 1 & 4). This bank is approximately 1.5ha in area and retains the principal population of *P. chlorantha*.

Once the reclaiming of the orchid bank from scrub had started the butterfly orchids soon showed their flowering potential. In the first year this was estimated at 20 plants but by the time Richard made his request the recorded numbers had grown to approximately 45. One of the positive outcomes of 10 years of monitoring has been the recording of plant numbers for our local records. Figure 2 shows the population size over the 10 years with a peak in 2010. During the monitoring period the areas of highest density of flowering plants have drifted from west to east. We now regret that we didn't record the location of plants and associated densities. Although the population is now well below the peak numbers there is presently an even distribution of plants across the Orchid Bank.



Figure 1: Wolstonbury Hill's Orchid Bank and Greater Butterfly Orchids

This research project with the two *Platanthera* orchids was intriguing as both *P. bifolia* and *P. chlorantha* have near identical genetic signatures but vary in many morphological details (Bateman *et al.*, 2012). The plants attract visiting lepidoptera and they provide a nectar reward. This nectar is found in the flower's spur and raises questions about the relationship between spur length and the proboscis of a visiting pollinator (Bateman & Sexton 2008a). The project in its inception was to investigate the geographical location of plants and the significance of spur length. The records taken at Wolstonbury were to provide one of many data sets across a range of latitudes.

In the first year, only spur length of a flower midway within the inflorescence was recorded. Subsequently, following Richard’s request (Bateman & Sexton 2008b), we recorded for each plant the overall height, number of flowers and number and width of each leaf. These additional measurements were designed to establish the possible correlation of spur length with local environmental conditions. The measurements have now been taken from a total of 557 stems and have given rise to 10 years of data sets, of which 9 have allowed scatter graphs to be drawn. Figure 3 shows some typical outcomes for data collected in 2014, using linear regression lines to indicate possible trends. An alternative statistical analysis is achieved by determining the correlation coefficients between variables. Table 1 gives all the statistical outcomes from the data sets collected over the 10 year period. When viewing the set of correlation coefficients a modulus value of unity would show a clear dependency with spur length, but as in all cases the values are extremely low it would imply a negligible dependence of spur length on the other measured physical properties of the plant. As a result a more useful indicator might be the coefficient of determination, r^2 , which provides a measure of variance in spur length resulting from changes of an independent variable such as leaf width. In nearly all data sets this link was $\leq 5\%$, either with respect to leaf width or plant height.

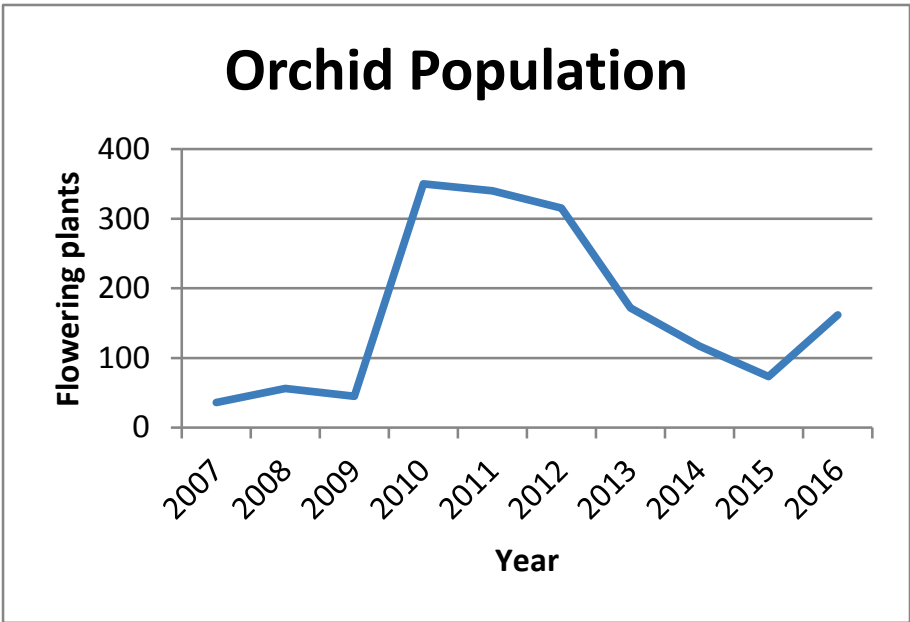
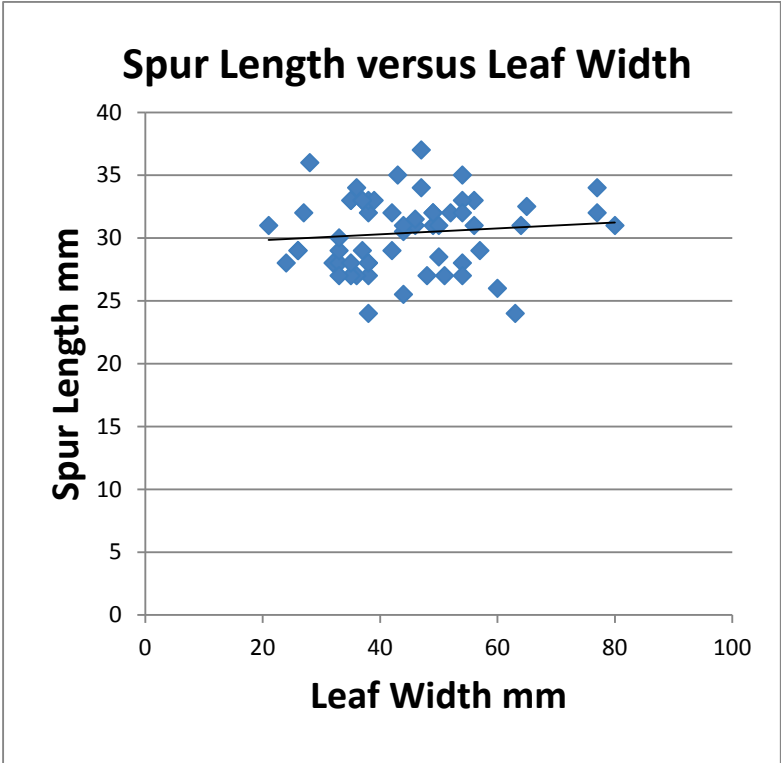
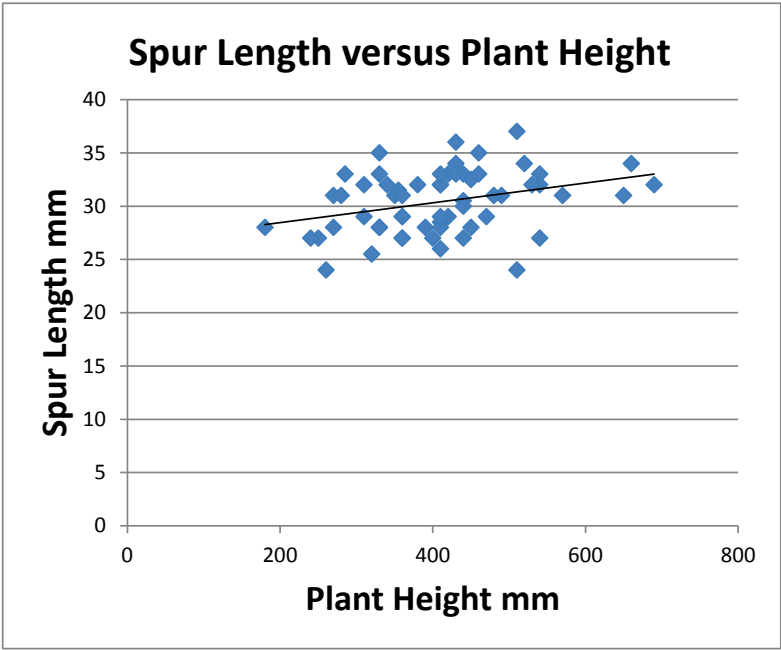


Figure 2 (above): *Platanthera chlorantha* flowering population
 Figure 3 (opposite): Scatter graphs for the morphology data collected in 2014



Another area of interest was with the measurement of spur length itself and in particular the standard deviation within any one data set. In all cases this appears to be relatively large, varying from $\sigma = 2.3$ to 3.6 mm. It's generally accepted that $\pm 2\sigma$ would account for 95% of all measurement readings taken around the overall mean spur length of 29mm. The question therefore arises as to why there is this large deviation in spur length, given that measurement errors should not exceed ± 0.5 mm.

Year	Number of Plants Measured	Mean Spur Length (mm)	Standard Deviation (mm)	Correlation Coefficient Spur Length vs Leaf Width	Correlation Coefficient Spur Length vs Plant Height
2007	36	27.5	3.24		
2008	56	28.9	2.77	0.269	0.354
2009	45	29.4	2.69	0.109	0.271
2010	60	28.6	2.66	0.012	0.129
2011	60	27.6	2.77	0.151	0.164
2012	60	28.0	3.60	-0.003	0.161
2013	60	29.7	3.02	0.247	0.088
2014	60	30.4	2.92	0.104	0.329
2015	60	29.9	2.88	0.038	0.189
2016	60	29.4	2.31	0.177	0.126

Table 1: Results from *P. chlorantha* data analysis

In Richard's report (Bateman & Sexton 2009) he discussed the local environmental factors that might influence spur length, many of which may apply to Wolstonbury. The position of the Orchid Bank on Wolstonbury is characterised by tall beech trees on the south side and open grassland on the north side. Typically we have areas varying between heavy shading and full sunlight, the ground is sloping and would offer a range of ground moisture levels together with a potential variation in localised temperatures. The plants may be found in any part of the Orchid Bank, but many are located adjacent to the beech trees. None of these factors was considered when collecting plant data or indeed the stage of a plant's growth or anthesis. These potential variables within a data set and across the span of the monitoring period may account for the large deviations in spur length. It was also noticed when viewing the results illustrated in Table 1, although the correlation of spur length with the two independent variables of leaf width and plant height is poor, the mean spur length

recorded over the ten years was consistently within 5% of the overall mean of 29mm. This would appear to suggest that the spur length is an important property for the plants' continued survival.

Bateman and Sexton have written extensively in regard to spur length of the British species of butterfly orchids, several articles appearing in this journal. For our part at Friends of Wolstonbury we thought this to be an exciting project from the start and, with encouragement from Richard, we have enjoyed extending the data collection across the decade. By providing these additional data sets we hoped to extend the project to encompass the variation of environmental changes that might have occurred due to the changeable British climate. Valuable support has also been received from the local National Trust centre and their wardens, who maintain and conserve the broad spectrum of flora on Wolstonbury.



Figure 4:
Greater Butterfly Orchid
at Wolstonbury Hill

Acknowledgements

We wish to thank Richard Bateman for his editorial review. Also thanks to Neville Henderson for his help and guidance with the collection of plant data.

References

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Growing Hardy Orchids - 2

Moira Tarrant talks to Michael Powell

Michael Powell will be well known to those members who have attended the HOS Spring Meeting at Kidlington. He regularly exhibits well-grown plants in the annual Plant Show and for the past two years he has been Secretary of the Show, ensuring that all runs smoothly for both exhibitors and the Show Judge. But he has also been instrumental in showing a far wider range of orchid enthusiasts the beauty and potential of hardy orchids through his work with Bournemouth Orchid Society. He has been part of the team who have constructed their often medal-winning exhibits at major orchid shows and his plants have been at the forefront of that excellence.

I visited his home in Hampshire on a mild November day and so our tour of his hardy orchids started outside with a look at the raised beds where, among other choice plants, he grows *Bletilla*. Mike explained that he got into orchids through collections of cyclamen and other bulbous genera. He now grows a wide range of orchids but almost all are terrestrial. The raised bed that favours *Bletilla* is well-drained and, being south facing, is very warm. He pointed out that the beautifully maintained garden has trees and hedge all along the eastern and northern borders which provide a good level of protection from the coldest directions.

We stopped at Mike's cold frame which stands against the north face of a fence and held tightly packed pots of summer-flowering genera such as *Dactylorhiza*, *Gymnadenia* and *Neottia*. Pyramidal Orchids (*Anacamptis pyramidalis*) are also kept here until they have a flower spike, when they are moved into the greenhouse. This prevents the leaves yellowing as the flowers open. Mike uses wider 'Stewarts' plastic pots for *Dactylorhiza* but terracotta long toms¹ for tuberous and rhizomatous subjects. The cold frame front glass stood open for good ventilation as it does all year except during the coldest weather when he protects plants with a layer of horticultural fleece. Sheets of exterior grade expanded polystyrene provide insulation underneath the wooden planks at the base of the frame and down the back against the fence.

We then went into Mike's 16ft × 8ft greenhouse, which was purpose built to suit his requirements. It sits on a base wall and is louvered the full length, both sides, at staging height, giving excellent ventilation. The climate is further controlled by a 9" (23.5cm) fan and a smaller 5" (12.5cm) fan which run continuously and, in the sub-divided space, tubular heaters are set to 5°C in one half and 3°C in the second half. The glass had been shade painted on the south side for the summer but during the winter months grow lights are used to prevent etiolated plants.

Figure 1: Michael Powell

Figure 2: Warmer growing area in Mike's greenhouse

Photos by Simon Tarrant



In the warmer half of the house immaculate rows of terracotta long tom¹ pots stood on plastic mesh staging. These are used for *Satyrium*, *Serapias*, and *Ophrys* (one plant to a pot), *Anacamptis*, *Orchis* and hybrids and *Chloraea alpina*. Mike explained that previously he had used plastic pots for these plants but became dissatisfied with growth when he moved. He now waters cautiously from the top with approximately ½ pint (300ml) to a pot and can watch the terracotta absorb the water. After about a fortnight the pot is visibly dry and can then be watered again. Mike is convinced that he can see a small spurt of growth of maybe 1-2mm after he waters. He feeds all of these genera with a mixture of Orchid Focus and Orchid Ultra² in rain water to remain below 300µS. Also on this bench were *Diuris* and *Gennaria* both in 8” (21cm) terracotta half pots but for different reasons. *Diuris* need the space to accommodate a very long tuber but *Gennaria* are planted 12 or 13 to a pot as they increase so rapidly.

On the other side of this area Mike grows a large collection of *Disa* including *D. uniflora*, *D. sagittalis*, *D. tripetaloides* and their hybrids. These were growing in deep plastic Rose pots and are watered with Orchid Focus and Orchid Ultra² at a rate of no more than 160-200µS and with cider vinegar added to give a pH of 5.5 to 6.5. Three feeds are given and then a flush every month during the growing season. Mike has found that over-feeding gives a huge plant which flowers but produces no decent tuber. The *Disa* pots stood in plastic trays to catch drips and in a heat wave to hold ½” (1.25cm) of water to keep plants sufficiently moist.

To maximise space, this slightly warmer end of the house also contained *Pleione* and Chinese *Cymbidium* including *C. goeringii*, *C. faberi* and *C. kanran* hanging above the staging on individual wire brackets and all enjoying a cool dry rest. I asked Mike about the hardiness of the *Cymbidium* and he finds all three are hardy under the conditions described. He would accept them on the Show bench at the HOS Plant Show. He did warn that some clones of *C. goeringii* will, however, need intermediate conditions. He feeds his *Cymbidium* and *Pleione* with Orchid Focus and Orchid Ultra² at about 700-800µS. During very cold spells Mike covers all the greenhouse plants with a layer of horticultural fleece.

We moved to the cooler end of the greenhouse which held *Calanthe*, *Cypripedium* and *Spiranthes*: both *odorata* ‘Chadd’s Ford’ and *sinensis*. Mike has found *Calanthe* to be very prone to virus, especially if the plant has been divided. He always buys whole plants and sterilises his tools rigorously whenever cutting the plants, for which he uses Virkon⁶ tablets. Dilute bleach can also be used but tools would also need

Figure 3: *Disa* sp. in full flower in the greenhouse
 Figure 4: Bournemouth O.S. medal winning display at Malvern 2015
 Photos by Mike Powell (Fig. 3) & Simon Tarrant (Fig. 4)



to be rinsed. *Epipactis* hybrids in this space included *Epipactis* Ventura, Renate, Lowland Legacy and Heart of Virginia. Mike particularly admires the hybrids made and registered by John Haggar. Mike also over winters a selection of high altitude cold-growing and near-hardy species such as *Stenoglottis* sp., *Angraecum magdalenae* and *Altensteinia fimbriata* from Colombia. In very frosty weather he moves these into frost free conditions.

The greenhouse door stands open day and night but as we left Mike secured a fine plastic net screen across it to deter wildlife. Back indoors we talked about composts for the plants Mike had shown me. His compost mixes are mostly adaptations of those given in ‘Growing Hardy Orchids’ by Philip Seaton et al (2011).

For Mediterranean species and British natives including *Dactylorhiza fuchsii* (but not other *Dactylorhiza*) he uses an open mix based on Compost A. (p.26) of 3 parts JI 2, 3 parts leaf mould (Beech or Oak), 3 parts Cornish grit⁵ (the grit is 2-3mm), 3 parts Cornish granite⁵ (which is coarser 5-6mm), 3 parts Perlite and 1 part Dodson & Horrell mixed chicken grit³. To this he adds a small scoop of Fish, blood & bone. For *Serapias* he leaves out the chicken grit. He mixes this in a plasterer’s bucket (rather than builder’s buckets) or horse feed buckets as they are a good wide shape. Mike emphasised that as in cake making (which he is extremely good at) the mixture has to ‘feel’ right. If it is too dry, add more leaf mould; if too sticky add more Perlite or grit.



Figure 5:
Dactylorhiza foliosa × *saccifera*
Photo: Michael Powell

For *Dactylorhiza* and *Epipactis* Mike adapts Compost B. (p.26) and uses 3 parts JI 2, 3 parts composted bark (being careful to select a brand which is not enhanced with added fertiliser) 3 parts coarse Perlite, 4 parts leaf mould, and 4-5 parts coarse grit. The *Dactylorhiza* also have 1 part of mixed chicken grit³ to achieve the alkalinity required. To this he adds 15ml of Fish, blood & bone.

For *Calanthe* Mike adapts Compost D. (p.26): 5 parts peat, 5 parts bark (Mike uses Orchiate⁴ 6-9mm), 5 parts Perlite and 5 parts leaf mould. He often adds extra bark or Perlite to open up the mix and also adds Fish, blood & bone and ½ - 1 part of well-rotted manure. It also makes a good mulch for his garden grown *Bletilla*, which are related to *Calanthe*.

For *Pterostylis*, *Diuris* and *Satyrium* Mike's mix is a version of Compost F. (p.27): 2-3 parts JI Ericaceous compost, 3 parts acidic sand, 3 parts fine bark (Orchiata⁴), 3 parts leaf mould (oak as it is more acidic) and 1 small scoop of dried blood. He finds he can also use the *Disa* mix of Perlite and sieved sphagnum for *Pterostylis* if some acidic sand is added.

Mike finds 'Hardy *Cypripedium*' by Werner Frosch & Phillip Cribb (2012) very helpful and referred me to p.143 for the basis of his growing method. He uses the biggest pot possible; a minimum of 8" (20cm) and wider than deep. In this he puts a layer of coarse substrate such as a mixture of pumice, Seramis, grit and Perlite. This is rounded at the centre with the *Cypripedium* placed on the mound and its roots and crown covered with the inert mixture. A top dressing of pine duff, leaf mould, bark (and composted bark if you have it) with a small amount of fertiliser such as slow-release granules or composted chicken manure plus Fish blood & bone is applied. This arrangement ensures that the roots are never directly in contact with organic matter but watering from above washes organic nutrients past the roots, mimicking growth in the wild. At the time that I visited the *Cypripedium* had a temporary top dressing of bark with the organic mix substituted in February as growth begins. Mike takes the precaution of sieving the pine duff and leaf mould he collects very vigorously to remove larvae.



Figure 6:
Epipactis Ventura
Photo: Michael Powell

For *Disa sagittalis* Mike uses pure Cornish grit sand⁵ (2-3mm) which he admits makes the pots very heavy. For *Disa uniflora* he uses 1 part sphagnum and 5 parts Perlite. The sphagnum is rubbed through a sieve to give the water retaining benefit without the straggly lengths of moss. For *Disa aurata* and *D. tripetaloides* and its hybrids he uses 4 parts lumpy peat and 1 part coarse Perlite. I queried with Mike the 'lumpy peat' and he suggested that a good source is often the growers and sellers of carnivorous plants. The important point about all the *Disa* mixes is their low fertility and acidity.

I asked him about the top-dressing that I had seen on his pots and this is Cornish grit⁵ (5-6mm grit). He confirmed that he usually waters from above with care except Disa which are dipped and *Calanthe* and *Pterostylis* which are dipped once the leaf growth prevents easy access to the surface.

I came away from my time with Mike with an impression of someone who is endlessly willing to share what he knows about growing the plants he loves, which made my visit a great pleasure. I am indebted to Mike for his time and knowledge and to him and his wife Rosie for their kindness and hospitality.

References

- Seaton, P., Cribb, P., Ramsay, M. & Haggard, J. (2011) *Growing Hardy Orchids* Royal Botanic Gardens, Kew.
- Frosch, W. & Cribb, P. (2012) *Hardy Cypripedium: Species, Hybrids & Cultivation*. Royal Botanic Gardens, Kew.

Products mentioned by Mike Powell

(These are Mike's personal preferences and are in no way endorsed by the HOS)

1. Terracotta long tom pots - Mike advises that these should be available at good garden centres including larger branches of Wyevale.
2. Orchid Focus (Grow) is an orchid specific fertiliser 2.2:1.3:2.1. Orchid Ultra is a growth enhancing nutrient to be used in conjunction with Orchid Focus. Both are manufactured by Growth Technology www.growthtechnology.com and are commonly available at garden centres or by mail order.
3. Dodson & Horrell chicken grit. A mix of insoluble flint grit, oyster shell and granular limestone sold in 1.1kg tubs. www.dodsonandhorrellpetfood.co.uk
4. Orchiata is a hard and stable bark prepared specifically as an orchid substrate. www.besgrow.com Available from orchid suppliers.
5. Cornish grit and granite. Available from Royal Horticultural Society.
6. Virkon. Disinfectant produced for animal welfare available in tablet form. Effective against bacterial, viral and fungal disease. 5g tablet makes 500ml of solution. www.virkon.com. Available from mail order suppliers. NB Mike pointed out to me that the tablets look very similar to sweets so must be kept away from children.

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Hybrid Helleborines

Richard Mielcarek

The first Violet Helleborines (*Epipactis purpurata*) for North Somerset (VC6) were discovered as recently as 1981. At that time there was also a small colony of Broad-leaved Helleborines (*E. helleborine*) nearby and, when announcing the discovery, the 1982 Proceedings of the Bristol Naturalists' Society added prophetically 'the occurrence of hybrids is therefore a possibility'. The colony of Broad-leaved Helleborines is now lost, probably during the 1990s when a fishing lake was excavated, but the Violet Helleborines continue, with about 35 - 40 plants most years, including a well established clump of over 10, in a narrow strip of mixed woodland.

I have visited the site most years since 2006; as well as normal looking Violet Helleborines I always manage to find one or two plants that do not obviously fit with that identification. In the early years I assumed these were the Broad-leaved Helleborines even though the leaves were not particularly broad, but in 2011, and again in 2013, I posted photographs to an online orchid discussion forum where opinions varied between Broad-leaved Helleborine, hybrid and aberrant Violet Helleborine and eventually tending both times towards aberrant Violet Helleborine.

In 2014 a new group of five odd looking plants appeared, two quite robust and the other three all rather small and weedy. I decided the two robust plants were probably both Broad-leaved Helleborines and, given the proximity of a number of Violet Helleborines, wondered whether the smaller plants were all *E. ×schulzei*, the hybrid between Violet and Broad-leaved Helleborine. I invited a couple of friends over to view the plants and they both agreed with my conclusion, so at the end of the season when I submitted my orchid records to the county recorder I put them in as 'possibly *E. ×schulzei*'. During the following winter I started to investigate the identification of this hybrid but found information, particularly photographs, hard to come by. The BSBI *Epipactis* crib provided the following information:

- stems greenish-pink, compared with dark stems (grey to violet) for Violet Helleborine and green for Broad-leaved Helleborine;
- leaves stiff, glabrescent and obtuse;
- epichile whitish, as in Violet Helleborine.

In 2015 the two robust plants and one of the smaller plants reappeared and by now I had started to have my doubts that the two robust plants were actually Broad-leaved Helleborines (see Figures 1, 2, and 3). Luckily the county recorder, Dr Helena Crouch, subsequently visited the site armed with the new BSBI Hybrid Atlas

Figures 1-3: *Epipactis ×schulzei* on 5th August 2015
Photos by Richard Mielcarek



4



5



which gave a further identification feature to check, the length/width ratio of the lowest leaf. She carefully measured and examined all three plants and was able to confirm that the leaves were obtuse (if you ignored the apiculate point the ends of the leaves were greater than 90 degrees) and glabrescent (the few long hairs on the veins detached easily) as in *E. helleborine* while the ratio of length to width of the lowest leaf exceeded 1.5 as in *E. purpurata*. These details, plus four photographs showing the leaves and stem (Figure 4), the whole plant and the flowers, were sent to Prof. John Richards, the BSBI *Epipactis* referee, and he confirmed the plants were *E. ×schulzei* saying “the stems below are of a characteristic washy pink (never seen in *E. helleborine*) and the leaves stiff and relatively narrow with a purplish tint, but the flowers more like *E. helleborine*”.

In addition, Dr Fred Rumsey also visited and took DNA samples from the three plants: he was later able to confirm that they all had the chloroplasts of *E. purpurata*, confirming that to be the maternal parent. Unfortunately he was not able to confirm the paternal parent. As the Broad-leaved Helleborine colony is now extinct this maternal parentage is not unexpected. The occasional Broad-leaved Helleborine plant occurs in woodland 150 metres or so away and it is assumed that an insect brought pollinia in from there and pollinated one of the Violet Helleborines. I wonder how much different the hybrid would look if the roles were reversed and Broad-leaved Helleborine was the maternal parent?

So what about the earlier plants from 2011 and 2013? Buoyed with success I subsequently sent a selection of photographs of those to Prof. Richards and he confirmed they were also *E. ×schulzei* (see Figure 5). The BSBI distribution maps confirm the rarity of this hybrid in Britain; it has been recorded from just three hectads since 2010, compared with 228 hectads in which both parents occur. Those other records came from Hampshire (VC12) in 2010, a plant with two flower spikes confirmed by Prof. Richards from photographs, and NE Yorkshire (VC62) in 2015, one plant confirmed by Prof. Richards. Whether the hybrid is genuinely scarce, or just hard to identify, is anyone’s guess. However, I found a new plant at the site in 2016, confirmed by Prof. Richards from photographs, so it is worth searching for.

The hybrid is said to be fertile so the possibility of back crosses clouds the picture. In fact at the Somerset site there are various other plants that are possibly back crosses, some with clean, whitish flowers and green leaves, and another which is very similar to a Violet Helleborine but with a bright red interior to the hypochile, but that is another story waiting to be written.

Figure 4: The leaves and stem suffused with pink. 14th August 2015
 Figure 5: *Epipactis ×schulzei* on 7th August 2013
 Photos by Helena Crouch (Fig. 4) & Richard Mielcarek (Fig. 5)

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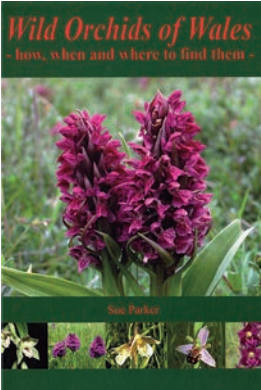
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Book Review: “Wild Orchids of Wales”

Mike Gasson



“*Wild Orchids of Wales - how, when and where to find them*” by Sue Parker. 192 pages.

Published 2016 by First Nature, Llandysul, Wales.

ISBN: 978-0-9934502-1-1

Available from First Nature for £18 + £2.80 P&P:

<http://www.first-nature.com/books/walesorchids2.php>

This is an excellent guide to the orchids of Wales in a conveniently portable A5 format, with a hard cover and authored by HOS member Sue Parker. It has a comprehensive section covering all of the recorded orchid species, illustrated with photographs of the highest quality.

There are some equally impressive habitat photographs and it is the attention given to where orchids grow and where to find them that makes this book especially useful. A section of some 70 pages deals with orchid sites and walks in detail and includes not only the orchid species to be found but also other plants of interest. Elsewhere, information on orchid biology and tips on photography are provided. The book is dedicated to conservation volunteers and it is good to see the inclusion of details on conservation and science organisations that are active in Wales. As one might expect, the efforts to preserve the Welsh populations of the Fen Orchid are well covered. The book is clearly produced by someone with a deep and detailed knowledge of the area and its conservation. Overall this is highly recommended for anyone living in or visiting Wales who has an interest in orchids or indeed more general natural history.

MALVERN INTERNATIONAL ORCHID SHOW

As HOS belongs to the British Orchid Council, its members can obtain reduced price tickets for the Royal Three Counties Show at Malvern on June 16-18th, which includes the Malvern International Orchid Show. At £6 these are excellent value compared to the full price alternatives of £19 advanced or £23 on the gate. Available for use by HOS members, their families and their friends, they allow entry to the entire Show on any one day that does not have to be specified in advance.

Iain Wright is co-ordinating HOS requests for these tickets. The closing date for requests is not yet fixed but unlikely to be before the end of March. Send him a cheque for £6/ticket made payable to Iain Wright, together with a stamped addressed envelope. Send queries to iaincwright@windmill.me.uk or use Celia's postal address or telephone number from the inside front cover. Cheques will not be cashed until just before the tickets are posted to you in the second half of May.



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