

3.2 Systematics and community composition of foraging worker ants (Family: Formicidae) collected from three habitats in a dry zone region of Sri Lanka

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ABSTRACT

Ants (Order: Hymenoptera, Family: Formicidae) are an important and common biotic component in the wet zone of Sri Lanka. Eleven subfamilies, 57 genera and 123 morphospecies of ants have been recorded from the wet zone recently, but little is known about the ants that inhabit dry zone of Sri Lanka. A survey on the dry zone worker ants was carried out from 2nd to 3rd of November, 2007 in three types of habitats, a forest, Kahalla - Pallekele forest (N 08° 31' and E 080° 30'), a bitter gourd cultivation (N 07° 51' and E 080° 37') and in an uncultivated land (N 07° 51' and E 080° 37') in Dambulla by soil sifting, litter sifting, honey baiting and pitfall trapping along five transects laid in each of them. A 100 m transect was laid in the forest whereas a 50m transect was laid in the other two habitats due to the smaller area of the two lands. Soil sifting and litter sifting were carried out at 5 m distance along each transect. Ten honey baits were placed at 5 m intervals along each transect and the baits were collected after an hour. Twenty, honey-baited pitfall traps were fixed randomly in the sampling area of each habitat and the traps were collected after five hours. All samples were preserved in 85% ethanol in the field. Worker ants were sorted and identified to the furthest possible taxonomic levels in the laboratory. Air (27 °C – 32 °C) and soil temperatures (27 °C – 33 °C) and soil moisture content (8.6% - 14.5%) of each habitat were also measured.

Worker ants belonging to five subfamilies, Dolichoderinae, Formicinae, Myrmicinae, Ponerinae and Pseudomyrmecinae and, 41 species and morphospecies of ants were recorded from the three habitats. The dolichoderines, *Tapinoma indicum*, *Tapinoma melanocephalum*, *Technomyrmex albipes*, the formicines, *Anoplolepis gracilipes*, *Camponotus* sp. 1, *Camponotus* sp. 2, *Camponotus* sp. 3, *Camponotus* sp. 4, *Oecophylla smaragdina*, *Paratrechina longicornis*, *Polyrhachis* sp. 1, *Pseudolasius* sp. 1, the myrmicines, *Calyptomyrmex* sp. 1, *Crematogaster* sp. 1, *Crematogaster* sp. 2, *Lophomyrmex* sp. 1, *Meranoplus bicolor*, *Monomorium destructor*, *Monomorium* sp. 1, *Pheidole* sp. 1, *Pheidole* sp. 2, *Pheidole* sp. 3, *Pheidole* sp. 4, *Pheidole* sp. 5, *Pheidole* sp. 6, *Solenopsis geminata*, *Solenopsis* sp. 1, *Strumigenys* sp. 1, *Tetramorium* sp. 1, *Tetramorium* sp. 2, *Tetramorium* sp. 3, *Tetramorium* sp. 4, *Tetramorium* sp. 5, *Tetramorium* sp. 6, *Tetramorium* sp. 7, the ponerines, *Anochetus* sp. 1, *Hypoponera* sp. 1, *Pachycondyla* sp. 1, *Platythyrea* sp. 1 and the pseudomyrmecines, *Tetraoponera allaborans* and *Tetraoponera rufonigra* were observed in these three types of habitats. *Tapinoma melanocephalum*, *Anoplolepis gracilipes*, *Paratrechina longicornis*, *Crematogaster* sp. 1, *Solenopsis geminata*, *Tetramorium* sp. 1, *Tetramorium* sp. 3 and *Tetramorium* sp. 7 were observed in considerable proportions whereas others were found in less than 4% proportions. Significant differences were observed among the frequencies of ant species recorded in this study (Chi-square test; $p < 0.05$) and, *Tetramorium* sp. 7 (28%), *Tetramorium* sp. 3 (13.4%) and *Solenopsis geminata* (10.9%), were the dominant species observed in Dambulla region. The ponerines were observed in the forest and the uncultivated land but they were not observed in the bitter gourd cultivation. The pseudomyrmecines were not observed in the uncultivated land. *Tapinoma melanocephalum*, *Paratrechina longicornis*, *Crematogaster* sp.1, *Meranoplus bicolor*, *Monomorium destructor*, *Pheidole* sp. 1, *Tetramorium* sp. 1, *Tetramorium* sp. 3 and *Tetramorium* sp. 4 were common to these sites. When compared with the previous record on dry zone ants, the presence of two pseudomyrmecines is a new observation and the absence of aenictines in current habitats was also noticeable.

Financial assistance from Kelaniya University Research Grant, RP/03/02/07/01/2005 is highly acknowledged.