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Schinus molle - Dioscoreaceae

JANUARY 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		



Beloved Education. Renewed Spirit!



Mussaenda - Caprifoliaceae

FEBRUARY 2008

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Bursera wappeleriana - Burseraceae

MARCH 2008

S	M	T	W	T	F	S
30	31					1
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Farouea albipila - Malvaceae

APRIL 2008

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Gardenia volubilis - Rubiaceae

MAY 2008

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Scadoxus pinnata - Amaryllidaceae

JUNE 2008

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Cathartes ovalis - Euphorbia family

JULY 2008

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27	28	29	30	31		



Richard E. Scriver, Research Specialist



Miconia prismatica - Gesneriaceae family

AUGUST 2008

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Stemmatanthera monticola - Impatiens family

SEPTEMBER 2008

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	1	2	3	4	5	6
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				



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Abrus spinosa - Passion Fruit family

OCTOBER 2008

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Richard E. Scriver, Research Specialist



Galda rubra - Daphne family

NOVEMBER 2008

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30						1
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Richard E. Scriver, Research Specialist



Aspidochelys repens - Impatiens family

DECEMBER 2008

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21	22	23	24	25	26	27
28	29	30	31			



Richard E. Scriver, Research Specialist

DNA BARCODING THE FLORA OF THE KRUGER NATIONAL PARK

The 2008 calendar of the University of Johannesburg (UJ) focuses on one of the research projects of our Department of Botany and Plant Biotechnology in the Faculty of Science: *DNA Barcoding the Flora of the Kruger National Park, South Africa*.

A group of scientist led by Dr. Michelle van der Bank (University of Johannesburg, South Africa) and Dr Vincent Savolainen (Royal Botanic Gardens, Kew / Imperial College London) with a team of five senior UJ researchers [PhD student Olivier Maurin, two Honours students Genevieve Thompson and Flip Minnaar, Dr Renaud Lahaye and Dr Sylvie Dutoit], have started an ambitious project of collecting all the plant species of the Kruger National Park to use DNA sequencing and barcoding techniques to study this rich flora of South Africa.

What is DNA Barcoding?

It is a diagnostic technique in which the DNA sequence of a portion of a single gene is used for species identification. It is intended to promote rapid and inexpensive species identification. In animals, the mitochondrial *cox1* gene (CO1) has been identified as a suitable DNA barcode, however, in plants it is still unclear which marker(s) could be used as a DNA barcode.

Producing a DNA barcode for the flora of the Kruger National Park

The Kruger National Park (KNP) is one of the largest protected areas in Africa. Various habitats and ecological regions exist within the boundary of this park, with at least 16 recognised 'ecozones', within almost two million hectares. It now also forms part of the Great Limpopo Transfrontier Park, which links the Kruger National Park with Gonarezhou

National Park in Zimbabwe and the Limpopo National Park in Mozambique. UNESCO has designated this new Transfrontier Park as a World Heritage Site. Surprisingly, no comprehensive botanical inventory has recently been done in the KNP.

To produce a barcode for the flora of the KNP we have evaluated eight plastid DNA markers, across a phylogenetically diverse set of taxa, which include 19 families, 22 genera and 38 species. The results indicate that a combination of genes is recommended as a barcode for the flora of the KNP, although *matK* alone correctly identified more than 90% of the species.

This study will improve the knowledge of plant biodiversity of the KNP, as well as conservation management, by providing exact localities of native, alien, rare and endangered plants. It will also facilitate the future monitoring of botanical plots throughout the park by providing DNA-based taxonomic identification tools.

A DNA Bank for the flora of the KNP at UJ

A DNA bank was set up at the University of Johannesburg to limit bio-prospecting where DNA extracts of the flora of KNP will be held centrally and could be made available for the scientific community. DNA extracts will also be duplicated and transferred to the DNA bank of the South African Biodiversity Institute (Kirstenbosch, South Africa), and the Royal Botanic Gardens, Kew (UK).

Visit our website for more information at:

<http://www.uj.ac.za/botany/PlantMolecularSystematicsLaboratory/tabid/6755/Default.aspx>

