

# ORCHID CONSERVATION NEWS

The Newsletter of the Orchid Specialist Group of the IUCN Species Survival Commission

Issue 1

May 2020

## RAPIDLY CHANGING PRIORITIES

### Editorial

Challenges to orchid conservation are many, often requiring decisions as to which projects must take precedence to others equally deserving, all within the context of budget, staff, travel contingencies, and political will. The past several years have dealt an array of challenges including severe drought and catastrophic bush fires in Australia, devastating desert locust outbreaks in East Africa, significant flooding events in North America and Europe, and the COVID-19 pandemic that has now severely impacted human life, education, national economies, and travel worldwide. Priorities are changing for us all and rapidly so.

While economies are faltering and national deficits are mounting, some may be wondering about future budgets and how orchid conservation work can be managed. With our schools, colleges, universities, and research institutes mostly closed over the past few months, many students and researchers now working from home are wondering if and how they can complete their projects, and if they may be able to travel to sites near and far. Many international borders are still closed to non-essential travel. Even local parks and conservation areas may still be closed to us who live and work nearby. How can we manage it all and remain focused on our conservation work? We should be able to continue but it will require some adjustment as to our immediate priorities.

Social distancing precludes large gatherings so some conferences such as BOTANY 2020 will be offering their first virtual conference. With registration fees reduced, no travel or accommodation costs, and no quarantine barriers to participation from home, virtual

meetings are now on my can-do list. The conservation community is developing new and more productive ways to deal with rapidly changing priorities. As we explore novel ways to interact with the conservation community at home and at large, this newsletter highlights projects dealing with wild orchid trade, herbarium label transcription methods and approaches, pollination ecology insight, and assessment of conservation threats. We look forward to hearing more about conservation approaches and successes in the coming months.

*Marilyn H.S. Light, Editor*

#### On the Herbarium Front – Volunteer Efforts

**Matthew Pace** is an Assistant Curator at the New York Botanic Garden William and Lynda Steere Herbarium. The C. V. Starr Virtual Herbarium contains digitized specimens and images. One of Matthew's interesting projects (other than manuscript writing), is the transcription of label data, making taxonomy updates to the herbarium database, and validating label transcriptions made by volunteers. Transcription of handwritten and sometimes fading herbarium label data into a typed format prior to digitization can be challenging but volunteers can work from home and can request advice if and when required. *Notes From Nature* and the digitization project at the NYBG is funded by the US National Science Foundation. This includes Orchidaceae (the project focuses on epiphytes, succulents, and carnivorous plants).

To learn more about this herbarium data conservation initiative visit:

<https://www.zooniverse.org/projects/md68135/notes-from-nature-nybg>

## Orchid Trade News – OSG Global Trade Program

**Jacob Phelps** has provided information on orchid trade initiatives happening throughout the world. Included are sections on trade in edible orchids, wild orchids as ornamental plants, as traditional medicinal sources, and for cosmetics. Visit the informative website for more information and check NEWS for regular updates. <https://globalorchidtrade.wixsite.com/home/orchids-trade>

Barcoding of edible orchids used in Chikanda in Zambia (16 species of six genera) has revealed unexpected results and conservation concern. (Veldman *et al.*, 2018).

Also read Hinsley *et al.* (2019) for a trade review.

### Revising China's List of National Key Protected Wild Plants

**Hong Liu**, Florida International University and Fairchild Tropical Botanic Garden, writes to inform us about a recently published comprehensive analysis on conservation measures implemented for wild Chinese orchids (Liu *et al.* 2020).

Highlights include:

- 1) Nearly half of Chinese orchids were categorized as threatened;
- 2) More than half of Chinese orchids were protected *in situ* and with *ex situ* measures;
- 3) The current Chinese Redlist underestimated threat from trade related over-harvest;
- 4) There is a need to strengthen conservation participation by institutions with utilization goal;
- 5) A dynamic national list of wild orchids in trade and trade volumes is needed.

## Bushfire Impact on Orchids – Australia

The damage wrought by recent bushfires in Australia is now being assessed. Where host trees have burned, epiphytes are obviously impacted as with the case of locally rare *Plectorrhiza tridentata* and its host trees growing in a gully rainforest site in East Gippsland, Victoria State.

<https://www.abc.net.au/news/2020-03-13/rare-orchid-found-in-gippsland-rainforest-at-risk-after-bushfire/12052458>

Some terrestrial orchids may have survived but their status is currently unknown. A comprehensive account of the response of orchids to bushfire was published following the Black Saturday Victoria fire of 2009 (Duncan, 2012).

### Pollinator Studies and Revelations

Houlihan *et al.* (2019) investigated the pollination ecology of the ghost orchid, *Dendrophylax lindenii*, in Florida, USA, only to find that the expected pollinator, *Cocytius antaeus*, was feeding on nectar only. They proposed that other sphinx moth taxa were or could be pollinators of protected *D. lindenii* in Florida. Pollination by *Pachylia ficus* (larval host, *Ficus aurea*), possible pollination by *Protambulyx strigilis* (larval host, *Schinus terebinthifolius*, etc.), and by *Dolba hyloeus* (larval host, *Asimina triloba*, etc.) were recorded.

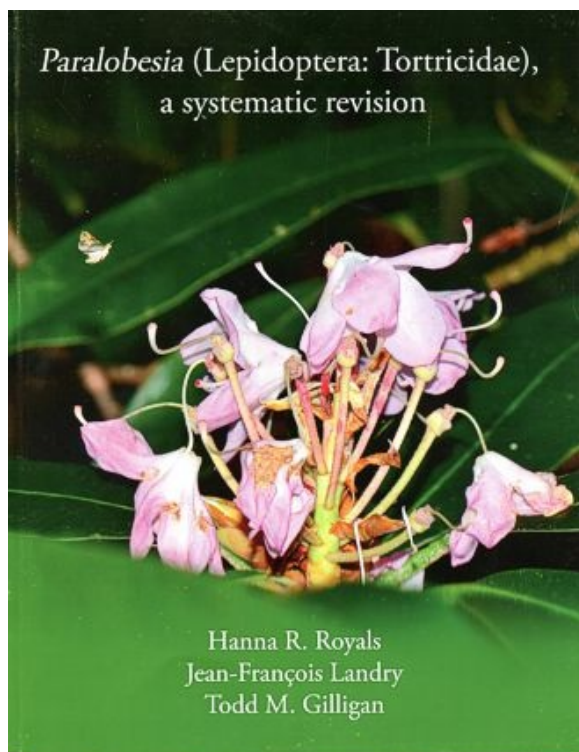
For information about the moths.

<https://www.sphingidae.us>

#### Video:

[www.nationalgeographic.com/animals/2019/07/ghost-orchids-florida-surprising-pollinators-moths](http://www.nationalgeographic.com/animals/2019/07/ghost-orchids-florida-surprising-pollinators-moths)

## On the Bookshelf



Royals, H.R., J-F. Landry, and T.M. Gilligan, 2019. *Paralobesia* (Lepidoptera: Tortricidae), a systematic revision. *Memoirs of the Lepidopterists' Society*, No. 6. Washington, D.C. 149 pp. ISBN 978-1-7342874-0-0

This systematic revision has used both field-collected, and reared specimens of a micromoth, *Paralobesia*, from known hosts to address the genetic and morphological complexity of a genus of interest to orchid specialists and entomologists alike. The entire tree is provided for 43 taxa showing the species level relationships within the genus. In terms of species-level relationships, *Cypripedium reginae* is shown to be host to two moth species, *P. cyripediana* and *P. marilynae*. Whereas *P. marilynae* has only been collected/reared from *C. reginae*, *P. cyripediana* has been reared from the orchid but more frequently from *Rhus sp.* (Anacardiaceae). This volume should be of interest to those interested in plant-insect relationships. M.L.

## Food for Thought

Besi, E.E., Nikong, D., Mustafa, M., and R. Go. (2019). Orchid diversity in anthropocene-induced degraded tropical rainforest, an extrapolation towards conservation. *Lankesteriana* 19: 107–124.

Duncan, M. (2012). *Response of Orchids to Bushfire*. The State of Victoria Department of Sustainability and Environment Melbourne, Australia. ISBN 978-1-74287-447-0 (online)

Duncan, M., and P.D. Molony (2018). Comparing wild and introduced populations of the threatened orchid *Diuris fragrantissima* (Orchidaceae) in south-eastern Australia. *Australian Journal of Botany* 66: 459–467. <https://doi.org/10.1071/BT18047>

Fonge, B.A., Essomo, S.E., Bechem, T.E., Tabot, P.T., Arrey, B.D., Afanga, Y., and E.M. Assoua. (2019). Market trends and ethnobotany of orchids of Mount Cameroon. *Journal of Ethnobotany and Ethnomedicine* 15:29. <https://doi.org/10.1186/s13002-019-0308-1>

Gao, Y., Zhao, Z., Li, J., Liu, N., Jacquemyn, H., Guo, S., and X. Xing (2020). Do fungal associates of co-occurring orchids promote seed germination of the widespread orchid species *Gymnadenia conopsea*? *Mycorrhiza*. <https://doi.org/10.1007/s00572-020-00943-1>

Guillerminet, T., Veltman, M.A., Gravendeel, B., and H.J. de Boer. (2019). Trade of Wild Orchids: an assessment of the recent CITES data. Poster - May 2019. DOI: 10.13140/RG.2.2.34094.15686

Hinsley, A., de Boer, H.J., Fay, M.F., Gale, S.W., Gardiner, L.M., Gunasekara, R.S., Kumar, P., Masters, S., Metusala, D., Roberts, D.L., Veldman, S., Wong, S., and J. Phelps. (2018). A review of the trade in orchids and its implications for conservation. *Botanical Journal of the Linnean Society* 186: 435–455.

Houlihan, P.R., Stone, M., Clem, S.E., Owen, M., and T.C. Emmel. (2019). Pollination ecology of the ghost orchid (*Dendrophylax lindenii*): A first description with new hypotheses for Darwin's orchids. *Scientific Reports* 9: 12850. <https://doi.org/10.1038/s41598-010-49387-4>

Jasinge, N.U., Huynh, T., and A.C. Lawrie (2018). Changes in orchid populations and endophytic fungi with rainfall and prescribed burning in *Pterostylis revoluta* in Victoria, Australia. *Annals of Botany* 121: 321–334.  
doi: 10.1093/sob/mex 164

Jiménez-López, D.A., Solano, R., Peralta-Carreta, C., Solórzano, J.V. and M.G. Chávez-Angeles (2019). Species richness may determine the income from illicit wild orchid trading in traditional markets in Mexico. *Economic Botany* 73, 171–186 (2019).  
<https://doi.org/10.1007/s12231-019-09460-5>

Kristensen, N.P., Seah, W.W., Chong, K.Y., Yeoh, Y.S., Fung, T., Berman, L.M., Tan, H.Z., and R.A. Chisholm (2020). Extinction rate of discovered and undiscovered plants in Singapore. *Conservation Biology*  
<https://doi.org/10.1111/cobi.13499>

Liu, H., Liu, Z., Jin, X., Gao, J., Chen, Y., Liu, Q., and D.-Y. Yang (2020). Assessing conservation efforts against threats to wild orchids in China. *Biological Conservation* 243. <https://doi.org/10.1016/j.biocon.2020.108484>

May, M., Jąkałski, M., Novotná, A., Dietel, J., Ayasse, M., Lallemand, F., Figura, T., Minasiewicz, J., and M.-A. Selosse (2020). Three-year pot culture of *Epipactis helleborine* reveals autotrophic survival, without mycorrhizal networks, in a mixotrophic species. *Mycorrhiza* 30: 51–61. <https://doi.org/10.1007/s00572-020-00932-4>

Phillips, S., Dillen, M., Green, L., Groom, Q., and M.-H. Weech (2019). Evaluating methods for transcribing specimen labels. *Biodiversity Information Science and Standards* 3: e37306. doi: 10.3897/biss.3.37306

Royals, H.R., Landry, J-F., and T.M. Gilligan (2018). The myth of monophagy in *Paralobesia* (Lepidoptera: Tortricidae)? A new species feeding on *Cypripedium reginae* (Orchidaceae). *Zootaxa* 446 (1) 081–096.

Royals, H.R., Landry, J-F., and T.M. Gilligan (2019). *Paralobesia* (Lepidoptera: Tortricidae), a systematic revision. *Memoirs of the Lepidopterists' Society*, No. 6. Washington D.C. 149 pp.

Veldman, S. *et al.* (2018). Trade in Zambian edible orchids—DNA barcoding reveals the use of unexpected orchid taxa for chikanada. *Genes* 2018, 9(12), 595;  
<https://doi.org/10.3390/genes9120595>

Wightman, N. (2018). Chasing up chikanda 2018. *The Chikanda Orchid Conservation Initiative Newsletter*, Issue No. 4, July 2018.

## Mark your Calendar

23th World Orchid Conference, Taichung, Taiwan  
Postponed <https://www.woc23.com/>

**MONOCOTS – 7th International Conference on Comparative Biology of Monocotyledons.**  
San José, Costa Rica, March 6–10, 2023

**24<sup>th</sup> World Orchid Conference, Perth, Australia, September 3–11, 2023**  
<https://horticulturalcouncil.com.au/event/24th-world-orchid-conference/>

**IOCC VIII, Perth, Australia, September 2023**  
8<sup>th</sup> IOCC to be held in conjunction with the 24th WOC  
Details to follow.

---

## Changes to contact information?

To maintain effective communication, we need to know of any changes in contact information.

Please inform the OSG Chair, Mike Fay.  
([M.Fay@kew.org](mailto:M.Fay@kew.org))

## Call for conservation news

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

Please submit material in Microsoft Word, and illustrations, if any, as separate jpeg files. If applicable, please include suggested captions and photographic credits. Send news to Marilyn Light, Editor,  
([mslight@distributed.net](mailto:mslight@distributed.net))