4.4 Diversity, distribution and species composition of worker ants in tea and rubber fields in Ratnapura district

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ABSTRACT

Very little is known about the diversity, distribution and species composition of ants, an economically important biotic component of tea and rubber fields, in Sri Lanka. Also, the endemic ant, *Aneuretus simoni* Emery, has been recorded from the forests of Ratnapura district but its presence or absence in the tea and rubber fields of the district has never been investigated earlier. A survey on worker ants was conducted by sampling worker ants from each tea and rubber field in Kuruwita (14 – 16, January), Nivithigala (28 – 30, March), Balangoda (24 – 26, May), Dumbaramanana (25 – 27, July) and Godakawela (28 – 30, September) in 2005. Honey baiting, (25), soil sifting (20), hand collection (10) at 10 m distance and pitfall trapping at night (10) were carried out along five, 100 m transects laid in each of the fields on each occasion. All samples were preserved in 70% ethanol in the field. Sorting of the samples and identification of ants to the furthest possible taxonomic levels was carried out under a low power stereo-microscope in the laboratory. Although significant differences in air temperatures were not evident in the tea and rubber fields at the other locations mean air temperature at the rubber field in Balangoda was significantly higher than that recorded from the tea field. Significant differences in soil temperatures and soil moisture% were noticeable (One Way ANOVA; $p<0.05$) between the tea and rubber fields at each of the locations. GPS co-ordinates of each location were also recorded.

Species Richness of ants recorded from the tea field in Kuruwita was twenty five and it increased to 35, 41, 50 and 52 with the additional species recorded from the tea fields in Nivithigala, Balangoda, Dumbaramanana and Godakawela, respectively. Nineteen taxa recorded from the rubber field in Kuruwita increased to 33, 48, 56 and 64 with the addition of ant species and morphospecies from Nivithigala, Balangoda, Dumbaramanana and Godakawela rubber fields, respectively. Seventy three species and morphospecies of worker ants belonging to six subfamilies, Amblyoponinae (rubber only), Dolichoderinae, Formicinae, Myrmicinae, Ponerinae and Pseudomyrmecinae were recorded collectively from the tea and rubber fields. *Aneuretus simoni* was never observed in these fields. Forty three species and morphospecies of ants were common to both tea and rubber fields while eight taxa were observed only in tea fields and twenty one species and morphospecies were restricted to rubber fields. Species composition of ants observed at each field was unique and characteristic to environmental conditions existed at each of them.

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