First inventory of the aquatic and semi-aquatic bugs (Heteroptera: Nepomorpha & Gerromorpha) of Langkawi Island, West Malaysia

were used to determine correlates of endemism, while non-metric multi-dimensional scaling (NMDS) was used to investigate species compositional variations. Sampling yielded a total of 198 terrestrial mollusc species. GLMMs revealed an important contribution of karst area and surrounding soil type on mollusc endemic richness, while NMDS showed that karsts separated by vicariant barriers in different parts of Peninsular Malaysia and Sabah had distinct malacofaunas. These results have important conservation implications: planners should take karst area and surrounding soil type into account, together with the effects of vicariant barriers such as mountains, when designing karst reserves in order to maximize the protection of invertebrate diversity.

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First inventory of the aquatic and semi-aquatic bugs (Heteroptera: Nepomorpha & Gerromorpha) of Langkawi Island, West Malaysia

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Langkawi Island (Pulau Langkawi) is situated off the northwest coast of Peninsular Malaysia, in the southern Andaman Sea. Although the water bug fauna of the Malay Peninsula is relatively well known, knowledge on the fauna of Langkawi is almost none, except for three reliable species records from Langkawi in the literature: *Halobates hayanus* White, 1883, *Haloveloides sundaensis* Andersen, 1992 and *Xenobates murphyi* Andersen, 2000. In 2006, we and Dr Tohru Naruse visited Langkawi for three days to explore the diversity of water bugs. The intensive collections primarily focused on habitat diversity (freshwater habitats, mangroves, and rocky shores) to record as many species as possible. Additional specimens collected from the island by Dr Damir Kovac in 1993 (deposited in Raffles Museum of Biodiversity Research, Singapore) are also included in this study. This survey unveils 52 species (47 species identified) belonging to 31 genera and 11 families from the island. Most of the species belong to two families, the Gerridae (19 species) and the Veliidae (12 species), while the remaining nine families together contain only 21 species. This agrees proportionally with the species numbers known from the Malay Peninsula. Three species are new to science, they are of the genera *Hydrotrephes* (Helotrephidae), *Strongylovelia* and *Microvelia* (both Veliidae). Another nine species are recorded from Malaysia for the first time. The fauna of Langkawi Island is compared with those of Tioman Island, where intensive surveys were carried out in the past, and of the Malay Peninsula.

Poster -13

Comparative studies on woody species diversity and structure in subtropical evergreen broadleaf forests along a latitudinal thermal gradient of the Ryukyu Archipelago

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In order to compare woody species diversity and stand structure on the basis of the architectural stratification of subtropical evergreen broadleaf forests along a latitudinal thermal gradient of the Ryukyu Archipelago, tree censuses in a 750 m^2 plot in Okinawa Island and a 400 m^2 plot in Ishigaki Island were performed. The number of layers increased along a latitudinal thermal gradient from four in the forest of Okinawa Island to five in the forest of Ishigaki Island. The values of Shannon's index H' and Pielou's index J' tended to increase from the top layer downward in the forest of Okinawa Island. However, in the forest of Ishigaki Island, these values tended to increase from the bottom layer upward. High woody