

SEASONAL ABUNDANCE AND DISTRIBUTION OF ANOPHELES LARVAE IN A RIPARIAN MALARIA ENDEMIC AREA OF WESTERN THAILAND

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Abstract. Three taxonomic groups of *Anopheles* larvae were morphologically identified within the Funestus Group (Minimus Subgroup and Aconitus Subgroup) (75.63%), Maculatus Group (20.47%), and Barbirostris Group (0.57%) during a two-year period in conjunction with active malaria transmission in a village near the Thai-Myanmar border in Kanchanaburi Province, western Thailand. The remaining 3.33% of anophelines collected were *Anopheles culicifacies* (3.07%), *Anopheles philippinensis* (0.17%), and *Anopheles vagus* (0.09%). Using an allele-specific multiplex molecular identification assay, the Minimus Subgroup consisted of *Anopheles minimus* (69.83%), and *Anopheles harrisoni* (0.06%) and 2 genetically-related species belonging to the Aconitus Subgroup, *Anopheles aconitus* (0.63%) and *Anopheles varuna* (5.12%). The Minimus and Aconitus Subgroup species were more abundant during the dry season (52.58%) than during the hot (24.95%) and wet (22.46%) seasons. The number of *Anopheles* larvae collected from the stream habitat was significantly higher during the second year than the first year, believed to be due to human environmental changes in the stream habitat from the building of a small check dam, which provided a more suitable and stable habitat for mosquito larval development. This study illustrates the importance of conducting site-specific studies to accurately determine vector bionomics (eg, larval habitats) and adult activity patterns and linking observations with malaria transmission dynamics in a given area.

Keywords: *Anopheles*, seasonal abundance, Minimus Complex species, larval abundance, Thailand

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INTRODUCTION

Malaria is one of the most important mosquito-borne infectious diseases in tropical and sub-tropical climes (WHO,