ABSTRACT. The malarial parasite, *Plasmodium vivax*, was detected in 4 species of *Anopheles* (Hyrcanus Group) mosquitoes, namely *An. kleini*, *An. pullus*, *An. belenrae*, and *An. sinensis*, from Gyeonggi Province, Republic of Korea (ROK). This study confirmed that *An. belenrae* was infected by *P. vivax*, and implicated this species as a potential vector of *vivax* malaria in the ROK.

KEY WORDS *Anopheles belenrae*, *Plasmodium vivax*, Culicidae, Hyrcanus Group, Korea
Anopheles Belenrae, A Potential Vector of Plasmodium Vivax in the Republic of Korea

The malarial parasite, Plasmodium vivax, was detected in 4 species of Anopheles (Hyrcanus Group) mosquitoes, namely An. kleini, An. pullus, An. belenrae, and An. sinensis, from Gyeonggi Province, Republic of Korea (ROK). This study confirmed that An. belenrae was infected by P. vivax, and implicated this species as a potential vector of vivax malaria in the ROK.
To incriminate a malaria vector in nature, it is necessary to demonstrate: 1) an association between the vector and human malaria cases; 2) evidence that the vector harbors sporozoites in the salivary glands (Beier, 2002). In addition, Chang et al. (unpublished data) noted that two specimens of An. belenrae collected from Paju on May 27, 2009 and Goseong County, ROK on June 22, 2009 were tested positive by PCR for P. vivax.

Other Anopheles species that were also found positive for P. vivax from our collections in Gyeonggi Province, ROK, were An. kleini, An. pullus, and An. sinensis. Six infected females of An. kleini (6/199) were collected from the following sites: Warrior Base (37.92444°N, 126.73944°E), n = 1 infected female (F) (1/7), August 8, 2008, collection/serial no. 8.3923; Tongilehon, Paju (37.90517°N, 126.738411°E), n = 1 F (1/71), July 2, 2008, collection/serial nos. 8.0627, 8.0458; n = 2 F (2/119), July 29, 2009, collection/serial nos. 8.2817, 8.2821; and ROK Army Base (37.918832°N, 126.738411°E), n = 2 F (2/2), June 13 and July 14, 2008, collection/serial nos. 8.2294, 8.2476. Three infected females of An. pullus (3/42) were collected from Tongilhon, Paju, n = 3 F, July 2, 2008, collection/serial no. 8.0470, 8.0494, 0508. Fifteen infected females of An. sinensis (15/273), were found in Tongilhon, Paju: n = 5 F (5/63), July 2, 2008, collection/serial nos. 8.0610, 8.0628, 8.0520, 8.0548, 8.0597; n = 1 F (1/60), July 11, 2008, collection/serial no. 8.0966; n = 3 F (3/37), July 23, 2008, collection/serial nos. 8.0206, 8.0221, 8.0238; n = 5 F (5/107), July 29, 2009; collection/serial nos. 8.2714, 8.2756, 8.2785, 8.2826, 8.2832; and ROK Army Base, n = 1 F (1/6), June 13, 2008, collection/serial no. 8.2476.

Furthermore, we are continuing the molecular analysis of several thousand Anopheles females from different locations in the ROK, particularly to identify the mosquito species and their associated Plasmodium parasites.

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