

## Orchid Research Newsletter No. 64

What began as the germ of an idea hatched by Phillip Cribb and Gren Lucas (Keeper of the Herbarium at Kew) in the late 1990s blossomed into a 15-year orchid project that was produced chiefly at the Royal Botanic Gardens, Kew, but involved more than 200 contributors throughout the world when everyone is taken into account – systematists, anatomists, palynologists, cytogeneticists, ecologists, artists, photographers, growers, and hybridizers.

In the sixth and final volume of *Genera Orchidacearum* published on 6 February of this year, 28 experts provided up-to-date information on nomenclature, derivation of name, description, distribution (with maps), anatomy, palynology, cytogenetics, phytochemistry, phylogenetics, ecology, pollination, uses, and cultivation for 140 genera in tribes Dendrobieae and Vandaeae. Both tribes were difficult to treat because of the sheer number of species (Dendrobieae with about 3650 and Vandaeae about 2200) as well as the dearth of reliable morphological synapomorphies for them; consequently, much of what we know about their relationships had to be drawn from phylogenetic analyses of DNA sequences. An Addendum updates a few generic accounts published in past volumes. A cumulative glossary, list of generic synonyms with their equivalents, and list of all series contributors round out the volume.

At the end of this era, it is important to recognize those stalwart individuals who actively contributed to all volumes and helped to make them the authoritative sources that they have now become – Jeffrey Wood, Phillip Cribb, Nigel Veitch, Renée Grayer, Judi Stone – and thank especially my co-editors Phillip Cribb, Mark Chase, and Finn Rasmussen. I can honestly say that I have never enjoyed a professional undertaking as much as the *Genera Orchidacearum* project. To have shared the joys of learning and accomplishment along the way with so many talented and conscientious colleagues is something that I wish for all *ORN* readers in your careers.

Where do we go from here? That in fact is the topic of a day-long seminar to be held at the 17<sup>th</sup> European Orchid Conference on 8-9 April 2015, hosted by the Royal Horticultural Society in London in collaboration with the Royal Botanic Gardens, Kew (see below under Upcoming Conferences), followed by a day of talks on orchid conservation. At this writing (3 July 2014) the slate of Conference speakers at Kew includes Cassio van den Berg, Mariana Mondragón-Palomino, Ken Cameron, André Schuiteman, Ruth Bone, Timo van der Niet, Alphonso Ducette, Kingsley Dixon, David Roberts, Stephan Gale, Henrik Pederson, Hugh Pritchard, Hanne Rasmussen, Samuel Sprunger, and yours truly. In the following two days, two parallel sessions of talks devoted to hardy orchids, horticulture, and travel will be given in Vincent Square by Svante Malmgren, Hildegard Crous, Camiel de Jong, Holger Perner, Phillip Cribb, Christopher Bailes, Tom Miranda, Lourens Grobler, Chris Purver, Martin Motes, Jean-Michel Hervouet, John Elliott, and many others – 39 lectures in all. The future of orchid research, especially in molecular biology, is more exciting than it has ever been, accelerated by next-generation sequencing and talented researchers worldwide. We hope to see you at the Conference!

**Alec Pridgeon**

## Upcoming Conferences

We welcome any news about future orchid conferences for promotion here. Please send details to Alec Pridgeon ([a.pridgeon@kew.org](mailto:a.pridgeon@kew.org)) as far in advance of the event as possible, remembering that the *Orchid Research Newsletter* is published only in January and July of each year.

### 21<sup>st</sup> World Orchid Conference

The 21st World Orchid Conference (WOC21) will take place from 10-14 September 2014 in Johannesburg, South Africa, at the Sandton Convention Centre. At this writing in December 2013, 46 speakers are scheduled, including keynoters Johan Hermans (UK), Robert Fuchs (USA), Steven Johnson (South Africa), and Mike Fay (UK). The official conference hotels for WOC21 are the Maslow and Balaika hotels, and the official tour operator is now Hartley's Safaris, which will be conducting a variety of excursions to Cape Town, Botswana (Victoria Falls, Chobe National Park, Okavango Delta), Zambia (Victoria Falls, South Luangwa National Park, Lower Zambezi National Park), Quirimbas Archipelago, Namibia, Zambezi River, Mozambique (Niassa National Park), and other once-in-a-lifetime adventures. A pre-Conference tour will go the Namaqualand for the amazing wildflower display, and post-Conference tours will travel through the Cape Town area. Closer to Johannesburg, the world-famous Kruger National Park beckons. For further information, visit [www.woc21.org](http://www.woc21.org). There is still time to register!

### 17<sup>th</sup> European Orchid Conference

The 17<sup>th</sup> European Orchid Conference and RHS London Orchid Show, scheduled for 8-12 April 2015, will be hosted by the Royal Horticultural Society in London in collaboration with the Royal Botanic Gardens, Kew. On 8–9 April there be a two-day scientific symposium at the Jodrell Laboratory, Royal Botanic Gardens, Kew; one day will focus on 'After *Genera Orchidacearum*' and another day devoted to orchid conservation. With the international orchid show at the RHS halls there will follow two days of horticultural lectures at Vincent Square in London on 10 April and 11 April, one dedicated to hardy orchids and another to general orchid horticulture and travel. For further information visit [www.rhs.org.uk/londonshows](http://www.rhs.org.uk/londonshows).

**The Fifth Scientific Conference on Andean Orchids** will be held in Cali, Colombia, in 2015. Information will be posted here as soon as it is available.

## Lady Sainsbury (1912-2014)

Lady Sainsbury, who died aged 101 on 6 February 2014, was, with her husband Sir Robert, a generous sponsor and patron of the arts. However, I always thought that her real passion was for orchids, especially white ones, and she built up a large orchid collection at Bucklebury, the Sainsbury's country home until the 1970s where she employed Brian Williams, the talented orchid grower and author, to manage it.

Lisa was born in England on 3 March 1912, the daughter of Simon Van den Bergh, a professor of philosophy at the University of Paris. She was brought up in Paris, Geneva, and London. Robert, her future husband, was her second cousin through his mother (Mabel Van den Bergh). His grandfather, John Sainsbury (1844–

1928), was the founder of the family food-retailing empire. The couple married in 1937, and shortly afterwards moved into 5 Smith Square, Westminster, their main home until 1994, when they moved to Dulwich. They were pioneering art collectors and built up a fine collection that included works by Degas, Picasso, Modigliani, Henry Moore, Alberto Giacometti, and Francis Bacon as well as artifacts and antiquities from around the world.

In 1973 they gave the bulk of their wonderful art collection to the University of East Anglia in Norwich, commissioning Norman Foster, then a little-known architect, to design on the campus the Sainsbury Centre for Visual Arts, which opened in 1978. The centre's library was named in Lisa's honour in recognition of her enthusiasm for the project.

The UEA was not the only beneficiary of their generosity. They made major donations to hospitals, hospices, and to the Royal Botanic Gardens, Kew. I first met her in the late 1970s when I heard that she was dispersing her orchid collection and asked her if she would give it to Kew. She was not convinced but agreed to meet Chris Bailes, then our new orchid grower, to see if he had the potential to improve the collection. He must have charmed her because she supported not only him but many other orchid projects over the succeeding years. In 1981, she funded Dr. Mark Clements, an Australian botanist, to work at Kew for 18 months to establish techniques for growing endangered British orchids from seed. She then generously endowed two orchid posts at Kew: the Endangered British Orchid Project and the Sainsbury Orchid Fellowship, filled first by Joyce Stewart and currently Dr. Alec Pridgeon.

Sir Ghilleen Prance, Kew's former Director, recently wrote that "Within months of my taking up the post of Director she made a major donation to endow the orchid programme that she had previously supported. This was so vitally important to Kew at that time when I was beginning to introduce an external funding programme. To have a large donation at the start of my time in office not only encouraged me, but it also stimulated other people to give to Kew and for us to set up the Kew Foundation that now prospers as the fund raising branch of Kew. I can't tell you enough how important that initial donation was as a catalyst. More importantly a great deal has been done for orchid conservation at Kew and elsewhere with the funds provided by the Sainsbury orchid endowment."

She will be fondly remembered by many orchid growers in England where she was a regular and perspicacious visitor and buyer at the regular RHS orchid shows and exhibits at Vincent Square.

Lady Sainsbury was awarded an honorary degree by the UEA in 1990 and an honorary fellowship in 2003. The same year she was awarded the Order of the Rising Sun, Gold Rays with Neck Ribbon, in recognition of her lifelong contribution to the promotion of Japanese culture in Britain. I was deeply moved by her appearance at my retirement party at Kew in 2006.

She will be greatly missed by the orchid world. The beautiful large, white-flowered hybrid *Angraecum* Lady Lisa is a lasting memory to her.

I would like to thank Professor Sir Ghilleen Prance and the obituary published by the *Daily Telegraph* on 13 February for information included in this tribute.

**Phillip Cribb**

## Recent Orchid Nomenclature

New orchid names may now be accessed on the IPNI website:

([www.ipni.org/ipni/plantsearch?request\\_type=search&output\\_format=query&ret\\_defaults=on](http://www.ipni.org/ipni/plantsearch?request_type=search&output_format=query&ret_defaults=on))

Click on "Show additional search terms" on the right-hand side of the screen. After the search page appears, type in **Orchidaceae** under family name and (for example) **2010-11-30** under "Record date" and "Added since." This will pull up a list of all names added to the IPNI database since 30 November 2010.

## Recent Literature

We sincerely thank Paolo Grünanger for supplying new book titles and references from European orchid journals. If you are aware of any recent citations not listed here and henceforth, please send them – in the exact style below – to Alec Pridgeon ([a.pridgeon@kew.org](mailto:a.pridgeon@kew.org)) for publication in the following issue (January or July). Write "ORN references" in the subject line of the e-mail. Book citations should include author(s), date of publication, title, publisher, and place of publication (in that order). Journal titles should be spelled out in full.

### Anatomy and morphology

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*sinensis* (Pers.) Ames and *Cymbidium pendulum* Sw.: a comparative study. *Bangladesh Journal of Botany* 42: 307-314.

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### **Books**

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Clayton, D. and Cribb, P. 2013. *The Genus Calanthe*. Natural History Publications (Borneo), Kota Kinabalu, in association with Royal Botanic Gardens, Kew.

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### **Conservation biology**

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## **Ecology**

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### **Molecular biology**

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### **Mycorrhiza**

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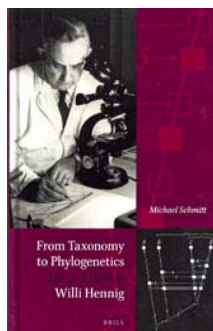
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## Book Reviews



**Schmitt, M. 2013. From Taxonomy to Phylogenetics – Life and Work of Willi Hennig.** Hardcover, xvi + 208 pp. Koninklijke Brill, Leiden, The Netherlands. ISBN 978-90-04-21928-1 (Hardcover edition). ISBN 978-90-04-21929-8 (e-book). £81 ([www.Amazon.co.uk](http://www.Amazon.co.uk)) or \$114 ([www.Amazon.com](http://www.Amazon.com)).

Willi Hennig is internationally recognized as the “father of phylogenetic systematics”, but much of his personal life has remained obscure until the Michael Schmitt worked closely with Hennig’s three sons (Prof. Dr. Wolfgang Hennig, Dr. Bernd

Hennig, and Gerd Hennig) to produce the most authoritative and intimate portrait of a man whose impact on how we view biological relationships rivals that of Linnaeus.

Emil Hans Willi Hennig was born on 20 April 1913 in Dürrehennersdorf, Saxony, Germany, into the family of a Protestant railroad worker. He showed an early interest in natural history in his school near Dresden and quickly progressed to the point where his teachers could teach young Willi nothing new in the subject. At the University of Leipzig he excelled in studies of insects, first beetles and then Diptera. In 1939, he was drafted into the infantry but spent a boring life in the barracks close to Berlin until the summer of 1940 when his unit was ordered to the Black Forest where he saw combat and prisoners being taken. All the while, he was working on scientific manuscripts assisted by his wife Irma. Later he was deployed to Poland, France, Denmark, and Russia but never joined the National Socialist Party. After he was severely injured by shrapnel in 1942 and nearly bled to death, he had a desk job as an entomologist in Berlin, specializing in Diptera at the Institute for Tropical Medicine, working even as the Allies bombed the city. Just before the war ended, he was sent to Italy to make recommendations on how to control malaria. On 2 May 1945, he was captured by the British while with the malaria training corps at the Gulf of Briest and then released that October. During his five months as a prisoner of war, Hennig began to draft his most important contribution to systematics — *Grundzüge einer Theorie der phylogenetischen Systematik (Basic Outline of a Theory of Phylogenetic Systematics)*—with pencil and ballpoint pen into a hardbound notebook, spanning 170 pages. Most of the correspondence and literature research was conducted by Irma. It was not published until 1950, and even after that it was many years before it won widespread acceptance because his writing style was too formal and his terminology obtuse. Readership was also mostly limited to entomologists as his institution distributed the book only to other entomological institutes; even the publisher did little to promote it. His second major work, *Phylogenetic Systematics*, was published in English 16 years later and found a significant following among professional biologists almost immediately.

Willi Hennig died of a sudden heart attack on 5 November 1976, survived by Irma and their three sons. Among the honors he had received were gold medals from the Linnean Society of London and American Museum of Natural History, the Fabricius Medal of the German Entomological Society, and an Honorary Doctorate from Freie Universität in Berlin. The centennial of his birth was celebrated last year in several symposia and conferences.

This thoroughly readable biography of Hennig traces his education and professional career with extraordinary detail, supplemented by original and heretofore unpublished images donated by his sons. His professors, supervisors, and colleagues who mentored him and helped to promote his work are discussed and pictured. Among the personal traits brought out in this book is the fact that he almost always wore a tie, even at home with his family.

Schmitt concludes with a few chapters devoted to Hennig's manifold contributions as a taxonomist, systematist, and philosopher, including, for example, the ways in which Hennig's definition of monophyly differs from that of Ernst Mayr. Mayr (1974) called Hennig's classification scheme 'cladistic', echoing the term used by Cain and

Harrison (1960), which was based on the word 'clade' coined by Julian Huxley (1958). Mayr and Hennig argued over whether or not the stem species should be included in a taxon, Mayr saying that paraphyletic taxa should be allowable in a classification on the basis that they, too, ultimately have a single stem species. Hennig disagreed, saying that paraphyletic taxa are based on symplesiomorphies erroneously considered to be synapomorphies. Hennig's basic view has generally prevailed, and current definitions of monophyly do not now invoke the stem species concept at all but instead the concept of exclusivity, i.e. the components of a clade are more closely related to each other than any of them is to a member(s) of another such group.

I recommend this book to all biological systematists as it delves into the philosophical issues of phylogenetics and broadens our understanding of the brilliant scientist who introduced it to us.

**Alec Pridgeon**

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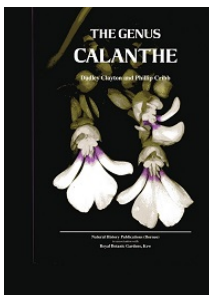
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**Clayton, D. and Cribb, P. 2013. The Genus *Calanthe***. Hardcover, xii + 411. Natural History Publications (Borneo), Kota Kinabalu, Sabah, Malaysia, in association with The Royal Botanic Gardens, Kew, Richmond, Surrey, England. ISBN 978-983-812-141-5. £80 (\$132) ([www.Kewbooks.com](http://www.Kewbooks.com)).

Only a few species of *Calanthe* are popular in the horticultural world; most of those are deciduous with showy flowers. The authors convey the many reasons why more of the 207 pantropical species are not better known and then provide brief glimpses into what has been published on their ecology, morphology and anatomy, cytology, phylogeny, pollination, and conservation. The phylogenetics chapter was written by Tomahisa Yukawa based on his study of plastid and nuclear DNA sequences of 53 taxa of *Calanthe* and outgroups (though these are never listed in the trees). As speculated by other workers, *Calanthe* is not monophyletic according to his results: *C.* subgenus *Preptanthe* (the deciduous group)



is sister to a clade comprising *Cephalantheropsis*, *Phaius*, *Gastrorchis*, and the evergreen species of *Calanthe*. It is difficult to interpret the cladograms pictured as support values for the branches and branch lengths are not included here, but Yukawa recommends recircumscribing *Calanthe* and *Phaius* in the narrow sense rather than lumping *Calanthe*, *Cephalantheropsis*, and *Gastrorchis* in *Phaius* (the oldest name) to establish monophyly with the least disruption of nomenclatural stability. Doing so would involve the elevation of *C.* sections *Styloglossum* and *Rhodochilus* to the genus *Styloglossum* and *C.* subgenus *Preptanthe* to the genus *Preptanthe*. Looking at the trees, however, I think that much more work is needed before nomenclatural changes can be made as *Phaius* would still not be monophyletic.

The vast majority of the book is devoted to the taxonomy of the genus, divided into *C.* subgenera *Preptanthe* and *Calanthe*. After artificial keys to the two genera, seven sections, and 207 species, species treatments include nomenclature, description, distribution, habitat, elevation (misinterpreted as 'altitude' here), flowering period, and notes. Many species are illustrated by line drawings, some by classic watercolour paintings, and most by colour photographs. The book closes with an index of synonyms and excluded species, a listing of natural and artificial hybrids, cultivation notes, bibliography, glossary, biographical notes, colour plate section, and index of scientific names.

Clayton and Cribb dedicated the book to the memory of James Comber, who had begun work on a monograph of *Calanthe* before he passed away in 2005. I think Jim would have been pleased with this effort continued in his name. It is remarkable for its inclusiveness and production quality; more importantly, it brings to light those species that few of us have ever seen described and illustrated.

**Alec Pridgeon**