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PHYLOGENY STUDY OF SOCIAL VESPID WASPS INFERRED FROM CYTOCHROME OXIDASE 1 (CO1) LOCUS

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ABSTRACT

Social wasps (Vespidae) display a wide range of diversity in their ecology and social organisation, providing insights into the origins of simple societies and the elaboration and maintenance of complex societies. Social wasps play an important role in our ecosystems and economies, for example, through their pollination and pest control services. Compared with other social insects (e.g. ants, termites and bees), the social wasps are understudied. The social subfamilies within the Vespidae namely Stenogastrinae, Polistinae and Vespinae occurred together only in the oriental region. Cladistic analysis of behavioral data showed that Stenogastrinae have been grouped together with the social Polistinae and Vespinae in the family of Vespidae. However, it has been reported that Stenogastrinae are more closely related to the solitary wasps; Eumeninae than to the other social subfamilies, based on their morphological characters. The aim of this study is to clarify the relationship between the subfamily in the social vespid wasps (Stenogastrinae, Polistinae, and Vespinae) based on *CO1* mitochondrial DNA. Construction of phylogenetic tree shows a monophyletic clade between subfamily of Vespinae and Polistinae and subfamily of Stenogastrinae have been group as the sister clade to other social wasps.

Keywords

Vespidae, Stenogastrinae, Cytochrome Oxidase 1 (*CO1*), Social wasps