The Special ARN Student Seminar in Humanosphere Science

Title：Genetic structure, *Wolbachia* infection, and behavior of the longhorn crazy ant, *Paratrechina longicornis*

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Related RISH mission： Mission 5 (Quality of the Future Humanosphere)

Abstract：

During the last few centuries, globalization facilitates and intensifies the spread of alien species, leading to the establishment of invasive populations and became a major threat to biodiversity and economy. Integrated studies of genetics and ecology and biogeography are critical for understanding and managing invasiveness. The longhorn crazy ant, *Paratrechina longicornis*, is a ubiquitous agricultural and household pest throughout most of tropical and subtropical regions. In this study, different approaches were used in understanding the invasive biology of *P. longicornis*. Molecular data indicates the presence of two highly divergent mtDNA clades (clades I and II) of *P. longicornis*, with both coexisting in most of geographical regions. Preliminary results of genetic analysis base on microsatellite data of workers ruled out East and South Asia as native areas. Behavioral test indicates that the acceptance rate of alien queens of *P. longicornis* is 0.23. The surveying result of myrmecophiles shows that a great diversity of insect was associated with *P. longicornis*, and the most ant colonies in Penang Island had serious parasitoid mite infestations.

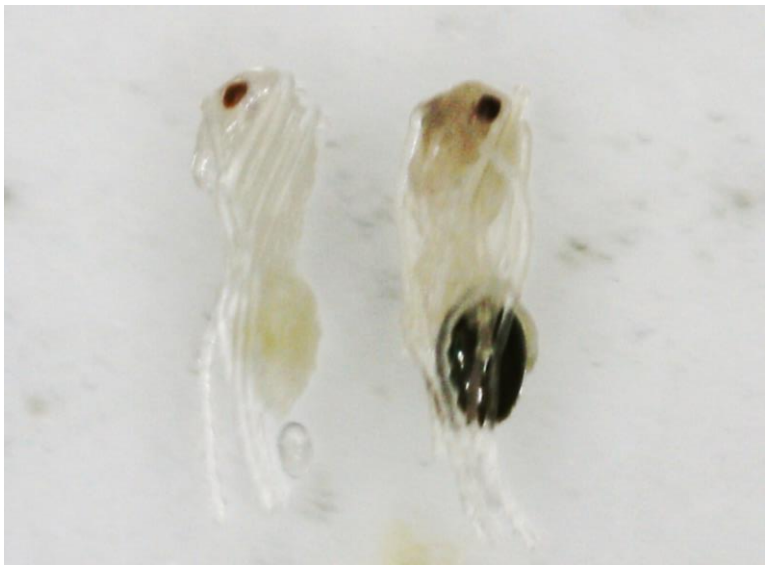

Fig. 1 Left) Ant pupa without parasitoid mite. Right) Ant pupa with parasitoid mite.