P38. More than twenty years of orchid ex situ conservation in Africa and Madagascar

Tariq Stévart, Eric Akouangou, Félix Andriatsiferana, Laura Azandi, Bakita Bakita, Jean-Philippe Biteau, Gyslène Kamdem, Sandrine Mayogo, Christelle Nyangala, Faustino de Oliveira, et al.

P38. More than twenty years of orchid *ex situ* conservation in Africa and Madagascar

Tariq Stévart[1,2,3*], Eric Akouangou[4], Félix Andriatsiferana[5], Laura Azandi[2,6], Bakita Bakita[4], Jean-Philippe Biteau[7], Gyslène Kamdem[6], Sandrine Mayogo[7], Christelle Nyangala[4], Faustino de Oliveira[8], Nirina Rajaonarivelo[5], Fortunat Rakotoarivony[1], Brigitte Ramandimbisoa[1], Armand Randrianasolo[1], Josia Razafindramanana[5], Aina A. Razanatsima[1], Murielle Simo-Droissart[6], Bonaventure Sonké[1,2,6], Simon Verlynde[1,9], Thomas Williams[10] & Vincent Droissart[1,2,6,11]

[1]Missouri Botanical Garden, Africa & Madagascar Department, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A. [2]Herbarium et Bibliothèque de Botanique africaine, CP 169, Université Libre de Bruxelles, Av. F. Roosevelt 50, B-1050, Brussels, Belgium. [3]Botanic Garden Meise (formerly National Botanic Garden of Belgium), Nieuwelaan 38, BE-1860 Meise, [4]Herbier National du Gabon, IPHAMETRA-CENAREST, BP 1156 Libreville Gabon. [5]Environnemental Department, Ambatovy Minerals S. A, Antananarivo 101 Madagascar. [6]Plant Systematic and Ecology Laboratory, Higher Teacher's Training College, University of Yaoundé I, Yaoundé, Cameroon. [7]Jardi-Gab, Libreville, Gabon. [8]Herbier National de Sao Tomé, Sao Tomé et Príncipe.[9]Cullman Program for Molecular Systematics, New York Botanical Garden, Bronx, New York 10458-5126, U.S.A. & Graduate Center, City University of New York, 365 5th Ave., New York, NY 10016, U.S.A. [10]Société des Mines de Fer de Guinée (SMFG). [11]Institut de Recherche pour le Développement (IRD), Unité Mixte de Recherche AMAP (Botanique et Bioinformatique de l'Architecture des Plantes), Boulevard de la Lironde, TA A-51/PS2, F-34398 Montpellier Cedex 5, France. *Author for correspondence: tariq.stevart@mobot.org

Orchid conservation represents a significant challenge in Tropical Africa and Madagascar, areas in which habitats are facing increasing pressure from agriculture, mining and logging activities. In these regions, a large part of the epiphyte flora is composed of orchids, most of which, when lacking flowers when encountered in the field, are impossible to identify. However, accurate identification is essential for developing conservation strategies since about 69% of tropical African and Malagasy orchids are potentially threatened. To overcome this identification problem, a shadehouse cultivation system was developed in São Tomé in 1997 and has now been extended across Continental Africa and Madagascar, providing a powerful tool for conducting thorough orchid inventories since most epiphytes can easily be brought into cultivation and grown to produce fertile, identifiable material. The network currently counts 12 shadehouses in six countries and, to date, 32,013 living orchids collected in the field have been grown, representing about 500 species, from which > 23,764 herbarium specimens have been collected, most associated with silica gel-preserved material and photos. This material has been used to describe 41 previously unknown species and to assess the conservation status of hundreds of species in three key areas (West Africa, Central Africa and Madagascar), while also leading to the publication of 44 articles in taxonomy, phylogeny, floristics and for the general public. Initially designed to facilitate orchid inventory and identification, the shadehouses now contribute to orchid conservation by protecting plants in safe, controlled conditions, producing material for seeds banking. They also offer valuable training opportunities for young botanists, thereby contributing to in-country capacity building. Key factors that explain the success of this shadehouse network and its long-term survival are the support provided by reliable local partners, the involvement of young botanists and students, and the development of new techniques to grow thousands of living orchids successfully and cost-effectively.

Keywords: Orchidaceae, epiphyte, Africa, Madagascar, *ex situ* conservation, shade house