

# ASSIGNMENT

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TOPIC:

BEHAVIOR OF MOSQUITES  
ANOPHELES

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# BEHAVIOR OF MOSQUITES ANOPHELES

## 1: Preference and Non-Preference Behavior:

Preference of *Anopheles minimus* (Diptera: Culicidae) in a malaria endemic area of western Thailand: baseline site description. Host feeding patterns of *Anopheles minimus* in relation to ambient environmental conditions were observed during a 2-year period at Tum Sue Village, located in Mae Sot District, Take Province, in western Thailand, where *An. minimus* is found in abundance and regarded as the most predominant malaria vector species. Detailed information on mosquito behavior is important for understanding the epidemiology of disease transmission and developing more effective and efficient vector control methods.

(Rung run Tegretol, Chatchai Tana chai, Waraporn Juntarajumnong, Siripun Tuntakom, Michael J Bangs, Vincent Corbel, Theeraphap Chareonviriyaphap) *Parasites & vectors* 5 (1), 114, 2012

Adult mosquitoes were collected every 2 months for two consecutive nights from 1800 to 0600 hrs. Three collection methods were used; indoor human-landing collections (HLC), outdoor HLC, and outdoor cattle-bait collections (CBC).

The Human landing activity of *An. minimus* in Tum Sua Village showed a stronger preference/attraction for humans compared to a cow-baited collection method. This study supports the incrimination of *An. minimus* as the primary malaria vector in the area. A better understanding of mosquito behavior related to host preference, and the temporal and spatial blood feeding activity will help facilitate the design of vector control strategies and effectiveness of vector control management programs in Thailand.

## 2: Mating Behavior

There is a controversy over which event comes first: mating before the first blood feeding episode or taking the first blood meal before mating and whether the female mosquito re-mates at all, (Villarreal et al., 1994; Yuval and Fritz., 1994). Here, we assume that the female *Anopheles* sap mosquito mates once and, after mating, she stores the spermatozoa in spermatheca after copulation, so that during each subsequent oviposition, the eggs can be fertilized during their transit through the oviduct (Charlwood and Jones, 1979; Charlwood et al., 2003; Craig Jr., 1967; Gomulski, 1990; Klowden, 2001; Takken and Knols, 1999). When the fertilized female mosquito ingests blood, she rests while the blood is digested and the eggs are developed.

Though spatial differences undoubtedly contribute to the population structure in some areas, temporal differences in mating behaviors could be involved and have been proposed to form a prezygotic barrier to gene flow between sympatric mosquito population

(Jones et al. 1974; Charlwood and Jones 1979; Manoukis et al. 2009; Rund et al. 2012).

For example, Round et al. (2012) noted that, in the laboratory, the time of peak male flight activity was 4.1 min earlier in one reproductively isolated incipient *Anopheles gambiae* mosquito complex form than the other form. ...

### 3: Host Finding Behavior:

The mechanisms by which mosquitoes locate their blood hosts are difficult to observe and analyze under natural conditions, given the small size of these insects, the crepuscular/nocturnal activity rhythms of most medically important species, and the distances of less than ten to hundreds of meters travelled to obtain a blood meal. Aspects of these mechanisms can be characterized from observations of the responses of mosquitoes in the laboratory and field to host cues at each stage in the process of host location ( [. Ring T Cardé, Gabriella Gibson](#)

[Olfaction in vector-host interactions](#)). (2010, 115-142, 2010).

[1:22 PM, 1/3/2021] Umar: total, 1,136 adults female anopheline mosquitoes were collected during the study period. All anopheline mosquitoes collected belong to three species. *Anopheles gambiae sensu lato* Giles was the most predominant (69.7%) followed by *Anopheles constant salt* Laveran (22.7%) and *Anopheles phronesis* Theobald (7.6%). There was significant variation in mean mosquito density among *An. gambiae* sale, *An. constant* sale, and *An. phronesis*. Parity rate of *An. gambiae* sale before spray operation was significantly higher than after spray operation. The highest peak biting activity of *An. gambiae* sale was between 1800 and 2100 hours. The longevity of *An. gambiae* sale ranged from 3.4 to 12.5 d.

[1:22 PM, 1/3/2021] Umer: Behailu Taye, Kidane Lelisa, Daniel Emana, Abebe Asale, Delenasaw Yewhalaw)

[Journal of Insect Science 16 \(1\), 2016.](#)

## 4: Oviposition Behavior:

Oviposition by African malaria vector mosquitoes: II. Effects of site tone, water type and conspecific immatures on target selection by freshwater *Anopheles gambiae* Giles ...

AWR McCrae

(*Annals of Tropical Medicine & Parasitology* 78 (3), 307-318,)

Females of *Anopheles gambiae* s. lat., most of which would have been *A. gambiae* s. str., were collected from houses in coastal Kenya and tested for their oviposition preferences using Petri dishes in large laboratory cages with lighting equivalent to weak moonlight. Significantly more eggs were laid overnight in water over black than over paler tones, and this difference increased as contrast with the surrounding floor was increased. Direct observation revealed that over white targets, females oviposited from a settled posture, whereas over black targets they did so from flight. The influence on this behavior of target darkness (tone) overrode that of cage size or target size. In tests which yielded markedly fewer eggs in sea water than in tap water, no significant difference was detected when cage floors were either black or white, although a black floor might have resulted in significantly greater discrimination against sea water had more tests been conducted.

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