




Female Arabian leopard *Panthera pardus nimr* cub born at the Wild Mammal Breeding Centre, Muscat, Oman on 15 February 2023. Photo: Royal Court Affairs.

in 2022 by a female from the Breeding Centre for Endangered Arabian Wildlife in Sharjah, United Arab Emirates. On 15 February 2023 she gave birth to the centre's first cub in 26 years. The female cub provides new hope for the survival of this Critically Endangered leopard in Oman and across Arabia, as both the wild and captive populations of this subspecies are very small. In addition, as the sire of the cub is a wild-caught Arabian leopard, she may contain some valuable genetic material that can be used to increase the genetic diversity of the captive Arabian leopard population across the region.

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22nd Sharjah International Conservation Forum for Arabia's Biodiversity

The 22nd Annual Sharjah International Conservation Forum for Arabia's Biodiversity was held at Sharjah Safari, United Arab Emirates, during 6–9 February 2023. The Forum brought together over 200 participants regionally from Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia, UAE, Yemen, and internationally from Australia, France, Germany, Greece, New Zealand, Russia, South Africa, the UK and the USA. The Sharjah workshops are hosted by the Environment and Protected Areas Authority, Government of Sharjah, under the patronage of H.H. Sheikh Dr. Sultan bin Mohammed al Qasimi, Member of the Supreme Council and Ruler of Sharjah. Following on from the inclusion of the genetic diversity

of wild species in Target 4 of the Kunming–Montreal Global Biodiversity Framework at the Conference of the Parties 15 meeting in Montreal in December 2022, the 22nd meeting had a single theme: conservation genetics.

The forum was aimed at conservation practitioners who may need to commission or interpret conservation genetics research in their projects and was led by the Royal Zoological Society of Scotland's WildGenes laboratory. The sessions covered: (1) an introduction to major concepts in conservation genetics, highlighting regional case studies, (2) use of genetic data to support reintroduction, including a practical session on founder selection, (3) genetics and taxonomy, including a gap analysis of outstanding taxonomic questions in the region, and (4) use of genetic data to support monitoring and management of threatened species in the wild, including the use of dietary metabarcoding, conducting a population census, and the management of hybridization. A technical session provided an overview of animal biobanking and the work of the Sharjah National Barcode of Life Programme, with advice for veterinarians taking samples, and a practical session on sample prioritization.

The final day brought together lessons learnt during the first 3 days in a practical session on the evaluation of genetic risk to threatened populations using the Genetic Score Card method, which has been proposed as an indicator for the evaluation of progress against Global Biodiversity Framework Target 4. Workshop participants tested the scorecard process on 18 Arabian species of conservation concern, as a means of exploring the different elements of genetic risk.

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Manglietia ventii blooms for the first time in Kunming Botanical Garden

The evergreen tree *Manglietia ventii* (with the synonyms *Manglietia hebecarpa*, *Magnolia hebecarpa* and *Magnolia ventii*) of the family Magnoliaceae was described in 1980




Manglietia ventii blooming in Kunming Botanical Garden.

and is endemic to Yunnan, China. It was categorized as Endangered on the IUCN Red List in 2012 and the China Red List of Biodiversity–Higher Plants in 2020, and listed as a second-ranked National Key Protected Wild Plant of China in 1999 and 2021, and by the Yunnan provincial government as a Plant Species with Extremely Small Populations in 2009. On 6 September 2023, in Kunming Botanical Garden in Yunnan, the ex situ population of 28 individuals, planted in 2015, bloomed for the first time.

The seedlings of *M. ventii* used to establish this ex situ population were propagated from wild-collected seeds. In 2015, the diameter of the planted seedlings at ground level was 1.2–1.4 cm. In 2019, average plant height was 3.8 m and average ground diameter 7.3 cm, and in 2023 these measurements were 8.3 m and 15.0 cm, respectively. Although the seedlings experienced frost damage, *M. ventii* has grown well and has adapted to the Botanical Garden's weather conditions. In situ conservation of *M. ventii* has included reinforcement and reintroduction of populations and establishment of mini-reserves, and as a result of these integrated conservation efforts *M. ventii* was not included in the 2021 list of Yunnan protected Plant Species with Extremely Small Populations.

In the wild, *M. ventii* blooms during April–May. This blooming in Kunming Botanical Garden in September suggests that studies of the species' conservation genomics and ex situ conservation biology are required.

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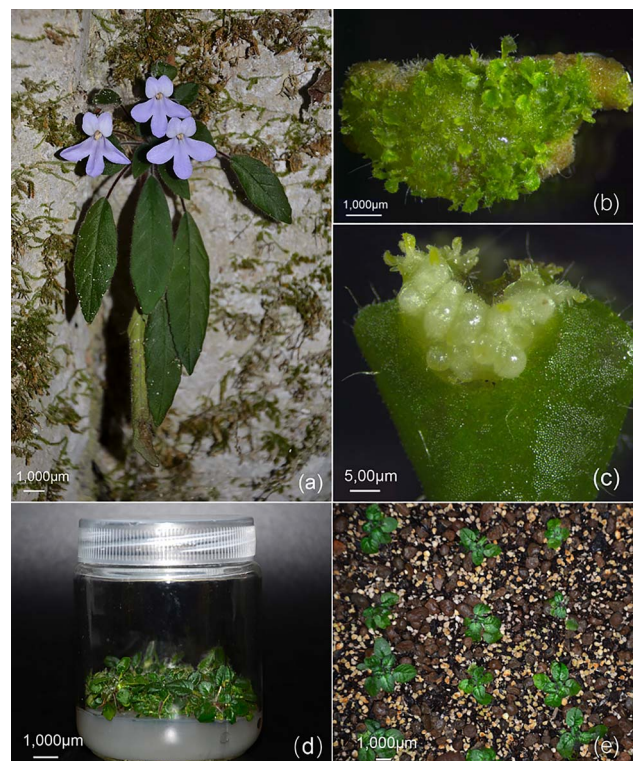
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Use of plant tissue culture to conserve the Critically Endangered *Petrocosmea grandiflora* in China

Petrocosmea grandiflora Hemsl. (Gesneriaceae) is a perennial herb endemic to China with large and beautiful bluish violet flowers of potential horticultural value. The first specimen of this species was collected in 1893 by British botanist Hancock in Mengzi County, Yunnan Province, and it was described by Hemsley in 1895, with the type specimen deposited at the Herbarium of the Royal Botanic Gardens, Kew, UK. For 121 years the species remained unseen until it was rediscovered in the wild in 2016. However, despite multiple field explorations only three populations have so far been found in the wild, with < 1,000 individuals in total. *Petrocosmea grandiflora* has been categorized as a Yunnan Key Protected Wild Plant, as a Plant Species with Extremely Small Populations in Yunnan Province, and as a Threatened Species of Higher Plants in China, and it should be categorized as Critically Endangered according to the IUCN Red List assessment criteria.

During September 2022–December 2023, with the support of a conservation programme (2021SJ14X-06) of Yunnan Forestry and Grassland Bureau, we successfully established an in vitro regeneration protocol using direct somatic embryogenesis and shoot organogenesis from leaf



(a) *Petrocosmea grandiflora* flowering in the wild; (b) adventitious shoot formation induced from one leaf explant; (c) somatic embryogenesis from one leaf explant; (d) seedlings growing on medium; (e) regenerated plantlets 3 months after transplanting.