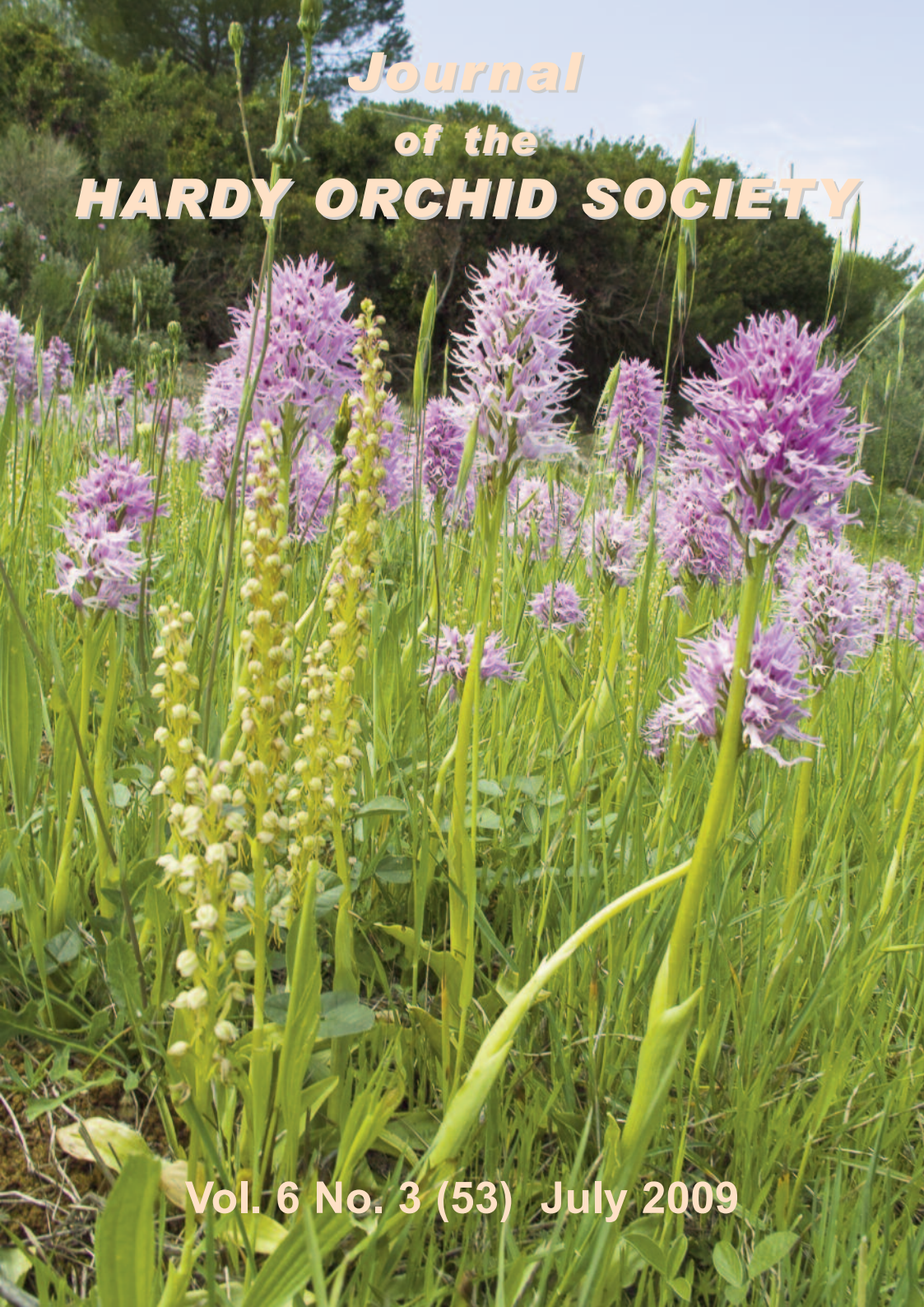

Journal of the HARDY ORCHID SOCIETY

Vol. 6 No. 3 (53) July 2009

The Hardy Orchid Society

Our aim is to promote interest in the study of Native European Orchids and those from similar temperate climates throughout the world. We cover such varied aspects as field study, cultivation and propagation, photography, taxonomy and systematics, and practical conservation. We welcome articles relating to any of these subjects, which will be considered for publication by the editorial committee. Please send your submissions to the Editor, and please structure your text according to the "Advice to Authors" (see website **www.hardyorchidsociety.org.uk**, January 2004 Journal, Members' Handbook or contact the Editor). Views expressed in journal articles are those of their author(s) and may not reflect those of HOS.

The Hardy Orchid Society Committee

Front Cover Photograph

Orchis italica and *Orchis* (*Aceras) anthrophora* in Monte Argentario, Italy, photographed by Paul Harcourt Davies. See the article on page 100.

Contents

Editorial Note

I received an interesting e-mail from HOS member Chris Whitworth who expressed support for Mike Clark's Kenfig piece in the April 2009 *JHOS* and asked if we could provide more information on conservation and site updates. To quote Chris "I visited the Hampshire site for Sword Leaved Helleborine last year and they were excited to proclaim how well the site had done and how many had flowered and Hartslock (another stop on my trip last year) likewise. Could the journal include a quick update or newsflash on sites such as those or the Military Orchids or even the the mega-rarities such as Lady's Slipper, Red Helleborine etc, just to say how well they had done without mentioning sites. I am sure people like myself with a budding interest would like to know." Anyway, further thoughts on this suggestion are welcome and I will try to find a way to include something along the lines that Chris suggests. For starters, Mike Clark at Kenfig reports that Bee Orchids are down by some 80% this year, Fen Orchids are proving to be "as rare as hens' teeth" but, providing it doesn't get too dry, *Epipactis helleborine* var. *neerlandica* is going to have a good year again with lots of plants showing.

Report from HOS Meeting at Kidlington

David Hughes

The meeting on Sunday 19th April 2009 attracted a full house. When already fully booked extra attendees turned up at the door and couldn't be turned away. Kidlington is the venue for the AGM, which duly voted in a new committee and the chairman thanked those who had served and welcomed new members. A full report of the AGM can be found on the website.

Our first lecturer was Simon Andrew, a long time traveller in Europe and orchid photographer. He gave us the benefit of 40 years of visits to France, taking us round the

major differing regions of that orchid rich country. He showed us examples of hybrids between Man, Soldier, Lady and Monkey Orchids, then *Ophrys bertolonii* varieties in the Corbiere. He showed us the similarity of *Orchis provincialis* to *Orchis pauciflora* and tempted us with a bog in Normandy studded with *Spiranthes aestivalis*, begging the question as to why it no longer survives in the New Forest. Perhaps the French allow their wild places to stay wild more effectively than the English. Paula Rudall followed with an excellent talk on electron microscopic studies of European orchid flowers. She was able to show us at high magnification the nature of sexual deceit in *Ophrys* species. Paula demonstrated the commoner cephalic pseudocopulation and abdominal pseudocopulation. We saw how the structure of the surface of the *Ophrys* labellum could affect its appearance, through the different nature of the hairs and multilayering.

Following lunch, we turned our attention to the plant table where, considering the difficult growing conditions, Malcolm Brownsword had encouraged an excellent display of orchids. We were fortunate to have the services of AGS judge Brian Walker who gave us a brief commentary on his criteria for judging. Again we were reminded of the need to use horizontal labels. Congratulations go to Malcolm for his Banksian medal and the "Best in Show" was won by new members Wilma and Jim Wright with their *Cymbidium goeringii*.

Richard Bateman continued the lecture programme with an update on his studies which he is kind enough to call the HOS project. He reminded us that DNA cannot (yet) distinguish *Platanthera bifolia* from *P. chlorantha*. With electron micrographs he demonstrated that the two species have similar flower structures but *P. chlorantha* is distorted by inflation of its stigma which then separates the other parts. Richard outlined the results of his studies of spur length and leaf width, with spurs getting longer from Scotland to southern France and the Austrian and Italian Alps. He would like further data, particularly from non-Alpine Europe, North Africa and far Northern Scotland and Shetlands. Iain Wright added a little light relief with his short talk describing differing labellar patterns on florets from the same plants of *Ophrys ariadne* in Karpathos. He introduced the quandary of the significance of these differences when, if they were found on different plants, we might be tempted to identify them as distinct species. Simon Tarrant followed with another short talk on the orchids he found on a tour round Iceland. This country claims 7 species, of which Simon found 4. His specimens of *Pseudorchis albida* were particularly vigorous, as was *Dactylorhiza viridis*. He was able to show us one unfamiliar orchid, *Platanthera hyperborea* which is a North American species.

To round off the day we were delighted to listen to Phil Seaton whose enthusiasm and individual lecturing style is always stimulating. Phil showed us how to germinate seed at home, stressing how little specialist equipment is necessary. He told us

of the need for fungus in orchid culture and how it was now demonstrated that fungus is not essential after all. He outlined plans for seed sowing workshops at his school in Kidderminster. These should be available for all Society members and there will be more information soon.

Rules and Classes for Photographic Show

David Hughes

Beginning with Wisley in 2009, the Society plans to run projected digital image classes in addition to the existing classes. The digital classes will be judged beforehand and the winning photographs will be projected before the audience at Wisley. As for existing classes, all competitors will be restricted to one picture per class (Rule 5). The following new classes and rules should be read in conjunction with the existing classes and rules, which can be found in your handbook and on the website.

Additions to Classes

14. Orchidaceous landscape, maximum size 1400 pixels wide and 1050 pixels high in uncompressed JPEG form.

15. A group of orchids, maximum size 1400 pixels wide and 1050 pixels high in uncompressed JPEG form.

16. A single orchid plant (see Rule10) maximum size 1400 pixels high and 1050 pixels wide in uncompressed JPEG form.

17. A close up (see Rule 9) maximum size 1400 pixels high and 1050 pixels wide in uncompressed JPEG form.

Additions to Rules

12. Images printed digitally may have minor adjustments to improve print quality and limited manipulation to remove distracting items.

13. For classes 14 to 17 the images should be put on a CD and posted to Mrs Ann Kitchen, Kincraig, Stonycroft Drive, Arnside, Cumbria, LA5 0EE, together with your name and contact details, a list of the image titles, the class they are entered for, and a small note naming the plant and providing any other information of interest to other members. None of this information should appear on the images themselves. Single images with the relevant information may be emailed to Ann at knak@kenak.plus.com, making sure the subject contains the phrase HOS Photo Comp. All digital entries must arrive by October 1st 2009. If you want any further information on digital entries please email Ann, again using as the subject HOS Photo Comp.

14. All entries in any class should be of orchids photographed within 2 years of the competition.

HOS Plant Show 2009

Malcolm Brownsword

The show secretary wishes to thank all those who contributed plants in the competitive classes, and particularly those who contributed the large number of plants in the non-competitive class. The judge, Brian Walker, thoroughly enjoyed the plant show, the general atmosphere and the speakers' presentations. He also brought along several plants, including a very large *Cypripedium formosanum* for us to admire. I am sure his comments on aspects of showing plants, particularly those on presentation, will be acted upon in future shows, so don't forget to stock up with gravel, chopped bark and moss for top dressing and purchase some round, rather than square, black plastic pots!

Next year the plant show will be on 28th March. This is probably the earliest date in the "window of opportunity" for flowering hardy orchids. It should enable those with early flowering species such as *Ophrys* to enter more plants but there could, of course, be a penalty for those with later flowering plants. Any growers' comments on the timing of future shows would be very welcome.

Plant Show Results

Class 2 Three pots native European (not native to Britain) orchids, distinct varieties.
1st Michael Powell: *Anacamptis laxiflora*; *Neotinea tridentata*; *Serapias lingua* "Lemon and Lime" (Photo 2c)

Class 3 Three pots non-European orchids, distinct varieties.
1st Kath & Peter Fairhurst: *Pleione* Ueli Wackernagel (Photo 3a); *Pleione* Piton (Photo 3b); *Pleione* Alishan "Merlin" (Photo 3c)
2nd Ron Bowler: *Pleione Asama* "Red Grouse"; *Pleione* Volcanello "Song Thrush"; *Pleione* Shantung "Ducat"

Class 4 Three pots hardy orchids, distinct varieties, any country of origin.
1st Michael Powell: *Cypripedium formosanum* (Photo 4a); *Cypripedium* Hank Small (Photo 4b); *Cypripedium* Michael (*C. micranthus* x *C. henryi*) (Photo 4c)
2nd Malcolm Brownsword: *Pleione* Tongariro; *Pleione* Shantung "Ducat"; *Pleione* Rakata "Locking Stumps"
3rd Kath and Peter Fairhurst: *Pleione chunii*; *Pleione grandiflora* (yellow form); *Pleione* Krakatoa "Wheatear"

Some of the first place winning plants are shown on the following pages and a complete collection of photographs is displayed on the website.
Photos by Mike Gasson


2c


10


11


13


4c


4b


4a


15

Class 6 One pot native European (not native to Britain) orchid.
1st Malcolm Brownsword: *Serapias olbia* x *neglecta*

Class 7 One pot non-European hardy orchid.
1st Kath and Peter Fairhurst: *Pleione* Piton
2nd Malcolm Brownsword: *Calanthe discolor*
3rd Ron Bowler: *Pterostylus curta*

Class 9 One pot *Orchis*, *Anacamptis* or *Neotinea*.
1st Malcolm Brownsword: *Anacamptis papilionacea* x *A. morio*
2nd Michael Powell: *Anacamptis champagneuxii*
3rd Tony Bennett: *Orchis mascula*

Class 10 One pot *Ophrys*.
1st Michael Powell: *Ophrys sicula* (Photo 10)

Class 11 One pot *Serapias*.
1st Malcolm Brownsword: *Serapias lingua* (Photo 11)

Class 13 One pot *Calanthe*.
1st Celia Wright: *Calanthe discolor* (Photo 13)
2nd Malcolm Brownsword: *Calanthe sieboldii*

Class 14 One pot *Pleione*.
1st Maren Talbot: *Pleione* Asama "Red Grouse" (Photo 14)
2nd Kath & Peter Fairhurst: *Pleione* Piton
3rd Michael Powell: *Pleione* Shantung "Ducat"

Class 15 One pot of any hardy orchid (Beginners' Class open to members who have never won a first prize).
1st Wilma and Jim Wright: *Cymbidium goeringii* (Photo 15)
2nd Celia Wright: *Calanthe tricarinata*
3rd Tony Bennett: *Pleione formosana*

(There were no entries in Classes 1, 5, 8 and 12)

Winner of RHS Banksian Medal: Malcolm Brownsword (15 points)
2nd Michael Powell (12 points); **3rd** Kath & Peter Fairhurst (9 points)
(3 points for 1st; 2 for 2nd; 1 for 3rd)

Winner of "Best in Show" Trophy: Wilma and Jim Wright for Class 15 entry *Cymbidium goeringii* (Photo 15)

Figure numbers for first place winning plants (as noted in the results list) indicate their class. Where multiple plants are entered a letter is also used.
Photos by Mike Gasson


14


3b


3a


3c

Provisional Programme for HOS Meeting, Harlow Carr Harrogate - Saturday 12th September 2009

09.30 Doors open
10.00 Tea or Coffee
10.30 Chairman's Introduction
10.40 Andrew Bannister - Raising Terrestrials from Seed
11.40 Short Break
11.45 Jeff Hutchings - Growing Hardy Orchids in a British Garden
12.45 Lunch
13.45 5 Slides in 5 Minutes - Volunteers from the Floor
14.15 Christine and David Hughes - A Few Chinese Hardy Orchids
14.50 David Nelson - Searching in Sicilly and Sardinia
15.20 Alan Gendle - Waitby Greenriggs, Management of a Rich Nature Reserve
16.15 Tea
17.00 Vacate Hall

Please contact David Hughes if you would like to give a short illustrated talk davidcchughes@talktalk.net or 01425470464

Book Review: *Ireland's Wild Orchids: A Field Guide*

Richard Bateman

Ireland's Wild Orchids: A Field Guide by Brendan Sayers and Susan Sex (2009) Privately published, 109 pp. €35.00 plus €5 from http://www.orchidireland.ie

In 2004, artist Susan Sex and author Brendan Sayers published a superb monograph of the Irish orchid flora, "*Ireland's Wild Orchids*". The large format (approximating A3) and high production quality allowed optimal presentation of Sex's technically accurate and aesthetically pleasing watercolours, but the book was published as a very expensive limited edition, placing it out of the reach of many orchid enthusiasts (including myself). Also, it was clearly a book for (robust) coffee tables rather than field use. Realising these limitations, Sayers and Sex have now engineered a radical and thoughtful conversion of their A3 monograph into an A5 field guide to Ireland's orchids.

In the species accounts, shrinkage of Sex's evocative watercolours has only marginally reduced their impact, and they are juxtaposed with two or three well-chosen photographs on the opposite page. Sayers' text is succinct and to the point, divided into formal and informal sectors on the page, and provides just sufficient information to gain a gestalt of the appearance and environmental preference of the plant. The only error that I noted was endowing the Pyramidal Orchid with a reservoir of nectar in its spur. The book employs a modern, DNA-informed taxonomy. Given the limited diversity of the Irish orchid flora, some subspecies and varieties also are given their own treatments, most notably among the dactylorchids. Surprisingly, *Dactylorhiza incarnata pulchella* is given only varietal status whereas *D. fuchsii okellyi* is elevated to subspecies, and the highly morphologically variable tetraploid marsh-orchids (an Irish speciality) receive no infraspecific treatments.

A page of information introduces each genus, and where identification clearly requires more detail this is provided – as when distinguishing between the Greater and Lesser Butterfly-orchids, the three ecologically specialised species of Fragrant-orchid, and the Broad-leaved and Green-flowered Helleborines (the latter generally less of a challenge than the text implies). Also interspersed among the text and watercolours are pages for notes. The weakest aspect of the book is the low-key distribution maps, which are based on vice-counties rather than hectads. However, this approach does usefully highlight the urgent need for more field recording in Ireland – the goal that this book appears designed to achieve.

The first ten pages of the book give brief accounts of conservation, hybridisation (inevitably featuring dactylorchids), floral morphology and a largely pictorial artificial key to the genera, while the book concludes with an index and a sparing bibliography.

Considerable thought has been given to making this field guide functional. It is ring bound and round cornered, with a thick transparent plastic cover and pages that more closely resemble thin card than thick paper; the ensemble is held together by an elasticated strap. Arguably the cleverest touch is placing a 15 cm ruler/ magnifier inside the back cover (hopefully, this will encourage Irish contributions to the HOS's spur-length survey of the Butterfly-orchids). Despite all of these precautions, given the predominance of wetland orchid habits in Ireland, it is probable that the guide will soon bear the indelible marks of serious field use. Unfortunately, HOS members tempted to obtain multiple copies, allowing both field use and coffee table display, are likely to be discouraged by the cover price. When seeking copies of this attractive book, prospective purchasers may also be mildly handicapped by the absence from the guide of a publisher's name, publication date or ISBN number.

Book Review: *Orchids of Britain and Ireland*

Celia Wright

Orchids of Britain and Ireland - A Field and Site Guide
by Anne & Simon Harrap Second edition May 2009
Published by A&C Black. ISBN 978-14081-0571-9
Paperback 480pp £24.99

The first edition of this book in 2005 was a welcome addition to my bookshelf. It contained a wealth of information on individual species of native orchid, together with information on where to go to look for them. It was well researched and referenced.

The second edition follows the same format as the first, with relatively minor alterations to the book's content. The first edition was already up to date with changes in nomenclature resulting from DNA studies, so changes are relatively minor, such as those to the Dune Helleborine and its subspecies. Notes have been added on new hybrids observed in the last few years, such as the Lady Orchid x Monkey Orchid hybrids in Oxfordshire, about whose origin Richard Bateman educated us so eloquently at the AGM last year. The authors have taken the opportunity to update the Red Book status for each species and to give this information more prominence.

There are two main improvements. The first is the quality of the printing. Some photographs have been changed, but almost all have benefited from improved colour rendition. The second is the price – a welcome reduction of £5 since 2005.

If you have a copy of the first edition, I think that will continue to serve you well. If you do not own a copy, I recommend the second edition to you, whether you are a beginner or experienced in the study of hardy orchids.

Book Review: *The Orchids of Ireland*

Richard Bateman

The Orchids of Ireland by Tom Curtis and Robert Thompson (2009) National Museums of Northern Ireland. 160 pp. ISBN 0 900761 50 4. Available from National Museums of Northern Ireland for £20/€22.50 plus package and posting. Contact um.info @ nmni.com or call 02890 395109.

One might have expected the nascent OrchidIreland Project to have generated a monograph on the orchids of Ireland at the end of its tenure. Instead, it appears to have yielded not just one but two books in early 2009 that pre-empt the project itself.

Curtis & Thompson's book is more traditional in concept than Sayers & Sex (2009, reviewed above). It is strongly reminiscent of the excellent book on Scottish orchids by Allan *et al.* (1993) in offering first-rate production quality and layout, and in featuring large numbers of superb colour photographs of orchids and their habitats, supported by high-quality line drawings. The text echoes both Allan *et al.* and Summerhayes (1951) in outlining the morphology, co-evolutionary relationships, classification, habitat preferences and conservation status of orchids, supported by a functional taxonomic key, glossary, index and (rather idiosyncratic) bibliography. Each orchid taxon occurring in Ireland is then given a more detailed individual treatment, though hybrids are set aside in lieu of their own chapter. Much of the considerable amount of information provided over the book's 160 pages can readily be found elsewhere, but nonetheless it is well presented and factually accurate.

Tables are employed to good effect in order to summarise information on habitat preference and formal conservation status, and careful reading of the text gradually reveals the more remarkable aspects of Irish orchids. As a veteran of several enjoyable orchiding trips to Ireland, I had already come to terms with the idea that *Ophrys insectifera* is more likely to be found in calcareous marshes than along woodland

margins, but the concept of a September-flowering ecotype of *Neottia* (*Listera*) *ovata* endemic to western Donegal was new and exciting to me. With regard to conservation, only four orchids enjoy formal protection in the Republic (*Cephalanthera longifolia*, *Hammarbya paludosa*, *Pseudorchis albida*, *Spiranthes romanzoffiana*), whereas in Ulster, Schedule 8 has been expanded to encompass local rarities such as *Dactylorhiza traunsteinerioides*, *Epipactis palustris*, *Anacamptis* (*Orchis*) *morio* and *Ophrys apifera* – the most unintuitive beneficiary, given its notoriously 'boom–bust' ecology.

The authors adhere to traditional taxonomy, using the genera and infrageneric taxa advocated for Ireland by Scannell & Synnott (1987) and a suprageneric classification that dates from the Dark Ages of 1960. The vast bodies of both genetic and morphological data gathered in the last two decades are acknowledged but not used here, on the grounds that the resulting taxonomic rearrangements are not yet universally accepted. Even if the "Catch 22" logic of this position is set aside, the impression remains that the authors would also judge as unproven the case for stone axes being an improvement over teeth plus fingernails as tools for skinning mammoths; well-argued justifications are needed for retaining old classifications as well as for adopting new ones (Bateman 2009).

This expressly conservative taxonomic position is also somewhat undermined by the unique and radical classification developed by the authors for the undeniably challenging genus *Dactylorhiza*. The authors' decision to make use of the ranks of subspecies and variety is welcome, but it would have been good to read explicit justifications for the contrasting treatment of *D. fuchsii hebridensis* and *D. incarnata coccinea* as subspecies versus *D. fuchsii okellyi* and *D. incarnata pulchella* as mere varieties. Another classic Irish speciality, *D. incarnata cruenta*, is rejected as a name, the authors instead favouring assignment to *D. incarnata* var. *haematodes* if one side of the leaf is spotted and var. *hyphaematodes* if both sides of the leaf are spotted. As the authors note, both these taxa can occur alongside plants with unspotted leaves that are most commonly assigned to *D. incarnata pulchella*. But the justification given for rejecting the Continental name *cruenta* for Irish plants – that their leaves have a length/width ratio of more than six provided that they do not exceed 96 mm in length – seems somewhat arbitrary.

The treatment of the tetraploid marsh-orchids is even more individualistic. The former *D. lapponica* is not considered to merit even varietal status under *D. traunsteinerioides* (an epithet that is mis-spelled throughout the book, in a nomenclatural combination mis-assigned to Sundermann). Such ready dismissal is counter-productive, as *lapponica* has only recently been recognised in the north and could be seriously under-recorded throughout the island. All Irish tetraploids are here assigned to the (actually exclusively Continental) *D. majalis*, thereby depriving Ireland of a gen-

uinely endemic species in the guise of *D. occidentalis*. Most startling is the re-naming of *D. purpurella* as *D. majalis* var. *brevifolia* (Rchb.f.) Kreutz – a classificatory outcome apparently not intended by Kreutz, since he continued to recognise "*D. majalis* subsp. *purpurella*" alongside "*D. majalis* var. *brevifolia*" (Kreutz 2005, p. 52).

The other surprising decision taken by the authors was to reject the hectad distribution maps that have become standard for biodiversity recording in the British Isles in favour of much larger and irregular administrative counties, and to make no distinction between extant and extinct records. Unfortunately, this decision disguises much of the justification for the formal conservation status of the more threatened orchids in Ireland. The "Celtic Tiger" phase of the Republic's economy in particular has left a country dissected by new roads and punctuated by new-build homes, where biodiversity concerns are rarely sufficient to seriously impede development projects. Anyone examining the mouth-watering habitat photos in *The Orchids of Ireland* will recognise that Ireland retains many botanical gems, but they will also realise that both field recording and underpinning scientific research remain worryingly patchy. The presence or absence in Ireland of taxa such as *Epipactis leptochila* and various hybrid combinations needs to be determined unequivocally, and many more sites for Irish "rarities" undoubtedly remain to be found. Indeed, appropriate research could well reveal further novel orchid taxa endemic to Ireland.

Overall, this is a superbly produced book that will undoubtedly hold considerable appeal for HOS members and should contribute significantly to the laudable goals of understanding and popularising Ireland's orchids. But it is also a "work in progress" that usefully highlights the need for an integrated long-term research project along the lines of OrchidIreland – a project that could ultimately generate *the* definitive book on Irish orchids.

Bibliography

Allan, B. Woods, P. & Clarke, S. (1993) *Wild orchids of Scotland.* HMSO, Edinburgh.

Bateman, R. M. (2009) Evolutionary classification of European orchids: the crucial importance of maximising explicit evidence and minimising authoritarian speculation. *Journal Europäischer Orchideen* 41(2): 243-318.

Kreutz, C. A. J. (2005) *Kompendium der Europäischen orchideen*. Landgraaf, Published by the author.

Scannell, M. J. P. & Synnott, D. M. (1987) *Census catalogue of the flora of Ireland.* Stationery Office, Dublin.

Summerhayes, V. S. (1951) *Wild orchids of Britain* (1st edn). Collins, London.

What's in a Name? 2. The Even Heavier Responsibility of Coining a New Name

Richard Bateman

In Part 1 of this article, "The heavy responsibility of using a previously described name" (Bateman 2009b), I used a recent series of exchanges in *JHOS* on the identity of several British orchids from Kenfig in South Wales and the Scottish Borders (in chronological order: Kreutz 2008; Cole 2008; Lewis 2008) as the hook to develop a broader discourse on the formal naming ("nomenclature") of orchids and the production of lists of recommended taxon names for British and Irish – and European – orchids. I particularly sought to address Cole's highly pertinent question, "what are the rules?" In Part 1, I considered the often overlooked impacts on the worlds of plant taxonomy, vegetation surveying/mapping and *in situ* conservation of assigning plants to previously described taxa using pre-existing names – in other words, identifying them – and I concluded that **there are no rules**, only vague guidelines. In Part 2 of this article I consider the significance to both orchidologists – both "professional" and "amateur", British and non-British – of **rules governing the coining of new names**.

Figure 1. The Bloody-early Marsh-orchid, *Dactylorhiza incarnata* subsp. *cruenta*, incorporates no fewer than two dozen unnecessary formal names.

Photo by Richard Bateman

Very few new orchid taxa have been described by British and Irish orchid specialists during the last 30 years; it seems that few of us remain sufficiently courageous (or foolhardy?) to coin new names for hardy orchids. Perhaps one reason for this reticence is the likelihood that many taxonomists will have considered the validity of the taxa that interest us long before they came to our attention. Consider, for example, the memorably named Bloody-early Marsh-orchid, *Dactylorhiza incarnata* subsp. *cruenta* (Fig. 1). Morphologically, this taxon is distinguished from other subspecies of *D. incarnata* primarily by its spotted leaves and bracts, while it is questionably differentiable on DNA evidence. In the British Isles this subspecies is confined to a few localities in western Ireland and two sites in northwest Scotland, though it is also recorded as being widespread in Scandinavia and the Alps (e.g. Haggar 2004). Partly as a result of its disjunct distribution, since it was first

described in 1782, it has acquired at least 23(!) redundant names, termed synonyms, that have either been applied to the taxon as a whole, to different morphs within it, or to contrasting geographic occurrences of it. This high proportion of redundant formal names is by no means unusual in orchid taxonomy, whereas it is rare in most other plant families.

As a result of past taxonomic interest in European orchids and the consequent extraordinary superfluity of names, all but the most trivial morphological manifestations of any orchid species has already been given a Latin or Greek epithet. Consequently, through many years of orchid research, I have never yet found myself obliged to coin a new epithet to describe a new species or infraspecific taxon. In every case (other than rare hybrids), I have eventually been able to locate a suitable pre-existing name, thrown into the nomenclatural melting pot (often centuries earlier) by some previous hopeful author. One merely has to rummage through 250 years of voluminous literature – often obscure, sometimes impenetrable and occasionally virtually unobtainable – in order to find that prior name.

Admittedly, there is an alternative to this painful search. One can simply coin a new name anyway and hope that no previous name exists. In many groups of plants there would be a reasonable chance of getting away with such casual corner-cutting research, but in the especially competitive world of European orchid taxonomy there is little likelihood of escaping justice – the nomenclatural police will soon be hot on your trail! Interestingly, such overly casual taxonomists are balanced by other overly obsessive taxonomists who delight in minutiae, delving into the most obscure literature in the hope of finding the earliest – and thus the "correct" – name for a particular taxon. It was this myopically legalistic approach to taxonomy, discussed in more detail below, that caused *Ophrys fuciflora* to become *O. holosericea* and then *O. holoserica* – before helpfully returning full circle to *O. fuciflora*! Science played little part in this painful debate.

The inescapable authoritarianism of "The Code"

There may not be any rules that govern the deployment of pre-existing names of higher plants, but there are most certainly rules that govern the coining of **new** formal names. These are laid down in the International Code of Botanical Nomenclature ("the Code": ibot.sav.sk/icbn/main.htm) – approximately 80 pages of dense legalistic prose whose complex structure and terminology would grace the shelves of any Lincoln's Inn barrister. Revised every six years, this botanical Magna Carta sets out obligatory rules for plant naming that constitute world-wide dictats. I have space here only to present heavily edited highlights most likely to affect any HOS member who is sufficiently brave to attempt to describe a new taxon (or, indeed, to redescribe an old one).

Firstly, where can you publish new names? The present rules state that the new name must be published as hard copies that are deposited in at least ten public libraries. Thus, this rule probably excludes from consideration *JHOS* but would in theory include the *Sun* or the *Mirror*, as well as the scientific books and journals in which taxonomy is more properly disseminated. I predict that this increasingly ill-conceived rule will be modified in (or even deleted from) the next edition of the Code, as pressure mounts within the taxonomic community to allow Web-only publication of new names – an innovation urgently required in order to improve speed of publication and access to the results.

Having decided where to publish, you must then concoct an appropriate Latin or Greek name for your new taxon; this generally reflects a person (typically ending in "-ii", e.g. *batemanii*), a place (typically ending in -ense or -ensis', e.g. *kewensis*), or a distinctive feature of the plant (often ending in "-um" or "-a", e.g. *grandiflora*). It is important to ensure that the Graeco-Latin spelling and gender are correct – no easy task for those of us who are not classics scholars. Also at this point, we need to check that this name has not already been used within the same genus at the same rank. Proving the absence of a name across three centuries of taxonomic literature sounds like a nightmarish task, and indeed it used to be – most practising taxonomists (including myself) have consequently made at least some errors. Fortunately, we can now "cheat". All (well, almost all) previously used plant names are listed in the regularly updated, Web-based International Plant Names Index (IPNI: www.ipni.org), where a simple word search delivers a much-needed and definitive (well, almost definitive) verdict in seconds.

Admittedly, IPNI does not tell us which names describe valid biological entities and which do not, remaining non-committally objective. Web-surfers in search of more subjective opinions regarding the validity of names can then graduate to the World Checklist of Monocots (www.kew.org/wcsp/monocots: monocots are a natural group of plants that includes grasses, palms and – yes, you've guessed it! – orchids!). The WCM expresses preferences (not necessarily those of orchid experts) among the available Linnean names but offers no justifications, biological or otherwise, for preferring some names over others. In the case of the six taxa discussed by Kreutz (2008), I suspect that he and I would be united in our unhappiness with the nomenclatural adjudications of the WCM, though there is at least a helpful box on the website where all users are invited to suggest credible alternatives to the choices of WCM's in-house experts!

At this point I will digress slightly to explain the significance of the law of priority. Central to the ICBN, this law states that the valid name for a taxon is the earliest epithet after 1753 to be validly published at that rank. The issue of rank is more significant than readers might suppose, because it means that the same taxon can be

obliged to carry more than one name at contrasting ranks. For example, if it is demoted from species to subspecies level, *Ophrys episcopalis* becomes not *O. fuciflora* subsp. *episcopalis*, as you might expect, but rather *O. fuciflora* subsp. *maxima* (or, if you are a follower of the World Checklist of Monocots, this morph is simply synonymised into *O. fuciflora* subsp. *fuciflora* in a valiant attempt to wholly eliminate both epithets *episcopalis* and *maxima*). The law of priority also means that any orchidologist who prefers library work to field work can again emulate our apocryphal Lincoln's Inn barrister, by poring through ancient literature seeking the precedence of an earlier epithet. If one is found, its (re)discoverer can legitimately argue that this older epithet should displace the existing, familiar name.

Recent nomenclatural assaults of this kind have sought to replace *Dactylorhiza majalis* with *D. comosa*, *D. occidentalis* with *D. kerryensis*, *Platanthera chlorantha* with *P. montana*, *Ophrys fuciflora* with *O. holoseric(e)a*, and *Epipactis purpurata* with *E. viridiflora*. Fortunately, there exists an appeals procedure that is available to anyone possessing the stamina to put together a formal legalistic case to conserve the original, generally more widely known name. The case is judged by the same group of professional nomenclaturists who maintain the ICBN, and both the case and verdict are published in the botanical journal *Taxon*. It is gratifying that, in recent years, most such cases have been won by the defence, including a bid in which I was involved to preserve from oblivion *D. majalis*.

And in case you were wondering, modifying the name of a pre-existing taxon is an even easier legislative task than describing a new taxon; you simply state the new name, together with the correct reference to the first legitimate use of that epithet (this first usage is termed the basionym). Thus, two dozen new combinations can be squeezed onto a single published page, despite the potentially profound consequences for the broader use of this plethora of formal names.

Back to the process of naming our new taxon. As I explained at length in Part 1 of this article, a name alone is of no practical value; we need supporting information to tell us how to distinguish that taxon from all other taxa. This goal is achieved by developing a crucial triangular relationship between the name, a type specimen and a formal description (Fig. 2). A type is essential for any name coined from 1958 onwards. It is one or more specimens that are designed to epitomise the new taxon and are placed in any internationally recognised herbarium. Of course, in practice, a single specimen gives no indication of the range of variation exhibited by the taxon in question. Also, in many (perhaps the majority) of cases, the type specimen is not truly typical of the taxon, but rather is an extreme morphology, deliberately chosen because it shows the supposed diagnostic characters of the taxon more strongly than most of the other plants that form the source population. Moreover, herbarium specimens of orchids are notoriously uninformative; the colour and three-dimensional

architecture are inevitably lost. Not surprisingly, some of us elect to use colour images, in addition to (or even instead of) actual specimens, to most effectively characterise the appearance of our new orchid taxa. Lastly, it is helpful to be given information on the site from which the type specimen was taken (termed the "locus classicus"), though surprisingly, locality information is not deemed essential by the Code when describing a new taxon.

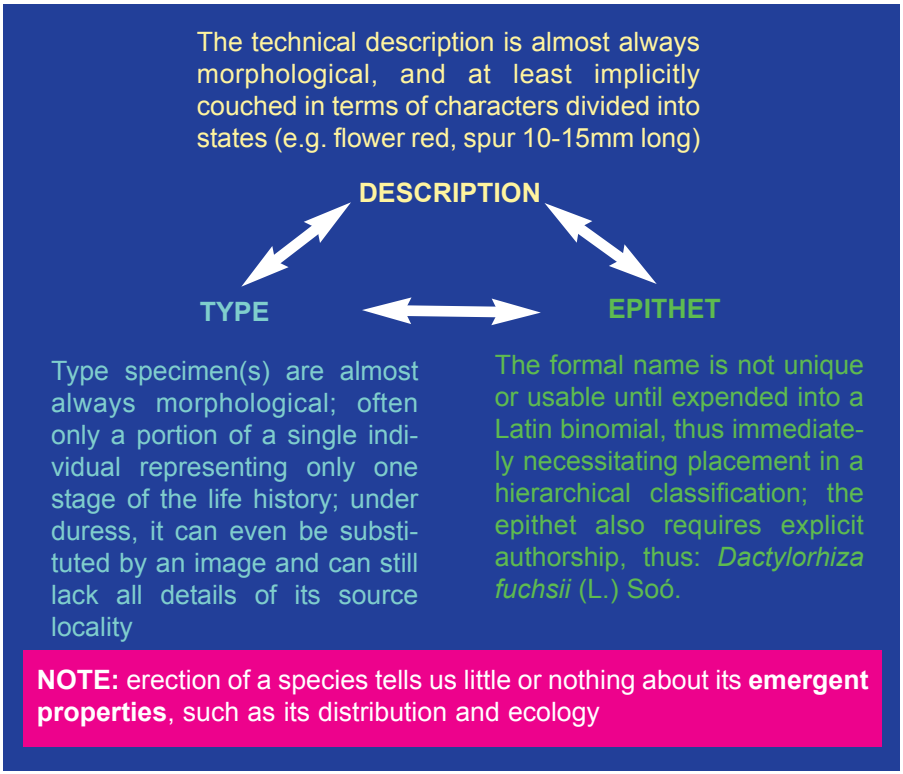

Figure 2. Summary of the crucial three-way relationship between a name, a type specimen and a taxonomic description. Only the description can be changed; the name and type are fixed and so can only be accepted or rejected.

The crucial yawning gap in "The Code"

Having coined a name and designated a type, we now need a written description of the new taxon. At present, for any formal name coined from 1935 onwards, the description must be presented in Latin, though it can also be presented in English if the author wishes (happily, this stipulation may soon disappear, given the aforementioned near-extinction of botanically inclined Graeco-Latin scholars). The description is the only one of the three elements defining a formal name that can subse-

quently be modified as more information is acquired; both the name itself and the associated type specimen are fixed, invariant points that can only be accepted or rejected by taxonomists, never altered (Fig. 2). The description is also the crucial part of the article naming the taxon (collectively termed the protologue) for use when attempting to identify subsequent finds.

Given the importance of this initial description, I find it truly mind-boggling that the 80 or so pages of the ICBN do not stipulate what information it should contain. As long as we can satisfactorily translate "Resembles Mickey Mouse" into Latin, that single phrase will constitute a perfectly valid (if utterly useless) description of *Ophrys michaelis-mus*! I have long toyed with the idea of describing a new taxon in DNA-speak – for example, "possesses the nucleotide cytosine at a location 156 nucleotides from the 5' end of the ITS region of the nuclear ribosomal DNA". This description would be valid; no rule in the Code stipulates that the formal description must include morphological characters. Nor, sadly, does any rule state that a new taxon cannot be described until genetic and/or ecological as well as morphological data have been acquired from at least one specimen, and preferably from a representative range of populations. If such a rule did exist, taxonomic "divination" would at last be superseded by basic science, and far fewer frivolous names would be coined.

Admittedly, even if such a rule were to be introduced, there would still be taxonomic disagreements, a fact amply illustrated by the recent history of the "Tyne Helleborine". Among the six orchid taxa in the UK discussed by Kreutz (2008), the "Tyne Helleborine" was the only novel name, having been formally described by him a year earlier as *Epipactis dunensis* subsp. *tynensis* (Kreutz 2007). Significantly, the decision to recognise this taxon received the support of both subsequent commentators in *JHOS* (Cole 2008; Lewis 2008). I'm afraid that it does not (yet) receive mine!

Let me explain. We are fortunate that these controversial Tyneside helleborine populations have been subjected to detailed DNA-based studies. The results demonstrated that both these Tyneside plants and *E. sancta* on Lindisfarne differ from *E. dunensis* on our west coast in only one measured DNA feature each (Squirrell *et al*. 2002; Hollingsworth *et al*. 2006). Arguably, this observation establishes a "balance of mutation" (*sancta* and *'tynensis'* show one mutation each), such that Kreutz's decision to treat both taxa as subspecies of *E. dunensis* has credibility. However, the two molecular differences are not of the same kind and are not equally informative in indicating the evolutionary origin of these taxa. Nor have populations of "*tynensis*" yet been the subject of publications detailing morphometric analysis followed by robust statistical comparison with other related taxa, in order to demonstrate that they are indeed reliably morphologically distinct as well as subtly molecularly distinct.

The research team that examined these plants in the late 1990s, which included both myself and BSBI *Epipactis* referee John Richards, decided on the basis of our various scientific studies that these few populations did not (yet) merit recognition as a new species or subspecies, having learnt our lesson from the premature description of *E.* "*youngiana*" as a species at these very same localities 26 years ago (compare Richards & Porter 1982; Squirrell *et al*. 2002; Hollingsworth *et al*. 2006). We decided that we had not accumulated sufficient data to select with confidence the best taxonomic rank for the Tyneside plants, especially as the highest of the contending ranks – that of subspecies – automatically brings conservation recognition in the UK. It was perhaps inevitable that other more confident taxonomists would feel less constrained by data and would formally name these plants in the interim. Recognising the likelihood of premature description by others often pressures fundamentally responsible taxonomists into enacting premature descriptions themselves. In other words, they are driven to adopt an understandable, but regrettable, defensive strategy.

Names matter more than they ought

Readers may by now be wondering why I am writing about this topic in such forthright terms, and why I am frustrated by the fact that anyone who has the patience to distill the essential rules from the Code can legitimately describe a new taxon. That person need find only a representative specimen or image and a susceptible editor who is willing to include the name and description in a valid publication.

Firstly, I have found that more than enough formal names already exist for my purposes. In my view, the primary task for today's orchid taxonomist is not creating yet more names but rather making sense of those already available to us, and organising them to the optimal benefit of the many practical users of taxonomy (not least HOS members). Thus, my taxonomic activity has focused on amalgamating (synonymising) taxa, shifting species between genera to better reflect evolutionary relationships, or changing the status of species or infraspecific taxa to better reflect their relative distinctness – for example, elevating particular subspecies upward to species or downward to varieties. This reorganisation requires a great deal of research if it is to make biological sense, but, as we have already seen, such changes are easy to enact nomenclaturally without first accruing biological data. Secondly, I have learned through bitter experience that, although it is simplicity itself to create a name, it is well nigh impossible to subsequently eradicate that name in the light of subsequent acquired scientific data. It seems that we humans have not truly escaped from the mysticism that permeated our early history – names alone still carry far more power than they truly warrant.

I outlined in Part 1 how national (and now international) recommended lists of plants – "names, ranks and serial numbers" – increasingly dominate field recording, which

in turn dictates the content of floras, which in turn provides the key framework for conservation efforts. I also explained how it takes many years to gather the scientific data necessary to demonstrate the biological reality of any particular taxon, and then many more years to persuade the botanical community that the resulting classification is indeed the best available. But this process appears positively hasty and straightforward compared with the time and effort needed to eliminate a named taxon that has been demonstrated to lack biological reality. Even when you believe that you have finally rendered such a name extinct (I have driven innumerable stakes through the heart of *Epipactis* "*youngiana*" in the last decade), it can still rise from the ashes like the phoenix. Or perhaps a better analogy is attempting to force a genie back into its bottle?

Figures 3 and 4. A comparison of *Dactylorhiza incarnata* subsp. (or var.) *ochroleuca* (left), whose current subspecific status has attracted conservation interest (e.g. Cheffings & Farrell 2005), and *D. incarnata* subsp. *pulchella* var. (or forma) *ochrantha* (right), whose lower taxonomic status effectively renders it invisible to most conservation bodies (rightly, in my view).
Photos by Richard Bateman

Why does this surfeit of superfluous names matter? I would make two main claims. The first is that a biologically indefensible taxon – best described as an "Emperor's New Clothes" taxon (Bateman 2006) – is likely to draw conservation resources

away from *bona fide* taxa that are typically in desperate need of those resources. And as we have clearly seen, controversial taxa are often recorded at very few sites and consequently are viewed as rare; arguably, five of the six supposed orchid taxa discussed by Kreutz (2008) are currently considered to occur at only one locality in the UK – one of several reasons for my ongoing scepticism regarding their biological validity. This perceived rarity further increases their chances of receiving high priority for active conservation.

More broadly, it is extremely important that taxonomic studies of orchids do not deviate in approach from those of other families of plants. I have found by bitter experience that many of my botanical colleagues are particularly unimpressed by the activities of orchid enthusiasts, arguing that their classifications are more anarchic than those generated for other plant groups. To some extent this magnified taxonomic complexity simply reflects the greater interest shown in orchids than, for example, in dandelions. Nonetheless, it cannot be denied that the majority of orchid classifications divide taxa more finely than do classifications of other plant groups. If species and infraspecific taxa are the basic units of conservation currency, it is crucial that relative inflation in the orchid family is countered, or it will inevitably lead to harmful devaluation of the work of all orchid enthusiasts.

My second, and more personal, objection to "over-splitting" is that more scientifically inclined taxonomists such as myself are obliged to follow this trail of often frivolous names, casually coined by others, rather like a slow-motion paper-chase. Carefully laid plans for a more objective campaign of scientific analyses often have to be set aside, at least temporarily, in order to test (and in most cases to eventually reject) taxonomic hypotheses bound up in names coined by others "legally" but with insufficient supporting evidence. This is no easy task, requiring planning, fundraising, fieldwork to gather the necessary body of morphometric data and DNA samples, analysis of the samples, analysis of the resulting data, a literature search, preparation of scientific papers, popular articles and reports to conservation bodies, discussions with reviewers and editors, a long delay in the press and finally the resulting publication. This is a lot of work to conduct simply to demonstrate that a casually coined name has no biological reality, especially when scientific resources are severely limited.

I believe that this is the point that Cole (2008) was making when he mischievously suggested that certain individuals of *Himantoglossum hircinum* with unusually deeply forked central lobes to their characteristically elongate spiral labella could readily be named as a new variety. There are vast numbers of epithets already available in the orchid literature that are based on similarly minimalistic levels of empirical or theoretical support. Is a deeply forked labellum really any more functionally trivial than the basis of many other named taxa? Could we not easily develop a "Just

So" story to explain how having a forked labellum entranced a particular kind of bee into preferring such flowers above all other flowers, permitting reproductive isolation of the forked-lipped lineage? We can in principle formally name each morphological (or indeed molecular) variant of an orchid species that we ever encounter, however slight its perceived distinctiveness. Once again, there are no relevant rules.

Knowledge should be paramount

I should make one point crystal clear at this juncture. Unlike some of my colleagues, I am not loftily arguing that the "right to name" should be restricted to professional taxonomists. In my experience, "professionals" have no more likelihood of accessing the "ultimate answer" to taxonomic questions than do "amateurs", and both professionals and amateurs have proven equally capable of wreaking taxonomic havoc. Also, I continue to view as admirable the remarkable egalitarianism that permeates taxonomy in general and orchid taxonomy in particular. It remains a discipline where any reasonably knowledgeable individual can make a significant contribution.

Rather, I agree with Cole's (2008) implicit suggestion that it is the rules regarding coining names that urgently require modification. I can think of two possible solutions. The first would be to devise the botanical equivalent of a driving test – a formal assessment of the skills needed to perform adequate taxonomy. Certainly, such schemes already exist for validating botanical field surveyors. But my preferred option would be to use the ubiquitous legalistic framework of the ICBN to specify an obligatory threshold of the kinds and amounts of supporting data that taxonomists must accrue before they are permitted to formally name (or rename) the taxa in question. This would helpfully reduce the impact on taxonomy of inadequately substantiated personal opinion.

Critics might reply that I am, in practice, undermining my statement in the previous paragraph that taxonomy should not be the sole preserve of "professionals". Surely, only paid professional taxonomists have access to the resources necessary to conduct what we might usefully describe as "experimental" taxonomy? Not so. Most morphometric studies of orchids (including the majority of my own) are conducted on an amateur rather than a professional basis, either as small self-contained studies or, less often, as highly collaborative trans-European projects such as the recent HOS survey of spur length in *Platanthera* (Bateman & Sexton 2008a, b). Most breeding experiments are also performed by amateurs. And most of the field mapping of orchid taxa is conducted by amateurs, increasingly supported by precise GPS coordinates. Many of the key ecological data, such as observations of pollination events, are typically made by amateurs. And in Part 1, I argued that DNA-based analyses can already be contracted out to commercial laboratories for an increasingly modest fee. I also predicted that within a few years, the technology will be avail-

able to amateurs to conduct their own DNA analyses (Bateman 2009a). Happily, the orchid world no longer sustains a fundamental division between amateur and professional, recognising that we can all make significant contributions to orchid science.

In my opinion, the biggest problems are caused not by the background of the people preparing the taxonomic descriptions, or by the complexity of the obligatory rules that govern plant naming, but rather by the **absence** of a rule dictating a minimum level of information that an author must accrue before a novel taxon can legitimately be described. If such rules were introduced, the present steady supply of new names, most of which prove to be unnecessary when (or rather if) scientific data are eventually collected, would dry up. Also, taxonomists would be encouraged to work alongside other kinds of researcher (e.g. geneticists, ecologists), allowing each group of researchers to better understand their study organisms. Unfortunately, many of my research collaborators presently refuse to become embroiled in taxonomic debates. They will happily generate the data necessary to test taxonomic assertions, but the unusually contentious nature of taxonomic decisions, combined with the fact that scientific data remain an optional extra rather than a necessity when making those decisions, discourage the active participation of many biologists in naming plants. Thus, to some degree, a wedge has been driven between taxonomists, who are best placed to erect taxonomic hypotheses (i.e. to coin names), and other kinds of comparative biologists, who are best placed to test the biological value of those taxonomic hypotheses and to determine their conservation value (i.e. to accept or reject those names).

The argument I have made throughout this article is that taxonomic disagreements should be decided on the basis of the relative strengths of the concepts and the data that support the competing positions. Orchid enthusiasts, not least HOS members, are making an invaluable contribution to science by documenting subtle morphological variants; such variants appear in every issue of *JHOS*, often accompanied by intriguing speculation regarding their presumed origins. But as the content of *JHOS* amply demonstrates, excellent descriptions of intriguing variants can be published without needing to formally name those variants. In my opinion, the European orchidological community could afford to be more rigorous and more cautious, both in coining new names and in elevating conservation-invisible forms and varieties to conservation-visible subspecies or species. It is important to remember that names acquire lives of their own – even those that are figments of their creator's over-active imaginations. In short, formal names make good servants but very poor masters.

References

Bateman, R. M. (2006) How many orchid species are currently native to the British Isles? In: Bailey, J. & Ellis, R. G., eds, *Contributions to taxonomic research on the British and European flora*: 89–110 + Plate 1. Botanical

Society of the British Isles, London.
Bateman, R. M. (2009a) Field-based molecular identification within the next decade? *Journal of the Hardy Orchid Society* 6(1): 31–34.
Bateman, R. M. (2009b) What's in a name? 1. The heavy responsibility of using a previously described name. *Journal of the Hardy Orchid Society* 6(2): 53–63.
Bateman, R. M. & Sexton, R. (2008a) Ongoing HOS *Platanthera* spur-length survey, a great success. *Journal of the Hardy Orchid Society* 5(1): 20–23.
Bateman, R. M. & Sexton, R. (2008b) Is spur length of *Platanthera* species in the British Isles adaptively optimized or an evolutionary red herring? *Watsonia* 27: 1–21.
Brooke, J. (1950) *The Wild Orchids of Britain.* Bodley Head, London.
Cheffings, C. M. & Farrell, L., eds (2005) The vascular plant Red Data List for Great Britain. *Species Status* 7: 1–116. JNCC, Peterborough.
Cole, S. (2008) Naming orchid taxa: what are the rules? *Journal of the Hardy Orchid Society* 5(3): 86–90.
Haggar, J. (2004) The Early Marsh Orchid in Northern Europe. IV. Northern forms, blotched leaves and polymorphism. *Journal of the Hardy Orchid Society* 1(2): 45–51.
Hollingsworth, P. M., Squirrell, J., Hollingsworth, M. L., Richards, A. J. & Bateman, R. M. (2006) Taxonomic complexity, conservation and recurrent origins of self-pollination in *Epipactis* (Orchidaceae). Pp. 27–44 in J. P. Bailey & R. G. Ellis (eds.), *Current Taxonomic Research on the British and European Flora.* Botanical Society of the British Isles, London.
Kreutz, C. A. J. (2007) *Epipactis dunensis* (T. & T.A. Stephenson) Godfery subsp. *tynensis* Kreutz, eine neue *Epipactis*-Sippe aus Nordengland und Südschottland. *Journal Europäischer Orchideen* 39(1): 123–133.
Kreutz, C. A. J. (2008) Update on British orchids. *Journal of the Hardy Orchid Society* 5(1): 11–16.
Lewis, L. (2008) Naming new orchid taxa: a reply but not an answer. *Journal of the Hardy Orchid Society* 5(4): 138–143.
Richards, A. J. & Porter, A. F. (1982) On the identity of a Northumberland *Epipactis*. *Watsonia* 14: 121–128.
Squirrell, J., Hollingsworth, P. M., Bateman, R. M., Tebbitt, M. C. & Hollingsworth, M. L. (2002) Taxonomic complexity and breeding system transitions: conservation genetics of the *Epipactis leptochila* complex. *Molecular Ecology* 11: 1957–1964.

Italy: By the Seaside

Paul Harcourt Davies

The prime reason for writing a series of articles giving an insider's view of Italy is that it offers me the chance to show off the wealth of the country's orchid flora. Thus, via some unusual morphological forms of familiar orchids, through rich displays in ideal orchid habitats and also with illustrations of some of the hybrids to be found, the journey continues. Seeing thousand upon thousand of orchids growing together could never make me blasé – how could it when I still get a leap of the heart when I see the first bee orchid flower each year? The dancing figures of Monkey orchids evoke the same sense of delight I experienced when, in a violent storm, I first saw the flowers on a Cretan hillside in 1974.

Time gives a sense of perspective and endorses the sense of wonder at the amazing genetic ragbag that makes up each orchid. I have (almost) stopped being angry at a taxonomic fad that, largely thanks to absence of peer review, leads to endless "new species". I feel that through workers like Richard Bateman good sense is making a return and science will triumph – as it inevitably has through history. For me, the real excitement with orchids lies not with artificial constructs like naming systems but with behaviour. For example, have you ever wondered why on a hillside some species exist in a few square metres and then nowhere else – what combination of soil consistency, drainage, aspect or even prevalence of pollinators determines that?

For years published work has accepted the "faithfulness" of *Ophrys* pollinators: now, I am keen to investigate the frequency of hybrids in some so-called "orchid hotspots" where the pollinators might not be so "choosy", for the insect-*Ophrys* relationship is an essential one in the evolution of new taxa. And what might be the proportion of the DNA in an orchid that determines some of the morphological characteristics that are claimed to allow *Ophrys fusca* to be subdivided into a gallery of species? My bet is for less than 0.0001% difference.

There is always a host of questions waiting for answers and I could hardly wait in this

Figures 1 (above) & 2: *O.* x*sommieri*, the hybrid between *Ophrys tenthredinifera* (Figure 3) and *Ophrys bombyliflora* (Figure 4)
Photos by Paul Harcourt Davies


2


3


4


5


6


7


8

very cold winter just past for spring and the chance to search and ponder anew. It takes us just over an hour to get to the Mediterranean proper, a pleasant drive that leaves behind the chestnut woods and agricultural land for a traditional Mediterranean maquis of holm oaks, arbutus, terebinth and cistus interspersed with clearings that harbour orchids. There is a descent of some 400m all told and thus the season is a good two weeks ahead in terms of orchid flowering. When there is little except buds and rosettes nearer home we find a good collection of orchid species in flower near the Etruscan tombs of Vulci: *Orchis simia, O. tridentata, O. italica, O. pauciflora, O. papilionacea* and *O. morio*, as well as *Ophrys – O. incubacea, O. crabronifera*, *O. tyrrhena*, scattered *O. galilea* and the first flowers of *O. bertolonii* and *O. fuciflora.*

On our first foray to the coast last year and this, we were in search of some true Mediterranean *Ophrys* at one of the few sites for *Ophrys tenthredinifera* (Fig. 3) and *Ophrys bombyliflora* (Fig. 4). *Ophrys* x*sommieri*, the hybrids between them (Figs 1 & 2), are fascinating, for *O. bombyliflora* contributes its own distinctive morphology (the small, rounded lip and prominent side-lobes) to *Ophrys tenthredinifera*, producing something special in the process.

Elsewhere in these jottings I have, typically, let myself go when it comes to talk of Gargano but when I first read Danesch there was another area frequently mentioned: "Monte Argentario", the promontory with twin lagoons near Orbetello that you see when you fly out from Rome up the coast. Unfortunately, much is fenced off (arguably illegally) by the rich and powerful from Rome who have their retreats there and do not want the "hoi polloi" around – and you don't come more "hoi" nor "polloi" than a pair of orchid photographers burdened with camera bags and tripods. Fortunately, a little local knowledge allowed us to get to some memorable sites – though it took several tries to locate the tiny road and an astound-

Figure 5: *Orchis italica* and *Orchis* x*bivonae*, its hybrid with *Orchis* (*Aceras*) *anthrophora*; Figure 6: *Serapias lingua*; Figure 7: Hybrid between *Ophrys bombyliflora* and *Ophrys fuciflora*; Figure 8: Hybrid between *Ophrys bombyliflora* and *Ophrys sphegodes*; Figure 9 [above]: Close-up of *Orchis* x*bivonae*
Photos by Paul Harcourt Davies

ing display of *Orchis italica* (Fig. 5 & cover) cascading down a hillside through an old olive grove. A small colony of *Orchis* (*Aceras) anthrophora* (cover) had flirted with these and produced several hybrids (x *Orchiaceras bivonae*) of an almost improbable magenta hue, visible from afar (Figs. 5 & 9). We found *Serapias* too, a mix of *S. vomeracea* and *S. lingua* (Fig. 6), en route to what we had really come to find – another hybrid, *Ophrys* x*hoeppneri*, arising from *O sphegodes* and *O. bombyliflora* (Fig. 8). The plants retained the elevated stature of *O. sphegodes* rather than *O bombyliflora* with a subtle and successful blend of parental characteristics. Another *Ophrys* possibly of hybrid origin, growing on Mt Argentario and the Tyrrhenian coast, is *O. sphegodes* ssp. *argentaria*, a small flowered subspecies with that broken labellum patterning that often accompanies taxa yet to stabilize. As I write the final draft of this account in early May 2009, I have just photographed another example of the profligacy of *O. bombyliflora* when it comes to gene sharing – a clear hybrid with *Ophrys fuciflora* (Fig. 7) and a fluke given that the parents flower several weeks apart.

Our nearest city, Orvieto is just 15 minutes away and it must be one of the most strikingly situated in Italy. Away from its confines the small roads become veritable oases for orchids in spring where they run through calcareous terrain and the verges again provide a perfect habitat. Local spikes of *Orchis purpurea* are almost a metre tall and hold more flowers than I cared to count but contemporaneous *Ophrys* become that much harder to find since the grass grows alarmingly fast. Still, it is easy to find *Ophrys bertolonii* – a lovely plant with the simplicity of stark contrasts between deep pink tepals, a dark brown labellum and deep blue speculum. Almost covered by the dust from a strada bianca we noticed a few distinctive *Ophrys* that were clearly hybrids of *Ophrys bertolonii* and *O fuciflora* (*O*phrys x*enobarbia*). A bit of judicious "blowing" from a rubber-bulbed brush was needed as light was low, flash was essential and each tiny dust particle became a reflector (Fig. 10).

Figure 10 [above]: *Ophrys* x*enobarbia*, the hybrid of *Ophrys bertolonii* and *O fuciflora*; Figure 11: *Orchis simia*; Figure 12: *Orchis* x*angusticruris*, the hybrid between *Orchis simia* and *Orchis purpurea*; Figure 13: *Orchis simia* var. *alba*
Photos by Paul Harcourt Davies


11


12


13

We are very keenly aware of good fortune and of the fickleness and fragility of the human existence: we never ever take life here for granted. One evening, snatched from the physicality of a day's wall building,, we found a meadow just 20 minutes from home where, amongst a drift of busy-looking *Orchis simia* (Fig. 11), was one group of three flowering stems of "var. *alba*" whose "monkeys" have white tepals and a creamy white lip (Fig. 13). Just two bushes away grew hybrids of monkey and lady orchids (Fig. 12), together with two flowering stems of man x monkey hybrids – Lankies and Mankies. And this being Italy, we had taken along some foccaccia I had baked the previous day and a bottle of that wonderful Italian bubbly known as Prosecco – perfect for a toast to nature and her resilience.