

3.1 Similarities and differences of the ant communities recorded from three types of habitats in Anuradhapura region.

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ABSTRACT

Ants are very common in the regions of wet and dry zone but little is known about the similarities and differences of the ant communities observed in the lands, which are under different levels of disturbance. A survey in the dry zone was conducted from 3rd to 5th of February, 2008, in three types of habitats, a forest (F), Anuradhapura Sanctuary (N 08° 20', E 080° 23'), a teak cultivation (T) in Matale Handiya (N 08° 21', E 080° 26') and an uncultivated land (U), surrounding area of Nuwara weva (N 08° 21', E 080° 25'), in Anuradhapura by soil and litter sifting, honey baiting, pitfall trapping and manual collection along five, 100 m transects laid in each type of habitat. Soil and litter sifting were carried out at 2.5 m intervals along each transect. Honey baits were placed at 2.5 m distance along each transect and collected into bottles filled with 70% ethanol after an hour. Manual collection was carried out at five minute intervals along each transect. Honey baited pitfall traps (20) were placed randomly to cover the whole sampling area and the traps were collected after five hours. All ants were preserved in the field in 70% ethanol. Worker ants were sorted and identified to the furthest possible taxonomic levels in the laboratory. Air (F: 29 °C – 31 °C; T: 29 °C – 30 °C; U: 30 °C – 31 °C) and soil temperatures (F: 28 °C – 31 °C; T: 28 °C- 30 °C; U: 28 °C – 29 °C) and soil moisture content (F: 4% - 8.3%; T: 1% - 3.3%; U: 0.9% - 4.8%) of each habitat were also measured. Dry weather persisted throughout the sampling period.

Worker ants belonging to seven subfamilies, Aenictinae, Dolichoderinae, Formicinae, Leptanillinae, Myrmicinae, Ponerinae and Pseudomyrmecinae, and 49 species and morphospecies of ants were recorded during this survey. *Crematogaster* sp. 1 (F-1%, T-12%, U-1%), *Crematogaster* sp. 3 (F- 4%, T- 42%, U- 21%), *Lepisiota* sp. 2 (F- 0.04%, T- 0.1%, U- 0.1%), *Meranoplus bicolor* (F- 8%, T-10%, U-10%), *Monomorium destructor* (F- 0.2%, T- 0.5%, U- 0.7%), *Myrmicaria brunnea* (F- 0.04%, T- 4%, U-12%), *Oecophylla smaragdina* (F- 0.2%, T- 0.4%, U- 0.4%), *Pachycondyla* sp. 1 (F-0.1%, T- 1%, U- 0.3%), *Paratrechina longicornis* (F- 2%, T- 0.1%, U-2%), *Paratrechina* sp. 2 (F-0.1, T-0.5%, U-1%), *Pheidole* sp. 8 (F-62%, T- 0.2%, U- 13%), *Solenopsis geminata* (F- 6%, T- 0.2%, U-1%), *Tetramorium* sp. 3 (F- 1%, T- 18%, U- 6%), *Tetramorium* sp. 5 (F- 1%, T- 2%, U- 0.1%) and *Tetramorium* sp. 7 (F- 1%, T- 6%, U-9%) were common to the three types of habitats (Similarity Co-efficient = 15.8%). *Camponotus* sp. 2 (0.3%), *Crematogaster* sp. 5 (0.02%), *Crematogaster* sp. 6 (0.1%), *Dolichoderus* sp. 1 (0.1%), *Lepisiota* sp. 3 (0.02%), *Lepisiota* sp. 4 (0.02%), *Leptanilla* sp. 2 (0.02%), *Pheidole* sp. 5 (0.1%), *Polyrhachis* sp. 1 (0.02%), *Protanilla* sp. 1 (0.02%), *Solenopsis* sp. 1 (0.02%) *Tetraponera rufonigra* (0.1%) and *Tetramorium* sp. 10 (0.1%) were restricted to the forest ($H' = 0.71$) while *Anochetus* sp. 3 (0.03%), *Pheidole* sp. 11 (0.1%), *Tapinoma* sp. 3 (0.4%) and *Tetramorium* sp. 4 (0.2%)

were observed only in the teak cultivation ($H' = 0.81$). *Anochetus* sp. 2 (0.1%), *Aenictus* sp. 1 (0.03%), *Camponotus* sp. 1 (0.1%) and *Harpegnathos* sp. 1 (0.03%) were restricted to the surrounding area of Nuwara weva ($H' = 1$). Presence of *Leptanilla* sp. 2 and *Protanilla* sp. 1 in a dry zone forest was observed for the first time and, the observation of *Aenictus* sp. 1 and *Harpegnathos* sp. 1 in a highly disturbed area was also an important record of this survey.

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