

(106)

Species richness, abundance and feeding habits of termites in three montane forest types in the Knuckles Region

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Abstract

The Knuckle Forest Region has been subjected to heavy logging and land clearing resulting in several fragmented natural forests in montane and lowland regions. Termites are an integral part of tropical forests as decomposers of plant matter into useful humus. Forest termites of Sri Lanka have not been well documented despite their importance in forests. Field studies were conducted in three montane forest types in the Knuckles region to document the species richness and abundance of the termite fauna and to deduce their feeding habits.

Termites were sampled in seven belt transects (each 100 x 2 m) laid in seven different forest sites representing three different forest types, namely upper montane (UMF) - 3 sites, dry lower montane (LMF) - 2 sites and wet LMF – 2 sites. Area within a transect was carefully examined for termites by searching all the known microhabitats of termites. Termite abundance was expressed as encounters (hits) with a species at each collection point in a transect. Sampling was supplemented with casual collections in the UMF. Termites were identified using descriptions and keys for the region and feeding groups were deduced from generic identity as well as from molar plate ridges in the right mandible of worker termites using keys and slide mounted mandibles of representative specimens.

Overall, a species richness of 26 species in three families and 10 genera were recorded, of which 25 species were documented from transects in the wet and dry LMF and none from UMF transects. A single species, *Postelectrotermes militaris* was recorded through casual collections in the UMF, from a branch of a thunder struck live tree. Fifteen species were documented from the 2-wet LMF transects and 22 from the 2-dry LMF transects. Termite abundance in the wet LMF transects was 86 and in the dry LMF transects 75, totally 161 hits. Documented termites comprised of fungus growing wood feeders (11 spp.), non-fungus growing wood feeders (7 spp.), soil-wood interface feeders (6 spp.), a single soil feeder, *Ceylonitermellus hantanae* and a single live wood feeder, *P. militaris*. Wet LMF transects had a higher relative abundance (78%) but low species richness (40%) of soil and soil wood interface feeders. In dry LMF transects both species richness (82%) and abundance (88%) of fungus growing wood feeders were higher.

Differences in termite assemblages can be attributed to differences in ground cover arising from climatic conditions in the three different forest types, especially in the UMF, where there is earthworm-riddled moist soil and damp, decomposed woody litter riddled with beetles.

Key words: transect sampling, *Postelectrotermes militaris*, upper montane, lower montane