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SPECIES ASSEMBLAGES AND DISTRIBUTION OF LITTER ANTS ALONG AN ALTITUDINAL GRADIENT ACROSS TWO VEGETATION TYPES IN HANTHANE FOREST

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Ants account for 30% of terrestrial biomass and are highly sensitive to environmental variables and disturbance, hence considered as indicator organisms. The present study investigated the effect of altitude and vegetation type on litter ant species assemblages and distribution along an elevation gradient of 400 – 900 m, across two major vegetation types; mixed woodland and pinus plantations in Hanthane forest. At each of five 100 m elevation levels, two transects were selected. Along the two sides of each transect, 1 m^2 plots were laid at every 20 m intervals. Plots on one side were used for hand-picking ants and those on the other side for litter collection to extract ants by Winkler method, during a period of one year from 2011 to 2012. Ants were preserved in 70% ethanol and identified up to generic level and grouped into different morpho-species. Air temperature, relative humidity and ground cover characteristics at five points in each transect were recorded. Data were analyzed using Primer v6 software. A total of 8689 ants in 9 subfamilies (Amblyoponinae, Cerapahynae, Dorylinae, Dolichoderinae, Formicinae, Leptanillinae, Myrmicinae, Ponerinae and Pseudomyrmicinae), 32 genera and 56 morpho-species were collected. Five subfamilies comprised of a single genus and a species. Subfamily Myrmicinae included the highest number of genera (15) and species (26 spp.). *Pheidole* was the most species rich genus (5 spp.) and *Solenopsis* sp. 1 was the most widely distributed and most abundant (6420 individuals). Comparison of sampling methods showed a significant difference for species (T = -3.27, *P* = 0.002), but not for genera (T = -1.77, *P* = 0.079). Species accumulation curves from two collection methods did not reach a plateau indicating that the study sites are under sampled. According to Chao-2, Jacknife-1 & -2, extrapolators, the expected number of species is 60-70. The overall result of different diversity and richness indices revealed that mixed woodlands, regardless of elevation, were richer in ant species than pinus plantations. In addition, species assemblages in the two pinus plantations were clustered together away from mixed woodland ant assemblages, despite differences in elevation. Permutation test (Relate test) (ρ = 0.30, *P* = 3%) showed that there is a weak relationship between ant assemblages and ground cover characteristics and climatic variables. Findings indicate that the difference in litter ant species assemblages in the Hanthana Forest is possibly due to differences in vegetation types rather than altitude. The study highlights the importance of natural woodlands compared to pine plantations in supporting litter ants that play a major role as ecosystem engineers.