

KN-01 Ethnopharmacology and biodiversity conservation: towards a sustainable future for indigenous peoples

V.H. Heywood

Centre for Plant Diversity & Systematics, School of Biological Sciences, University of Reading, Reading RG6 6AS, UK

Objectives: This paper examines how humans are dependent on biodiversity for health and nutrition, especially in the case of indigenous communities whose reliance on plants for traditional medicines, food, fuel and fibre makes them especially vulnerable to environmental change and which continue to suffer discrimination, marginalization, extreme poverty and conflict ⁽¹⁾.

Methods: Ethnopharmacology, biodiversity and agriculture are in effect inextricably linked and the interactions between them are examined in the context of: (a) changes in the way in which Ethnopharmacology is currently perceived, (b) major advances in understanding and use of traditional medicines and adoption of safety standards (c) changes in approaches to biodiversity conservation, (d) a recognition of the key role of local communities in managing biodiversity, (e) a convergence of interest between the agrobiodiversity and conservation sectors, (f) an increased appreciation of the need to adopt a wider approach to human nutrition than conventional agricultural model allows, (g) an increased recognition of intellectual property rights, access to resources and benefit sharing, (h) the impact of global changes and in particular accelerated climate change on biodiversity, food production and human health, which is forcing the development of a new conservation dynamic.

Results and conclusions: These all interact to produce what Nina Etkin termed "dynamic tension" ⁽²⁾ that will invigorate Ethnopharmacology and require a much broader perspective and understanding of what is happening to indigenous communities, their local biodiversity, their health and nutritional requirements and the options available for their conservation and sustainable use.

Keywords: Ethnopharmacology, biodiversity, agriculture, human nutrition.

References: 1. Sha Zukang, Foreword to The State of the World's Indigenous Peoples, United Nations, New York (2009). 2. Etkin, N.L. & Elisabetsky, E. J. *Ethnopharmacol.*, 2005, 100:23–26.

KN-02 TCM in the "West": Benefits or Bane from an ethnopharmacological perspective

R. Bauer

TCM Research Center Graz, Institute of Pharmaceutical Sciences, Karl-Franzens-University Graz, Universitätsplatz 4, 8010 Graz, Austria.

Traditional Chinese medicine (TCM) has thousands of years of experience in China and is based on a specific theory with a holistic approach for disease and health management. In recent years, TCM has more and more been practised in the Western world, and "globalization of TCM" has become an important issue. Chinese medicine can certainly be considered as a treasure trove, which can complement Western medicine, especially in prevention and the treatment of chronic diseases. However, it has to be brought in line with Western health care and drug regulations.

Herbal medicinal products have to fulfil state of the art quality standards, in order to guarantee their safe and reliable application ⁽¹⁾. Processing of herbs (*phaozhi*) is an important feature, and needs to be studied in order to elucidate its relevance and to specify the quality of processed herbs. The relevant therapeutically active constituents of herbs need to be identified. During this process, many interesting drug leads have been found, like artemisinin, camptothecin, or huperzin. However, the special effect of Chinese medicine is based on the application of extracts and mixtures of herbs. Therefore, the synergistic effects of components need to be studied. Systems biology is the best suited approach, since it allows the broadest analysis of the metabolic status of a patient for diagnosis and the effects of treatments ⁽²⁾. Systems biology may also be the tool to translate classical Chinese medical theory into Western physiology and pharmacology. Therefore, TCM should not be considered as a bane, but as a chance to develop our knowledge on prevention and treatment of diseases further.

Keywords: TCM, Chinese medicine, systems biology, quality control.

References: 1. Pferschy-Wenzig, E.-M., Bauer, R. Quality control of Chinese herbal drugs. In: P. Houghton, P.K. Mukherjee (Eds.) *Pharmaceutical Press*, London 2009. 2. Ma, T. et al. *Mol Biosyst.* 2010 6(4): 613-9.