

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS



Conclusions

The study on biology of copepod, *Acrocalanus gibber* Giesbrecht 1888, at the PMBC pier, Phuket Island, in the Andaman Sea, lead to the following results :

1. Relationship between body length (prosome length) in micrometers and weight in microgram carbon of *A. gibber* copepodid and adult stages, size range between 535.7 and 789.6 micrometers, could be expressed as the equation :

$$W = (1.188 \times 10^{-9}) L^{(3.359)}, r^2 = 0.89$$

2. Weight of eggs obtained from females incubation in the laboratory was averaged as 0.089 microgram carbon for average egg diameter of 89 micrometers.

3. Egg production rate of *A. gibber* ranged from 6.3 to 52.0 eggs per female per day dependent on food availability, both primary production and the two fractions of chlorophyll concentration.

4. Abundance of *A. gibber* at the PMBC pier during the study period ranged from 18 to 227 individuals per cubic meter with peaks in October (wet season), February and May (dry season).

5. Secondary production of *A. gibber* ranged between 4.62 and 187.54 microgram carbon per cubic meter of water per day with two distinct peaks in February and May. The production is significantly correlated to pelagic primary production and chlorophyll concentration of the >8 micrometers fraction.

6. Ingestion rate of *A. gibber*, adult females, increased almost linearly with food concentration, ranged from 1.98 to 13.08 microgram carbon per female per day at the algal concentration of 50 and 1500 microgram carbon per liter of water, respectively.

7. Within the zooplankton community, *A. gibber* was a fraction of 3.5 per cent of the copepods or 2 per cent of the total zooplankton population.

8. *A. gibber*, together with other copepods and zooplankton were consumed by 36.1 per cent of fish species observed in the same area. Only *A. gibber* itself was consumed by 5 species or 13.9 percent of total fish species which most of the them are common planktivorous fishes found in the coral reef area.

Recommendations

1. Stomach index of fishes around the study area would be an interesting topic to be done for more knowledge in specific predator-prey relationship between zooplankton and planktivorous fishes.

2. Since it was concluded from this study that both egg and secondary productions of *A. gibber* were limited by food availability, this could be applied for the further work on copepod cultivation. It is interesting to be carry on for effective copepod cultivation technique to be used as food stock for fish larvae both in laboratory and in application for mass culture.

3. Food size spectra of various stages of copepods is one of the experiment works that would give useful information in explaining the relationship between different size fractions of chlorophyll concentration and copepods production.

4. Study of other copepods and zooplankton in the same aspects as *A. gibber* in this study is important to understand the secondary production and particularly to understand the linkage between trophic level.