

Sungsit Sungvornyothin 2007: Ecological Aspects and Characterization of Malaria Mosquito, *Anopheles minimus* Complex in Thailand. Doctor of Philosophy (Entomology), Major Field: Entomology, Department of Entomology. Thesis Advisor Associate Professor Theeraphap Chareonviriyaphap, Ph.D. 80 pages.

The aim of this study was to perform the analyses on species identification of the Minimus complex using data from previous report along with a large sample of wild specimens from Thailand. The Minimus complex is composed of at least three sibling species, *An. minimus*, species C and species E. *Anopheles minimus* and species C are widespread throughout the Southeast Asian region whereas species E is found in Ryukyu islands, Japan. *Anopheles minimus* and species C are known as malaria vectors and appear sympatric with some specific behaviors. The first presents a presector pale spot (PSP) on the wing costa whereas the latter have both presector and humeral pale spots (HP). No acceptable diagnostic power on species identification has been established over large temporal and geographic investigation. This present study explored nine populations throughout Southeast Asia, including published data and wild caught populations from two sites in Thailand, indicating unreliable of the two morphological characters in identification of the two species, *An. minimus* and species C. Therefore, molecular identification remains the most significant tool for the species identification of the Minimus complex.

In addition, the trophic behavior of *An. minimus* and species C was described by using a molecular identification assay over a two year period at Pu Teuy Village, Sai Yok District, Kanchanaburi Province. Feeding activity of species C was unique compared to *An. minimus* from other localities in Thailand. Outdoor feeding of species C occurred throughout the night with one prominent peak (1800 hour) whereas indoor feeding showed two small peaks at 2000 and 2400 hours. The small number of *An. minimus* collected during the study precluded a determination of peak activity patterns. A better understanding of biology and behavior of a single species is critically important to help identify the respective role in disease transmission.

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