BIONOMIC STATUS OF *ANOPHELES EPIROTICUS* LINTON & HARBACH, A COASTAL MALARIA VECTOR, IN RAYONG PROVINCE, THAILAND

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Abstract. A longitudinal entomological survey was conducted to provide in-depth information on *An. epiroticus* and determine whether ecological and entomological factors could influence malaria transmission in Rayong Province, Thailand. The mosquitoes were collected monthly from May 2007 to April 2008 by human landing catch technique from 6:00-12:00 PM for 2 consecutive nights, at 3 collection sites. A total of 3,048 mosquitoes within 5 species were captured: *An. epiroticus*, *Culex quinquefasciatus* Say, *Cx. sitiens* Wiedemann, *Aedes aegypti* (L.) and *Ae. albopictus* Skuse. PCR was used for molecular identification of *An. sundaicus* complex, by determination of COI, ITS2, and D3 genes. The target mosquitoes were *An. epiroticus*, which was the predominant species, accounting for 43.8 % of specimens collected. The biting cycle pattern increased during 6:00-8:00 PM and reached a maximum of 6.6 bites/person/hour by 12:00 PM. The mosquitoes varied in population density throughout the year. The highest biting rate was 37.6 bites/person/half night in September and the lowest (10.2 bites/person/half night) in January. Nested PCR and real-time PCR techniques were used to detect the malaria parasite in *An. epiroticus* adult females. Nine of 926 (0.97%) mosquitoes tested were malaria parasite positive: 6 *P. falciparum* and 3 *P. vivax*. The infective mosquitoes were found in the dry and early rainy seasons. The overall annual entomological inoculation rate (EIR) in the village was 76.6. The overall parity rate was 74%. A total of 38 cement tanks were used to characterize the nature of the breeding places of *An. epiroticus*. *An. epiroticus* larvae coexisted with *Aedes* and *Culex* larvae; the maximum larval density was more than 140 larvae per dip in May. Breeding places included fresh, brackish and salt water, typically with full sunlight and mats of green algae on the water surface. The salinity of the water ranged from 0.5 to 119.4 g/l, with a narrow pH range of 8.2-8.7. Dissolved oxygen was highest in November (6.27 mg/l) and lowest in March (3.46 mg/l). The water temperature varied between 24.6 and 32.8ºC.

Key words: *Anopheles epiroticus*, bionomic status, malaria vector, Thailand

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