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A preliminary study of systematics and community composition of foraging worker ants (Order: Hymenoptera, Family: Formicidae) in three habitat types in Polonnaruwa

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Thirty genera and 47 species and morphospecies of ants belonging to six subfamilies have been recorded from Anuradhapura and Dambulla regions in the dry zone of Sri Lanka recently. Worker ants that inhabit the Giritale forest, a vegetable cultivation in Nikawewa and an uncultivated land in Jayanthipura were investigated on the 2nd and 3rd of July, 2008 to prepare a preliminary inventory of ants in Polonnaruwa region. Worker ants were sampled by soil sifting (20), litter sifting (20), honey baiting (20) and, hand collection for five mins (20) at 5 m distance along five, 100 m transects laid at each site. Twenty, honey-baited pitfall traps were fixed randomly throughout each site and collected after five hrs. All samples were preserved in 85 % ethanol. Worker ants were sorted and identified to the furthest possible taxonomic levels in the laboratory. Air ($33.7^{\circ}\text{C} \pm 1.4$) and soil temperatures ($31.2^{\circ}\text{C} \pm 2.3$), soil pH (6.1 ± 0.4) and soil moisture content ($13.2 \% \pm 1.8$) of each habitat were also measured.

Seventeen genera and 31 species and morphospecies of worker ants belonging to four subfamilies, Dolichoderinae, Formicinae, Myrmicinae and Ponerinae were recorded from the Giritale forest. Cumulative Species Richness recorded from each site increased with the use of several sampling methods. Four dolichoderines, eight formicines, 14 myrmicines, and five ponerines were recorded from the Giritale forest. Cumulative Species Richness reached 39 with the addition of three formicines, four myrmicines and a ponerine from the cultivated land. Cumulative Species Richness reached 52, with the addition of six formicines, six myrmicines and a pseudomyrmecine from the uncultivated land. *Pheidole* sp. 8 (35 %) was dominant in this collection (Chi-square test; $p < 0.05$) and 1 % - 10 % proportions were represented by each of the other species ($H'_{\text{Forest}}=1.7$, $H'_{\text{Un.}}=2$ and $H'_{\text{Cu.}}=2.5$). The number of genera and the Cumulative Species Richness recorded from the dry zone increased to 32 and 68, respectively and *Acropyga* sp. 1, *Camponotus* sp. 6, *Camponotus* sp. 8, *Crematogaster rothneyi*, *Crematogaster* sp. 1, *Hypoponera* sp. 2, *Lepisiota* sp. 1, *Lepisiota* sp. 2, *Lepisiota* sp. 3, *Leptogenys* sp. 3, *Lophomyrmex* sp. 2, *Paratrechina* sp. 2, *Pheidole* sp. 11, *Pheidole* sp. 13, *Pheidole* sp. 14, *Plagiolepis* sp. 2, *Polyrhachis* sp. 2, *Polyrhachis* sp. 3, *Recurvidris* sp. 1, *Solenopsis* sp. 3 and *Solenopsis* sp. 4 were recorded for the first time from the dry zone.

Keywords: Polonnaruwa ants, systematics, community composition, Preliminary inventory