

Diversity and Abundance of Termites in a Mahogany Plantation in the Gannoruwa Hills

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Natural forests in the Gannoruwa hills have been subjected to many disturbances: slopes (518-670 m) converted into cocoa plantations, which are much degraded now and parts of the summit planted with mahogany (712 m). Only the rest (>700 m) remains less disturbed. The impact of the mahogany plantation on forest termite fauna (an indicator taxon) was examined with the objective of determining species composition, species richness, abundance and feeding habits of termites. Termites were sampled using the standard belt transect (2 x 100 m) method. Their identity was determined and abundance recorded based on number of encounters/hits of different species. Species richness and feeding habits of termites were based on their taxonomic identity. Comparisons were made with the less disturbed natural forest (741 m) and degraded natural forest (578 m) in the Gannoruwa hills.

A total of ten termite species in five genera of the Family Termitidae namely, *Bulbitermes* sp.1, *Ceylonitermellus hantanae*, *Dicuspitermes incola*, *Nasutitermes* sp.1, *Odontotermes bellahunisensis*, *O. globicola*, *O. guptai*, *O. hainanensis*, *Odontotermes* sp. 6 and *Odontotermes* sp. 5 were recorded from the mahogany plantation. Genus *Odontotermes* (6 spp.) had the largest representation. *Odontotermes* sp. 5 (8 hits) was the most abundant followed by endemic *C. hantanae* (5 hits). The least abundant were *O. globicola* and *Odontotermes* sp. 6 (1 hit each). Termite fauna was dominated by fungus growing wood feeding *Odontotermes* spp. (6 species). *Nasutitermes* sp.1 and *Bulbitermes* sp. 2 are non-fungus growing wood feeders. Of the other two species, *D. incola* is a soil-wood interface feeder and *C. hantanae* is a soil feeder.

Termite fauna of the mahogany plantation differed from the other two forest types. Mahogany plantation yielded the least number of species (10), degraded forest the highest (13), followed by the less disturbed forest (12). Three species were common to all three forests, while 5 species in disturbed forest and 4 species in degraded forest were shared with the plantation forest. *Odontotermes* sp. 6, *C. hantanae*, and *D. incola* were recorded only from the plantation. All species in the plantation forest belonged to the family Termitidae and those in the other two forests to Termitidae and Kalotermitidae. Absence of Family Kalotermitidae (dry wood termites) in the plantation reflects the resistant nature of mahogany wood. The most abundant species, both in plantation (8 hits) and natural forest (9 hits) was *Odontotermes* sp. 5, which was absent from degraded forest. The most abundant species in degraded forest, *Nasutitermes* sp.1 (8 hits), was less abundant in plantation (4 hits). Majority of species (16/23) in all 3 forests are wood feeding termites.

The slight differences in species richness among the forest types is in agreement with previous reports that moderate levels of forest disturbances are favourable for termites, while high levels of disturbance are unfavourable. Woody litter resulting from forest disturbances accounts for the high number of wood feeders. Termite species richness reflects the degree of disturbances to natural forests.

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