

COMPARISON OF ANT SPECIES DIVERSITY BETWEEN LOWLAND RAIN FOREST AND A SEMI EVERGREEN FOREST IN KNUCKLES MOUNTAIN RANGE, SRI LANKA

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Ants are an important part of the terrestrial biodiversity. Yet their diversity in different forest types is poorly known. This study compared the diversity of litter ants in two forest types; lowland rain forest (LRF) and semi evergreen forest (SEF) in Knuckles range, for the first time. Litter ants were sampled along three, 100 m transects laid in the two forests, from October 2011 to March 2012. Along each transect, at 20 m intervals, 1 m² quadrates were placed on both sides to collect ants from Winkler extraction along one side and hand picking along the other side. Ants were identified to furthest possible taxa. In each quadrate, weather parameters and litter structure variables were measured/quantified. Data were analysed using Minitab 14 and Primer v6 software. From 72 quadrates in two forests, 8,232 worker ants in 66 species representing 30 genera in seven subfamilies were collected. From both forests seven subfamilies: Aneuretinae (1 genus and 1 species), Cerapachyinae (1, 3), Dolichoderinae (2, 4), Formicinae (5, 11), Leptanillinae (2, 2), Myrmicinae (12, 26), and Ponerinae (7, 19) were recorded. Subfamily Myrmicinae had the highest number of species and genera in both forests. Significantly different species richness ($P < 0.05$) was recorded for LRF (48 spp.) and SEF (35 spp.). Seventeen species were shared between two forests while 31 and 18 species were restricted to LRF and SEF, respectively. *Solenopsis* sp. 1 (>60%) dominated the ant community in both forests. *Paratrechina* sp. 4 (11%) and *Solenopsis* sp. 2 (5%) in LRF, and *Solenopsis* sp. 2 (13.8%) and *Pachycondyla* sp. 4 (5.5%) in SEF were observed in considerable proportions, while all other species were found in less than 5% proportions. *Aneuretus simoni* (2.6%), a critically endangered monotypic genus was the fourth most abundant species in SEF, reported for the first time from these locations. Analysis of similarity test confirmed that ant species diversity in two forests differs significantly (Global R=0.625, $P=0.001$). Shannon, Simpson's and Berger-Parker diversity indices were higher for LRF (1.60, 2.39 and 1.58, respectively) compared to SEF (1.27, 2.05 and 1.46, respectively) indicating high ant diversity in LRF. Altitude, air temperature, litter depth, percent litter cover, vegetation cover, bare ground and number of twigs were significantly associated ($P < 0.05$) with forest types. Thus it is possible that distinct ant communities observed in each forest is a result of the habitat heterogeneity and complexity that these physical features and micro climatic conditions have given rise to.