

Report

Study trip to Belgium natural history museums

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1. Purpose

To travel to Belgium to study types and identified material at the Institut royal des Sciences naturelles (IRSN), Brussels, and the Musee Royal de Afrique Centrale (MRAC), Tervuren, both in Belgium.

2. Background

In the South African Agricultural Research Council's (ARC) Biosystematics Programme the taxonomy of bees has been undertaken for 34 years. This has made bees one of the better studied insect groups (at species level) in southern African. This is the result of my systematic approach to taxonomic research during which I have methodically revise the bee genera. Visiting museums and studying their collections is the only approach to taxonomic research that can result in one obtaining a thorough knowledge of the biodiversity of the species of a taxon, e.g., the bees. About 1200 bee species are recorded from South Africa. And bee diversity, beyond the honey bee, is unexplored with regard to the management and sustainable use of biological diversity in southern Africa. In the past one of the major obstacles to the management of wild bees for pollination was an inability to identify the species. This situation is rapidly changing.

Studying type material is fundamental to taxonomic research and most of the types of Afrotropical bees are housed in European Museums. Some of the most important museums, in particular regarding the Megachilidae, are in Belgium. This is because J.J. Pasteels, who revised the Afrotropical Megachilidae, was Belgian. His work contained many errors and needs to be repeated. The MRAC has a very rich collection of all Central African bees and is therefore important to all taxonomic research on Afrotropical bees.

3. Discussion

Since my last visit to Belgium I have acquired a digital microscope, which in essence is a small, high magnification, digital camera. Thus instead of spending hours describing types and drawing their diagnostic features, I can now photograph them. This makes my work abroad much more efficient. Although I am currently studying the carder bees (Megachilidae, Anthidiini), I was able to use my time to capture data on other bee taxa for future taxonomic revisions. This was also possible because both museums allowed me to work 10 hour days.

In total number of specimens that I studied was 136 type specimens and 94 identified non-type specimens.

Further, I am busy working with a database expert, Willem Coetzer, in South Africa to develop a database of the Afrotropical Apoidea. During my visit to

Belgium I discussed with, and received agreement from, Dr E. DeConinck to database her entire collection of identified bees. This will be done early next year. A small team of people will visit the Museum, photograph the specimens and their labels, and then the collection will be databased from the specimen's labels. A copy of the database and training in its use will be given to MRAC. The Afrotropical bee database project, is coordinated by Willem Coetzer and funded by the JRS Foundation.

My previous trip to Belgium, Belgian Directorate-General for Development Cooperation, partim GTI, was to support a taxonomic revision of the southern African species of *Megachile*. This project has been completed (Eardley 2012a, 2012b, 2012c). The current project will hopefully include at least two publications and they should be published in 2014 – taxonomy requires a lot of meticulous work and takes a long time.

4. Conclusions

My study trip was highly successful. It achieved all its goals. In addition it presented an opportunity for me to give something back to the Belgian museums through databasing the MRAC collection and giving them a copy of the database for their own use.

5. Acknowledgements

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