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### Phylogeographic study of the Weaver Ant, *Oecophylla smaragdina* Fabricius, in Bangladesh (Hymenoptera: Formicidae)

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#### Abstract

The Weaver ant, *Oecophylla smaragdina*, is an important biological control agent of the insect pests of the fruit crops, and is distributed from South India through South East Asia to North Australia, including many tropical western Pacific islands. A previous phylo-geographic study has shown that the species is divided into seven groups, where Indian populations are the sister group of other six South-East Asian groups, including Australia. The Bangladesh populations have been reported to be members of one of the SE Asian groups, but the data are limited and the border between the Indian type and South East Asian type is not clear. The aim of the present study was: (1) to examine whether all Bangladesh populations belong to the South East Asian type, and (2) if so, to find out the borders between Indian and SE Asian types of *Oecophylla* populations in Bangladesh. Considering two major rivers (Ganga and Jamuna) as borders between India and Bangladesh, 14 colonies from the western part of Bangladesh were collected during 2013 to 2014. To determine genetic type and analyze phylogenetic relationship among populations, mitochondrial cytochrome *b* gene (Cytb) of 246 bp and cytochrome oxidase subunit I (COI) of 444 bp were extracted and the nucleotides were sequenced using an ABI 3100 Avant DNA Sequencer (Applied Biosystems). The phylogenetic analysis from N-J tree, M-L tree and Bayesian analysis showed that all *Oecophylla* populations collected from the western part of Bangladesh were of the Indian type. Hence, the two rivers were not the borders separating Indian and South East Asian *Oecophylla* populations in Bangladesh.

**Key words:** Bangladesh, *Oecophylla smaragdina*, phylogenetic analysis, phylogeography, weaver ant

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