

DNA barcoding of 40 macrofungi from KwaZulu/Natal

The Maputo-Pondoland-Albany hotspot is rich in a great diversity of macrofungi (fungi such as mushrooms that can be readily seen with the naked eye) due to the sub-tropical climate of some parts of the hotspot. Past experience in observing macrofungal species occurring there, and through the continuous interaction of the primary investigator with citizen scientists in the area, it is clear that there exist a great biodiversity of fungi, and numerous novel species that cannot be placed by even international experts. However, the capacity to describe our novel macrofungi does not exist at the moment in South Africa. We also do not have DNA sequence data for even the fungi we think we could identify. This is a serious impediment to produce accurate lists and ecological datasets for our macrofungi, and it also means that such data is not very useful to biodiversity and conservation initiatives or regulation actions. Lastly, the past couple of years have seen a significant increase in interest from the public in macrofungi who wants to know what these species are. Efforts to help them are limited based on the lack of research, knowledge and funds to help those very active in collecting fungi themselves. This proposal aims to help a particular group of citizen scientists in the Pietermaritzburg/Durban area of KwaZulu-Natal, by aiding in identification of fungi. A group of 40 target fungi will be selected that include both known and unknown fungi, and species with uncertain identities. Identifications will be done with DNA barcoding coupled with proper phylogenetic analyses and morphological studies. Four novel fungi will also be selected for proper description. The barcodes will be submitted to BOLD, the target species will be added to the Encyclopedia of Life, and new records will be added to the checklist of South African macrofungi previously developed by the investigators. The project will be crucial to establish active research on various types of macrofungi.