

CHAPTER V

CONCLUSION

A total of 96 iso-female lines (isolines) of *Anopheles aconitus* were successfully identified to karyotypic forms. Only two forms, Form B (52 isolines) and C (44 isolines), were obtained in this study.

The comparative morphological study of 4th instar larvae, pupae and adult females revealed no morphological difference between *An. aconitus* Form B and C.

Biometric egg comparison of *An. aconitus* Form B and C under scanning electron microscopy (SEM) demonstrated intraspecific variations of float width and number of posterior tubercles on the deck without relating to the forms, while the surface topography was morphologically similar.

The investigation to search for paracentric inversion on ovarian nurse cell polytene chromosomes of all *An. aconitus* Form B and C strains by comparing to the standard chromosome mapping (*An. aconitus* Form B, Chiang Mai strain), indicated the lack of major chromosomal rearrangements.

Nineteen enzyme-electromorph loci were performed for allelic frequencies of 4th instar larvae and adult females of *An. aconitus* Form B and C. The results demonstrated that these two forms had similar allelic frequencies, suggesting no pre-mating barrier between the two forms.

Crossing experiments among 4 isolines of *An. aconitus* Form B and C exhibited strongly genetic compatibility with healthy and fertile hybrids through a number of generations, indicating no post-mating barrier between the two forms.

Comparative sequence analyses of ribosomal DNA (rDNA: ITS2) and mitochondrial DNA (mtDNA: COI, COII) of 6 isolines in each *An. aconitus* Form, B and C, revealed very low intraspecific molecular variation between the two forms, illustrating conspecific cytological relationships.

Laboratory experiments to determine the susceptibilities of reared colonies of *An. aconitus* Form B and C to *Plasmodium falciparum* and *P. vivax* indicated that these two forms provided similar oocyst and sporozoite rates to the ingroup-controlled primary vector, *An. minimus* A.