CHAPTER 5

Conclusion

The major findings of this research are consisted of three points, i.e., (1) this study is the first to apply the mitochondrial cytochrome *c* oxidase subunit I (COI) gene-based DNA barcoding for identifying successfully the eight species belonging to the Hyrcanus Group; (2) this study is the first to demonstrate the success in establishing a stenogamous colony of *An. peditaeniatus* in Thailand, in which high insemination rate and sperm density were obtained in all generations, and (3) the results of the present study demonstrate that male wing, female maxillary palpomere, characters of the large sensilla coeloconica and gonostylus size might influence the mating success of the stenogamous *An. peditaeniatus*. This study is the first to demonstrate the variation in the number of large sensilla coeloconica on the antennal flagellum of females of eight species of the Hyrcanus Group using light microscopy. Furthermore, the lower frequency of clasper movement and shorter mating time could be important mechanisms that control the stenogamous behavior of this species. The structure of the male genitalia of this species influences the success of copulation in a small cage. Therefore, this study contributes knowledge of mosquito biology that may enhance colonization of other anophelines and points to avenues for any future research aspects in Thailand and/or other countries.