

Orchid Research Newsletter No. 68

When Alec Pridgeon, editor or co-editor of the *ORN* for 30 years, asked me to become his successor, I was immediately hit by a severe bout of impostor syndrome. It felt as if the captain of a battleship had asked the cook to take over. Those of you who have seen the movie *Under Siege* will know that such things do not always end badly, and I can only hope that I can rise to the occasion. Many thanks to Alec for doing such a great service to the orchid world, not only as editor of the *ORN*, but also as chief editor of the recently completed series *Genera orchidacearum*. He has retired as Sainsbury Orchid Fellow at Kew, but we should hope he will never retire as member of the community of orchid scientists.

The *ORN* is first and foremost a repository of citations of recent research papers. One could pose the question if it has not outlived its usefulness in this respect, now that *Google Scholar* (<https://scholar.google.co.uk/>), the *Web of Science*[™] (<http://apps.webofknowledge.com/>), and Rudolf Jenny's *Bibliorchidea* (<https://orchid.unibas.ch/index.php/en/bibliorchidea>), among many other resources, have made the scientific literature more accessible than ever before. I don't think so. I think it is still immensely useful to be able to see at a glance what our colleagues have published in the past six months or so, and to have their work arranged into categories. An additional benefit is that readers of the *ORN* can copy-and-paste citations into their own references without having to do a lot of reformatting.

One minor innovation I have introduced is to arrange the references to systematic publications by geography of the taxa concerned (with a category 'General' for items that are supra-regional). For the rest, I plan to keep the *ORN* on its trusted course, and I hope you will support me in this by providing news items, citations I missed, book reviews, and anything else you would like to share with your fellow orchid scholars. Please send your contributions to a.schuiteman@kew.org, with 'ORN' as part of the subject line.

In his final editorial for the *ORN*, Alec wrote: "It has been a pleasure to use this forum to pass on recent orchid references and news in the orchid world (obituaries, book reviews, etc.)." I look forward to indulge in this pleasure as well, but I do hope there will not be too many obituaries.

André Schuiteman, June 2016



Dendrobium incurvum Lindl. Photo: André Schuiteman.

Upcoming Conferences

We welcome any news about future orchid conferences for promotion here. Please send details to André Schuiteman (a.schuiteman@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.

News from the 22nd World Orchid Conference

Plans for the next World Orchid Conference in Guayaquil, Ecuador, are in full swing, and the members of the Organizing Committee are excited about what we are now able to offer registrants—four days of excellent presentations, posters from students supported by scholarships, a jaw-dropping show with more than 1,000 species in flower, seasoned tours through some of the most orchid-rich habitats in the world and to the famous Galápagos Islands, and the warm hospitality of Ecuadorians anxious to show off their beautiful country.

The Conference lectures, scheduled for **8–12 November 2017**, will cover three main topics: science, horticulture, and conservation biology. There will be two concurrent sessions with simultaneous translation (English-Spanish) for each of the four days of lectures beginning Wednesday, 8 November 2017. Proposed abstracts for those wishing to speak at the Conference are now being accepted for consideration; the absolutely final date for receipt of lecture abstracts will be **1 September 2016**. Format for the lecture abstracts and the mailing address for their submission can be downloaded under the Conference tab of the website (<http://www.woc22.com/>). Registration fees will be waived for accepted speakers. Prospective speakers whose abstracts are not among those ultimately selected by the Conference Committee (consisting of 10 individuals) will still have their registrations discounted at the early-bird rate rather than the full rate. The Conference Committee will regularly send names associated with accepted abstracts to the organizers so that they are aware of those whose registration fees are to be waived as well as those who will only be charged at the early registration rate. Abstract format and style are specified on a download under the Conference tab of the website.



We are planning two half-day symposia of invited talks. One symposium will be devoted to the vast diversity of Andean orchids, which is what most registrants are planning on seeing both at the show as well as "up close and personal" on the pre- and post-conference tours. The other symposium will focus on the systematics, ecology, conservation biology, cultivation, trade, and ethnobotany of the world's pantropical and most commercially important orchid genus: *Vanilla*. All talks will begin promptly at 9:00 a.m. and end at 4:45 p.m. Specialist group and committee meetings will be held 5:00-7:00 p.m. unless conflicts require otherwise.

We encourage poster presentations, especially by students, within the categories of taxonomy and systematics, ecology, conservation science, and horticultural science. Students whose posters are accepted may be eligible for scholarships toward their

registration fees. Evidence of student status (Bachelor's, Master's or Ph.D. student) at the time of submission will be required. Awards will be made at both undergraduate and graduate student levels. The Conference Committee will award scholarships to those students whose abstracts best meet the following requirements: clarity, accurate spelling and grammar, and statement of significance. Scientific abstracts will also be expected to introduce the problem, describe the materials and methods (if appropriate), and then clearly present the results and conclusions. Abstracts of all posters accepted will be included in the Conference *Proceedings*.

Space is allocated on the website allowing registrants to donate money toward these scholarships with a \$25 minimum. A full scholarship of \$100 would cover full student registration. Please support our young orchid researchers; many of them will become educators and guardians of biodiversity in precisely those habitats of the world most in need of preservation.

Poster format and guidelines may be downloaded under the Conference tab of the website. The deadline for poster abstracts is **1 January 2017**; abstracts received after that date cannot be accepted.

Alec Pridgeon

News from Correspondents

Please submit any news about recently completed research, future research plans and needs, change of address, upcoming or recent fieldwork, etc. to André Schuiteman (a.schuiteman@kew.org). Graduate students are especially encouraged to share the subjects of their thesis or dissertation with the international community.

Diego Bogarín is a PhD candidate at Leiden University, The Netherlands, where he studies the biogeography and evolution of *Lepanthes*, one of the most diverse Neotropical orchid genera, under supervision of Dr. Barbara Gravendeel and Prof. Dr. Erik Smets. The goal of his PhD project is to understand the evolutionary diversification of one of the most diverse groups of Orchidaceae, namely the Pleurothallidinae, in Lower Central America (LCA). LCA contains about 2010 species of orchids; this means that 6.5–8% of the species diversity of the family is present on about 1% of the Earth's land surface. Pleurothallidinae are the most diverse in terms of species richness and contain the largest genera: *Lepanthes*, *Pleurothallis*, and *Stelis*. These groups significantly outnumber the other genera recorded in terms of species diversity. An inventory will be made of the species and their biogeographical distributions in LCA in order to explain patterns of distribution, endemism and relationships with nearby floras. Phylogenetic analyses and fossil calibrated molecular clock estimates will be used to determine if major geological events, such as the rise of the Andes and the closure of the Isthmus of Panama, propitiated orchid speciation. The biological mechanisms that have led to evolutionary diversification of these orchids will be studied in more detail. This will be done by focusing on the pollination of selected species of *Lepanthes*. The aim is to find out whether the deceptive syndrome, involving pollination by fungal gnats attempting to mate with flowers of *Lepanthes*, is correlated with high species diversity. These studies could have important future conservation applications, because the orchids, pollinators and fungi involved are all vulnerable to climate change in the cool high-elevation areas where they are most diverse.

Tania D'hajjère is conducting a PhD project at the Université Libre de Bruxelles, Belgium, under the supervision of Prof. Patrick Mardulyn and Dr. Tariq Stévant: Biogeography of Atlantic Central Africa—*Tridactyle* (Orchidaceae): a story of speciation and colonisation at São Tomé and Príncipe. It addresses the evolutionary and biogeographic processes underlying biodiversity patterns in tropical African plants. The experimental model, epiphytic orchids, is a prominent component of tropical rainforests, especially in São Tomé and Príncipe, two oceanic islands recognized as biodiversity hotspots. The genus *Tridactyle* will be used as a model to test speciation and diversification scenarios in the context of the theory of island biogeography. A taxonomic revision will be carried out first, based on a molecular phylogeny, also including material from continental Africa. The possible scenarios will then be examined at the intraspecific and interspecific level. The demographic history of the group will be studied, with a focus on *Tridactyle tridactylites* (Rolfe) Schltr., with the following scenarios: sink scenario, continental persistence scenario, ancient source scenario and recent source scenario. Finally, it will be tested whether the speciation history of *Tridactyle* species is similar to other closely related Angraecoid orchids and to other families from rainforests.

Jennifer Dietel is a PhD student at the Institute of Evolutionary Ecology and Conservation Genomics, University of Ulm, Germany. Under the supervision of Prof.

Dr. Manfred Ayasse she is studying infraspecific taxa of *Epipactis helleborine* (L.) Crantz. This orchid attracts its pollinator by partial deceit. The flowers emit so-called 'Green Leaf Volatiles' which normally are produced by plants infested by herbivorous insects, such as caterpillars. Thereby they attract prey-hunting predatory wasps for pollination. Up to now more than 30 subspecies of *E. helleborine* have been described based on various morphological traits. In most habitats, several subspecies as well as transition forms can be found in sympatry. It is not clear whether the described taxa really deserve the rank of subspecies, if they represent ecotypes, or if there is evidence for an early stage of speciation. Molecular studies suggest the presence of recurrent hybridization or a very recent/ongoing reproductive divergence. The PhD work focuses on possible isolation barriers occurring between the taxa *E. helleborine* subsp. *helleborine*, *E. h.* subsp. *moratoria*, *E. h.* subsp. *castanearum*, and *E. h.* subsp. *minor*. The aims to clarify the taxonomy of *E. h. helleborine*, *E. h. minor*, and *E. h. moratoria*, to search for pre-mating or post-mating isolation barriers, and to shed light on the evolution of the plant-pollinator system. It is hypothesized that the morphology of the flowers and the scent attracting the pollinator play a role in pre-mating isolation, and hybrid fertility will be studied as a potential post-mating barrier. Molecular methods will be used, and the plants' mycorrhiza and ecology, as well as other abiotic and biotic factors that might serve as isolation barriers will be investigated.

Recent Orchid Nomenclature

New orchid names may be retrieved from the IPNI website: <http://www.ipni.org/ipni/plantnamesearchpage.do>. 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. Also be sure to check the *World Checklist of Selected Plant Families* (<http://apps.kew.org/wcsp/>) for accepted names and synonyms as well as for building your own checklists.

Recent Literature

We are grateful to Paolo Grünanger for supplying references from journals dedicated to European orchids. If you are aware of any citations published between January 2015 and May 2016 not listed here or in the previous issues, please send them—in the exact style below—to André Schuiteman (a.schuiteman@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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dos Santos, L. E. B., Santána, J., Petini-Benelli, A., and de Moraes, C. P. 2015. Root anatomy of *Galeandra leptoceras* (Orchidaceae). *Lankesteriana* 15(2): 159–164.

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Books

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Chowdhery, H. J. 2015. *Ladys' [sic] Slipper Orchids of India*. BSMPS, Dehra Dun.

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Ethnobotany/Ethnopharmacology

No entries.

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