UJ's wild DNA expedition nets more than 10 000 species

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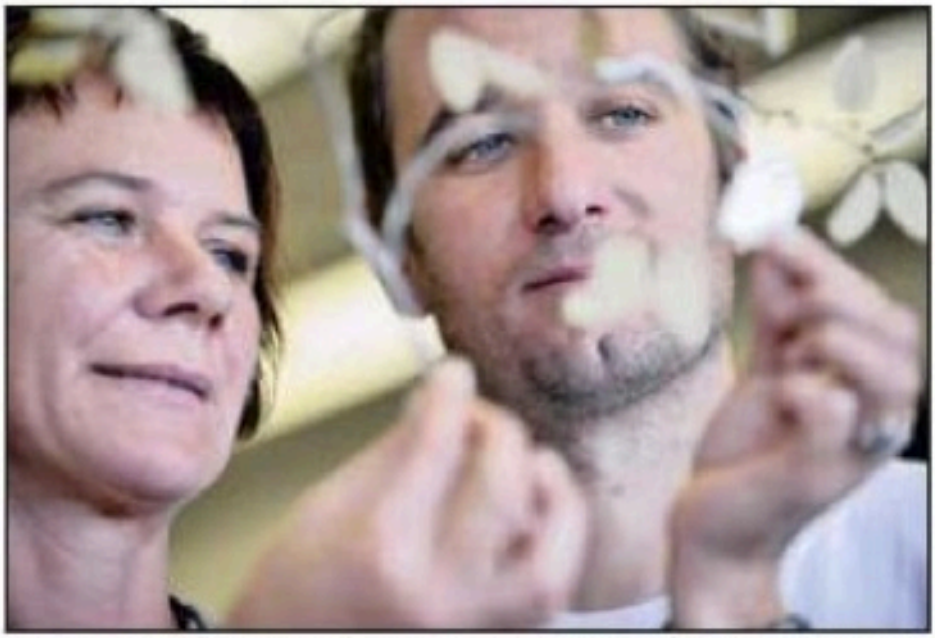

ALL IN THE GENES: Professor Michelle van der Bank, left, and Olivier Maurin of UJ's botany and plant biotechnology department check the voucher number of a specimen in the lab where they collect DNA information on hundreds of trees and plants. PICTURE: CARA VIERECKL

THEY had hoped to collect around 1 500 species on their groundbreaking DNA expedition to South Africa's biodiversity hotspots – but they came home with thousands more.

The efforts of the team of local and Canadian scientists and researchers who ventured to the Succulent Karoo, Cape Floristic region and the Maputuland-Pondoland-Albany area in recent weeks as part of the 2010 Toyota Enviro Outreach, may have made the single biggest contribution yet to an international DNA project.

The expedition, led by the University of Johannesburg (UJ), amassed more than 10 000 plant, animal and insect species in just over two weeks. Over 3 500 species will be offered to the International Barcode of Life project, which originated in Canada, and aims to assemble a DNA barcode library for all life on earth.

Dr Olivier Maurin, of the department of botany and plant biotechnology at UJ, told the Saturday Star this week that the plant team gathered around 800 specimens corresponding to around 700 species.

"The plant team didn't discover any new species, although while processing samples we might be surprised... However, we did encounter one tiny daisy at Noup, which seemed to be restricted to this area and was only collected twice previously by botanists. The plant is considered by some researchers as a possible new species and by others as a subspecies. In such cases like this we hope DNA barcoding will assess its identity."

His colleague, Professor Michelle van der Bank, has received widespread acclaim for her discovery of the matK-gene, used as the identifier for all plant species DNA.

For Maurin, it was the beautiful forests around Knysna that left him most entranced.

"During the two days we stayed there, we had no rain, but the vegetation got a constant mist that made the forest constantly humid. Trees are tall with a good diversity, from places you have these majestic tree ferns and there are lots of little plants (orchids and ferns) growing on tree trunks."

South Africa has undertaken to barcode 20 000 specimens by April 2011 and a further 40 000 by April 2013. It's an ambitious target, but Maurin believes it's within reach.

"Although the 20 000 is a very high target in a year the combination of all the collections made during this trip (plants, fishes and insects) bring the number of samples being processed and sent to Canada up to 5 000.

"If we combine these numbers with the material previously processed since the start of the project the total has reached 8 000 species."

The rest of the target, he believes, will be achieved through collaborations with other institutions. "Promoting DNA barcoding at different levels of society is the best way the technique will be understood and accepted not only by scientists, but also by the general public," he says.