

### 3.2 Worker Ant Communities (Order: Hymenoptera; Family: Formicidae) of Two Disturbed Forests in Anuradhapura District

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#### ABSTRACT

Ants are an ecologically important group of insects in the forests but there is no information on ants that inhabit dry zone forests of Sri Lanka. A survey on dry zone forest ants was carried out by laying five 50 m transects in a forest in Anuradhapura (12 - 3 p.m.) and another forest in Thambuththegama (11 - 2 p.m.) on the 27<sup>th</sup> and 28<sup>th</sup> of April in 2006, respectively. Worker ants in ten soil samples (W: 5 cm L: 5 cm D: 5 cm) that were taken at 5 m distance along each transect, were collected by sifting with a sieve and a white tray. All worker ants fallen into the tray were preserved in 85% ethanol. Ten honey baits were kept at 5 m intervals along each transect and collected into vials filled with 85% ethanol, after an hour. Worker ants were sorted, identified to the lowest possible taxonomic levels and enumerated in the laboratory. Air (A: 29 °C – 30 °C; T: 31.5 °C - 32.5 °C) and soil temperatures (A: 30 °C – 31 °C; T: 29 °C - 29.5 °C) and soil moisture content (A: 9.4 % – 14.4%; T: 9.6 % - 16%) of each forest were also recorded.

Worker ants belonging to four subfamilies, Dolichoderinae, Formicinae Myrmicinae, and Ponerinae were observed in both forests but subfamily Aenictinae was restricted to Anuradhapura forest. Cumulative Species Richness values recorded by soil sifting reached twenty one and thirteen for Anuradhapura and Thambuththegama forests, respectively; honey baiting recorded eighteen and eleven for the two forests. Species Richness observed by the two methods was twenty seven in Anuradhapura forest and eighteen in Thambuththegama forest whereas cumulative Species Richness was thirty two for the two forests. Two dolichoderines, *Tapinoma indicum* and *Technomyrmex albipes* and a formicine, *Paratrechina longicornis* were recorded from both forests. Also, the myrmicines, *Crematogaster* sp. 1, *Meranoplus bicolor*, *Monomorium destructor*, *Monomorium* sp. 1, *Monomorium* sp. 3, *Pheidole* sp. 3, *Tetramorium bicarinatum* and *Tetramorium* sp. 1 and the ponerine, *Pachycondyla* sp. 1 were among the species common to both forests. The Aenictines, *Aenictus* sp. 1 and *Aenictus* sp. 2, a dolichoderine, *Tapinoma melanocephalum*, and two formicines, *Camponotus* sp. 1 & *Oecophylla smaragdina* were restricted to Anuradhapura forest only. In addition, the myrmicines, *Monomorium* sp. 2, *Myrmecaria brunnea*, *Oligomyrmex* sp. 1, *Pheidole* sp. 1, *Solenopsis* sp. 1 and *Strumigenys* sp. 1 and, the ponerines *Cryptopone* sp. 1 and *Leptogenys* sp. 1 were recorded only from Anuradhapura forest. The dolichoderine, *Technomyrmex* sp. 1, two formicines, *Lepisiota* sp. 1 & *Paratrechina* sp. 1 and the myrmicines, *Pheidole* sp. 5 & *Tetramorium* sp. 4 were restricted to Thambuththegama forest. *Myrmecaria brunnea* (70.6%) was the sole dominant species in the Anuradhapura forest (chi-square test,  $p < 0.05$ ) whereas *Technomyrmex albipes* (37.2%), *Crematogaster* sp. 1 (25.2%) and *Pheidole* sp. 3 (17.8%) were dominant among the worker ant fauna in Thambuththegama forest (chi-square test,  $p < 0.05$ ). These results revealed that diverse ant fauna survive in the dry zone forests and the ant community present in any forest may be unique to the level of disturbance and quality of the environment of that forest.

Financial assistance by Kelaniya University Research Grant, (RP/ 03/ 02/ 07/ 01) is acknowledged.