

Abstracts

South African Association of Botanists — Annual Meeting 2008

**Abstracts of papers and posters presented at the 34th Annual Congress of the South African Association of Botanists held at the Drakensville Mountain Resort, 14–18 January 2008**

*The presenter of multi-authored papers is underlined*

★ Awards made to students

**Plenary Lectures**

**Biotechnology and ornamental horticulture**

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The horticultural market is one driven by the desires of a sometimes whimsical society with an ever increasing demand for higher quality products and greater novelty. Conventional breeding and plant improvement techniques have in some cases become inadequate to keep up with such a progressive society, and so biotechnological techniques were adopted. Biotechnology can be defined as the set of techniques or applications that use biological systems to make or modify processes or products for a specific use. Biotechnology has aided conventional breeding in three main areas: (1) increased understanding of the physiological and genetic regulation that underpins plant growth and responses to environmental cues; (2) improving the quality and speed that plants can be produced through techniques such as micropropagation, *in vitro* hybridisation, disease elimination and doubled haploid plants, and (3) introduction of novel traits through procedures like mutation breeding, polyploidy induction, protoplast fusion, somaclonal and epigenetic variation, and genetic modification. Some of these techniques will be discussed with particular emphasis on techniques for introducing new characteristics. Although being used for many decades, there are relatively few widespread success stories compared to major agronomic crop plants. This field of ornamental horticulture has great potential for exponential growth in the future.

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**South Africa's bioprospecting legislation: Local lessons for global benefit**

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Following extensive delays, the draft regulations on bioprospecting, access and benefit-sharing in respect of Act 10 of 2004 were published for public

comment by DEAT on 16 March 2007. As a partner in a state-funded consortium bioprospecting the South African flora for new drugs to treat neglected African diseases, SANBI, along with many other parties, will be affected directly by changes to the law. In a review of the regulations we ask the following questions: Are bouquets now due to DEAT, or are these regulations merely evidence of a widening divide between scientists and biodiversity regulators? Are South Africa's obligations to the Rio Convention being effectively serviced? Is bioprospecting to be regulated in a reasonable and practicable manner or will yards of red tape effectively tie up the industrial and commercial development of our biodiversity? The South African experience is contextualized in relation to other biodiverse countries of the developing world that have sought to service their CBD obligations through the introduction of national legislation.

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**People's science: southern African ethnobotany in global perspective**

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The term "ethnobotany" was coined 120 years ago at a time when the "Scramble for Africa" was at its height. Worldwide, the focus of economic botany, of drawing on knowledge of local people, linked to European colonial interests in plant products with potential economic and industrial value. Ethnobotany, in a world trying to deal with climate change and achieve the Millenium Development Goals (MDG's), the aims, focus and methods used in ethnobotanical research have changed a great deal. In this paper, I will address the following questions: How does ethnobotanical work carried out in southern Africa compare with that practised globally? Where should research at the interface between people, plants and landscapes be heading at the start of the 21st century? What lessons can be learned for the African region from either the global or southern African experience?

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**Resilience, thresholds and dynamic landscapes**

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Complexity theory suggests that ecosystems can persist for long periods, before changing rapidly to a new stable state, or phase. Transition between phases occurs when ecological thresholds have been crossed, and is followed by a reorganization of biotic and environmental interactions, leading to the emergence of a new stable state. Savannas are dynamic, complex systems in which fire, herbivory, water and nutrient availability interact to determine tree abundance. Phase and transition has been observed in savannas, but the role of these different possible drivers is not always clear. In this paper, the objectives were to identify phase and transition in the fossil pollen record from Kruger National Park, South