Orchid Meetings on the 2013 Agenda

IOCC5 - Isle de la Réunion
December 2–6, 2013

The 5th International Orchid Conservation Congress is planned for December 2013 at Saint-Denis, Ile de La Réunion, located about 800 km from Madagascar. The theme is “Orchid Conservation – Making the links”. The website provides details including congress hotel, visitor information, and associated field trips. This is an opportunity not to be missed! [http://iocc5.univ-reunion.fr/](http://iocc5.univ-reunion.fr/)

The vascular flora of the island has been assessed. Here is a link concerning the Red List assessments of Ile de La Réunion as of 2010.

[http://orchidees.vandes.com/doc-joints/dossier-de-presse-flore-vasculaire-de-la-reunion-161210.pdf](http://orchidees.vandes.com/doc-joints/dossier-de-presse-flore-vasculaire-de-la-reunion-161210.pdf)

A useful website illustrating endemic, indigenous, and introduced orchids of the island may be viewed at: [http://www.orchidees-reunion.fr/](http://www.orchidees-reunion.fr/)

International Orchid Workshop
May 17–20, 2013
University of Calabria, Italy

Immediately following the New Phytologist symposium, the International Orchid Workshop ‘Orchid Population Dynamics’ will be held at the same location so members might find it profitable to attend both. While contributions on demography and population dynamics are especially encouraged, other topics are welcomed including management and conservation. For more information, please visit the workshop website: [http://www.iow2013.it/](http://www.iow2013.it/)

Taxonomy and ecology join forces for orchid conservation in Aotearoa New Zealand

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There are about 100 species of orchids in New Zealand; most of them are terrestrial and over 70% endemic. They are found in coastal settings, grassland, wetlands, and forest floors or alpine grasslands. Some species have gone “urban” and have taken over small gardens in traffic islands or sidewalks. Some orchids have also reached the far south of New Zealand and many of the sub Antarctic islands (below ca. 52°S) support at least one or two species of terrestrial orchids.

Orchids are one of the major plant groups with conservation problems in New Zealand and currently one-third of them are considered threatened or uncommon. Orchids are also one of the plant groups requiring considerable systematic and taxonomic research, and numerous taxonomically
Indeterminate orchids have been reported by the New Zealand Native Orchid Group (http://www.nativeorchids.co.nz/) and the Department of Conservation. Unfortunately, at least 11 of these potentially “new orchid species” have been included in the most recent assessment of the conservation status of New Zealand indigenous plants (de Lange et al. 2009). Some of the main threats to their conservation are habitat destruction, browsing, competition by weeds and illegal collection (de Lange et al. 2007).

A three-year grant from Marsden Fund (Royal Society of New Zealand) has allowed me to study the taxonomy, ecology and pollination biology of the New Zealand spider orchid, Nematoceras trilobum. This is one of the most common terrestrial orchids in the country and it grows in a diverse array of habitats from scrub and lowland forest to subalpine shrublands and mires. The morphological variability of this species is such that it has been suggested to include up to 25 taxa (St. George 2006) and some of them have been given “tag names” such as Nematoceras “eastern hills”, Nematoceras “tri-white”, Nematoceras “round leaf” and Nematoceras “darkie” (Fig 1 A, B, C and D).

Despite their taxonomic status being unknown several of these “forms” are already included in the list threatened and uncommon plants of New Zealand. Clarifying the taxonomic identity of these orchids is one of the goals set for this project. This will not only contribute to the knowledge of New Zealand biodiversity but also will have a positive impact on policy and decision making for conservation agencies regarding the prioritisation and implementation of conservation actions.

During the first year of the study, fertile material of these orchids was collected in the North and South Island of New Zealand. Leaves and floral morphological characters were measured and used in statistical analyses and leaf tissue was collected and stored in silica gel for DNA studies. Sequences for a number of nuclear (ITS) and chloroplast markers (psbJ-petA, trnL-trnF) were generated by Jonathan Frericks (MSc Student, Victoria University of Wellington) as part of a Summer Research Scholarship Program with Dr Peter Ritchie (Victoria University of Wellington). Preliminary analyses of these sequences suggest that at least two of the forms included in the species aggregate, i.e. “eastern hills” (Fig. 1A) and “round leaf” (Fig. 1C) should be recognised as distinct species. These results were also supported by a set of morphological characters, unique to each form, singled out by the statistical analyses.

Unfortunately, the molecular markers used above were not useful to untangle the relationship among other members of the N. trilobum aggregate such as “triwhite” (Fig. 1B) and “darkie” (Fig. 1D). These allopatric and morphologically different orchids have identical sequences in both nuclear and chloroplast markers. Affinities between these two orchids and two other members of the aggregate will be explored this year using the DNA fingerprinting technique AFLP. As for “eastern hills” and “round leaf”, after their formal description is completed, and their abundance and distribution patterns are studied, their conservation status will be re-evaluated and, hopefully, listing along other threatened and uncommon New Zealand orchids will be unnecessary.

On another front, a small scale study to isolate and identify the endomycorrhiza used by a selected group of terrestrial New Zealand orchids and implementing a symbiotic germination protocol for them has been started by Jonathan Frericks as part of his MSc project in collaboration with Otari-Wilton’s Bush Botanical Garden - Victoria University of Wellington and the Museum of New Zealand. This study is the first of its kind in New Zealand and will provide valuable information and techniques necessary to assist conservation of a number of Nationally Critical and Nationally Endangered orchid species that have been reduced to less than two populations in the wild.

Promoting orchid research in New Zealand and implementing conservation techniques long used overseas are the main goals.
I am currently working towards. In the long term, I am hoping these efforts will provide a better understanding of New Zealand orchids’ ecology and build the skills necessary to secure their conservation.

References


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North American Orchid Conservation Center (NAOCC) – up and running

**Dennis Whigham**

With funding from the Smithsonian Institution (SI), the United States Botanic Garden (USBG) and the Native Orchid Conference (NOS), NAOCC has started toward its long-range goal of assuring the survival of the native orchid heritage in the U.S. and Canada. NAOCC developed an exhibit on native orchids for the annual SI/USBG orchid show that we held at the U.S. Botanic Garden. The orchid show is over but the display has been popular and they have decided to keep it up until October.

Melissa McCormick and Dennis Whigham gave NAOCC related presentations at the USBG, the annual meeting of NOS, the annual meeting of the Mid-America Orchid Congress, the Alaska Island and Oceans Visitor Center (headquarters of the Alaska Maritime National Wildlife Refuge) and a memorial symposium in Trebon (Czech Republic) dedicated to the memory of Dagmar Dykyjova, the noted Czech ecologist who published a book on orchids at the age of 89! NAOCC also hosted the first ‘partner’s workshop at the Smithsonian Environmental Research Center in June. Representatives from the Atlanta Botanic Garden, Alaska Botanic Garden, Mt Cuba, Duke Farms, Desert Botanic Garden, Center for Plant Conservation, The Nature Conservancy, New England Wild Flower Society, Bureau of Land Management, University of Alberta, and the USDA/ARS joined staff of the SI and USBG for a highly interactive workshop. The two-day workshop focused on issues related to the establishment of seed and fungal banks.

In addition there were discussions about efforts to grow native orchids in botanic gardens and efforts to restore native orchid populations. Over the next year, committees will be formed to develop plans to move forward with these activities and NAOCC will seek funding to move beyond the planning stage. The workshop also included a presentation of an exciting new web site (*Go Botany*: http://gobotany.newenglandwild.org/) that was recently launched by the New England Wild Flower Society. *Go Botany* can be used to identify more than 3500 species native to New England. The web site also includes facts and details about the species and also offers many educational opportunities. NAOCC will partner with NEWFS to develop an interactive web site that will based on the software behind *Go Botany* and will ultimately include all orchids native to the U.S. and Canada. The first launch of the interactive web site will include the orchids of New England and the Mid-Atlantic states. You can get a glimpse of how the web site might function by examining the orchid section in *Go Botany*. Finally, a video that describes what NAOCC is trying to accomplish can be found on the web site of the Smithsonian Environmental Research Center (http://serc.si.edu). For those on Facebook, you should also be able to find the video by searching for NAOCC.

For further information about NAOCC, contact Dennis Whigham at the Smithsonian Environmental Research Center (whighamd@si.edu)

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Call for conservation news

Members are asked to provide news of their recent conservation activities for publication in the OSG Conservation News.

Changes to contact information?

To maintain effective communication, we need to know of any changes in contact information. Please inform the OSG Chair, Dr. Mike Fay <M.Fay@kew.org>.