high abundance of $(AC)_n$ and $(AG)_n$ sequences in the *An. minimus* genome. A partial genomic DNA library of *An. minimus* was generated and the recombinant clones containing sequences that hybridized to each $(AC)_{14}$ or $(AG)_{14}$ probe were obtained and sequenced. Most clones contained sizes of insert ranging 200-1,200 base pairs. From the amount of positive clones determined, $(AC)_n$ dinucleotide microsatellite was found predominately distributed in the genome of *An. minimus*, comparing to $(AG)_n$.

53rd Annual Meeting of the American Society Tropical Medicine and Hygiene (ASTMH). Miami, Florida, USA. 7-11 November 2004.

Am J Trop Med Hyg. 2004; 70(4 suppl):117.

EVALUATION OF CANDIDATE TRAPS AS TOOLS FOR CONDUCTING SURVEILLANCE FOR ANOPHELES MOSQUITOES IN A MALARIA-ENDEMIC AREA IN WESTERN THAILAND

Sithiprasasna R, Jaichapor B, Chanaimongkol S, Khongtak P, Lealsirivattanakul T, Tiang-Trong S, Burkett DA, Perich MJ, Wirtz RA and Coleman RE

The effectiveness of five mosquito traps at sampling anopheline mosquitoes was compared with landing/biting (L/B) collections in western Thailand. Traps evaluated included a CDC style light trap (CDC LT) with dry ice, the American Biophysics Corporation (ABC) standard light trap (ABC LT) with dry ice and octenol, the ABC counterflow geometry (CFG) trap with dry ice and octenol, the ABC mosquito magnet (MM) trap with octenol, and the Nicosia and Reinhardt Company Mosquito Attractor Device (N & R trap). Mosquito numbers captured in landing-biting collections were 5.2, 7.0, 7.3, 31.1, and 168.8 times greater than those collected in the ABC LT, MM, CDC LT, CFG, and N & R traps, respectively, for *Anopheles minimus* Theobald, the predominant malaria vector in the region. Similar results were obtained for the secondary malaria vectors *Anopheles maculatus* Theobald and *Anopheles sawadwongporni* Rattanarithikul & Green. Only *Anopheles kochi* Doenitz was collected in significantly greater numbers in the CDC LT, ABC LT, and MM traps compared with L/B collections. Although none of the traps were as effective as L/B collections, the ABC LT, MM, and CDC LT were the best alternatives to human bait for the collection of anopheline malaria vectors in Thailand.

J Med Entomol. 2004; 41(2): 151-7.

EVIDENCE FOR ARBOVIRUS DISSEMINATION CONDUITS FROM THE MOSQUITO (DIPTERA: CULICIDAE) MIDGUT

Romoser WS, Wasieloski LP Jr, Pushko P, Kondig JP, Lerdthusnee K, Neira M and Ludwig GV

The mechanism by which arboviruses bypass the basal lamina of mosquito midgut cells and enter the body cavity has been unclear. Experiments using Venezuelan equine encephalitis

viral replicon particles, which express the green fluorescent protein gene in cells, indicate the operation of tissue conduits, possibly involving tracheae and visceral muscles, that facilitate virus movement through the basal lamina. Ultrastructural studies of the midgut reveal evidence for possible complete penetration of the basal lamina by tracheal cells and regions of modified basal lamina associated with visceral muscle. The modified basal lamina closely resembles proventricular matrix material known to allow virus passage.

J Med Entomol. 2004; 41(3): 467-75.

FIELD VALIDATION OF *AEDES AEGYPTI* (DIPTERA: CULICIDAE) AGE ESTIMATION BY ANALYSIS OF CUTICULAR HYDROCARBONS

Gerade BB, Lee SH, Scott TW, Edman JD, Harrington LC, Kitthawee S, Jones JW and Clark JM

In previous studies, we developed linear regression models to age-grade female *Aedes aegypti* L. reared and maintained under controlled laboratory conditions. The models were based on temporal differences between two cuticular hydrocarbons, pentacosane ($C_{25}H_{52}$) and nonacosane ($C_{29}H_{60}$), which were extracted from *Ae. aegypti* legs and analyzed by gas-liquid chromatography. These initial models predicted adult female age up to 165 DD (12-15 calendar d at 28°C). The age of older mosquitoes, however, could not be accurately predicted. In this study, our original regression models were tested using age data obtained from mosquitoes maintained in a field laboratory and those that were marked, released, and recaptured in northwestern Thailand. Our field data led to the development of two new regression models: one for the cool-dry season (February-March)and one for the rainy season (July-August). Both models resulted in better estimates of age than the original model and thus improved our ability to predict the age of *Ae. aegypti* to 15 calendar d. Females older than 15 d can be identified as such, but their exact age cannot yet be estimated. The new models will be useful for epidemiological studies and evaluating the impact of *Ae. aegypti* control interventions for disease prevention.

J Med Entomol. 2004; 41(2): 231-8.

GEOGRAPHIC INFORMATION SYSTEM AS EPIDEMIOLOGICAL TOOL IN SURVEILLANCE OF DENGUE VIRUS-INFECTED AEDES MOSQUITOES

Sithiprasasna R, Patpoparn S, Attatippaholkun W, Suvannadabba S and Srisuphanunt M

A Geographic Information System (GIS) was used as analysis tool to study the spatial distribution of dengue virus-infected *Aedes* mosquitos in Thailand. Global Positioning System (GPS) instruments were used to map villages involved in dengue epidemiological studies in Ratchaburi Province, Thailand. Differentially processed GPS data, with a spatial resolution of approximately 1 meter, were incorporated into a GIS for analysis and mapping. Databases associated with a village GIS included village number, *Aedes aegypti* populations, and test results. Epidemiological surveillance for dengue infection through the detection of the dengue