7. CONCLUSIONS

1. Morphology identification:

-Using the third maxilliped character clearly and rapidly separated the male *P. merguiensis* and *P. silasi*.

-Using the morphometric character (L_1: $L_{1,2}$) could not be clearly isolate *P. merguiensis* from other closed species.

-The identification, based solely on morphology, which is cost-effective and rapidly, but it can be misleading because of deep morphological differentiation (slow rate of morphological divergence).

2. Isozyme pattern:

-MDH isozyme pattern is not clear to separate *P. merguiensis* and *P. silasi* because of the recent diverged of white prawn species.

-Isozyme studies reveal discordant patterns between morphological data and genetic divergence such as the morphological distinct taxa sometimes show little or no genetic divergence.

3. DNA markers:

-12S rRNA, 16S rRNA and COI (558 bp) sequenced analysis could be separated *P. merguiensis, P. silasi, P. indicus.*

- By 558 bp of COI sequences, there are two cluster in *P. merguiensis* isolated from the Gulf of Thailand and Andaman sea.

4. PCR-RFLP of COI:

-Using PCR-RFLP technique of primer mtD-8 and mtD12, PCR product was cut by *Rsa*I could be separated *P. merguiensis*, *P. silasi*, *P. indicus*, *P. monodon* and *P. semisulcatus.*

-Using PCR-RFLP technique of primer mtD-4 and mtD-9, PCR product cut by *Mbo*I and *Bgl*II could be separated *P. merguiensis* from the both coasts of Thailand.

Further study

This study could clearly identify the closely related species of white prawn in Thailand by combining morphology, allozyme and mitochondrial DNA method. Mitochondrial DNA method could be elucidated the ambiguous specimens from morphological and allozyme method.

P. indicus was not found in this study while *P. silasi* was only found at Nakhon si thummarat province. It should be studied further about the distribution of these two species and *P. silasi* is limit distribution species or not. Is it possible that there is no *P. indicus* in Thailand.

There are two clusters of *P. merguiensis* in Thailand. The nuclear DNA marker is further required to answer that they are the cryptic species or a species which a strong phylogeographic.