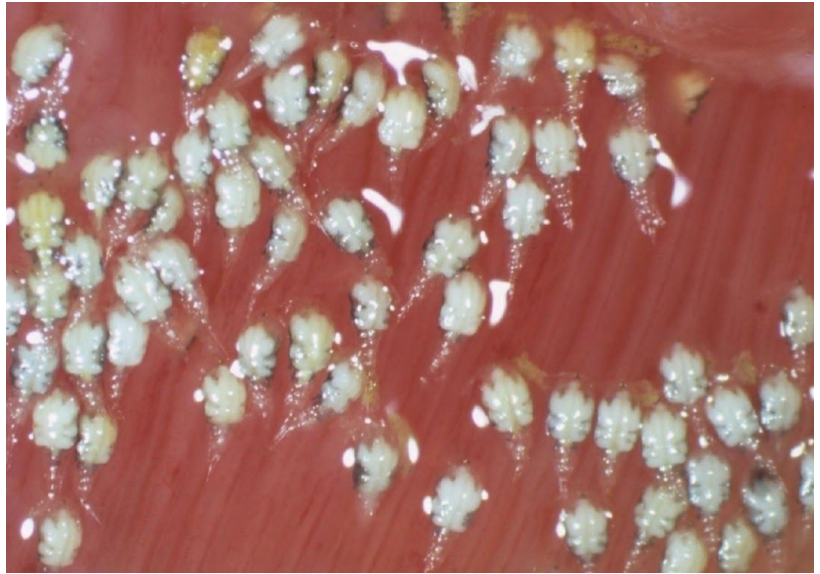


Gill Maggots.

Scientific name is "*Ergasilus*" which belongs to the crustacean family. The maggots we can see in this image to the right are the mature females full of eggs.



This delightful parasite can cause considerable damage to the fish it preys upon. It feeds on blood and mucous. The gills of koi are very delicate but also have a very high blood supply which makes it an easy food source. Due to the gills being the place where oxygen and carbon dioxide are exchanged and absorbed into the bloodstream, heavy infestations can effectively suffocate the host fish as the surface area for gaseous exchange is reduced or damaged. Additionally fish may become anaemic due to blood loss as the maggots feed off them. Another problem encountered is that this parasite can act as a vector for passing on other viruses and

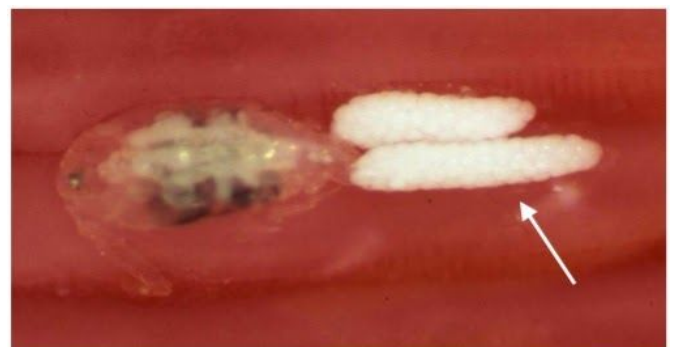
bacteria, which may lead to further health complications. Fortunately it is quite a rare parasite in koi ponds.



Identification

It is not necessary to use a microscope as these parasites are visible with the naked eye. They are grayish black and white parasites which are several millimeters long. They infest the

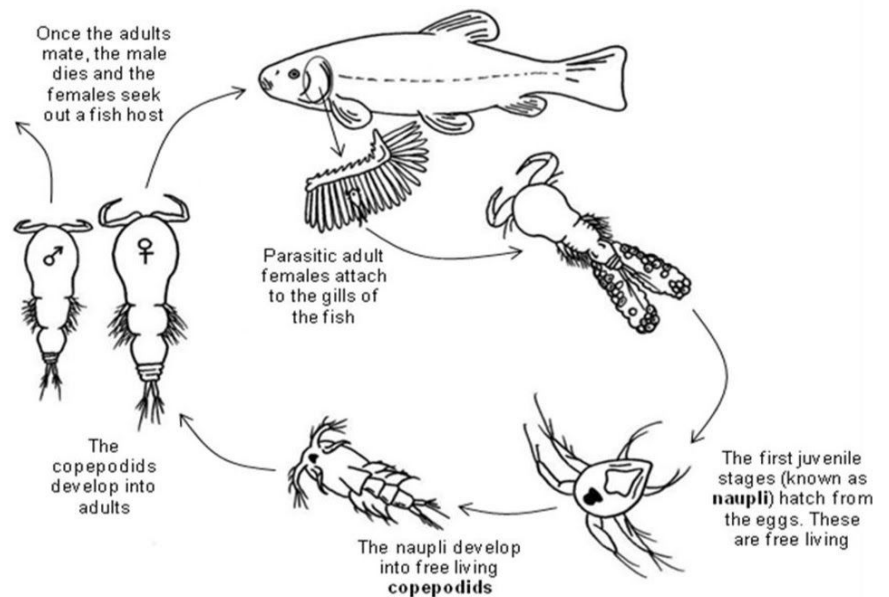
gills of the host fish and cause damage to the filaments so eroded areas may be seen on closer inspection. Secondary infection may also be visible with gills being discoloured and not the bright pink/red they should be.



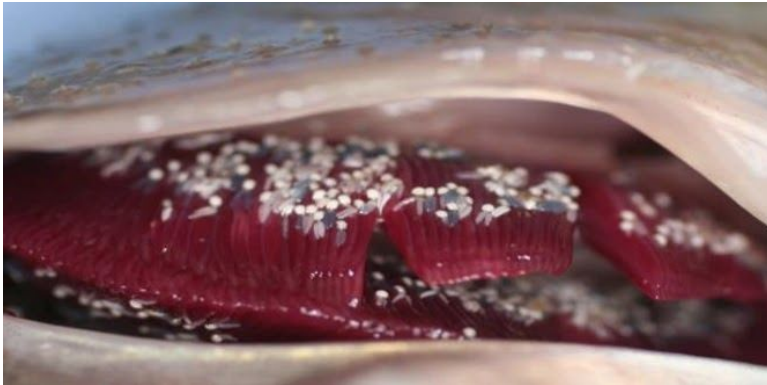
Ergasilus sieboldi with its long white eggs sacs (arrow).

Lifecycle

After mating takes place on the host fish the male dies, eggs are released by the females while they are still attached to the gills. Egg sacks are about 1.5mm in size. Hatching can take a few days but is temperature dependent. Their lifecycle includes six “nauplius” and five “copepod” stages. The “nauplius” stage means it has appendages of the head that are used for swimming, they have a number of moults where they shed their skin to reach the next stage of development. The “copepod” stage is where the parasite develops into a more adult stage with several more moults until they find a suitable host. These juveniles then seek out a host. It is however only the females that become parasitic.



The life cycle of *Ergasilus sieboldi*.



Symptoms

Symptoms are similar to that of a gill fluke infestation. An affected koi will have severe irritation. The koi may be seen gasping at the water surface or hanging around high oxygen concentrated areas such as air stones, returns and waterfalls. They will also flash a great deal in an effort to try and dislodge the problem. Closer inspection of an infected fishes gills will find discoloured or damaged filaments and the maggots.



Treatment

Gill maggots respond poorly to most treatments. Old treatments used were organophosphates but they are now illegal in the UK due to being hazardous. Here are some options that may be effective should you ever have the misfortune of having to battle this parasite.

Lice-Solve:

Treats the whole pond so kills any free swimming juveniles. Repeat treatment a month apart may be required to be sure the eradication is complete. Turn off UV lights as it deactivates it. Remove any activated carbon from the pond/filters. Do not use with Orfe. Ensure extra air is added during treatment.

Dosage: 4 grams per 1000 litres.



JBL ArguPond Plus:

For use at temperatures over 18°C. Remove any activated carbon from the pond/filters. Turn off UV, Ozone units, copper and hydrochloric acid dosage devices. Treatment to be added in the morning to allow for observation.

Dosage: 40ml per 800 Litres.



****The YKS accepts no responsibility for any damage or loss caused by following this guide. Any treatments are carried out at your own risk. Always follow the instructions on the packets. Know your pond volume and double check your calculations. Always test water prior to any treatments. Ensure adequate aeration****

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