

The Conference, WOC tours and orchid conservation initiatives



SUSANNE MASTERS and AMY HINSLEY report on the 21st WOC Conference lectures, the WOC tours and conservation issues



Star of Africa, *Angraecum stella-africae*, was selected as the orchid for the WOC21 logo

JOHANNESBURG developed as the nexus of South Africa's gold mining industry as the discovery of vast gold seams fuelled the growth of the city, in Gauteng province. The concept of Orchids: Gold in the Green Age as the theme of the 21st World Orchid Conference & Show directly connects WOC21 with the city's history. This theme also highlights wider issues across South Africa including its wealth of biodiversity, conservation initiatives realised in conjunction with the mining industry, and awareness of both the economic and social value of orchids.

History of an iconic orchid

Star of Africa, *Angraecum stella-africae*, was selected as the orchid to use for the WOC21 logo. As well as having an elegant flower shape that works well as a logo the species was particularly appropriate because it was discovered in South Africa by Gerrit van Ede, WOC21 Chairman and Conference Chairman. Gerrit told us, 'One of my hobbies, as a student, was mountaineering and rock climbing. In May 1964 I went with a group of fellow students to a place called Umkomani, to climb a rock outcrop known as the Mitre Buttress. Two men lived on the farm there and one of them, Alex Renny, made colour pencil drawings of local flowering plants. Among them was a drawing of a small *Angraecum* with a fairly large flower. I had only just started to take an interest in orchids and did not realise the significance of the drawing. A few years later, I returned to Umkomani and saw the drawings again. It was then that I realized this *Angraecum* was something special. So I accompanied Mr Renny up the gorge leading to the top of the mountain and the habitat of this *Angraecum*. We were fortunate enough to find a plant in full flower in an



Above At the Gala Dinner, Johan Hermans (right) thanks the organisers of the 21st World Orchid Conference, (left to right) Catharina Wilfinger, Gerrit van Ede, Anthony Grohovaz and Lourens Grobler

accessible position on the cliffs above the gorge. The first photograph of this species ever published was taken that day. Star of Africa has always been part of my orchid life, and I expect it to continue to cast its spell for, hopefully, many more years.'

Conference Talks

Keynote lectures provided a local context for orchidologists, starting with A Journey through Southern Africa, by Johan Hermans, outgoing President of the WOC Trust and Chairman of the RHS Orchid Committee. This was followed by talks on hybridization, pollination and genetics, including, Vandaceous Intergeneric Hybrids: Past and Future, by Robert Fuchs; Orchid Pollination: a Tale of Mimicry and Deception, by Professor Steven Johnson; and Orchid Conservation Genetics: New Solutions for Old Problems?, by Dr Mike Fay.

With more than 50 lectures on the programme, only a small proportion can be summarized here. Two, based on South African orchids, aroused interest in future developments. Tinus Oberholzer, co-owner of Plantea Orchids, discussed the merits of native South African species for cultivation, and which attributes are particularly suited to marketing

species for non-specialist growers. Steven Johnson's presentation on the forthcoming publication *Orchids of South Africa*, due out in 2015, provided an invaluable whistle-stop tour of South African orchids.

Orchid conservation outside South Africa was also well represented. Dr Noushka Reiter talked about the ongoing work and many successes of the Australian Network for Plant Conservation's Orchid Conservation Programme. This aims to propagate and reintroduce threatened southeast Australian orchid species. American orchid specialist Tom Mirenda, from the Smithsonian Institution, gave a talk that explored the various roles of orchid gardens in conservation, from centres for the *ex situ* protection of wild species to their importance as a source of material for genetic and other scientific research. He also drew attention to the launch of the Go Orchids website, a valuable source of information on the native orchids of North America, produced by the North American Orchid Conservation Center: <http://goorchids.northamericanorchidcenter.org>

Closing comments

At the Gala Dinner, Johan Hermans thanked the local team who organized the 21st WOC. Alongside

Gerrit van Ede, Chairman and Conference Chairman, a team including Anthony Grohovaz, Show Chairman; Catharina Wilfinger, Communications Portfolio; Frik Botha, Financial Director; and Lourens Grobler, Chairman of Judging, worked to deliver the combination of scientific research, conservation initiatives and beautiful displays that made WOC21 a memorable event.

Clare Hermans, WOC judge and Vice Chairman of the RHS Orchid Committee, highlighted the role of spouses in supporting the work of WOC members by saying, 'Key committee members and officials dedicate time, finance and effort in order to fulfill demands of roles that require commitment to travel as well as specialist knowledge. Alongside these officially recognized volunteers, their spouses also make equal contributions, which too often go unacknowledged. It is true that many

spouses find orchids so fascinating they go on to become involved in their own capacity, and their work is acknowledged in these contexts. However, it remains important for all of us to recognise these unofficial contributors to the WOC. It is only with their patience, understanding and efforts we are able to have such well-organised and well-delivered WOC events that both celebrate and develop orchids and knowledge of them.'

Group meetings and forums

The WOC provided a great opportunity for a meeting of the Orchid Specialist Group of the IUCN (International Union for Conservation of Nature). This international network of orchid experts works to further orchid conservation. It was a well-attended meeting and included updates from regional and thematic groups, as well as discussions of the best ways to progress with group

priorities such as orchid red-listing.

In addition to the main IUCN meeting, a separate event provided an opportunity for those in the early stages of their orchid careers, whether in science or horticulture, to get together and network. This Early Career group has an online forum and will soon be starting Facebook and Twitter accounts.

A locally threatened orchid

Conservation was also on the agenda at WOC21 and the Terrestrial Orchid Conservation group began by focussing on the orchid most closely associated with Johannesburg, *Brachycorythis conica* subsp. *transvaalensis*. It is currently found in only one population in Gauteng province. Little is known about its pollinator and a survey found that few plants had set seed. A more imminent threat is the expansion of Johannesburg and Pretoria, as proposed housing developments could affect



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Little is known about the pollinator of *Brachycorythis conica* subsp. *transvaalensis*

Judi Kirke-Weilich

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Faraday Market in Johannesburg is a hub for muthi (traditional medicine) traders

Susanne Masters

the area. Additionally, tracks made by off-road vehicles erode into gullies and the area is scoured by fresh tracks as eroded tracks become unusable.

Wild Orchids of Southern Africa (WOSA) is a conservation group established in 2013 to support conservation of South African orchids in their natural habitats, see: <http://wildorchids.co.za/html>. *Brachycorythis conica* subsp. *transvaalensis* is their first focal species. Initial proposals for the conservation of this species include rapid steps of assessing the species under Red List criteria and halting development that threatens the known habitat of this species. Longer term proposals include using *in vitro* germination to establish *ex situ* populations, and research on topics such as pollination and soil studies, which will generate an understanding of population biology, and determine the characteristics of its habitat to aid searches for further populations.

Trade in orchids

Another issue for orchid conservation in South Africa discussed by the group was trade, as both a threat to wild orchid populations, and as a potential conservation tool. Various community orchid growing projects have been established, but not persisted in the long-term. Issues that have hindered long-term success of these projects have included difficulty engaging the whole community at the start of a project, and practicalities of



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certification, product shelf-life and whether horticultural markets presented long-term opportunities. Conservation via commercially-orientated community projects will remain a topic of interest, especially as orchids have both social and economic uses in South Africa.

Johannesburg muthi market

With most of the 176 units of Faraday market selling products for traditional healing, it is not only one of the oldest markets in Johannesburg, but also a place in which non-horticultural orchid trade can be seen. Various orchid species are used medicinally in South Africa. Decline of wild populations due to harvesting for medicinal trade is specified as the

Above Various plant parts being sold by traditional healers were hard to identify
Below Part of a pile of chopped stems, probably orchid canes, being sold as medicine



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main threat to *Eulophia speciosa* on South Africa's Red list. Ledile Mankga is a PhD student at Johannesburg University and has conducted research using DNA barcoding to identify plants traded on traditional markets. She took us to Faraday market, which is one of the markets she sampled.

Several whole orchid plants were easily recognised as orchids, but could not be identified further as their flowers had not yet opened. Most plants traded on the market had been cut up so were difficult to identify visually, such as the heap of chopped stems we saw that looked like orchid canes. We would certainly recommend that any visit to the market is with a local person who can speak some of the 11 official languages of South Africa, as we benefitted greatly from Ledile's ability to communicate with the many traders.

The story of 'the living dead'

Noushka Reiter from the Australian Network for Plant Conservation went on a pre-conference trip. 'Of the many stories and places we visited on our four-day, non-stop road journey around the southwest of South Africa one orchid story from our off-beat guide and driver/medicinal man stuck out. As we drove out of Cape Town we pulled over on the side of the road to see several species of orchid and this is where I was first introduced

to 'the living dead'. A beautiful species, *Pterygodium catholicum*, has pale yellow and dark red, sweet-smelling flowers. It is pollinated by the bee *Rediviva peringueyi*, which needs the annual plant *Hemimeris racemosa* (*Scrophulariaceae*) to survive. Sadly, *H. racemosa* is all but gone in this area. Our guide said that he unfailingly goes around hand pollinating the *P. catholicum* as the bee has not been seen in that part of the country for many years. Because of the collapse of their pollination web *P. catholicum* are now referred to as 'the living dead'.

The pervading mists of Cape Town allow *Satyrium odorum* to grow epiphytically

Terrestrials residing in trees

In theory, the area around Cape Town has no epiphytic orchids. Yet *Satyrium odorum* grew everywhere from the top of Table Mountain to roadsides and on palm trees. A terrestrial orchid taking up residence in a tree is rendered possible by the pervading mists of Cape Town. On a misty day, lack of visibility curtailed hiking on Table Mountain making it

difficult to see *Disa uniflora*, which is so ubiquitous that even local people who are not orchidologists or even botanists are familiar with it.

National Biodiversity Institute

Kirstenbosch National Botanical Garden in Cape Town is the oldest garden that forms part of South Africa's National Biodiversity Institute (SANBI). As well as conducting research, SANBI links research to practice. This includes working with mining companies to minimize the environmental impact of economic development, and fostering awareness of biodiversity.

Roleen Ellman, Deputy Director Biodiversity Education and Empowerment Directorate, met with us to provide an overview of SANBI's biodiversity empowerment programme. Their successful school garden collaborations have been the result of schools applying to join the programme. Roleen explained how, after being accepted on to the programme, schools are supported in planning their garden, and by being given starter plants for the garden, which they then need to propagate to expand the garden to its full size. After the third year the garden is officially handed over to the school, but SANBI continues to provide support via advice and supply of extra plants. This process of selecting



Tom Riebel / www.ispid.org.za

Above *Pterygodium catholicum* is known as 'the living dead' because its pollinator bee has not been seen in this part of South Africa for many years, so the plants have to be pollinated by hand in order for the species to survive

Right Plants of *Satyrium odorum* growing as epiphytes on a palm tree in Cape Town. This scented species usually grows as a terrestrial, (see front cover), and is endemic to the southwestern Cape Province of South Africa

Below Clouds envelop Table Mountain, and nearby peaks, on an almost daily basis. The flat-topped mountain reaches 1,085m in height, and forms part of the Cape Floral Region, which has been identified as one of the world's 18 biodiversity hotspots



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Robeen Elmam

Macassar High School's garden developed as part of SANBI's biodiversity empowerment programme

participants on the basis of commitment, and by providing short- to long-term support, with plant selection generated by the community, is potentially a useful model for developing orchid cultivation projects.

Future opportunities

Orchid growing can be marginalized as either a horticultural hobby or a research interest i.e. occupying small, specialist niches. But orchids are a feature of South Africa's biodiversity that have economic value indirectly as a feature of wildlife tourism, and directly as a plant commodity used medicinally. The 21st WOC raised the profile of South African orchids, in particular terrestrial species. In conjunction with developing initiatives, such as conservation work by WOSA, and community engagement by SANBI, and the growing body of knowledge on orchid distribution and cultivation techniques, South Africa's orchid scene looks exciting. ■



Robeen Elmam

The garden at Imperial Primary School is another successful collaboration project for SANBI

AMY HINSLEY is a conservationist conducting research on wildlife trade using interdisciplinary methods, with a particular focus on consumer preference in the orchid market
SUSANNE MASTERS is an ethnobotanist, currently doing PhD research on edible wild orchids in Turkey

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