Orchid Research Newsletter No. 65

Those who attended the 21st World Orchid Conference in Johannesburg last September were treated to 1) a marvelous show filled with native South African species of Orchidaceae and other indigenous plant families, and 2) some excellent talks on orchid floras, conservation biology, ecology, and systematics. Just to mention a few, Steve Johnson gave a typically superb plenary talk on deceit pollination in South Africa, and Mike Fay intrigued the audience with news of exciting new approaches to conservation genetics. Nicola Flanagan delivered a fascinating lecture on the diversity of *Vanilla* species and their mycorrhiza in Colombia. Alex Hirtz introduced the incredible orchid diversity of Ecuador as an enticement to attend the 22nd WOC in Guayaquil in 2017. We thank the organizing committee – Gerrit van Ede, Anthony Grohovaz, Catharina Wilfinger, Frik Botha, and Lourens Grobler – and all the others who helped to make all the registrants feel so welcome.

The New Year promises at least two other conferences of note. First up is the 17th European Orchid Conference to be held at the Royal Botanic Gardens, Kew, and the Royal Horticultural Society Halls in Vincent Square, London, in April (see details below). Among the distinguished international speakers will be Cássio van den Berg, Ken Cameron, Andre Schuiteman, Mariana Mondragón-Palomino, Kingsley Dixon, Hanne Rasmussen, Phillip Cribb, Tom Mirenda, Henrik Pedersen, Holger Perner, John Elliott, Svante Malmgren, Hildegard Crous, Pepe Portilla, and Andrea Niessen.

Then in November the 5th Scientific Conference on Andean Orchids will convene in Colombia, a nation that rivals (Colombians say surpasses) Ecuador in orchid diversity. I attended the show and mini-symposium in Cali last November, and I can attest to the incredible representation of native species of *Cattleya*, *Phragmipedium*, *Masdevallia* and other pleurothallids, *Cyrtochilum*, *Stanhopea*, *Coryanthes*, etc., far too many to list here, and all grown to perfection. Perhaps as one barometer, the American Orchid Society judges present gave out 39 awards.

There is no better way for scientists and serious hobbyists to learn cutting-edge techniques and network with their colleagues than to attend conferences and share their own knowledge and experimental results. As orchid specialists, we are blessed with an unending array of world venues for those conferences with as much adventure as we care to experience in associated tours. As people, there is no better way to renew long-time international friendships, as I did in Johannesburg.

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) 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.

The 17th 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, please visit www.rhs.org.uk/londonshows.

The Fifth Scientific Conference on Andean Orchids will be held 19-21 November 2015, on the beautiful and safe campus of the Pontificia Javeriana University (PUJ). Over the course of the Conference, one day of talks will each be devoted to systematics, ecology, and conservation science. Poster sessions in all three areas of investigation will supplement the lecture series. Simultaneous translation will be available for all talks. The *Proceedings* of the Conference will be published in an indexed journal dedicated to biodiversity research. Single-day and multiple-day tours will be available with expert guides, providing an excellent opportunity to see and photograph a diversity of spectacular orchids *in situ*. The webpage for the conference is www.andeanorchidconference.org, which is still under development, so please check back often.

The 12th Asia Pacific Orchid Conference will be held in Bangkok, Thailand, 19-17 March 2016. For up-to-date news, consult the website address (www.apoc12.com).

The 22nd World Orchid Conference will take place 5-13 November 2017 in Guayaquil, Ecuador, at the spacious Guayaquil Convention Center. There will be two concurrent sessions with simultaneous translation for each of the four days of lectures beginning Wednesday, 8 November 2017. Proposed abstracts for those wishing to speak at the Conference will begin to be accepted for consideration no earlier than 1 November 2015. Format for the abstracts and the mailing address for their submission will be relayed on the website (www.woc22.com) by 1 September 2015. Poster presentations, especially by students, are encouraged. Students whose posters are accepted may be eligible for scholarships toward their registration fees. Abstracts of all posters accepted will be included in the Conference *Proceedings*. More publicity will follow in subsequent issues of the *Orchid Research Newsletter* and orchid magazines among other publications.

News from Correspondents

Please submit any news about newly completed research, future research plans and needs, change of address, upcoming or recent fieldwork, etc. to Alec Pridgeon (a.pridgeon@kew.org). Graduate students are especially encouraged to share the subjects of their thesis or dissertation with the international community. We will print submissions in the format below. Many thanks to those who have contributed.

A. Toscano de Brito, a research botanist at Marie Selby Botanical Gardens, has been awarded a prestigious three-year research grant from the government of Brazil. Entitled “Phylogenetic, biogeographic, and taxonomic studies in Pleurothallidinae and Oncidiinae - *Ornithocephallus* clade (Ordhidaceae),” the project is part of an ongoing, multidisciplinary collaboration between UFPR and Selby Gardens. The grant funds nine trips to Brazil, a molecular laboratory at Federal University of Paraná (UFPR), and most field expenses and domestic travel within Brazil. The grant will also provide funds for three postdoctoral positions at the university in Curitiba. The students will develop their research at UPFR and Selby Gardens under the supervision of Eric de Camargo Smidt and Toscano de Brito.

Nigel Veitch (1965-2014)

Nigel Veitch, a senior phytochemist on staff at the Royal Botanic Gardens, Kew, drowned in the waters off St. Ives, Cornwall, where a fisherman discovered the body by chance on 1 September 2014.

Nigel received his BA, MA, and D.Phil from the University of Oxford and joined RBG Kew in 1992. He was noted for his research covering the diversity and uses of natural products, as well as their isolation and characterization, with an emphasis on the application of NMR spectroscopy. Other projects focused on the structural basis of biological activity and the characterization of substrate binding sites in plant and fungal enzymes. He was a contributor to *Flavonoids: Chemistry, Biochemistry and Applications* (CRC Press 2006), currently one of the standard works on the subject. He was a former recipient of the Jack. L. Beal Award from the American Society of Pharmacognosy, which was given for work on the isoflavonoids of the tropical legume *Ateleia herbert-smithii*. Although he specialized in phytochemistry of Fabaceae and the use of chemical characters in multidisciplinary legume research, he and Renée Grayer also contributed all the comprehensive phytochemical treatments for the *Genera Orchidacearum* series (1999-2014) by email – complete with a formal title page as if it were a book in itself. He served with distinction on the editorial boards of *Biochemical Systematics and Ecology* and *Phytochemistry Letters*.

At Nigel’s funeral, David Clark, his old friend from Merton College, Oxford, gave the eulogy. According to Mr. Clark, Nigel had arrived at Merton from Queen Mary's College in Basingstoke, having received a Postmastership (its highest academic scholarship). He was awarded a first-class degree in 1988 and ranked fifth in the university for chemistry that year. He stayed on at Merton until 1992 while he studied for his doctorate with the eminent biochemist, Robert Joseph Paton Williams MBE FRS. Nigel was a devotee of the *Lord of the Rings* trilogy, in part because J.R.R. Tolkien had been a Fellow of Merton College.

Many of the staff of the Royal Botanic Gardens, Kew, have been anxious to pay tribute to Nigel here. His colleague, Geoff Kite, remembered him this way: “Nigel’s

most admirable and respected characteristic as a scientist was his integrity. Nothing short of the humble and exact truth and accuracy in meticulous detail would do in his scientific work. His co-workers recall with fondness -- and frustration -- that Nigel always managed to find factual errors in their contribution to a joint manuscript, but they rarely if ever found an error in Nigel's contribution. This quest for accuracy extended to his extensive reviews on the literature of new flavonoids in which Nigel would not simply report the claimed published structure of the new compound but re-interpret the author's data and not cite those papers with errors in the interpretation. They were consigned to the "incorrect structure" folder that became worryingly large. Needless to say, Nigel became a much sought-after referee by editors of phytochemical journals. Despite his scientific rigor, though, Nigel retained an unfailing politeness; even a cutting remark on someone's incorrect science would be delivered with charming indirectness."

His co-author Renée Grayer reported that Nigel was taken seriously ill just as he was preparing to give an important lecture on anthocyanins at a conference in Portugal, and so he could not attend. That lecture will be published posthumously. She summed it by writing, "We have lost a great scientist and a dear friend and colleague."

Office-mate Phil Stevenson first met Nigel in 1987 as undergraduate sandwich students working in Linda Fellows' lab. "It was almost certainly this pre-PhD experience that sowed the seed of his interest in natural products chemistry and plants to which he returned after his PhD," Stevenson wrote. "Nigel loved the gardens and always felt a family connection as his great uncle had been a highly commended horticulturist at Kew in the 1940s and 1950s."

Peter Gasson recalled a day he spent with Nigel in Hampshire in the spring. They stopped for coffee and cake at one of his favourite cafes opposite Jane Austen's house before continuing on to Chappett's Copse to admire the wonderful colony of *Cephalanthera longifolia* that is managed by the local wildlife trust. Their next stop was Noar Hill, another Hampshire Trust reserve, close to Selborne made famous by Gilbert White. They walked among plants of *Orchis mascula* and found several Duke of Burgundy butterflies, which were among Nigel's many interests.

Nigel was a quiet, articulate, elegant gentleman and polymath who maintained fluency in Danish as well as an enviable proficiency on the piano and flute. Every year he led the Kew Choir at the annual staff Christmas carol service. He had a special fondness for antiquarian natural history books and especially those dealing with Cornwall. British history was another of his many interests, and he could trace his ancestry back over several centuries. The famous English purveyors of wild orchids in the nineteenth century, James Veitch & Sons, were most likely on some branch of Nigel's family tree that seemed destined to work with plants.

His tragic and untimely passing has left a void among the Kew staff that will never be filled. It is my personal honour to have known and worked with Nigel on *Genera Orchidacearum* and to have called him a true friend. Rest well, my friend.

Alec Pridgeon

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). 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) for publication in the following issue (January or July). Write "ORN references" in the subject line of the email. 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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Espolador Leitao, C. A., Heidi Dolder, M. A., and Cortelazzo, A. L. 2014. Anatomy and histochemistry of the nectaries of *Rodriguezia venusta* (Lindl.) Rchb. f. (Orchidaceae). *Flora* 209: 233-243.

Hsu, S-T., Wongprichachan, P., Chou, Y-M., Liu, T-Y., Miyajima, I., and Huang, K-L. 2014. Analyses of sporads types at different bud development stages of *Phalaenopsis* orchids. *Journal of the Faculty of Agriculture Kyushu University* 59: 39-44.

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Books

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Minasiewicz, J. and Znaniecka, J. M. 2014. Characterization of 15 novel microsatellite loci for *Cypripedium calceolus* (Orchidaceae) using MiSeq sequencing. *Conservation Genetics Resources* 6: 527-529.

Phillips, R. D., Peakall, R., Hutchinson, M. F., Linde, C. C., Xu, T., Dixon, K. W., and Hopper, S. D. 2014. Specialized ecological interactions and plant species rarity: the role of pollinators and mycorrhizal fungi across multiple spatial scales. *Biological Conservation* 169: 285-295.

Qian, X., Li, Q-J., Liu, F., Gong, M-J., Wang, C-X., and Tian, M. 2014. Conservation genetics of an endangered lady's slipper orchid: *Cypripedium japonicum* in China. *International Journal of Molecular Sciences* 15: 11578-11596.

Sommerville, K. D. Offord, C. A. 2014. Conserving a life cycle -- simultaneous cryopreservation of orchid seeds and mycorrhizal fungi. *Acta Horticulturae* 1039: 219-226.

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Zhang, Y., Zhao, S-W., Liu, D-Y., Zhang, Q-X., and Cheng, J. 2014. Flowering phenology and reproductive characteristics of *Cypripedium macranthos* (Orchidaceae) in China and their implication in conservation. *Pakistan Journal of Botany* 46: 1303-1308.

Cytogenetics

da Silva, J. A.T., Giang, D. T. T., Dobranszki, J., Zeng, S-J., and Tanaka, M. 2014. Ploidy analysis of *Cymbidium, Phalaenopsis, Dendrobium* and *Paphiopedilum* (Orchidaceae), and *Spathiphyllum* and *Syngonium* (Araceae). *Biologia* 69: 750-755.

Ecology

Ackerman, J. D., Falcon, W., Molinari, J., Vega, C., Espino, I., and Cuevas, A. A. 2014. Biotic resistance and invasional meltdown: consequences of acquired interspecific interactions for an invasive orchid, *Spathoglottis plicata*, in Puerto Rico. *Biological Invasions* 16: 2435-2447.

Bellino, A., Alfani, A., Selosse, M-A., Guerrieri, R., Borghetti, M., and Baldantoni, D. 2014. Nutritional regulation in mixotrophic plants: new insights from *Limodorum abortivum. Oecologia* 175: 875-885.

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Jagde,V., Kusum, and Sembi, J. K. 2014. Study on distribution and habitat ecology of a rare lady slipper orchid (*Cypripedium cordigerum* D. Don) in Himachal Pradesh. *Vegetos* 27: 382-388.

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Kosaka, N., Kawahara, T., and Takahashi, H. 2014. Vegetation factors influencing the establishment and growth of the endangered Japanese orchid, *Cypripedium macranthos* var. *rebunense*. *Ecological Research* 29: 1003-1023.

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Micropropagation/seed germination

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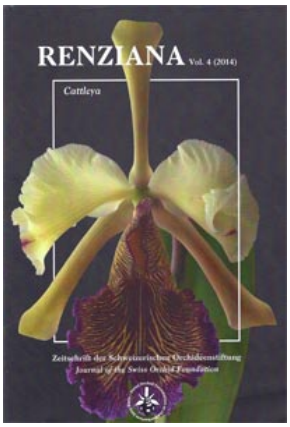
Book Review



Cribb, P., Crocker, G., Ejiri, E., Miranda, F. E. L. de, and van den Berg. 2014. Renziana. Vol. 4. Cattleya. Softcover, 100 pp., 177 colour photographs, 2 maps. Schweizerische Orchideenstiftung am Herbarium Jany Renz, Basel, Switzerland. ISSN: 2235-0799. Reinhardt Media Service (www.orchid.unibas.ch; email: media@reinhardt.ch; tel. +41 (0)61 264 64 50). Price: SFr 15/ € 15. Also available as an eBook on Amazon and Google Books.

Joining previous issues of *Renziana* covering *Paphiopedilum*, *Phalaenopsis*, and *Vanda*, the current issue focuses on everything *Cattleya* – morphology, classification as the result of DNA sequence data, distribution, biogeography, ecology, conservation, pollination, breeding, and cultivation. The primary author for this issue is the widely acknowledged expert on Laeliinae and especially *Cattleya*, Cássio van den Berg. He recounts the taxonomic history of the genus and explains the rationale for lumping *Sophronitis* and Brazilian *Laelia* species into *Cattleya* as series of *C.* subgenus *Cattleya* section *Crispae*. He reminds us that Robert L. Dressler argued for the same reclassification 25 years ago strictly on the basis of interfertility.

For me the most interesting information in this issue is van den Berg's thorough treatment of the distribution, biogeography and ecology of the species as a key to successful cultivation of the species. For instance, although *C. aclandiae, C. nobilior*, and *C. walkeriana* occupy dry habitats in the savannas and 'Caatinga' of inland Brazil, *C. amethystoglossa* grows in even more arid habitats in full sun on the palm species *Syagrus coronata*. How many plants of *C. amethystoglossa* and others have we killed by purposeful (but well-meaning) overwatering and/or excessive shading? Photos of several species *in situ* illustrate this section.

Phillip Cribb joined van den Berg in writing up a short history of the genus and also a section on morphology with an excellent watercolour of *C. labiata*. For the most part the description is accurate, but I think we should be using the term 'capsule' by now instead of 'seed pod'. Legumes have pods, but orchids have capsules. 'Pod' has always been in common parlance in orchid media, but the term is morphologically, developmentally, and taxonomically incorrect with respect to orchids. Adding insult to injury, the caption for the capsule of *C. dowiana* × Hardyana on page 9 is referred to as the "Seed *pot* [my emphasis]," an obvious but unfortunate typographical error by the editors.

The issue is richly illustrated by excellent photos that would have reproduced better on a coated paper stock (a la *Orchid Digest*), but then the publication costs would have been higher. Everyone can afford this reasonably priced but highly informative exposition on one of the world's favourite orchid genera. Everyone will keep it as a authoritative reference.

Alec Pridgeon