



TRAINING COURSE ON FISH LARVAE: PHASE I RESULT OF SPECIES IDENTIFICATION AND MORPHOLOGICAL DESCRIPTION OF EXAMINED LARVAE AND JUVENILE

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16 – 26 November 2022
Samut Prakan, Thailand





FAMILY SCOMBRIDAE

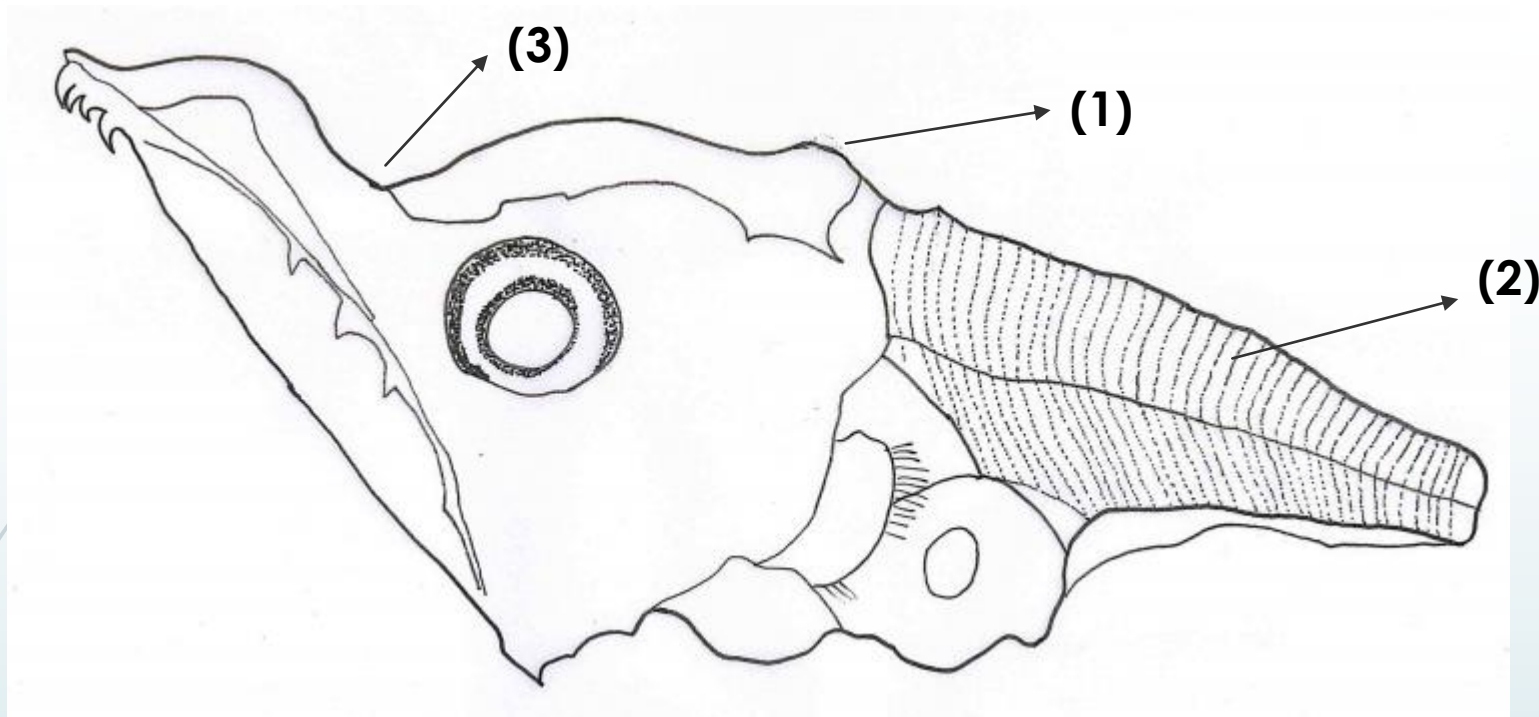
Gymnosarda unicolor

NL/SL	:	3.5 mm
HL	:	1.53 mm
BD	:	2.85 mm
ED	:	0.46 mm
PaL	:	2.82 mm



Body shape	:	Moderate (80%)
Head	:	Large deep (43%)
Gut	:	Coiled compact PaL 75% of body
Snout	:	Long and pointed
Mouth	:	Large, oblique
Eye	:	Large and round
Spination	:	Preoperculum spine developed
Pigmentation	:	Poor

Meristic Characters			Reference
D	:	-	1 st 13-15, 2 nd 12-14
A	:	-	12 - 13
P1	:	-	25 - 28
P2	:	-	
C	:	-	
M/V	:	39	38 - 42

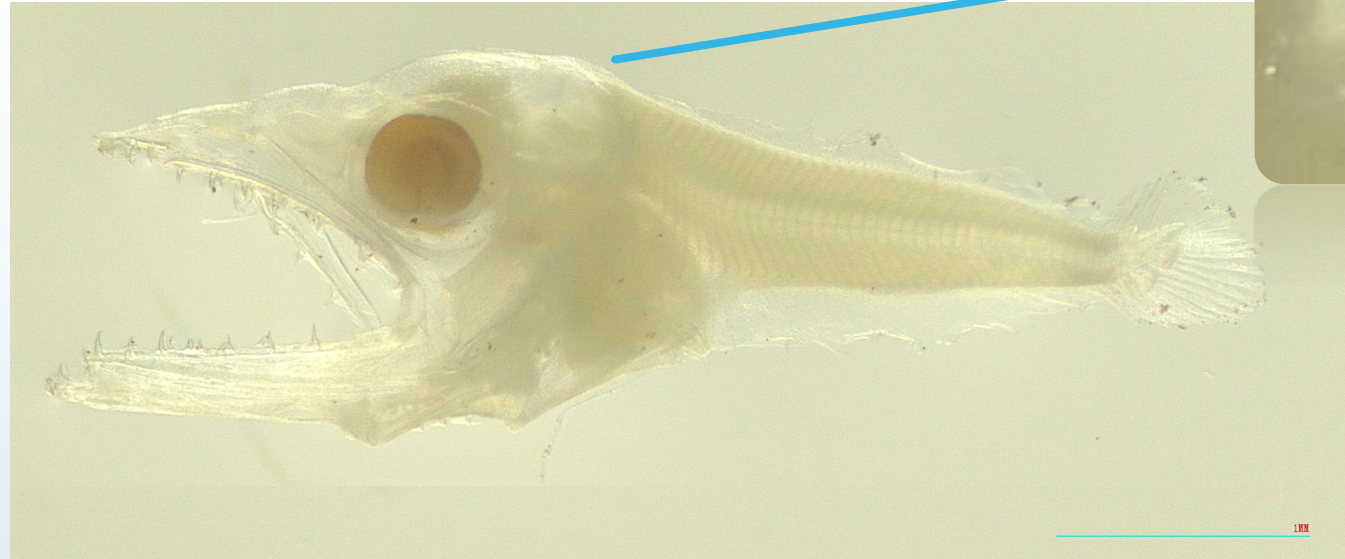


Remarks:

- This specimen show several characteristic typical for scombrids family by **large head and eyes**, and head spination. The myomere number of this family more than 31, different with some families Nemipterids, Sparids, Terapontidae, and Ambassidae, which have lower number of myomere. This specimen is not Pingupedids because the head spination is not well developed.
- During the identification, the specimen characteristic resemble *Scomberomorus commerson* and *Gymnosarda unicolor*. But in several characteristic it closest to *Gymnosarda*, i.e. absent supraoccipital spine **(1)**, relatively small preoperculum, and the myomers was less than 42 **(2)** (*Scomberomorus commerson* myomer from 42-52). In addition, the curved head shape on the forebrain similar to 3.4 mm NL *Gymnosarda unicolor* illustration provided by Okiyama and Ueyanagi (1977) **(3)**

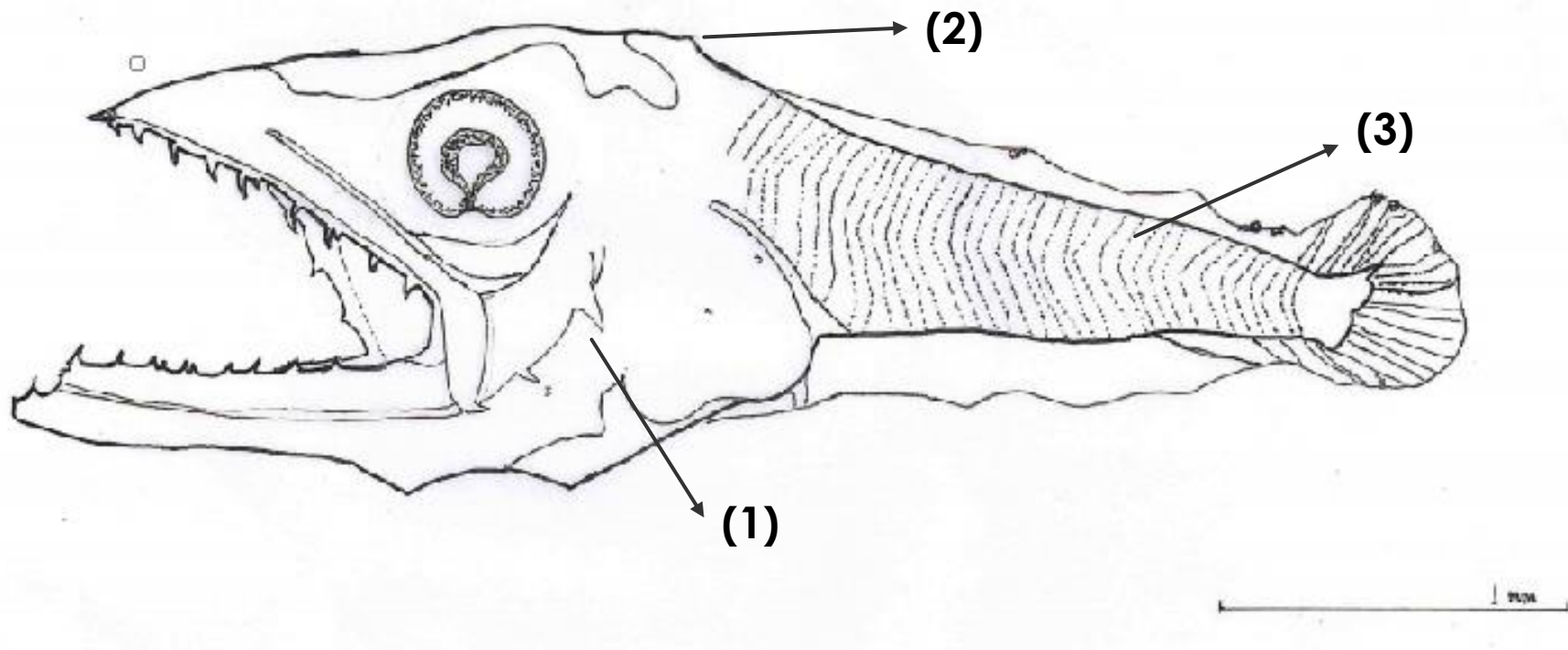
Scomberomorus commerson

NL/SL	:	5.1 mm
HL	:	2.33 mm
BD	:	1.48 mm
ED	:	0.57 mm
PaL	:	2.85 mm
SnL	:	1.31 mm
PdL	:	2.58 mm



Body shape	:	Moderate, BD 29% of BL
Head	:	Large, 45% of BL
Gut	:	Coiled not compact, PaL > 1/2 BL
Snout	:	Pointed and elongated
Mouth	:	Oblique and large
Eye	:	Large and round
Spination	:	Developed
Pigmentation	:	Poor

Meristic Characters			Reference
D	:	-	1 st 13-22, 2 nd 15-25
A	:	-	16-29
P1	:	-	20-26
P2	:	-	
C	:	-	
M/V	:	46	41 – 56



Remarks:

- This specimen show several characteristic typical for scombrids family by large head and eyes, and head supination. The myomere number more than 31, different with some families Nemipterids, Sparids, terapontidae, and Ambassidae, which have lower number of myomere. This specimen is not Pingupedids because the head spination is not well developed.
- Preopercular spine present **(1)**
- Supraoccipital spine present **(2)**
- The different with *Sarda* sp. observed from the vertebrae, 44-45 for *Sarda* and 42-46 for *S. commerson* **(3)**



FAMILY CARANGIDAE

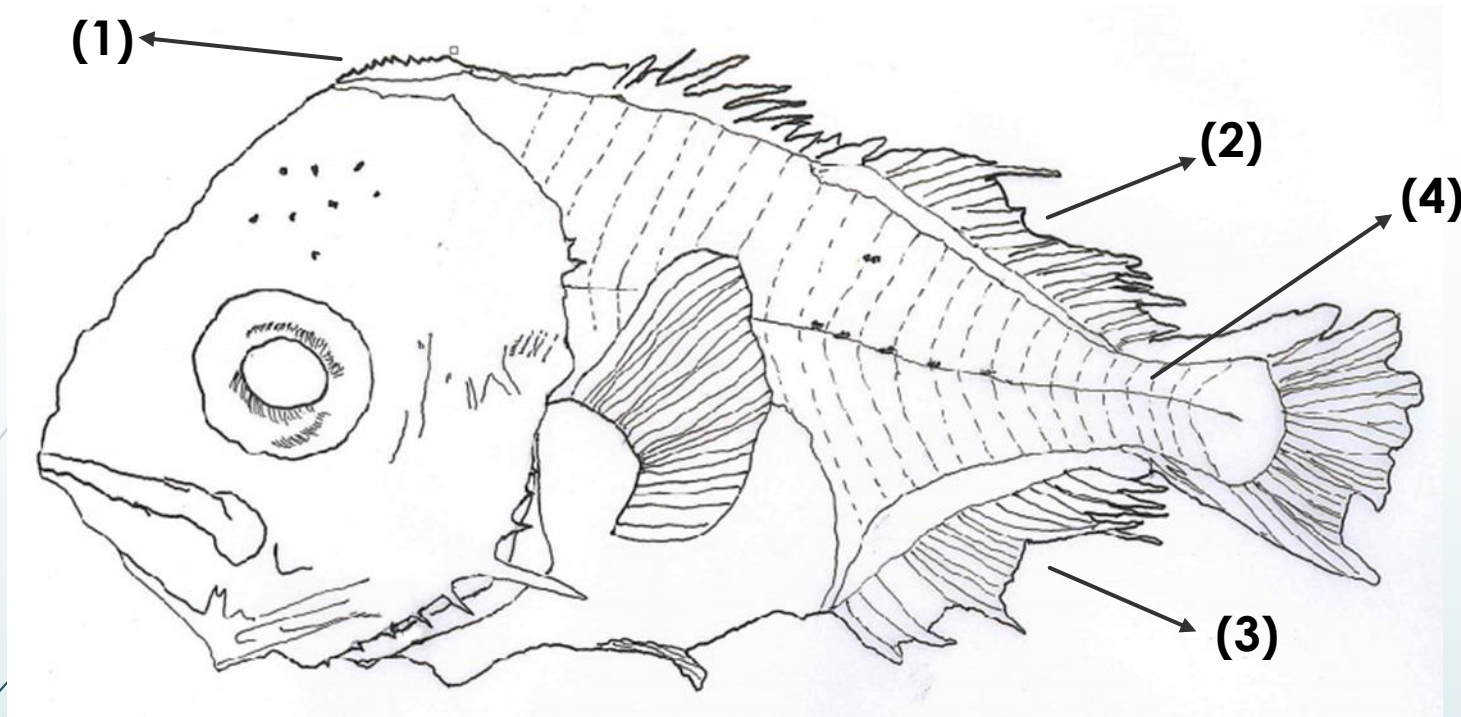
Carangoides chrysophrys

NL/SL	:	5,14 mm
HL	:	2,15 mm
BD	:	2,41 mm
ED	:	0,71 mm
PaL	:	3,08 mm
SnL	:	0,63 mm
PdL	:	2,25 mm



Body shape	:	Deep (BD 46% BL)
Head	:	Large, deep (HL 42% BL)
Gut	:	Coiled not compact
Snout	:	Moderate
Mouth	:	Large, terminal
Eye	:	Large and round
Spination	:	Well developed
Pigmentation	:	Poor, Pigment spots small on the body and midhead

Meristic Characters			Reference
D	:	VIII-1,19	VIII-1,18-20
A	:	II-I, 14	II-I, 14-17
P1	:	-	
P2	:	-	
C	:	-	
M/V	:	24	10 + 14



Remarks

- The main characters of Carangidae observed from the specimen are the present of SOC (not Lactaridae and Nomeidae), relatively long PAL (not Apogonidae), smaller gut than Chaetodontidae, the myomere less than 30 (not Citharidae).
- Supraoccipital crest **(1)** present and body shape deep as member of group 1
- The first dorsal fin soft ray is not elongate (not *Alectis* sp.), no pigmentation observed on the abdominal finfold (not *Caranx* sp.), preoperculum spine not very elongate (not *Gnathanodon* sp.), and the dorsal fin rays less than 40 (not *Parastromateus* sp.). Thus the closest identity for this specimen is *Carangoides* sp.
- Among 15 *Carangoides* species, the closest characteristic similar to this specimen is *C. chrysophyrus* because the dorsal fin rays is 19 (18-20) **(2)**, the anal fin rays is 14 (14-17) **(3)**, the scutes is not observable, and the vertebrae for most of *Carangoides* species is 24 **(4)**.



FAMILY ENGRAULIDAE

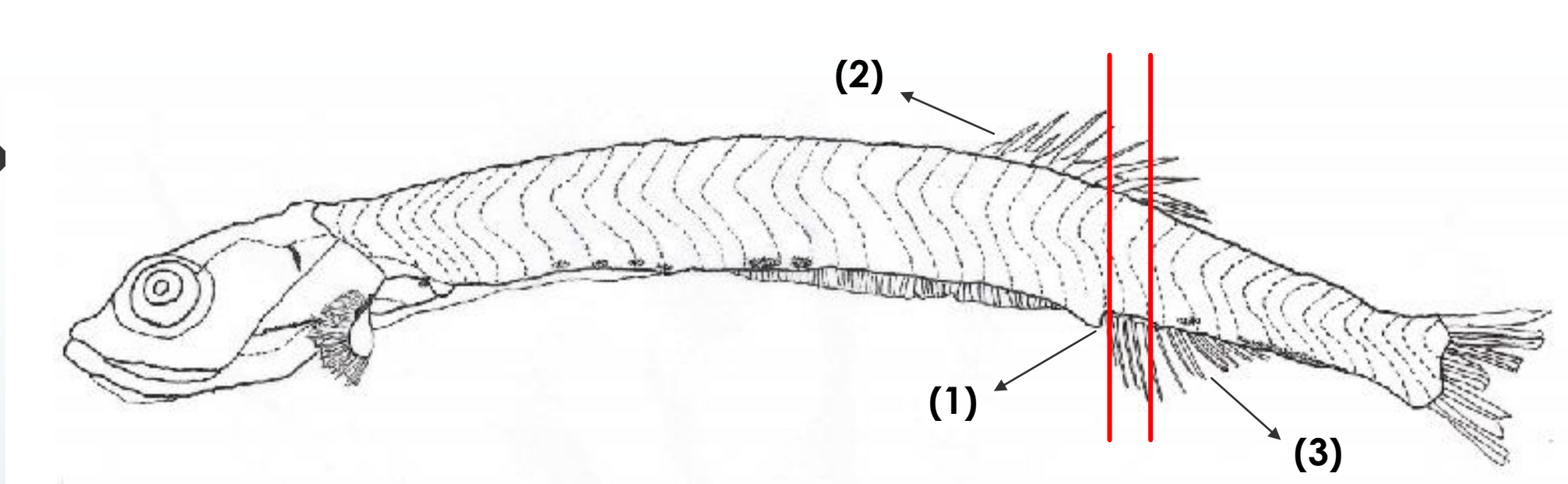
Enchrasicholina heteroloba

NL/SL	:	9,15 mm
HL	:	1,73 mm
BD	:	0,88 mm
ED	:	0,43 mm
PaL	:	6,82 mm
SnL	:	0,44 mm
PdL	:	6,04 mm



Body shape	:	Very elongate (BD 9% BL)
Head	:	Small (HL 18% BL)
Gut	:	Straight very long
Snout	:	Long and pointed
Mouth	:	Large and terminal
Eye	:	Large and round (ED 25% HL)
Spination	:	-
Pigmentation	:	Poor, small spots on the body

Meristic Characters			Reference
D	:	13	13 – 15
A	:	12	15 -19
P1	:	-	
P2	:	-	
C	:	-	
M/V	:	44	41 - 44



Remarks:

- The identification keys to the family are the elongate body shape and anus under or just posterior to dorsal fin.
- As a member of Engraulidae with the number of anal fin rays less than 30, this specimen has closest characteristic to *Stolephorus*, *Encrasicholina*, and *Engraulis*.
- The specimen is not *Engraulis* because the origin of anal fin just anterior to end of dorsal fin. The specimen also is not *Stolephorus* because of lower number of dorsal and anal rays. In *Stolephorus*, dorsal rays 14-18 and in anal rays 17-24, while for *Encrasicholina*, dorsal and anal rays, 12-16 and 14-21, respectively.
- The main characteristics in identifying this specimen as *E. heteroloba* was from the position origin of anal fin just anterior to end of dorsal fin **(1)**.
- The reference number of dorsal and anal rays for *E. heteroloba* is 13-15 and 15-19, respectively. The number of dorsal rays suitable with the reference (13 dorsal rays) **(2)**, but in this specimen the anal rays is 12 **(3)**, less than 15. This was due to in this specimen size (less than 10 mm) the rays is possibly not well-developed yet.

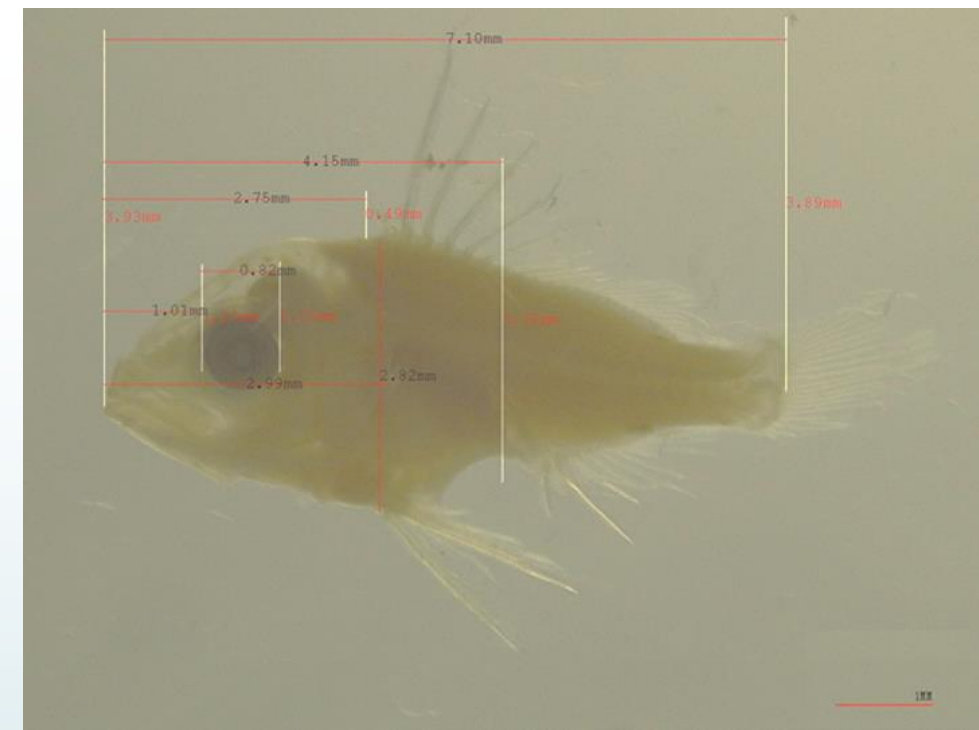


FAMILY LUTJANIDAE

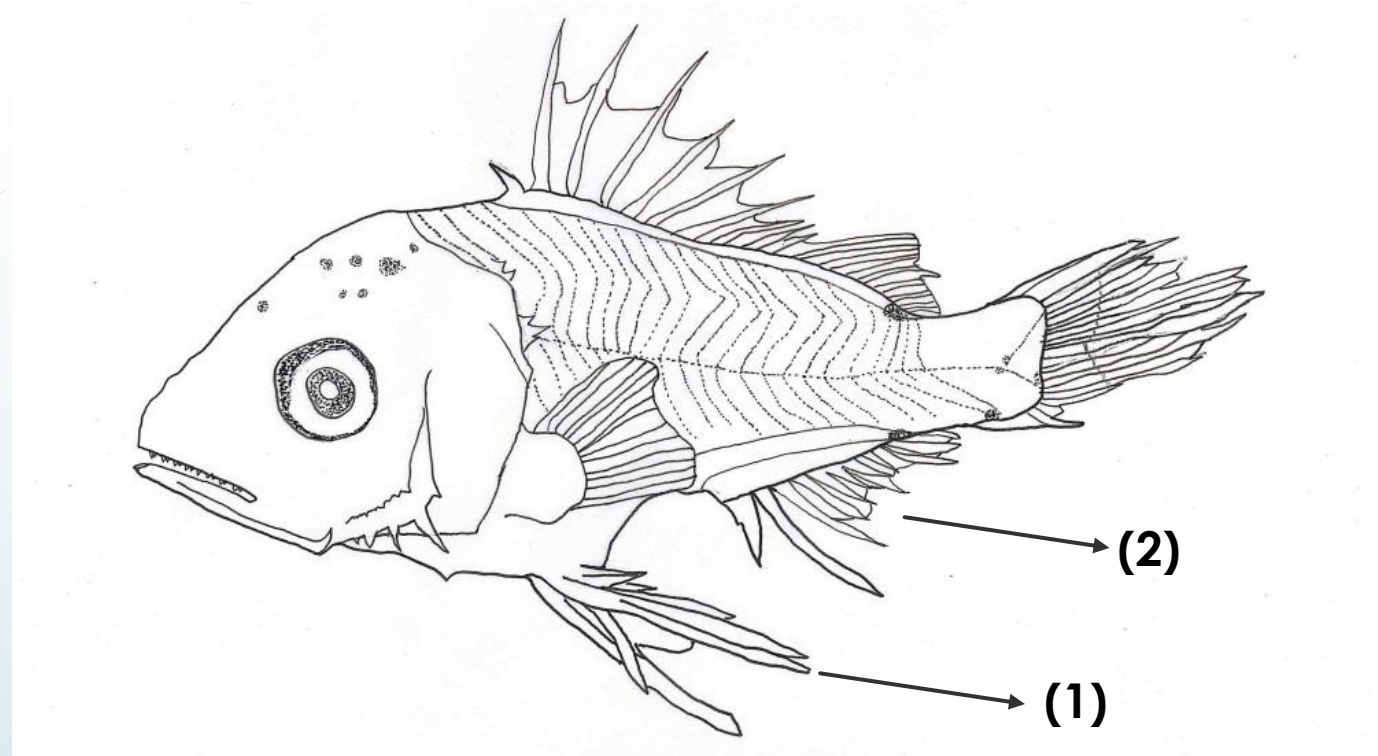
Lutjanus sp.

NL/SL	:	7,10 mm
HL	:	2,99 mm
BD	:	2,82 mm
ED	:	0,82 mm
PaL	:	4,15 mm
SnL	:	1,01 mm
PdL	:	2,75 mm

Body shape	:	Moderate (BD 39% BL)
Head	:	Moderate (HL 42% BL)
Gut	:	Coiled not compact
Snout	:	Moderate
Mouth	:	Small and terminal
Eye	:	Round
Spination	:	Well developed
Pigmentation	:	Some pigmentations on the head and posterior of the body



Meristic Characters			Reference
D	:	X, 13	X-XII, 12-16
A	:	III, 8	III, 7 – 11
P1	:	15	15 – 17
P2	:	I, 5	I, 5
C	:	17	
M/V	:	24	10 + 14



- The first characteristic on determining Lutjanidae identity from this specimen was from the dorsal spine formation. The round shape of caudal fin was also ensure that this specimen is a lutjanid and not caesonidae. The absent of serrate ridges on the forehead of this specimen was also ensure that this specimen is not siganidae.
- Its ray pelvic fin is a little longer than the pelvic spine **(1)**. From the anal rays number 8) **(2)**, this specimen was different from *Macolor* sp. which has 10-11 and *Caesio* sp. which has 10-13.

FUTURE WORKING SUBJECTS





TERIMA KASIH

