

4.3 Ants as Biological Indicators of Human Disturbance – evidence from Sinharaja forest and tea and rubber fields in Ratnapura district

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ABSTRACT

Ants are a major group of insects in the forests as well as in agricultural fields in Sri Lanka. If the presence or absence of some ant taxa in disturbed areas differs from that of a forest reserve was investigated by sampling worker ants from tea and rubber fields in Godakawela and the primary and secondary forest regions in Sinharaja forest in September and October, 2005, respectively. Heavy rains prevailed during the sampling on both occasions. Honey baiting (25), soil sifting (10), hand collection (10) and litter sifting (10) during day time and pitfall trapping (10) at night along a 100 m transect were carried out in the forest while all of those methods except litter sifting were carried out in the tea and rubber fields. Depth of litter, soil moisture content and temperature and air temperature were also recorded.

Worker ants belonging to seven subfamilies, Aneuretinae, Amblyoponinae, Cerapachyinae or Leptanillinae, Dolichoderinae, Formicinae, Myrmicinae and Ponerinae were recorded from the primary and secondary forest regions whereas five subfamilies, Dolichoderinae, Formicinae, Myrmicinae, Ponerinae and Pseudomyrmicinae were observed in both tea and rubber fields. Worker ants of subfamily Amblyoponinae were recorded from rubber fields but they were not observed in the tea fields. Thirty two morphospecies of ants from the primary forest region and twenty seven morphospecies from the secondary forest region were observed during this study. Thirty and thirty four morphospecies of ants were recorded from tea and rubber fields, respectively. Although Species Richness values did not show significant difference ($p > 0.05$) for the four types of ecosystems, it was evident that *Anoplolepis gracilipes* (Jerdon), *Diacamma rugosum* Mayr, *Meranoplus bicolor* (Smith F.), *Odontomachus simillimus* Smith F., *Oecophylla smaragdina* Fabricius and *Tetraponera rufonigra* (Smith F.) could be considered as biological indicators of disturbance as they were restricted to tea and rubber fields. Also, *Aneuretus simoni* Emery, *Technomyrmex bicolor* Emery, *Anochetus* sp. and *Leptogenys* spp. were restricted to the two types of forest regions but further research would be carried out to confirm these observations.

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