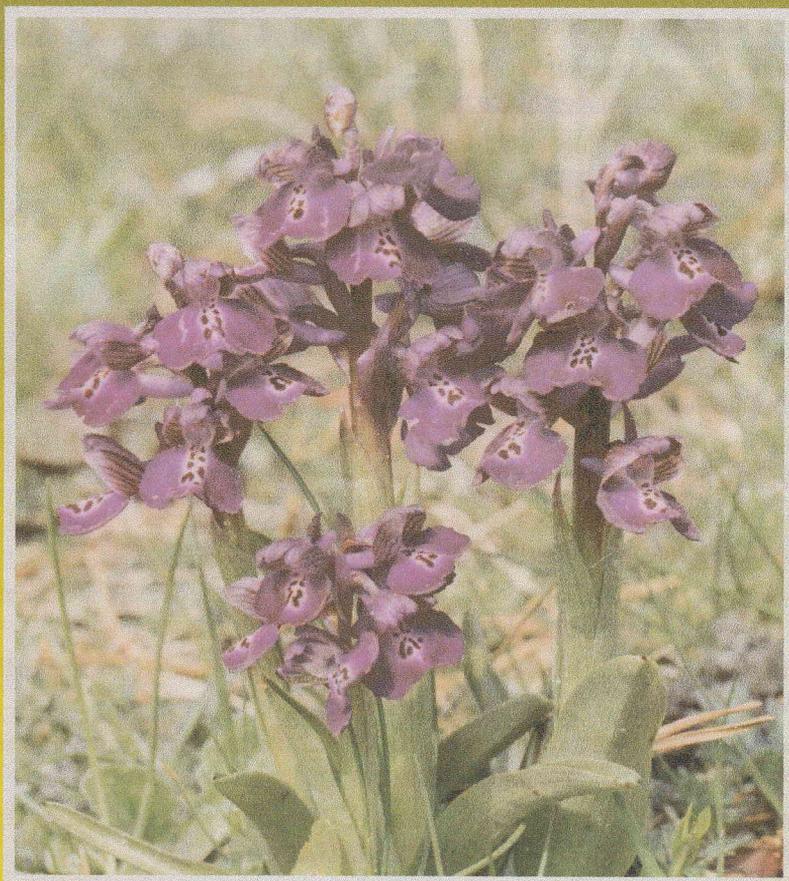


Journal
of the
HARDY ORCHID SOCIETY



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The Hardy Orchid Society

Our aim is to promote interest in the study of Native European Orchids and those from similar temperate climates throughout the world. We cover such varied aspects as field study, cultivation and propagation, photography, taxonomy and systematics, and practical conservation. We welcome articles relating to any of these subjects, which will be considered for publication by the editorial committee. Please send your submissions to the Editor, and please structure your text according to the 'Advice for Authors' (see page 24).

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Cover Picture: Class 6 Winner, *Anacamptis (Orchis) morio*, Photo: Richard Laurence

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Editorial

Patrick Marks

The members who attended the Wisley meeting appeared to be overwhelmingly positive in their comments about the changes in the society Newsletter, now the “Journal of the Hardy Orchid Society”. The first issue had a difficult start, but most of the problems, which included computer software incompatibility, have been resolved. There may still be changes in the Journal, but I hope these will result in a quality product which reflects the vast range of expertise and enthusiasm to be found in our membership, and meets the needs of those members who feel that they are only beginners in the field of orchids. Suggestions about the content of the journal are welcome to the Editor or any committee member.

The Wisley meeting, despite its late date, did not have the weather problems of 2002 and was a most successful day. The talks, two of which were computer-aided, were all well received, with Richard Bateman’s wide-ranging and erudite assessment of our orchid flora giving members much food for thought. The photographic competition saw a superb range of images on display, six of which are illustrated in this Journal and more on the new HOS website.

Visit the new Hardy Orchid Society Website

www.hardyorchidsociety.org.uk

HOS Meetings in 2004

- Sunday 25th April Spring Meeting, including AGM and Plant Show, at Exeter Hall, Kidlington, just north of Oxford.
- Sunday 12th September Northern Meeting at Harlow Carr Gardens, Harrogate.
- Sunday 31st October Autumn Meeting and Photographic Competition at Capel Manor, NW London, close to M25 Junction 25.

Details of all meetings and shows will be published in future Journals.

Hardy Orchid Society Conservation Code

1. The HARDY ORCHID SOCIETY (HOS) recommends that its members should **not** buy orchids illegally collected in the wild.
2. The HOS Journal will not accept any articles or advertisements from sources convicted of illegally digging orchids.
3. Members of the HOS may not sell illegally collected plants under the auspices of the Society.
4. The HOS will not accept membership applications or membership renewals from persons convicted of illegally digging orchids.
5. Orchids growing in the wild should not be rescued or relocated without the appropriate permission (common, non-schedule 8* orchids normally require only the permission of the landowners at source & destination). If in doubt, ask the Conservation Officer, who may be able to advise on the best time for relocation.
6. Orchid seed should not be collected in the UK without the appropriate permission (common, non-schedule 8* orchids normally require only the permission of the landowner).

* Schedule 8 of the Wildlife & Countryside Act covers the following orchids, which therefore require English Nature permits for the collection of seed; permission to collect samples, dig them up or relocate them is unlikely to be given to an individual.

<i>Cephalanthera rubra</i>	Red helleborine
<i>Cypripedium calceolus</i>	Lady's slipper orchid
<i>Dactylorhiza lapponica</i>	Lapland marsh orchid (actually a form of <i>D. traunsteineri</i>)
<i>Epipactis youngiana</i>	Young's helleborine (actually a hybrid)
<i>Epipogium aphyllum</i>	Ghost orchid
<i>Himantoglossum hircinum</i>	Lizard orchid
<i>Liparis loeselii</i>	Fen orchid

Ophrys fuciflora
Ophrys sphegodes
Orchis militaris
Orchis simia

Late spider orchid
Early spider orchid
Military orchid
Monkey orchid

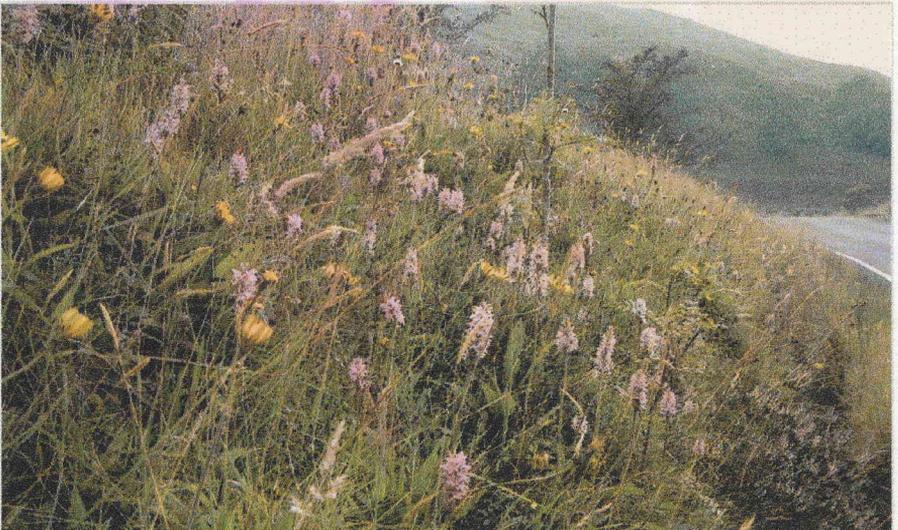
Photographic Competition 2003

Doreen Webster – Show Secretary

What supportive members we have in the Hardy Orchid Society. On Saturday 22nd November at Wisley, 23 members showed their keenness by entering prints and/or slides in the Photographic Competition, a total of 159 exhibits. Thanks to all of you for your support.

The Judge was Robert Rolfe of Nottingham, a very experienced judge of both plants and plant photographs. The judging went very smoothly, but Robert did comment on some of the landscape photographs as he felt they should include more of the background in order to qualify as landscapes. He also congratulated the Society on the high standard. Thank you Robert for all your hard work.

For those of you who missed the show, the First Prize winning pictures are displayed on the HOS Website www.hardyorchidsociety.org.uk, and several are included in this Journal. Thanks again to everyone. Please start clicking ready for next year, when we will be at a new venue and will endeavour to have more space available for even more prints.



Class 1: *Dactylorhiza maculata* in Galloway, Joan Varley.



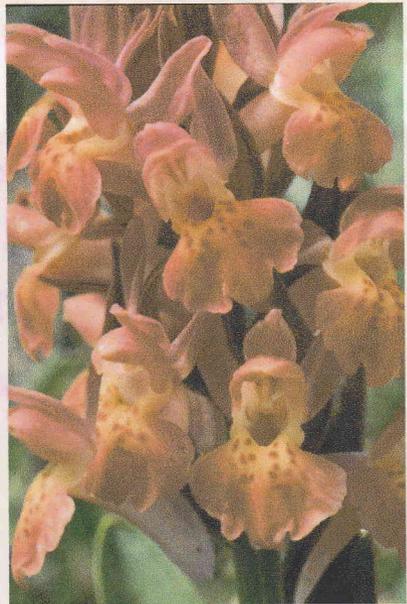
Class 8: *Orchis (Aceras) anthropophora*
Richard Laurence



Class 4: *Gymnadenia conopsea*
Chris Barker



Class 7: *Hammarbya paludosa*
John Devries



Class 12: *Dactylorhiza sambucina*
Don Tait

Photographic Competition Winners

Class 1: An orchidaceous landscape – print up to 7 x 5 inches

Joan Varley: *Dactylorhiza maculata*, Galloway (see page 5)

Class 2: A group of orchids – print up to 7 x 5 inches

Gary Tucknott: *Neotinea (Orchis) ustulata*, Lot, France

Class 3: A single orchid plant – print up to 7 x 5 inches

Raymond Gould: *Orchis mascula*, East Sussex

Class 4: A close-up – print up to 7 x 5 inches

Chris Barker: *Gymnadenia conopsea*, Wensleydale, North Yorkshire (see opposite)

Class 5: An orchidaceous landscape – print up to A4

Simon Andrew: *Himantoglossum hircinum* & *Anacamptis pyramidalis*, Normandy

Class 6: A group of orchids – print up to A4

Richard Laurence: *Anacamptis (Orchis) morio*, Suffolk, (see front cover).

Class 7: A single plant – print up to A4

John Devries: *Hammarbya paludosa* (see opposite)

Class 8: A close-up – print up to A4

Richard Laurence: *Orchis (Aceras) anthropophora* (see opposite)

Class 9: An orchidaceous landscape – 35 mm colour slide

Richard Manuel: *Dactylorhiza romana*, Gargano, Italy

Class 10: A group of orchids – 35 mm colour slide

Kath Tait: *Serapias cordigera*

Class 11: A single orchid plant – 35 mm colour slide

Patrick Marks: *Pseudorchis albida*, Perthshire

Class 12: A close-up – 35 mm colour slide

Don Tait: *Dactylorhiza sambucina* (see opposite)

Six Days in Newfoundland Report on a talk at Wisley by Simon Andrew

Simon Andrew and the editor, Patrick Marks, had both travelled to Newfoundland in July 2003, blissfully unaware of each other's trip. Simon's trip took place in mid-July, so it was interesting for both the audience at the meeting and Patrick Marks to hear about the orchid species coming into bloom and those which had finished. Simon's trip followed the same route from Port-aux-Basques heading to the Gros Morne National Park, a major starting point for any trip to Newfoundland. Simon was using a digital camera and projected his pictures with the aid of a laptop computer and digital projector.

Simon briefly outlined the location and geological make-up of Newfoundland. Despite being at a similar latitude to Birmingham, the lack of a warming influence such as the Gulf Stream is clearly illustrated in the harsher winters, with icebergs reaching the coast even in summer. Simon found that the *Cypripediums*, which had been blooming profusely only a couple of weeks previously, were mostly over in Gros Morne. He found plenty of the red bog orchid species like *Arethusa bulbosa* (Dragon's-mouth Orchid) and *Calapogon tuberosus* (Grass Pink) and the white *Platanthera blephariglottis* (White Fringed Orchid) in the vast, boggy areas which fringe the highway north. In Gros Morne, apart from the *Cypripediums* which were mostly going over, he found a range of *Platanthera* species coming into full flower, as well as some *Corallorhiza maculata* (Spotted Coral-root).

Heading north, he stopped at various limestone sites as mentioned in Patrick Marks's article, before arriving at the town of Raleigh where trips to Burnt Cape and Cape Norman were planned. With the assistance of the local rangers he explored Burnt Cape, again finding some species going over, but still seeing *Amerorchis rotundifolia* (Small Round-leafed Orchid), *Platanthera hyperborea* (Tall Northern Green Orchid), *Dactylorhiza (Coeloglossum) viridis* (Frog Orchid) and some *Cypripedium parviflorum* (Large Yellow Lady's Slipper). A trip west to Cape Norman, another bleak limestone area, revealed a similar flora.

The trip back south included a productive stop at a reserve called Table Point, where he was lucky to discover a Newfoundland rarity, *Platanthera hookeri* (Hooker's Orchid), and a further day at Gros Morne before continuing back towards Port-aux-Basques. He had a productive stop at a town called Stevenville, a few hours drive south of Gros Morne, with species such as *Arethusa bulbosa*, *Calapogon tuberosus* and the third of the red bog orchids, *Pogonia ophioglossoides* (Rose Pogonia). Two further *Platanthera* species, *Platanthera grandiflora* (Large Purple Fringed Orchid) and *Platanthera lacera* (Ragged Fringed Orchid), concluded his tally of species. He acknowledged the usefulness of a list compiled by Todd Boland, a Newfoundland botanist, and encouraged members to travel to Newfoundland in July to view the spectacular displays that can be easily found.

Following Footsteps in the Vercors Report on a talk at Wisley by Tony Hughes

This talk was about a holiday (18 - 24 May 2003) in which the footsteps of various HOS members (Richard Manuel and Les Lewis in particular) were followed from west to east through the southern part of the Vercors. Starting from alongside the Rhone in Valence, the D68 heads east into the hills where all manner of orchids abound on the roadsides and in the woods and meadows. Many were well-known British species, but often in mind-blowing profusion. Particularly fascinating was the "Mankey" orchid (*Orchis anthropophorum* x *simia*), growing alongside both its



Ophrys drumana
Photo: Tony Hughes

parents. But it wasn't only orchids - in many places the cascades of a lime-loving Trumpet Gentian, *Gentiana angustifolia*, proved very photogenic.

After a few miles, the road reaches a plateau around the Col des Limouches and Col de Bacchus, where many possible routes let one wander over close-cropped hillsides full of orchids. Here *Ophrys drumana* (the local relative of *O. bertolonii*) appeared in quantity, together with many forms of the spectacular hybrid *Neotinea (Orchis) tridentata x ustulata*.

From there we headed south down the D70, past impressive limestone outcrops and gorges, towards Crest. The orchids persisted down to the fertile lowlands, where we (unwittingly!)

photographed a small-flowered form of the Late Spider Orchid - identified for us by one of the Wisley attendees as *Ophrys gracilis*.

From Crest we headed east up the valley of the River Drôme, and then took a detour north over the Col de Rousset to the "Montagne de Beurre". Somewhat disappointing, since this was not the EU Butter Mountain, and the only orchid in flower at that level (about 5000ft) was *Dactylorhiza sambucina*.

Continuing eastward, we climbed steadily to the Col de Menée, where the steep, grassy slopes above the western end of the road tunnel displayed fine specimens of *Orchis pallens*. Through the tunnel, the road turns north and gently descends the eastern scarp of the Vercors towards Clelles. On this side we noticed the absence of *Orchis simia* and several *Ophrys* species, but they were replaced by even better delights! *Orchis spitzellii* occurred in several places, often in the company of magnificent Lady (*O. purpurea*) and Military (*O. militaris*) Orchids and their inevitable hybrids.

Staying in Richardière, at the foot of the spectacular Mont Aiguille, we had ready access to many excellent areas. Particularly rewarding were the varied habitats along the little road to Tresanne. At one point a huge clump of *Cypridium calceolus* waved at us from a roadside bank, while *Ophrys araneola* (a small-



Neotinea tridentata x ustulata
Photo: Tony Hughes

flowered Early Spider) favoured the ditch. It seems that *C. calceolus* likes the steep, east-facing slopes of the Vercors, since we found it in at least half a dozen places - an excellent way to end a holiday!

For more detailed accounts of this region, see Richard Manuel's articles in Newsletters 18, 27 and 28.

Burnt Tips and Bumbling Bees: How Many Orchid Species Currently Occur in the British Isles?

Richard M Bateman

This extended presentation was in effect an address from the outgoing President of the Society. I therefore chose to mark the occasion by preparing an overview of recent insights gained from DNA-based studies into the biology, systematics and evolution of the British and Irish orchid flora, focusing especially on how best to circumscribe species.

Evolution can be viewed in two ways. We are most familiar with seeing evolutionary

relationships viewed laterally, with morphological divergence among species being plotted against time as the vertical axis to generate the familiar tree motif. However, we can also view the present-day products of evolution from above and at "higher magnification", seeking morphological gaps among sets of individuals representing particular populations; these gaps should in theory reflect barriers to gene exchange between species. Seen from above, species are visualised not as a tree but more often as clusters of points on two-dimensional "ordination plots" that resemble graphs.

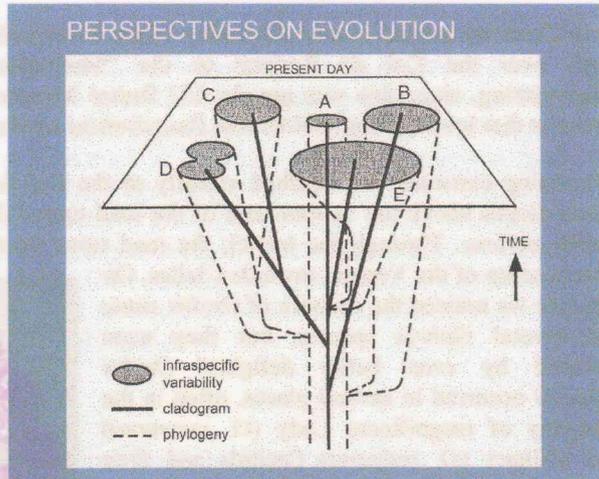


Diagram comparing evolution viewed from the side versus evolution viewed from above

Evolution inevitably involves changes in the appearance or the biological "behaviour" of a species that are caused by one or more genetic modifications. Thus,

in order to understand evolution, we need to describe both the morphology *and* the molecular genetics of each organism, and then compare the patterns revealed by these complementary sets of techniques. When comparing species by generating evolutionary trees, we tend to represent each species with a single representative individual (an approach to sampling that can be termed ‘typology’). The morphological data employed in such studies reflect discrete characters that are either present or absent, while corresponding genetic data are sequences of bases from particular regions of the plants’ DNA (e.g. Bateman, 2001).

However, when attempting to circumscribe species, we need information from much larger numbers of individuals, ideally sampled from across the geographical range of each suspected species. Morphological data are diverse, including counts and measurements of particular structures; similarly, molecular genetic approaches are more diverse, including not only sequences but also techniques that dissect the DNA into comparable fragments and then measure their contrasting sizes with great precision. Such population-level studies are more labour-intensive and cannot encompass nearly as many species as tree-building approaches. In practice, each of these two approaches feeds relevant information into the other; this feedback is reflected in most of the case-studies described below.

We are fortunate that Britain’s orchids have in the last decade probably been analysed more extensively using these techniques than any other plant family growing anywhere else in the world. This collective success reflects research collaborations between the three main plant systematics laboratories in Britain (Royal Botanic Gardens Kew, Royal Botanic Garden Edinburgh, Natural History Museum), working together with other universities further afield (e.g. Lund, Naples, Estonia, Beijing). The initiative was also driven in part by materials generously supplied to the research team by members of the Hardy Orchid Society.

The results of studies constructing evolutionary trees of the tribes Orchideae (*Orchis* and its relatives) and Neottideae (*Epipactis* and its relatives), revolving around Kew’s comprehensive *Genera Orchidacearum* project, have been the subjects of previous presentations to the Society. Nonetheless, another brief review was considered desirable, as the original sequence data derived from the ITS region of the nuclear genes (Bateman *et al.*, 2003), which is inherited from both parents of a plant, have since been supplemented with sequences from two regions of the chloroplast, which are inherited only from the mother. The two contrasting clusters of DNA (termed genomes) in the nucleus and chloroplasts are under different constraints and so can inform us about different aspects of the evolution and genealogy of the plants being analysed.

Comparison of the nuclear and chloroplast results confirms the original ITS-based interpretations in all cases. “*Aceras*” *anthropophora* is in fact a true “anthropomorphic” *Orchis*. In contrast, “*Orchis*” *ustulata* has no close relationship with *Orchis purpurea*, being part of the group epitomised by *Neotinea maculata*, and

"*Orchis*" *morio* has no close relationship with *Orchis mascula*, being nested between *Anacamptis pyramidalis* and *A. ("Orchis") laxiflora*. "*Coeloglossum*" *viridis* is actually a relatively primitive *Dactylorhiza*. More recent discoveries include the fact that *Neottia nidus-avis* is closely related to, and may have evolved from, "*Listera*" *ovata*; species formerly in the genus *Listera* should therefore be transferred to *Neottia* (Bateman *et al.*, in press). Within Tribe Malaxideae, *Hammarbya paludosa* is most closely related to *Liparis loeselii*, and should therefore be incorporated into *Liparis* (Salazar, Chase & Cribb, in prep.).

The almost complete coverage of species now greatly facilitates further research. Firstly, it is easy to place phylogenetically the few remaining unplaced species. For example, analysis of material supplied by Kath Fairhurst and Mihaela Nikolova of the contentious Caucasian taxon "*Pseudorchis*" *frivaldii* clearly demonstrates that this species is nested within *Gymnadenia*, close to (but not sister to) the former genus *Nigritella*. This evolutionary tree shows that floral reduction has occurred three times within *Gymnadenia* (it has already been demonstrated to have occurred separately in "*Nigritella*" and *G. odoratissima*). Secondly, the evolutionary tree provides a context for re-examining records of natural hybridisation. For example, applying molecular phylogenetic techniques to a suspected hybrid new to science, between *Anacamptis robusta* and *A. fragrans*, demonstrated not only that its parentage had been correctly identified but also that *A. fragrans* was its mother and had passed on to the adjacent hybrid more of its morphological characteristics than had its father, which was located at least 100 m distant (Bateman & Hollingsworth, in press; see also the next issue of *JHOS*).

Armed with morphometric and population genetic tools, we can in theory re-examine the status of *all* of the supposed orchid species native to the British Isles. Several techniques have already been applied to one of the most challenging genera, *Epipactis* (Squirrell *et al.*, 2002; Bateman *et al.*, in press). Sampling across Europe indicates at least a dozen independent and randomly-distributed origins of self-pollinated lineages from within the cross-pollinated *E. helleborine* complex. Each self-pollinated line is genetically distinct and, because of being self-pollinated, of very low genetic diversity. However, this supposed genetic weakness has not prevented species such as *E. phyllanthes* and *E. leptochila* from becoming widespread across western Europe. *Epipactis dunensis* is a British endemic that is genetically distinct from the more widespread *E. leptochila*;



Epipactis sancta
Photo: Richard Bateman

moreover, a single small population of *Epipactis* on the dunes of Lindisfarne in northeast England also appears sufficiently distinct genetically to provide some support for Delforge's decision to describe it as a new species, *E. sancta*. Diversification of *Epipactis* within Britain into subtly different soils and habitats may in part reflect switches of mycorrhizal partners.

An even broader panoply of molecular techniques has been applied to the most taxonomically troublesome of all of Britain's orchid genera, *Dactylorhiza*. Many authors ascribe the morphological complexity in the genus to "hybridisation". There is some truth in this statement, but the most crucial mode of hybridisation in *Dactylorhiza* is when two morphologically and genetically contrasting species (most commonly *D. incarnata s.l.* and *D. fuchsii s.l.*) simultaneously hybridise and double the chromosome number in the progeny. This process, termed 'allopolyploidy', immediately confers on the progeny at least partial genetic isolation from their parents. Key questions to ask are therefore how frequently this process results in successful establishment of the resulting stabilised hybrids, and which species is the mother and which the father.

By comparing results from a range of different analytical techniques, it has become clear that members of the *D. incarnata s.l.* and *D. fuchsii s.l.* groups have combined repeatedly to generate large numbers of subtly distinct "species" (Pillon *et al.*, *subm.*). In Greece and Asia Minor, *D. euxina* replaces *D. incarnata* and *D. saccifera* replaces *D. fuchsii*, while in Ireland and northwest Scotland, *D. maculata* sometimes replaces *D. fuchsii*. Some allopolyploid species have proved to have multiple origins; for example, *D. traunsteineri* has separate origins in the Alps, Scandinavia and the British Isles. And, as with *Epipactis*, some peripheral populations have proved to be both recently evolved and genetically unique. A good example is *D. ebudensis*, found only on the Hebridean island of North Uist, which is unusual in having *D. incarnata* rather than *D. fuchsii* as its mother. These results have some worrying implications for the recent *Plant Atlas of Britain and Ireland*. Although generally very comprehensive, this tome actually maps on the same diagram UK populations of *D. ebudensis*, *D. occidentalis* and *D. purplella* var. *cambrensis* (= *majalisformis*). All are erroneously ascribed to *D. majalis sensu stricto*, despite the fact that each has a separate and distinct evolutionary origin within the British Isles, whereas we can now recognise that *D. majalis s.s.* is exclusively Continental.



Dactylorhiza ebudensis
Photo: Richard Bateman

British populations of *Gymnadenia* have also recently been subjected to combined morphological and molecular investigations (Bateman, Denholm & Hollingsworth, in prep.). The three named taxa that inhabit calcareous grasslands, wetlands and heathlands are reliably genetically distinct and thus could legitimately be recognised as full species, named *G. conopsea*, *G. densiflora* and *G. borealis*, respectively. Although they are difficult to distinguish from each other morphologically, and hence are said to be cryptic, detailed morphometric studies have revealed new and better characters for separating these species; in other words, they are less cryptic than is generally supposed.

However, other contrasts between molecular and morphological data are even more striking. For example, *Spiranthes romanzoffiana* is a rare species that has been given "Schedule 8" conservation status in the British Isles, but is relatively common in North America. Populations of *S. romanzoffiana* north of the Hebridean island of Mull have high levels of diversity consistent with cross-pollination, whereas populations further south have much lower genetic diversity consistent with self-pollination (Forrest *et al.*, in press). Does this contrast indicate two separate waves of immigration to the British Isles of North America seed? Or does it indicate evolutionary divergence after a single immigration event? And are there any reliable morphological differences separating the northern and southern populations? In order to answer these important questions, we need additional genetic data from North America, plus morphological data from both continents. In the meantime, the information already acquired on reproductive behaviour should prove useful to our conservation bodies.



Left, *Gymnadenia borealis* and right, *G. densiflora* at same scale.
Photos: Richard Bateman

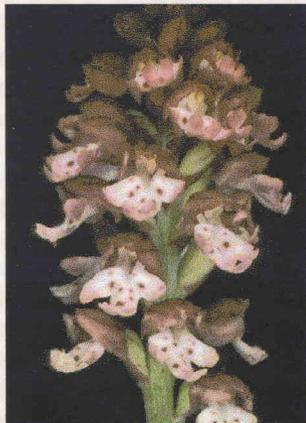
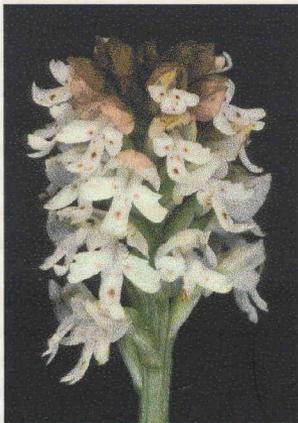
By contrast, the two British species of butterfly-orchid, *Platanthera bifolia* and *P. chlorantha*, are readily differentiated by their appearance but extremely difficult to distinguish genetically (Bateman, Rudall & James, in prep.). This observation implies that they diverged very recently, despite the fact that both have become widely distributed across Eurasia. *Platanthera chlorantha* is about 50% larger than *P. bifolia* in most of its features, the exceptions being a much wider separation of the bases of the

pollinia and a much larger spur entrance. These two characters appear to have been sufficient to dictate a switch in the species of pollinating moth from *P. bifolia* to *P. chlorantha*, constituting a potentially very valuable model system for observing the mechanism of speciation through natural selection.



Left, *Platyanthera chlorantha* and right, *P. bifolia*
 Photo: Richard Bateman

Equally intriguing is the differentiation between the early-flowering and late-flowering populations of *Neotinea ustulata*. This is Britain's most rapidly declining wildflower; here, the larger and more widespread group of populations flowers in late May/early June, but another set of populations confined to the chalk downs of south-east England flowers in early July. Similar differentiation of flowering time is evident across the geographical range of the species, though at the eastern end of the range, in Estonia, late-flowering populations are the more common. It has been argued that the late-flowering populations merit recognition as a new subspecies or even as a new species (in either case named *aestivalis*), despite the fact that the supposed morphological differences are both subtle and unreliable. Genetic studies of populations of *N. ustulata* across Europe, focusing on Britain and Estonia, have demonstrated that the genetic variation attributable to geographic variation is substantially greater than that attributable to any divergence between early-flowering and late-flowering populations (Tali, Fay & Bateman, *subm.*). This implies that complete genetic isolation has not been achieved between the early-flowering and late-flowering populations. Also of interest is that fact that, in Britain, the early-flowering populations are more



Neotinea ustulata: early form on left, late form on right.
 Photos: Richard Bateman

diverse than the late-flowerers, supporting expectations that had been based on the hypothesis that the late-flowering populations diverged from the early-flowering populations and have therefore had less time to develop genetic novelties.

Lastly, we should consider two other processes that have undoubtedly contributed to the diversity of the present British orchid flora. The first is migration, specifically the transport in air currents of the dust-like seeds of orchids. It is likely that seed of non-British orchids is constantly raining down on the British Isles, but that very few of these seeds successfully establish viable populations. This in turn is likely to be determined by whether appropriate co-evolutionary partners exist here in the form of viable mycorrhizal infections of their roots and (except in the cases of self-pollinated species) of insects capable of pollinating the flowers. In this context, the certainty of global warming brings the probability of new orchid species establishing themselves in the British Isles by northward migration from the Continent. Possible examples of such migrations include the relatively recent arrivals of *Ophrys cf. balearica* to Dorset and *Serapias parviflora* to Cornwall. This makes it imperative that deliberate introductions of such species are not attempted, as they inevitably undermine the legitimacy of natural arrivals. It is also desirable that genetic fingerprinting techniques are made sufficiently precise to determine the geographic source of any surprising immigrants. Suitable case-studies for such research include our rarer *Ophrys* species, *O. sphegodes* and *O. fuciflora* (Devey, Bateman & Fay, unpublished), together with *Himantoglossum hircinum*, whose distribution has long been recognised as ebbing and flowing in response to regional climate change.

The final determining factor to consider is the saddest, namely extirpation – the complete loss from the British Isles of certain orchid species (this process cannot legitimately be termed extinction, as all of the species in question persist happily in Continental Europe). It is now widely accepted that *Spiranthes aestivalis*, last seen with any frequency in the New Forest in the 1930s and finally disappearing in 1959 following a combination of draining of its marshy habitats and over-collecting by herbarium botanists, has been extirpated from Britain. However, it may also be time to declare *Epipogium aphyllum* lost to the British flora; to the best of my knowledge, it has not been seen here for over a decade, thereby earning its colloquial name of Ghost Orchid. One possible cause of its apparent departure from the corporeal world is increasingly dry soils, reflecting both climatic change and denudation of its broad-leaf forest habitats through a combination of gales and disease.

Taken together, these combined genetic and morphological studies demonstrate that we in Britain play host to a range of different *kinds* of orchid species. Some supposed species do not withstand close scientific scrutiny, having neither morphological nor molecular cohesion. Examples in Britain include some of our greatest “rarities”: *Epipactis “youngiana”*, *Dactylorhiza “lapponica”* and, arguably, the late flowering *Neotinea ustulata “subsp.” aestivalis*. These unjustified “species”, best described as “Emperor’s New Clothes” species, have in the past been an avoidable drain on conservation resources. Other species, such as the different habitat specialists that have

evolved within *Gymnadenia*, show greater molecular differences than morphological differences; consequently, they have not yet become widely recognised as full species, despite the fact that they merit such distinction. Such plants are “Cinderella” species. A subcategory of Cinderella species are “Robinson Crusoe” species: single, geographically isolated populations that have acquired their own characteristic genetic motif, together with a morphological spectrum that is at least subtly distinct from their closest relatives. Examples mentioned above include *Epipactis sancta* from Lindisfarne and *Dactylorhiza ebudensis* from North Uist. We can also expect to host increasing numbers of “Bleriot” species such as *Serapias parviflora*, which may have flown across the English Channel unaided but alternatively could have been given unwarranted assistance by man.

Nonetheless, it may appear that the majority of British orchid species have long been widely recognised and are uncontroversial. But then, many of our orchids have not yet been subjected to intense morphological and molecular scrutiny. I can therefore confidently predict that further surprises await us. One conclusion rapidly and clearly emerging from recent research is that a wide range of evolutionary processes cause speciation in hardy orchids; thus far, each of our detailed case-studies has implicated a different causal mechanism. Moreover, not all speciation events confer immediate adaptive advantage; it would seem that evolution is more complex and interesting than even Darwin could have predicted.

Furthermore, we still have some very challenging questions to answer collectively. Which combination of the many analytical techniques now available is most effective for circumscribing species? Must taxa be both morphologically and molecularly distinct in order to be deemed legitimate species? If small geographically peripheral populations, or occasional radically altered mutant forms within populations (including self-pollinating lines), fulfill both these criteria, are they sufficiently extensive to warrant species recognition? Should multiple origins of self-pollinating species from a single cross-pollinating parental species, or of allopolyploid species from the same pair of parental species, each be differentiated as separate species? And how can conservationists make best use of this burgeoning body of evolutionary knowledge? Will they be prepared to abandon long-cherished supposed species that in fact have no biological reality?

Lastly, some readers may still desire an explicit answer to the simplistic question posed in the title of this article. If *Spiranthes aestivalis* and *Epipogium aphyllum* are judged to be extirpated from Britain, *Anacamptis* (formerly *Orchis*) *laxiflora* on the Channel Islands is viewed in a biogeographic context as being French rather than English, and the rare Robison Crusoe taxa *Dactylorhiza ebudensis* and *Epipactis sancta* are regarded as acceptable “neophyte” species, the current answer is 52 species in 20 genera. To those readers anticipating a definitive answer of 42, I can only invoke many years of inflation over the period since *Hitch-Hikers Guide to the Galaxy* was first broadcast in 1978–80.

References

- Bateman, R. M. 2001. Evolution and classification of European orchids: insights from molecular and morphological characters. *J. Eur. Orch.* 33: 33–119.
- Bateman, R. M. & Hollingsworth, P. M. In press. Morphological and molecular investigation of the parentage and maternity of *Anacamptis* x *albuferensis* (*A. fragrans* x *A. robusta*), a new hybrid orchid from Mallorca, Spain. *Taxon* 53.
- Bateman, R. M., Hollingsworth, P. M., Preston, J., *et al.* 2003. Molecular phylogenetics and evolution of Orchidinae and selected Habenariinae (Orchidaceae). *Bot. J. Linn. Soc.* 142: 1–40.
- Bateman, R. M., Hollingsworth, P. M., Squirrell, J., *et al.* In press. Phylogenetics: Neottieae. In Pridgeon, A. M., *et al.* (eds.), *Genera Orchidacearum*, 4. *Epidendroideae I*. Oxford University Press.
- Forrest, A. D., Hollingsworth, M. L., Hollingsworth, P. M., *et al.* In press. Population genetic structure in European populations of *Spiranthes romanoffiana* set in the context of other genetic studies on orchids. *Heredity*.
- Pillon, Y., Chase, M. W., Fay, M. F., *et al.* Submitted. Systematics and biogeography of diploids and allotetraploids in *Dactylorhiza* (Orchidaceae). *Molecular Ecol.*
- Squirrell, J., Hollingsworth, P. M., Bateman, R. M., *et al.* 2001. Partitioning and diversity of nuclear and organelle markers in native and introduced populations of *Epipactis helleborine* (Orchidaceae). *Amer. J. Bot.* 88: 1409–1418.
- Tali, K., Fay, M. F. & Bateman, R. M. Submitted. Little genetic differentiation across Europe between early-flowering and late-flowering populations of the rapidly declining orchid *Neotinea ustulata*. *Biol. J. Linn. Soc.*

The Early Marsh-Orchid in Northern Europe

John Hagger

III The British and Irish fen, marsh and bog forms

Recent British floras might lead the novice to believe that *Dactylorhiza incarnata* subsp. *pulchella* exclusively represents a purple-flowered subspecies that is found in and adapted to poor fen, wet heathland and bog where the soil pH is generally below 6. The impression is also that subsp. *incarnata* has pink flowers, usually with distinctly trilobed labella with fine red markings and strongly reflexed lateral lip margins, and is to be found growing in wet meadows and fens with a circumneutral pH of 6 to 8.

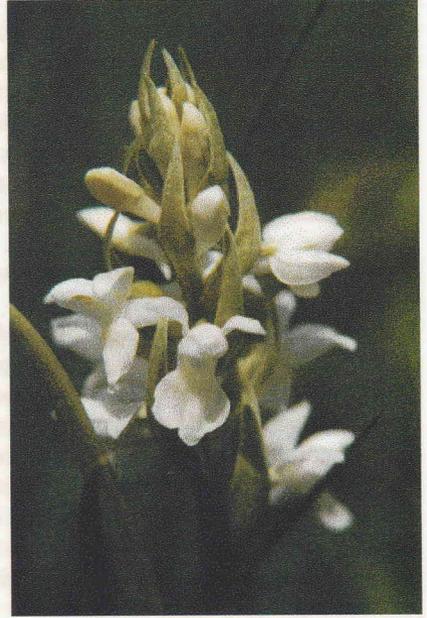
The recent “New Atlas of the British and Irish Flora” (Preston, Pearman & Dines 2002), for example, describes subsp. *pulchella* primarily as “a tuberous perennial herb of acidic valley bogs, marshes and damp heathland, often growing with *Sphagnum*”. Lang (1989) described subsp. *pulchella* as “identical in morphology with the normal form, but the colour is a mauve-purple”. It was the expert opinion of Turner Ettliger (1997) that purple-flowered early marsh-orchids might be better looked upon as mere colour variants of *incarnata*, were it not for the fact that a high propor-

tion of them seemed to grow in acid bog habitats. Heslop Harrison (1956) relied entirely on flower colour when he created “subspecies” *pulchella*, although he admitted that the purple-flowered plants were actually highly polymorphic and exhibited not one consistent feature other than purple flower colour. According to Jenkinson (1995), though, plants of subsp. *pulchella* from the New Forest are markedly and consistently different in morphology and floral anatomy from the southern forms of subsp. *incarnata*.

The generalisation of subsp. *pulchella* as a bog-adapted, purple-flowered orchid, and of subsp. *incarnata* as a pink-flowered fen plant, is really rather a myth: it holds largely true only south of a line cutting across mainland Britain through mid-Wales and East Anglia. Even within this area, exceptions occur. The New Forest bogs, for example, harbour populations of subsp. *pulchella* that contain not insubstantial numbers of plants with pale purple and virtually white flowers. These orchids share the common morphology of Jenkinson’s interpretation of subsp. *pulchella*, and are evidently no more than different colour forms of the same taxon. Their presence is a clear indication that the subsp. *pulchella* (defined by Heslop Harrison solely by its flower colour) even near its type location cannot be identified by purple flower colour alone.

D. incarnata has recently been described from a factory grounds near Waltham Abbey on London’s doorstep, growing there in three colour forms (Burton 1983). Coastal Sussex offers a single site for *D. incarnata* in a neutral meadow near the sea (Lang 2001). Here atypically late-flowering, very robust and foliose, purple-flowered individuals with markedly reflexed, trilobed and finely marked labella grow in the company of earlier pink and purple-flowered plants. Consistent with Heslop Harrison’s and Lang’s descriptions of subsp. *pulchella*, but not with Jenkinson’s, these tall, leafy plants appear to be close to robust specimens of “main-form” var. *incarnata* as seen in Öland and elsewhere in southern Sweden (Mossberg & Lundqvist 1994).

Above the imaginary line bisecting southern and northern Britain, the textbook separation of subsp. *pulchella* and subsp. *incarnata* breaks down more completely. In North Wales and parts of Northern and Middle England, it appears to be much more common to find pink and purple-flowered early marsh-orchids, often of very similar morphology but sometimes as polymorphic in form as they are in flower colour, growing together and probably interbreeding in marsh or fen habitats. Indeed, some of these colonies sport a multitude of colours: off-white, pink, rose-red, lilac and purple, plus many intermediates. Such mixed colour populations are also found in bogs over limestone in Central and Eastern Ireland (Brunker 1950, Feehan & O’Donovan 1996). The population of *D. incarnata* to be found at Wicken Fen in Cambridgeshire is a good example of such a case. It seems nonsensical to separate out only the purple-flowered specimens at such sites and transfer them to a different subspecies. There must be a strong argument in favour of excluding these plants from subsp. *pulchella* and instead referring to them as purple colour variants of subsp. *incarnata*. Such a move would go a long way to reconciling the disparate classification of the



Dactylorhiza incarnata; four colour forms from Wicken Fen, Cambridgeshire.
Photos: John Haggard, 2003

species adopted by British and Continental authors.

In a paper that I would strongly recommend to interested parties, Heslop Harrison (1953) described a population of *D. incarnata* from a marshy common at Foul登 in Norfolk. This was markedly variable in the colour, size and shape of the flowers. In his opinion, one of the forms here, which had purple flowers, shared a common morphology with a monomorphic, anatomically invariable and exclusively purple-flowered population some nine miles further north in an almost identical pingo habitat near King's Lynn. It seems highly likely that this latter segregate owed its uniformity and its similarity to some of the Foul登 plants as a result of a recent "founder effect" (the result of all the plants arising from one or just a few seeds with a very limited amount of genetic variation). Certainly this was Heslop Harrison's favoured opinion at the time. It seems most likely then that the King's Lynn plants were quite closely related to the plants at Foul登. In just the same way as plants of different form and flower colour at Wicken appear to be linked in a single, genetically diverse and interfertile population, so would the plants at Foul登 have been. Despite the strong evidence linking the purple-flowered plants at King's Lynn with the mixed colony of purple- and pink-flowered plants at Foul登, Heslop Harrison (1956) and later Bateman and Denholm (1985) both included the former population in their diagnostic descriptions of subsp. *pulchella*, suggesting a degree of taxonomic separation quite inconsistent with observation. Bateman and Denholm furthermore noted that the North Norfolk population appeared to be biometrically closer to Western Irish plants (their subsp. *cruenta*) than to the remainder of their British *pulchella* sample, which consisted largely of southern bog forms, but also confusingly included some yellow flowered plants from the highly polymorphic population at Wicken. Might it not be equally valid to describe the Foul登, King's Lynn and Western Irish plants (at least those with unblotched leaves) as purple-flowered subsp. *incarnata*, rather than group them in different subspecies? In Western Ireland, populations of *D. incarnata* that grow in wet meadows and fens over limestone are almost exclusively purple-flowered, although few, if any, share the typical morphology associated with subsp. *pulchella* in Southern England (Webb & Scannell 1983). Some of these colonies contain plants that are indistinguishable from the purple-flowered "main-form" subsp./var. *incarnata* from Southern Sweden.

In the north of England, Wales and parts of Scotland, mixed pink- and purple-flowered populations occur over limestone and over non-calcareous rocks in wet habitats whose pH is tempered by basic flushes. Although some Scottish orchid literature describes purple-flowered early marsh orchids without qualification as belonging to subsp. *pulchella*, and as preferring boggy areas with rather more acidic conditions than subsp. *incarnata* (e.g. Allan & Woods 1993), a different impression emerges when individual Scottish county floras are consulted. Despite the apparent abundance of "boggy habitats" in Scotland, purple-flowered early marsh orchids are nearly always cited as being rare (only two records in The Flora of East Ross-shire, for example). Where they are found at all, they are often in the company of pink-flowered subsp. *incarnata* and/or in base-rich habitats (Jermy & Crabbe 1978,

McCallum Webster 1978, Duncan 1980, Scott & Palmer 1987). A Cumbrian flora informs us that pink-flowered subsp. *incarnata* grows in the company of purple-flowered subsp. *pulchella* "at most of the subsp. *pulchella* sites" (Halliday 1977). Although I am personally unacquainted with northern British *D. incarnata*, photographs of supposedly characteristic plants from Ardnamurchan in Western Scotland and supplied by one colleague show purple and pink flowers of almost identical floral anatomy and of a form unlike either southern subsp. *incarnata* or subsp. *pulchella* (Phillips, 2003, personal communication). A better description of these plants would seem to be as colour forms of the same taxon, whatever that might be. Another colleague informs me that the separation of Scottish *pulchella* and *incarnata* seems fairly clear, and that the two plants often occupy adjacent habitats with the purple-flowered plants in the boggy and more acidic of the two (Marks, 2003, personal communication). It cannot be denied, however, that in parts of Northern Scotland and Northwest England the distributions of the two "subspecies" frequently shadow one another and are not mutually exclusive in the way they usually are in Southern England. Furthermore, it does appear that in some situations, particularly in the north and west of Scotland, the differently coloured flowers are carried on plants which are otherwise fairly monomorphic, but which do have some anatomical characteristics quite unlike the southern forms. These include narrow and petite sheathing leaves that in many cases do not extend upwards as far as the base of the flower spike. It is difficult to ascertain whether such features reflect genetic differences or are due to environmental influences. However, it is worth noting that these characteristics (plus a rather consistently diamond-shaped and generally weakly divided labellum) are also found in the *D. incarnata* populations of the mountains of Scandinavian Lapland, Finland and in some of the colonies in north-western Ireland (Landwehr 1977). These northern forms seem more tolerant of variable soil pH, and will occupy rather more acidic substrates than many of their southern relatives.

It is an interesting observation that, in some cases, changes in water level or in the mineral composition or pH of the soil might actually physically alter the flower colour of some forms of *D. incarnata*. This indicates that the intensity of floral pigmentation may be influenced by environmental factors under certain circumstances. The phenomenon has been reported by Allen (HOS meeting 14/09/03) in the Scottish forms and has been suspected by myself in some Welsh dune colonies, whose red flower colour often appears to dilute down to pale pink on the periphery of the colony. Dune forms grown from seed will sometimes vary quite markedly in the intensity of their red flower colour from year to year, presumably depending on the form, pH and moisture retention of their composts. It seems likely that the ability to perform this colour change is genetically determined and may have taxonomic relevance. The phenomenon seems to be associated with the red pigments only but could conceivably turn a pale lilac "*incarnata*" into a dark red-purple "*pulchella*" and wreak further taxonomic confusion.

The notion that all our northern purple-flowered types (excluding those with pigmented leaves?), and particularly the majority that seem to occur in colonies of mixed

flower colour, are synonymous with ecologically isolated forms from the acidic southern bogs must surely be questionable. Might it not be more reasonable to include both northern colour forms in a single subspecies, rather than call the purple-flowered individuals “subsp. *pulchella*” and identify them with plants from the New Forest that really do not resemble them at all?

A full list of the references quoted and additional illustrations may be found on the author’s website at www.johnsorhids.co.uk.

***Dactylorhiza incarnata* in Gotland**

Ian Phillips

I visited Gotland at the beginning of June 2000, some three weeks before John Hagar visited other parts of Sweden (Newsletter 27). Like him, I noted that it had been a warm spring, and I found the orchid season concertinaed, with early and mid-season orchids blooming together. In the space of three days, I visited 16 sites and saw twenty species or sub-species.

I had subconsciously prepared myself for purple *Dactylorhiza incarnata* subsp. *incarnata* by reading in the past Sven Nilsson’s Orchids of Northern Europe with paintings by Bo Mossberg, which shows the full colour range from pink to purple. I had also seen Landwehr’s paintings of a pair of *D. incarnata* subsp. *incarnata*, one of which is decidedly purple. Nonetheless, when out in the field I found myself recording *D. incarnata* subsp. *pulchella* quite frequently, and *D. incarnata* subsp. *incarnata* somewhat less frequently, without really thinking much more about it, except that the former should not have been growing quite so happily side by side with the latter on clearly basic terrain. I did note that in a couple of sites *D. incarnata* subsp. *incarnata*, *pulchella* and *cruenta* were intermingled, but that I did not see subsp. *incarnata* and subsp. *ochroleuca* growing together.

It was only when I returned home that I started to reconsider my identifications. To be honest, what I had called *pulchella* did not greatly resemble either the dainty plants that I had seen on rare occasions in the west of Scotland or the more robust plants of the New Forest, although they were perhaps closer to the former than to the latter in that the flowers tended to be rather finely marked. However, I did remember that I had seen a very considerable colour range in the New Forest from a rather deep pink (not at all like the *incarnata* that I know in Hampshire) to deep purple, with albinos commonly thrown in.

Before I read John’s paper, I had tentatively concluded that *D. incarnata* subsp. *incarnata* is a plant of basic soils that can range from what is called flesh-coloured (i.e. pink overall) in Britain to purple or flesh-coloured in Gotland. I assumed that the “off-white” plants that were just opening in Gotland were poorly pigmented variants

of either, since they too tended to have very faint fine markings. I also tentatively concluded that the *D. incarnata* subsp. *pulchella* of Scotland and Hampshire are probably different from each other and from the Gotland plants.

Mercifully, in Gotland, *D. incarnata* subsp. *cruenta* posed fewer problems, as there were two forms: one much more robust than the specimens I saw in Scotland; another with leaves that were narrow and few, much more like Scottish specimens. There was a considerable range in the density of leaf marking. In one wet site, the smaller form was growing with *D. traunsteineri*, but was readily distinguishable. I have no comparisons of British plants for the relatively common *D. incarnata* subsp. *ochroleuca* on Gotland, but distinction from pale varieties of pink or purple forms seemed straightforward. Is it the same as British *ochroleuca*?

Journal - Advice to Authors

All members of the HOS are encouraged to submit articles for publication in our Journal. Any topic related to Hardy Orchids will be considered, such as cultivation, propagation, conservation, taxonomy, orchid-hunting expeditions and holidays, photography, meetings and shows, book or web-site reviews, questions, problems, controversial issues, etc. Articles may range in length from a single paragraph up to a maximum of about 2000 words. If you need advice, or if you wish to submit a longer article, please consult the Editor first in order to avoid wasted effort.

Although articles may be submitted in (neat) hand-written or typed form, word-processed articles save the Editor a lot of work! MSWord is preferred, and files may be submitted via CD-ROM or e-mail. If you wish to see roughly how your article will appear in the Journal, the Appendix to this note gives the main formats to use.

Short titles which fit on a single line are preferred, followed on the next line by your name in the form you like. If the article is long, it may help your readers if you divide it into sections with sub-titles.

Orchid names always present problems because no two reference books use the same set! We intend to publish a fairly comprehensive list of "Preferred Names" for British orchids, which we would encourage you to use - even if you disagree with some of them! For orchids from other parts of Europe, our own list would be too long and controversial. Consequently, the names used by Pierre Delforge in "Orchids of Britain and Europe", 1995, (Collins Photo Guide) are preferred, since this is a widely available recent source in English. The exception is those species that have recently been moved to different genera following the genetic studies of Richard Bateman and colleagues; our convention is to include the previous genus in brackets, e.g. *Anacamptis (Orchis) morio*.

It usually helps to ask a friend to read and comment on your article before submission. The Editor and one or more members of the editorial sub-committee will then review it - you will be informed of any non-trivial changes they recommend. However, the final article should represent your views, which may not necessarily be those of the Society!

If appropriate, good quality colour pictures may be submitted to illustrate your article. These may be slides, prints or digital images, but in the case of digital images a print should be included so that the Editor and the printer know the expected colours. It may not be possible to print all pictures submitted, so please indicate which are the more important. For the digital buffs, Journal pictures are normally half-page (about 4.5x3.5 inches) or smaller, and printed at 300 pixels per inch. If you think one of your pictures deserves a full-page spread, consult the Editor!

References to "serious" literature should be in a standard format so that readers may track down the originals. In the text, the author's name and the date of publication are all that is required, e.g. Bloggs (1995). At the end of the article, the corresponding full details should be given. Books should be listed as: Danesch, E. & O., (1980) *Orchideen Mitteleuropa*, 128 pp., Hallwag Taschenbucher, Bern und Stuttgart. Articles in journals should be in the format: Norman, T., (1989) The Cultivation of European Tuberous Orchids, *Qu. Bull. A.G.S.* 57 No. 236: 154-171.

Appendix - Word Processor Formats

Page:	Size - A5; margins all 1.5cm.
Main Title:	Centred, Times New Roman (TNR), 12pt bold, initial capitals only.
Author:	Centred, TNR, 11pt bold, no punctuation marks, followed by one line-space.
Section Headings (if used):	Flush Left, TNR, 10pt, bold, initial capitals only.
Paragraph Text:	Fully Justified, TNR 10pt, no indents. One line space between paragraphs.
Punctuation:	Single space character following any punctuation mark.
Abbreviations:	sp. = species (singular); spp. = species (plural); subsp. = sub-species; var. = variety; etc.
Italics:	Reserved for botanical names (compulsory!) and other foreign words.

All Change at the HOS Website!

Tony Hughes

Throughout the four and a half years that we have had a website, it has been kindly hosted by HOS member Ian Rodgers, at no cost to the society. As a measure of its value to the HOS, it has been visited well over 35,000 times since its launch. And it has grown! From modest beginnings, it has been updated and expanded every 2 or 3 months as a great collaborative exercise - some 20 members have supplied well over 200 photographs of British orchid species, varieties and hybrids. And all the dozens of pictures of winning entries from Plant and Photo Shows are a fine demonstration of members' skills. The website has now grown too large for its present location, so we have transferred it to a new server, with our own domain name:

www.hardyorchidsociety.org.uk

Please make a careful note of this new site address - and do tell all your friends!

To complete the changes, Bill Temple has kindly volunteered to manage the website, starting this January, so please send all your pictures, information and suggestions direct to him (see inside Front Cover for his contact details).

Letter to the Editor from Alan Blackman

I would like to comment about a point you raised in your latest editorial – the use of common names of orchid species. Last year in southern France, I met a German couple who were looking for orchids. My German is almost nil, and so was their English! I wanted to tell them about a nice colony of Lesser Butterfly Orchids that I had seen a couple of miles away, so I said to them “*Platanthera bifolia*” and pointed along the road. They did not understand, and after a while I realised they did not know the Latin name for this species. I had a copy of Delforge with me, so showed them the picture in the book. “Ah, zwei Blatt” they replied, which translates into English as “two leaves”. The English name Twayblade (two leaves) is given to *Listera ovata*, not *Platanthera bifolia*. This illustrated to me why it is so important to use Latin names and avoid any confusion.

Back Issues of the HOS Newsletter/Journal

All back issues of the Newsletter are still obtainable from Barry Tattersall, 262, Staines Road, Twickenham, Middlesex, TW2 5AR. Enquiries are welcome by email at orchis@tatty.screaming.net. A full list of contents can be viewed on our website.

The current charges for back issues are: for up to 3 copies – £2:50 each; for 4 or more copies – £2 each. As a promotion, we are still able to offer issues 8 – 14 at a sale price of £1 each. Postage for UK members is included in the above prices, but for our overseas members we will have to charge at cost.

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