

Altitudinal distribution of leaf litter ants along a transect in primary forests on Mount Kinabalu, Sabah, Malaysia

Abstract

The ant communities of the leaf litter were studied along an elevational gradient on Mount Kinabalu in primary rain forest systems ranging from dipterocarp hill forest to dwarf forest of the highest altitudes (560, 800, 1130, 1360, 1530, 1740, 1930, 2025, 2300, 2600 m a.s.l.). The litter ant fauna along the gradient included 283 species of 55 genera. The number of ant species in the leaf litter decreased exponentially without evidence of a peak in species richness at mid-elevations. This result is in contrast to many findings on altitudinal gradients in ants and other animal groups. Most ant species have a very limited altitudinal range leading to high turnover values when comparing communities of different altitudes. Of the ant species, 74% were even restricted to one site. As evident from this study, altitudinal ranges of species are very narrow. Elevational gradients are therefore extremely species-rich and might serve as a prime example of hot spots of biodiversity. This fact is of great concern when implementing conservation strategies.