

Fabians attend the 15th International Conference on Nitrogen Fixation

The 15th International Conference on Nitrogen Fixation was held in Cape Town from 21-26 January 2007. In this picturesque setting at the foot of Table Mountain the delegates (most of whom were from Europe and the USA) agreed that South Africa was an appropriate location for hosting a conference themed “Biological Nitrogen Fixation (BNF) Applications for Poverty Alleviation”. The keynote address by Lamourdia Thiombiano (Senior Soil Resources Officer for the FAO Regional Office in Africa), was very aptly entitled “Biological Nitrogen fixation and poverty alleviation in Africa”. Numerous other presentations also addressed this issue, as well as the role of BNF in food security and its uses and limitations in sustainable agriculture and forestry.

Among the plants of agronomic importance, legumes are most diverse. The keynote address by Noel Ellis from the John Innes Centre in Norwich in the United Kingdom, touched on some of the problems this diversity and species richness pose for breeding programmes. In his presentation entitled “Gene Discovery and Marker Development in Crop Legumes”, he addressed issues such as the evolution and domestication of crop species, as well as strategies for the exploitation of information from model systems for application in less intensively studied target crops. Presentations on similar issues such as genomics of nitrogen fixers and genetics/regulation of nitrogen fixation were also included.

A significant number of the sessions at the conference focused on the bacterial symbionts responsible for BNF. This interaction between plant and bacterium, usually result in the formation of specialized root structures known as nodules, within which BNF occurs. The majority of these BNF bacteria apparently form part of the class Alphaproteobacteria, but an increasing number of authors are now reporting that members of the Betaproteobacteria are also capable of nitrogen-fixation and nodulation. Under the auspices of the CTHB, Emma Steenkamp and Chrizelle Beukes presented their work on the root nodule bacteria from the enigmatic legume tribe Hypocalypeteae. This tribe includes the single genus, *Hypocalyptus*, with only three known species (*H. sophoroides*, *H. oxalidifolius* and *H. coluteoides*) all of which are endemic to the Western Cape. Their preliminary data suggests that the bacteria responsible for BNF in these plants forms part of the Betaproteobacteria genus *Burkholderia*. Together with other presentations on the bacterial symbionts of various legume species, this talk highlighted the importance of understanding BNF for agricultural and conservation management.

This conference provided the delegates with the opportunity to meet the world leaders in the field of BNF and to discuss with them some of the specific issues of BNF pertaining to the South African situation. However, the conference did not only entail work and no play, and delegates were taken on a number of different mid-conference tours to view some of the spectacular Cape scenery. One of these, the Peninsula tour, included visits to Maiden’s Cove, the Cape of Good Hope, Cape Point and a wonderful but windy visit to the penguin colony at Boulders Beach.



From left to right, Chrizelle Beukes, Emma Steenkamp and Francina Phalane (ARC-PPRI, Roodeplaat) on a very windy day at Cape of Good Hope in the Table Mountain National Park.