

TAXONOMY & ECOLOGY

Beyond Classical Approaches

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REVITALISING TAXONOMY AND ECOLOGY RESEARCH: MALAYSIAN PERSPECTIVE

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ABSTRACT

Malaysia has a total land areas of 329,847 km² consisting of eleven states in Peninsular Malaysia while the other two, Sabah and Sarawak are located in the Island of Borneo. Of this total land area about 18.4 million ha are forested. The diverse forest and aquatic ecosystems are also blessed with high species richness and endemism that qualified Malaysia as one of mega hot spots of the world tropical biodiversity. Effort for *in-situ* conservation is implemented through the establishment of totally protected areas of an estimated area of 1.39 million ha under the category of national park, wildlife sanctuary and nature reserve. Documentations of the species diversity in Malaysia for both flora and fauna overall are still very much in adequate and the numbers are shown as an estimation except for some taxa of animals and plants. Their habitats are exposed to disturbance, destruction due to human activities and occurrence of natural disaster which lead to the phenomenon of biodiversity crisis, species loss and extinction. Concerted efforts are needed to accelerate taxonomic and ecological research of the vast number of species estimations available. The issue of taxonomic impediment is not only happening in Malaysia but worldwide. To know the species we need to study in detail, to enumerate, to identify their diagnostic characteristics, to analyse their relationships, to describe, name and classify them. The time has come for taxonomists and various related disciplines within Malaysia to work together on a common platform in revitalising taxonomic work within the limited numbers of expertise available. Potential approaches to revitalise and enhancing research activities are:- strengthening and upgrading existing facilities such the museum, herbaria, culture collections and gene bank; create national taxonomic database and networking; train young scientists for integrative approach base on traditional morphology and molecular DNA and lastly encourage collaborations among institutions for both national and international grants applications. The transformation of this taxonomic and ecological research base on the above approaches will help to expedite the documentation and describing of the vast number of unknown species of flora and fauna within our diverse ecosystems before there are totally disappeared. We have to work together to document and conserve our biodiversity as one of the most important and valuable national heritage and for the benefit of mankind.

Keywords: Biodiversity, DNA barcoding, revitalising taxonomy and ecology research

INTRODUCTION

Malaysia is located in the western part of the Malay Archipelago. It is part of the tropics, famous for its biodiversity richness. It is home to a wide diversity of the flora and fauna. Malaysia is counted among the biodiversity hotspots of the world because of the tropical rainforest, which housed species richness ranging from the ecosystem level, to the species and to the genetic levels. In Malaysia the general assumption of biodiversity or species loss are never substantiated by any scientific data or evidences. Loss of forested forest is evidence as more and more of the

areas are opened agricultural and infrastructures developments. If ever there are species loss there are no accurate quantification or account of such losses. The main causes are due to habitat loss, degradation and fragmentation, over exploitation due to over harvesting, logging, fishing and hunting, pollution, introduction of exotic species and climate change.

In the last few decades, virgin and secondary rainforests have been diminished and converted into rubber and oil palm plantations, other agricultural crops as well as for settlement schemes. The forests have also