GENERAL NEWS

Thyme, drugs combo work better against fungal diseases (The Guardian, Oct 2012)

Combining natural products such as thyme and prescription drugs has been shown to be more effective in fighting severe fungal infections. Agriculture-based, food-safety-focused studies by United States Department of Agriculture (USDA) scientists and their colleagues found that pairing conventional antifungal medicines with natural, edible compounds from plants such as thymol, can boost the healing effects of some of these drugs...Read more. Click here for research article.

‘Super tree’ maps 20 000 medicinal, related plants (Medical Xpress, Sep 2012)

By studying and recording over 1,500 medicinal plants reported to have health benefits in three continents, the researchers created a family tree of plant species for each area, demonstrating how medicinal plants relate to each other. They then combined the trees to create a ‘super’ family tree representing 20,000 species to reveal which medicinal plants from different areas were related...Read more. Click here for article abstract.

Scientists grow drug for rare disease in corn (Reuters, Sep 2012)

Scientists have grown a drug to treat a rare genetic disease inside corn plants, potentially offering a cheaper way to manufacture a treatment that currently costs hundreds of thousands of dollars a year for each patient. The move marks an advance for the emerging field of molecular farming, which could one day see complex biotech medicines being mass-produced in plants rather than factories...Read more

FORTHCOMING BOOKS

Chemistry and pharmacology of naturally occurring bioactive compounds

Written for phytochemists, synthetic chemists, combinatorial chemists, as well as other practitioners and students in related fields, this volume presents cutting-edge research in the chemistry of bioactive natural products and helps the reader understand how natural product research continues to make significant contributions in the discovery and development of new medicinal entities. The reference presents chemistry and pharmaceutical potential of natural products in modern drug discovery processes, and covers the synthesis and semi-synthesis of potentially bioactive natural products. It features chemical advances in naturally occurring organic compounds and describes their spectral properties, chemical transformations, and structure-activity relationships.

To be published on the 5th February 2013
On Wednesday the 26th September 2012 I had the honour of meeting with Professor Avrelija Cencič, an esteemed member of the international advisory committee (IAC) for the SABINA project of Sub-Saharan Africa. Avrelija recently visited each of the SABINA nodes which include the Universities of Dar es Salaam, Namibia, Malawi, Pretoria, Witwatersrand and the Tea Research Foundation of Central Africa, where she had the opportunity to interact with several masters and PhD students in the network. Furthermore, she had the opportunity to observe the work being done by each institution and especially appreciated the work oriented towards the improvement of the socio-economic status of the Mulanje region of Malawi.

“I believe that the goals and aims of the SABINA/POL-SABINA project were fully achieved. The project provided an opportunity to young, bright students to gain, besides a degree also knowledge and what is additionally very important, the ability to visit other institutions in the network. In doing so they have established new contacts and I believe have also initialized a network of future excellent scientists and friends that will be a benchmark for other networks in the region of Sub-Saharan Africa”.

Avrelija Cencič is an award-winning Slovenian university professor, researcher, manager and educator in health and life sciences. In 1995 and 2000 respectively, Avrelija was awarded with her Masters in Science and Biology, and her PhD which focused on the biochemistry and molecular biology of leukocytic and trophoblastic interferon gamma.

During her studies, Avrelija held several positions at the University of Maribor and she is currently employed as the Chair of the Department of Biochemistry and Nutrition at the Faculty of Medicine and the Chair of the Department of Microbiology, Biochemistry, Molecular Biology and Biotechnology at the Faculty of Agriculture and Life Sciences. Her current research interests include the validation of drugs; the risk assessment, bioavailability and health-benefit studies at GIT level; new and functional cell models to validate new drugs for pharmaceutical purposes; emerging foodborne and water-borne pathogens as well as researching the protective role of natural compounds and microbes.

Speaking to Avrelija one can tell that she is very passionate about her work. Her passion and hard work has left her with several awards of which the most recent is an award for 1st place and an “Apple of quality” for the best international IP project in Slovenia. Avrelija is a member of several societies and organizations including the European federation of Biotechnology and Nature and she is currently involved in a number of national as well as international research projects and programmes.

Avrelija’s hope is that the SABINA/POL-SABINA programmes would continue to grow and that the excellent results obtained from the individual projects will become visible in the industry so as to contribute to the upliftment of the socio-economic status of Sub-Saharan Africa.
Having spent some 50 years as an organic chemist with an interest in medicinal plant chemistry in South Africa it was relevant now to ask three questions, (1) when were natural products first utilized, (2) who were the people involved, and (3) what is the status quo? Based on older literature published in the South African Journal of Chemistry, information gleaned from attendance at innumerable chemistry conferences, and relevant literature in university archives, a great deal of information was gathered to answer the first two questions. For example, that the first veterinarian to treat cattle diseases caused by poisonous plants in the Eastern Cape was Dr Jotella Soga in the 1890s. Contributions from other prominent scientists such as Marais, Rindl, Rimington and Warren followed. From about 1940 to the 1990s, researchers concentrated mainly on the isolation of new compounds from local plants for which some indigenous knowledge was recorded.

### Potential of South African medicinal plants used as anthelmintics – Their efficacy, safety concerns and reappraisal of current screening methods


Studies on anthelmintic activity of medicinal plants have received insufficient interest and attention from researchers despite the high incidence of helminth infections in the poorer communities of South Africa. There are only a few anthelmintic remedies available which are inadequate in terms of accessibility, affordability and probably efficacy. In this review, we reappraised the various anthelmintic studies on South African medicinal plants to highlight how much and/or how little is known. The rich botanical and medicinal plant knowledge in South Africa is an indication of the potential of discovering potent treatments against helminth diseases in both humans and livestock. A total of 115 plant species encompassing 43 families screened for their anthelmintic potential (mainly nematodes) are listed in the current review. Combretaceae and Fabaceae were the most commonly used families.

### Relative impact of flavonoid composition, dose and structure on vascular function: A systematic review of randomised controlled trials of flavonoid-rich food products


Previous systematic reviews suggest beneficial effects of flavonoids on biomarkers of cardiovascular disease (CVD) risk, but have overlooked the impact of dose response or food complexity. The aim of the present study was to examine the relative impact of composition, flavonoid structure and dose. MEDLINE, EMBASE and Cochrane were searched for randomized controlled trials (RCTs) of flavonoids or flavonoid-rich foods/extracts. Flavonoid composition was established using United States Department of Agriculture (USDA) and Phenol-Explorer databases. Effects of six flavonoid subgroups on endothelial function (flow-mediated dilation; FMD), and systolic and diastolic blood pressures were assessed by random effects meta-analyses and regression analyses.

### Medicinal mushrooms in prevention and control of diabetes mellitus


Diabetes mellitus is a life-threatening chronic metabolic disease caused by lack of insulin and/or insulin dysfunction, characterized by high levels of glucose in the blood (hyperglycemia). Millions worldwide suffer from diabetes and its complications. Significantly, it has been recognized that type 2 diabetes is an important preventable disease and can be avoided or delayed by lifestyle intervention. Presently, there are many chemical and biochemical hypoglycemic agents (synthetic drugs), that are used in treating diabetes and are effective in controlling hyperglycemia. However, as they may have harmful side-effects and fail to significantly alter the course of diabetic complications, natural anti-diabetic drugs from medicinal plants have attracted a great deal of attention. Medicinal mushrooms have been valued as a traditional source of natural bioactive compounds over many centuries and have been targeted as potential hypoglycemic and anti-diabetic agents.