Taxonomy and conservation of Marasmodes (Asteraceae, Anthemideae): A highly threatened and often overlooked genus endemic to the Cape Floristic Region

A.R. Magee1b, D. Raimondo1, L. Von Staden1, R. Koopman2
1Compton Herbarium, South African National Biodiversity Institute, Private Bag X7, Claremont 7735, Cape Town, South Africa
2Department of Botany and Plant Biotechnology, University of Johannesburg, P.O. Box 524, Auckland Park 2006, Johannesburg, South Africa

Marasmodes DC. is a genus of rather inconspicuous woody shrubs with sclerophyllous ericoid leaves and sessile discoid flower heads. The species flower during the dry autumn months and are rather indistinguishable from the surrounding vegetation when not in flower. As a result they have been largely overlooked and poorly collected. Prior to 2009 only four species were recognised. In the last three years these have been teased apart, with nine species newly described, so the genus now comprises 11 species. However, a thorough taxonomic revision of the genus is required to assess the status of the four original species in relation to the slew of newly described taxa, as well as to provide a comprehensive taxonomic key to identify them. They are all highly localised and largely found in agricultural landscapes where there is significant development pressure. Consequently they are also all considered to be highly threatened and two are possibly already extinct. It is for these reasons that CREW (Custodians of Rare and Endangered Wild-flowers) dedicate a day each year, Marasmodes Day, focused on locating species of this genus. Through this program and targeted fieldwork as part of the revision almost all of the species have been located and studied in situ, another three new species discovered, and M. beyersiana S.Ortiz revealed to be a synonym of M. polyceraphala DC. A taxonomic revision of the genus, in which we now recognise 15 species, along with a reassessment of their conservation statuses is presented.

do:10.1016/j.sajb.2013.02.045

The development of an accurate DNA-based identification tool for traded and protected tree species in Southern Africa

R. Kabongo, O. Maurin, K. Yessoufou, M. Van der Bank
African Centre for DNA Barcoding, University of Johannesburg, APK Campus, P.O. Box 524, Johannesburg 2006, South Africa

A prerequisite for efficient control and seizure of illegally harvested forest products is a rapid and accurate method of identification. However, most producing nations still rely on slow and in some cases intense limited morphological identification practices. The current and rapid development of DNA barcoding techniques is acknowledged to bring about accuracy and efficiency in species identification. The main objective of this project is to generate a DNA barcode library for traded and protected trees, and test the efficacy of DNA barcode in discriminating timber species. Furthermore, the project also successfully explores the recent progress in DNA isolation from unconventional materials. Our current library represents a database of 109 species representing 10 genera for which the standard barcoding regions matK and rbcL are generated. This database can serve as a backbone to a better control mechanism based on DNA techniques for species identification and also advances the ability of relevant authorities to rapidly identify species of timber at entry and exit points between countries with simple but fast and accurate DNA techniques.

do:10.1016/j.sajb.2013.02.047