

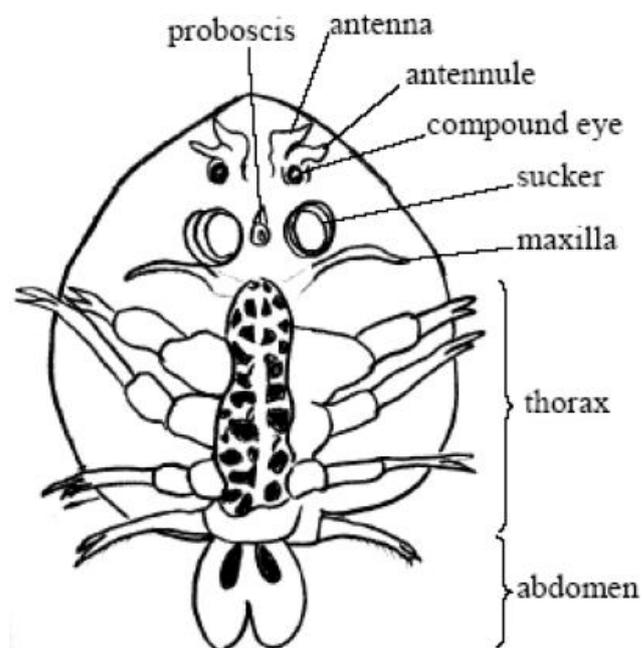
## Diseases caused by crustacean parasites

### Introduction-

Crustacean parasites are frequently found to infest fishes and prawns. Infestation of fishes by these parasites in natural waters do not manifest in serious disease outbreak but infestation in confined waters very often cause serious disease outbreak. However in general low infestation with crustacean parasites do not cause serious damage to fish/prawn except irritation and localized ulceration.

### Common Crustacean Diseases

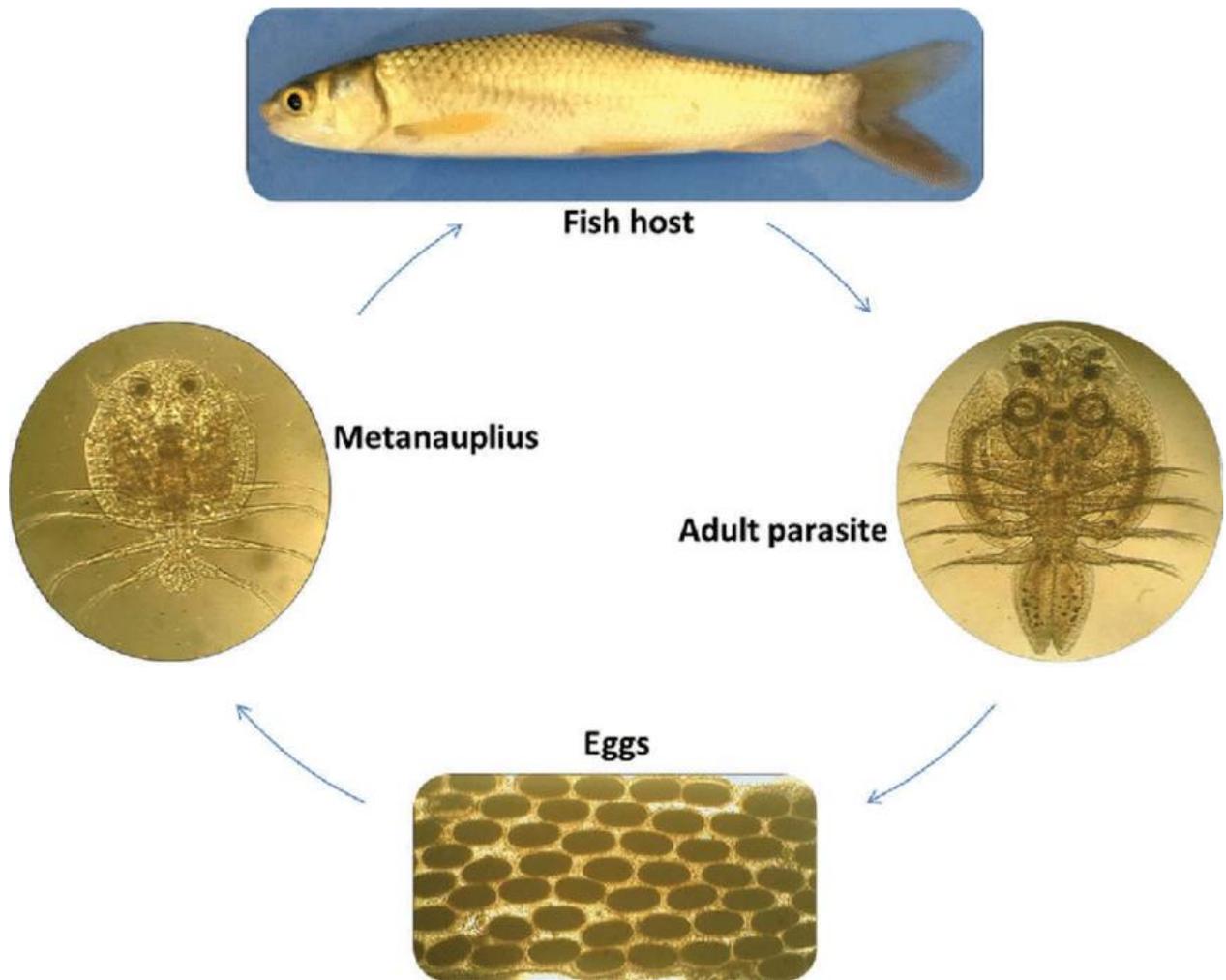
#### 1. Argulosis –



### General Characteristics

- The body of the adult argulus species is distinguishable into cephalothorax, thorax and abdomen.
- Body dorsoventrally flattened.
- Anterior portion is adapted to parasitic function and posterior for locomotion.
- They have 2 very short pairs of antenna and 2 pairs of maxillae.
- The first antenna modified into attachment organ.
- They have 2 black faceted eyes.
- 4 pairs of thoracopods i.e. swimming leg.

### Life cycle:



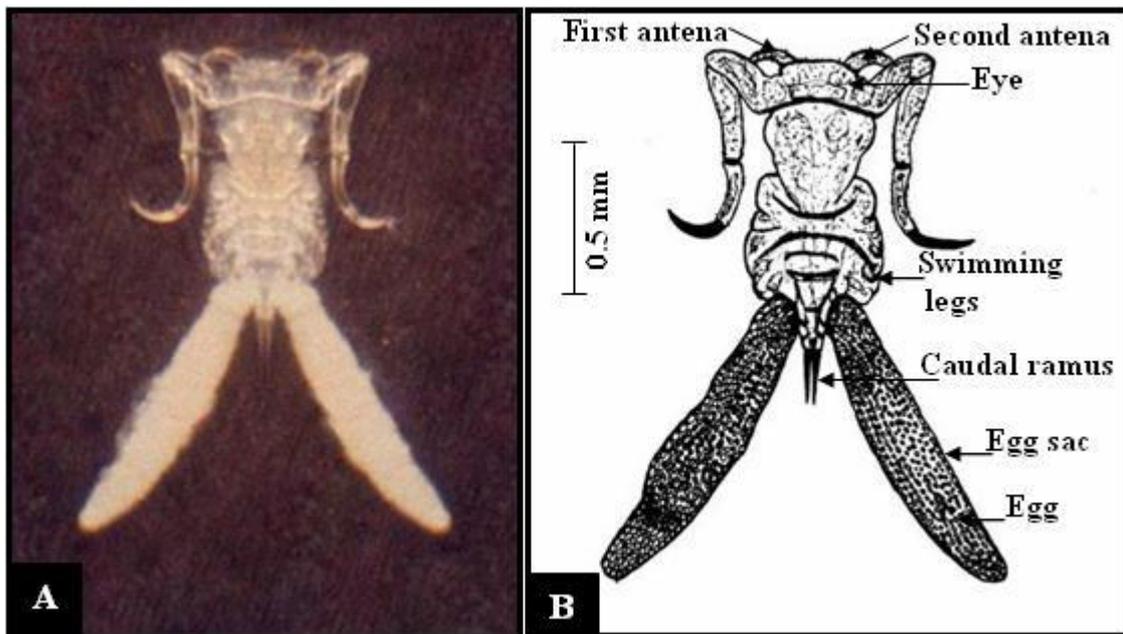
**Diagnosis-**

- The adult parasite is oval , flat , transparent to whitish with two conspicuous black spots.
- It is visible moving freely on the surface of the host fish.
- The afflicted fishes are restless with erratic swimming behavior and loss of appetite.

**Prevention and treatment-**

- Sodium chloride bath treatment @3-5% till fishes are stresses.
- Gemmexane treatment in pond @1mg is particularly effective.
- KMno4 treatment in pond @ 4 mg.

## 2 . Ergasilosis-

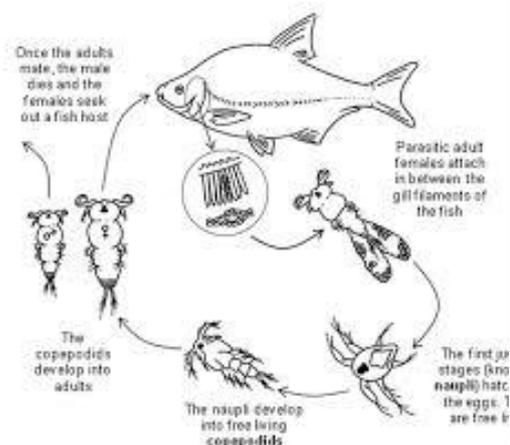


### General characteristics-

- The adult female Ergasilus species is parasitic on the gills.
- The anterior end is broad and narrow posteriorly.
- The length varies from 1mm-3mm.
- The head and the first thoracic segment are fused from the broad cephalothorax of various shape.
- The head has two pairs of antennae.
- The second antennae is modified into a hook like structure for firmly lodging into the fish gills.
- The first 4 thoracic segments bear a pair of swimming legs.

### Life cycle-

Mating takes place in water. The male dies and the female attaches to the host and becomes parasitic. Eggs are produced in the egg sacs. The egg hatches to form the nauplius, metanauplius and five copepodid stages which are free living and finally develop into the adult form.



## Diagnosis-

- Infestation occur in gills , buccal cavity , operculum and fins.
- They look like white codes less than 2mm long.
- Surfacing , lethargy and restlessness occur.

## Prevention and treatment-

- Potassium permanganate treatment in pond @ 4 mg for 15 minutes.
- Sodium chloride bath treatment @ 2-3% for 15 minutes.

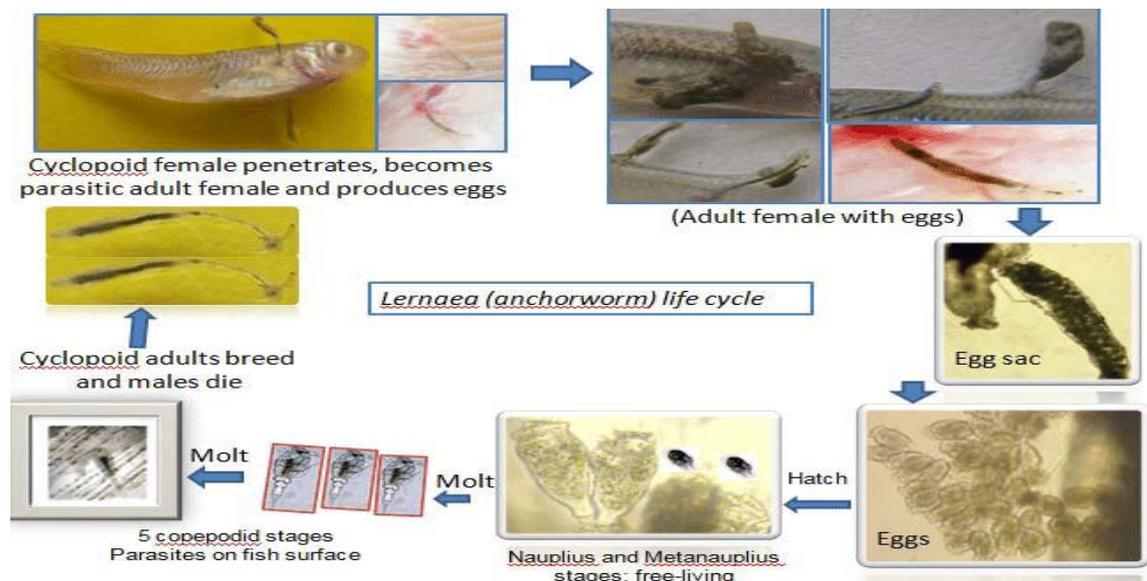
## 3.Lernaeosis-

### General characteristics-

- The adult female Lernaea species is parasitic in fish.
- It can grow to 162 mm as recorded in *C. idella* .
- The adult form is seen protruding from nostrils, body surface and fins with the head buried deep into the host tissue.
- The body is elongated with atrophied swimming legs.

### Life cycle-

The life cycle of a Lernaea species starts with the eggs which hatch out into free swimming and free living nauplei. They survive for 4-5 days on their yolk and then moult to become metanauplei. Metanauplei moult 5 times through successive copepod stages. During the last copepod stage copulation with males occur after which the females become parasitic by penetrating the skin. The males possibly die out. All copepod feed on fish mucus, but can live as long as 4 days without a host.



## Diagnosis-

- In light infestation the fishes are restless and rub against the sides and bottom of the pond due to irritation.

**Prevention and treatment-**

- Potassium permanganate treatment in pond @4 mg.
- Sodium chloride bath treatment @3-5%.