

CHAPTER 5

Conclusion

This study reported the metaphase karyotypes of *An. nigerrimus* and *An. nitidus*. Four karyotypic forms of *An. nigerrimus* were found in 5 provinces of Thailand and Cambodia including, Form A (X₁, X₂, X₃, Y₁), B (X₂, X₃, Y₂), C (X₁, Y₃) and D (X₃, Y₄), of which Form C and D were new metaphase karyotypes discovered in this study. Regarding *An. nitidus*, 5 karyotypic forms were found in 2 provinces of Thailand including, Form A (X₁, Y₁), B (X₁, Y₂), C (X₂, Y₃), D (X₁, X₃, Y₄) and E (X₁, X₂, X₃, Y₅). Herein, all different karyotypic forms of both species showed genetic compatibility as well as low intraspecific sequence variations of the nucleotide sequences in ribosomal DNA (ITS2) and mitochondrial DNA (COI and COII), thus suggesting a conspecific cytological race within each species. Therefore, this is the first report to clarify the species status of karyotypic variants of *An. nigerrimus* and *An. nitidus*, based on multidisciplinary approaches (cytogenetic investigations, cross-mating experiments and molecular analyses), and indicate that the 4 and 5 forms are of the same species within *An. nigerrimus* and *An. nitidus*, respectively.

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