

**SPECIES COMPOSITION OF COPEPOD IN BERAU  
WATERS, EAST KALIMANTAN, INDONESIA**

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# INTRODUCTION

- Copepod :  
microcrustacea holoplanktonic  
Humes (1994) : 11.500 species ; 200 famili &  
1650 genus
- Copepod in Indonesia  
Expeditions: Challenger (1872-1876), Siboga  
(1899-1900), and Snellius I (1929-1930)
- Estuarine waters : Berau, East Kalimantan

# WHY BERAU???

- 1) Berau is the second big river after Mahakam in East Kalimantan that supplies a huge fresh water including sedimentation and pollution that could change the quality of coastal environment**
- 2) the Berau estuarine is surrounded by mangrove forest that could supplied big amount of nutrient to the coastal environment**
- 3) there is not any plankton study was done before in Berau estuarine that could be used as base line input for coastal zone management of this area.**

# GOALS

- To study the species composition of copepod including abundance
- Preparing the illustration and description of collected species of copepod in accurate way

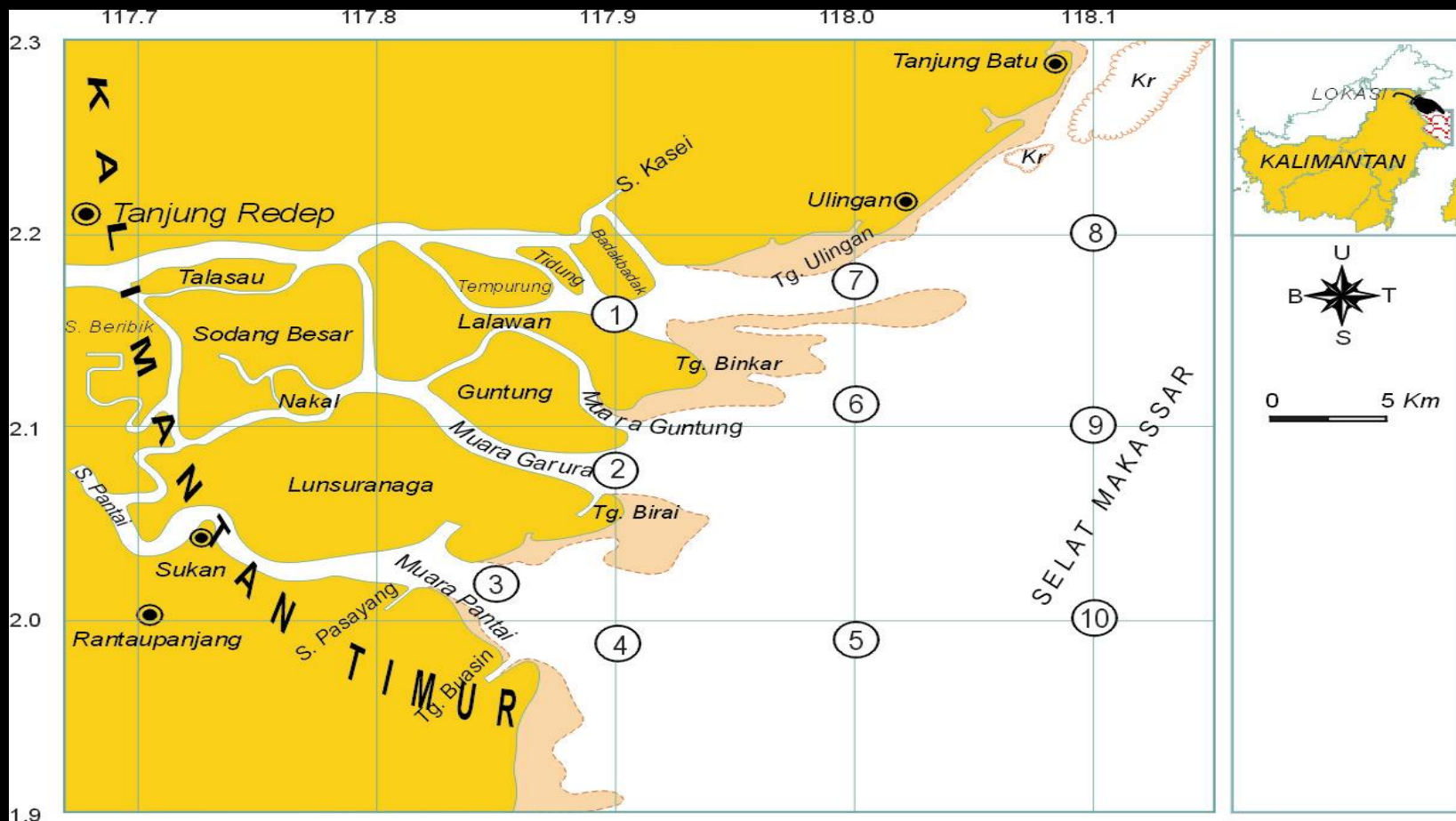


Figure 1. Sampling stations in Berau Waters, East Kalimantan

# Method

- **Temperature, Salinity and Current**

Temperature and Salinity ; CTD

Current ; Direct Reading Currentmeter RCM-2

- **Copepod** ; conical plankton net, 300  $\mu\text{m}$ , diameter of 0,45 m and length of 180 cm
- **flow meter** mounted at the mouth of the net

# SAMPLING PROCESS



# Data processing in laboratory



# TEMPERATURE

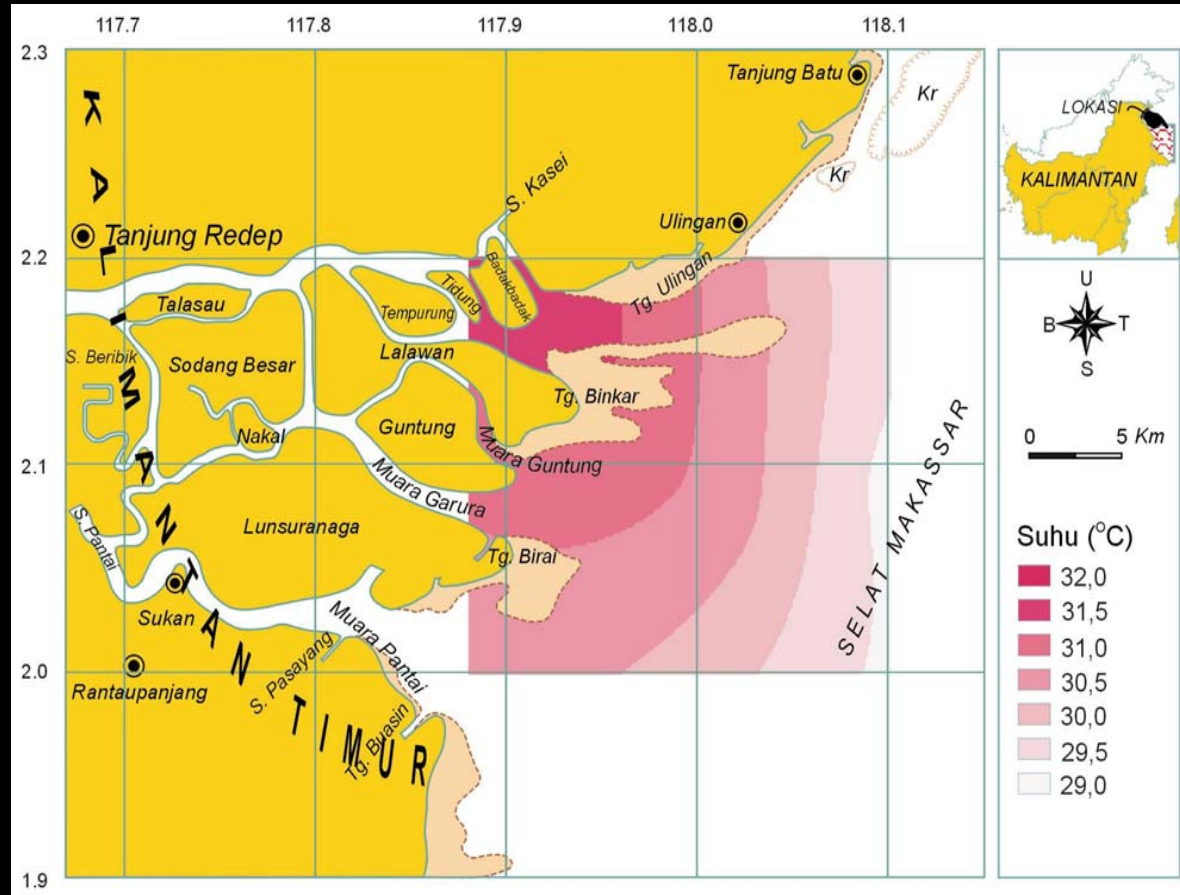


Figure 2. Horizontal distribution of temperature in Berau waters  
September 2005

# Salinity

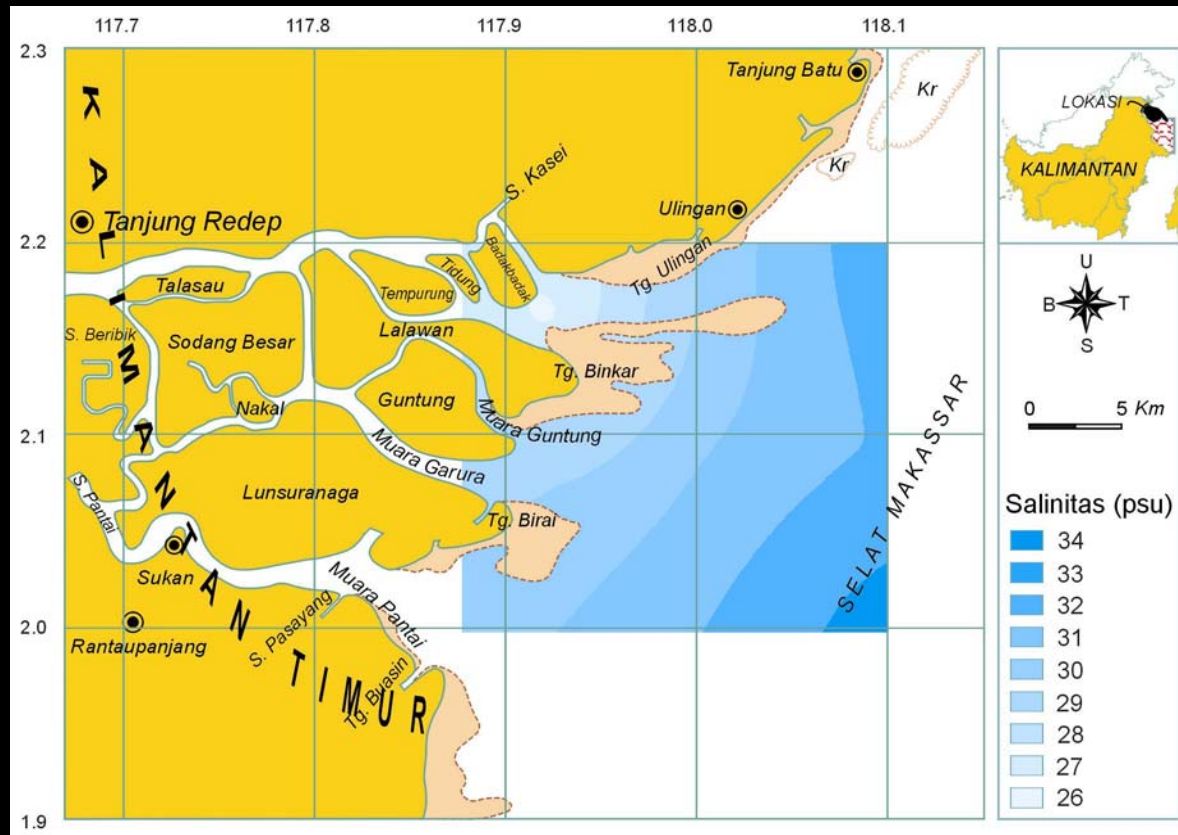


Figure 3. Horizontal distribution of salinity in Berau waters  
September 2005

# Current

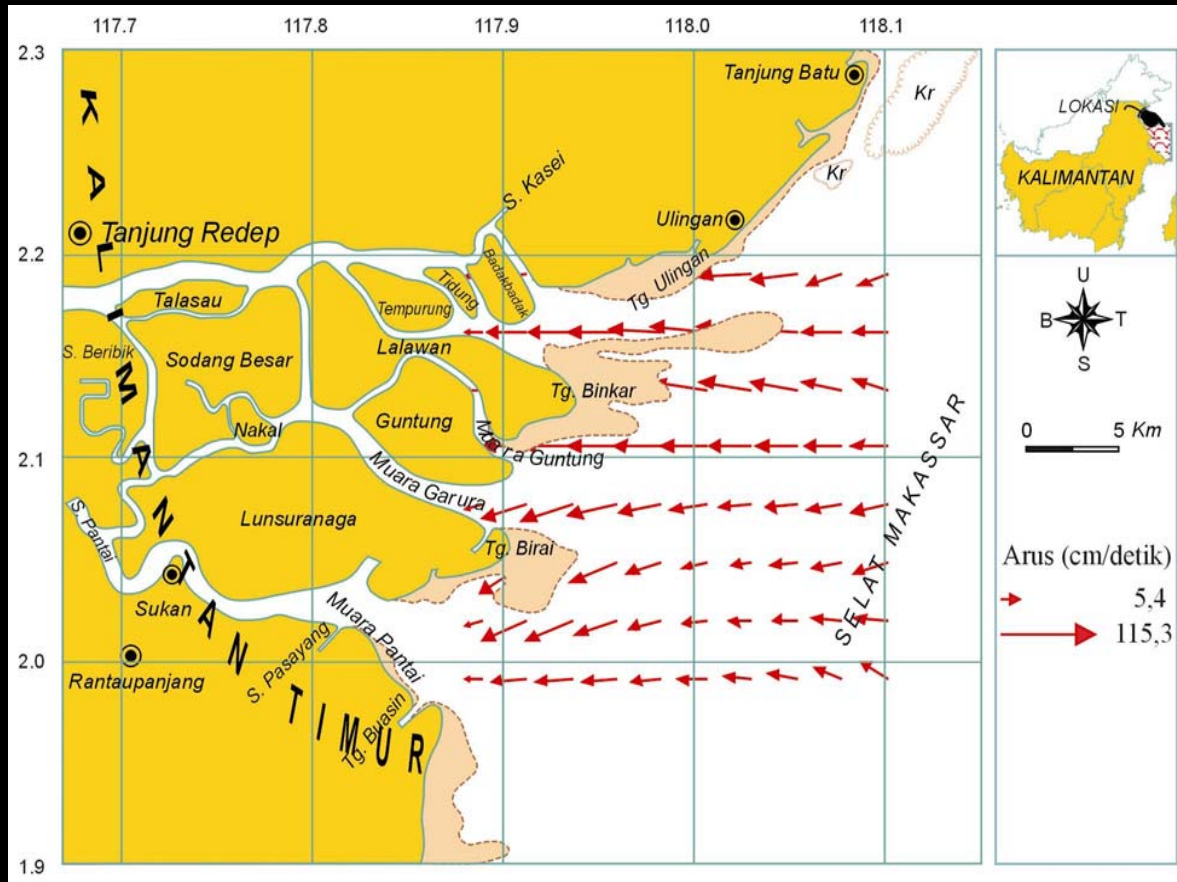


Fig 4. Current pattern during high tide in Berau Water  
September 2005

Table 1. Copepod in Berau Waters

Ordo	Family	Genus	Species	HABITAT					
				P	I	O	E	N	
Calanoid	Calanidae	<i>Canthocalanus</i>	1. <i>pauver</i>	●	●	●	-	●	
			Eucalanidae	<i>Subeucalanus</i>	2. <i>subcrassus</i>	●	●	●	-
	3. <i>crassus</i>	●			●	●	-	-	
	Centropagidae	<i>Centropages</i>			4. <i>brevifurcus</i>	-	-	-	●
			5. <i>furcatus</i>	●	●	●	-	-	
			6. <i>dorsispinatus</i> (nr)	-	-	-	●	●	
	Temoridae	<i>Temora</i>	7. <i>orsini</i>	●	●	-	-	●	
			8. <i>discaudata</i>	●	-	-	●	●	
			9. <i>turbinata</i>	●	●	-	-	●	
	Acartiidae	<i>Acartia</i>	10. <i>pasifica</i>	●	●	-	●	●	
			11. <i>erythraea</i>	●	●	-	●	●	
			12. <i>bispinosa</i>	●	●	●	-	●	
			Pseudodiaptomidae	<i>Pseudodiaptomus</i>	13. <i>incisus</i>	-	-	-	●
	Tortaniidae	<i>Tortanus</i>			14. <i>forcipatus</i>	●	●	-	-
			Paracalanidae	<i>Acrocalanus</i>	15. <i>gibber</i>	●	●	-	-
	<i>Parvocalanus</i>	16. <i>crassirotris</i>			●	●	-	-	●
	<i>Paracalanus</i>	17. <i>aculeatus</i>			●	●	●	-	●
	<i>Bestiolina</i>	18. <i>similis</i>			●	●	-	-	●
	Pontellidae	<i>Labidocera</i>	19. <i>acuta</i>	●	●	-	-	●	
			20. <i>bengalensis</i>	●	●	-	-	●	
			21. <i>javaensis</i>	-	-	-	-	●	
			22. <i>minuta</i>	●	●	●	-	●	
			<i>Pontellopsis</i>	23. <i>macronyx</i>	●	●	-	-	●
				24. <i>herdmani</i>	-	●	-	-	●
				Candaciidae	<i>Calanopia</i>	25. <i>australica</i>	●	●	-
	<i>Candacia</i>	26. <i>discaudata</i>	●			●	-	-	●
	Phaennidae	<i>Phaenna</i>	27. <i>spinifera</i>	●	●	●	-	-	

Tabel 2. continue

Cyclopoida	Oithonidae	<i>Oithona</i>	28. <i>brevicornis</i>	●	●	●	-	●
			29. <i>oculata</i>	●	●	●	-	●
			30. <i>simplex</i>	●	●	●	-	●
	Sapphirinidae	<i>Copilia</i>	31. <i>mirabilis</i>	●	●	-	-	●
		<i>Sapphirina</i>	32. <i>gastrica</i>	●	●	-	-	●
	Oncaeidae	<i>Oncaea</i>	33. <i>conifera</i>	●	●	-	-	●
			34. <i>media</i>	●	●	-	-	●
		35. <i>sp. (ns)</i>	-	-	●	-	-	
Harpacticoida	Lichomolgidae	<i>Euterpina</i>	36. <i>acutifrons</i>	●	●	-	●	-
	Ectinosomatidae	<i>Microsetella</i>	37. <i>rosea</i>	●	●	●	-	●
Poecilostomatoida	Tachidiidae	<i>Kelleria</i>	38. <i>australiensis</i>	●	●	-	●	●
			39. <i>sp. (ns)</i>	-	-	-	●	-
	Corycaeidae	<i>Corycaeus</i>	40. <i>asiaticus</i>	●	●	●	-	-
			41. <i>catus</i>	●	●	●	-	-
			42. <i>crassiusculus</i>	●	●	●	-	-
		43. <i>lubbocki</i>	●	●	●	-	-	
Siphonostomatoida	Caligidae	<i>Caligus</i>	44. <i>sp.</i>	-	-	-	-	-

Ket. P=Pacific; I=Indian; O=Oceanic; E=Estuarine; N=Neritic; nr = new record; ns = new species

### The composition of Copepod species in Berau Water

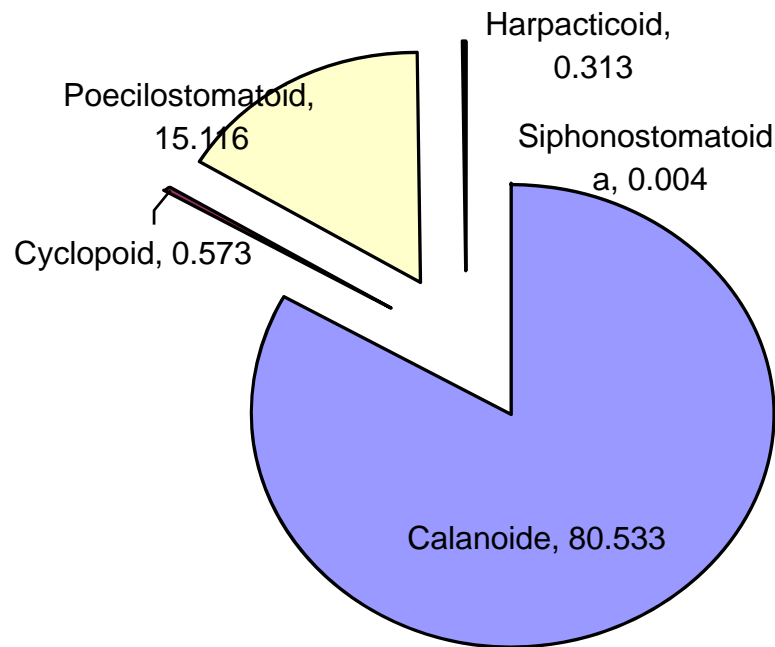


Fig 5. Species Composition of Copepod in Berau Waters,

Abundance of Copepod in Berau Water

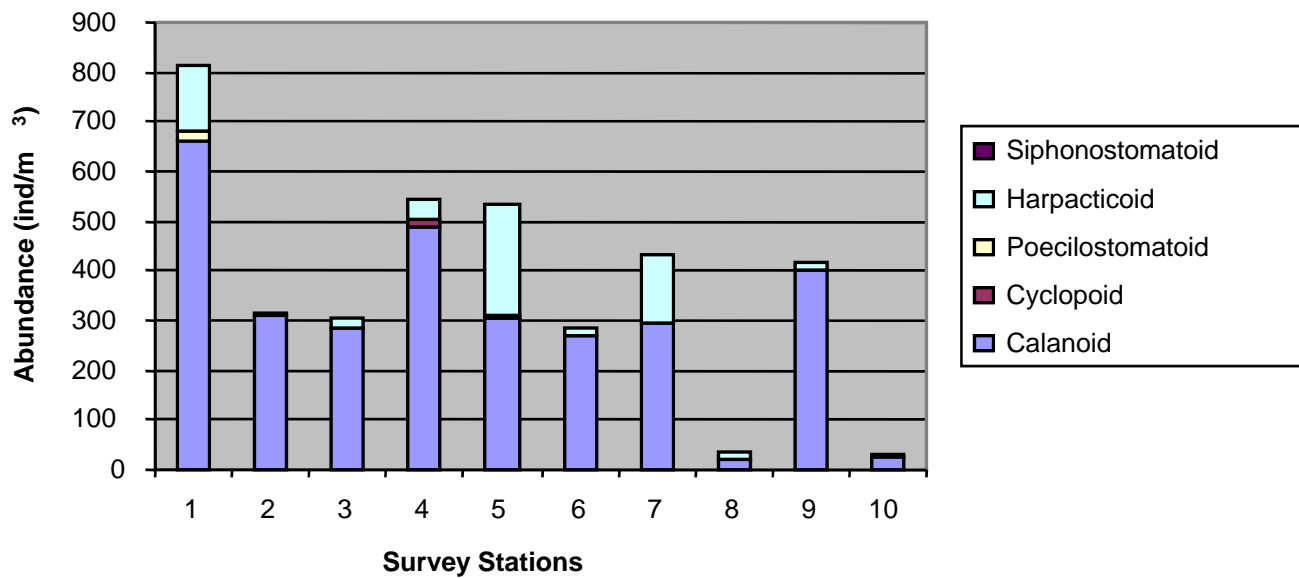


Fig 6. Abundance of Copepod in Berau Waters,

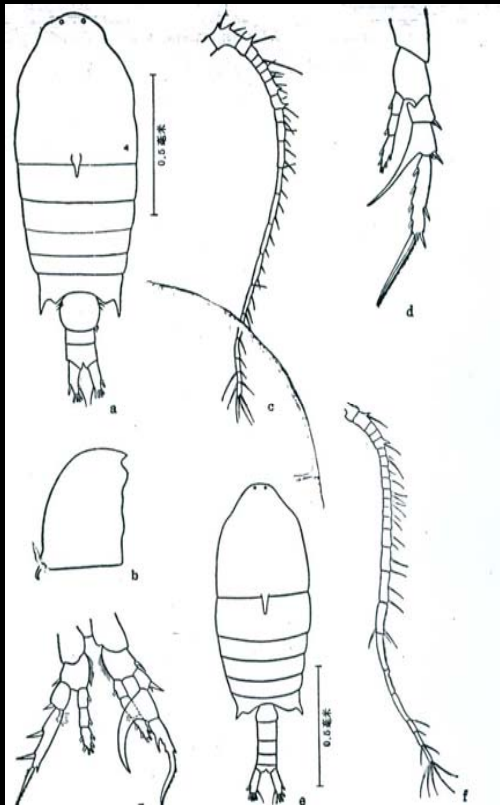


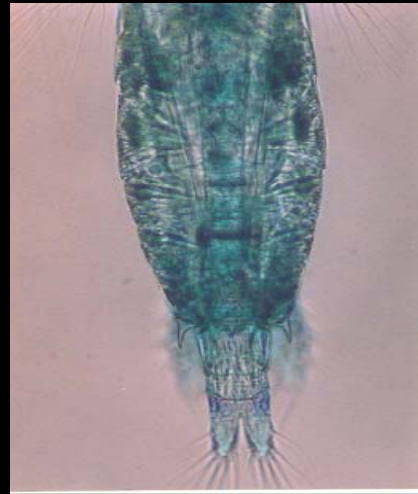
Fig 7. (a) *Centropages dorsispinatus* (Kim, 1985)  
(b) *Centropages dorsispinatus* in Berau waters, East Kalimantan

# CONCLUSION

- The composition of Copepod species juring the sueves consist of:  
ordo Calanoid (27 species),  
Cyclopoid (8 species),  
Poecilostomatoid (6 species),  
Harpacticoid (2 species), and  
Siphonostomatoid (1 species)
- 1 *new record species* is *Centropages dorsispinatus*
- The dominance of Copepod in general showed a trend that decreased from the estuarine to the open sea.
- Calanoid had the higher dominance
- The conditions of temperature, salinity and current pattern were suitable for the grow of Copepod and even the other marine animals.



*Acartia bispinosa*



*Acartia pacifica*



*Acrocalanus gibber*

Several photos of Copepod species in Berau, East Kalimantan



*Corycaeus asiaticus*



*Tortanus forcipatus*



*Acartia erythraea*

Several photos of Copepod species in Berau, East Kalimantan



*Centropages orsini*



*Temora turbinata*

Several photos of Copepod species in Berau, East Kalimantan



*Thank you*