

Genus : *Thelazia*

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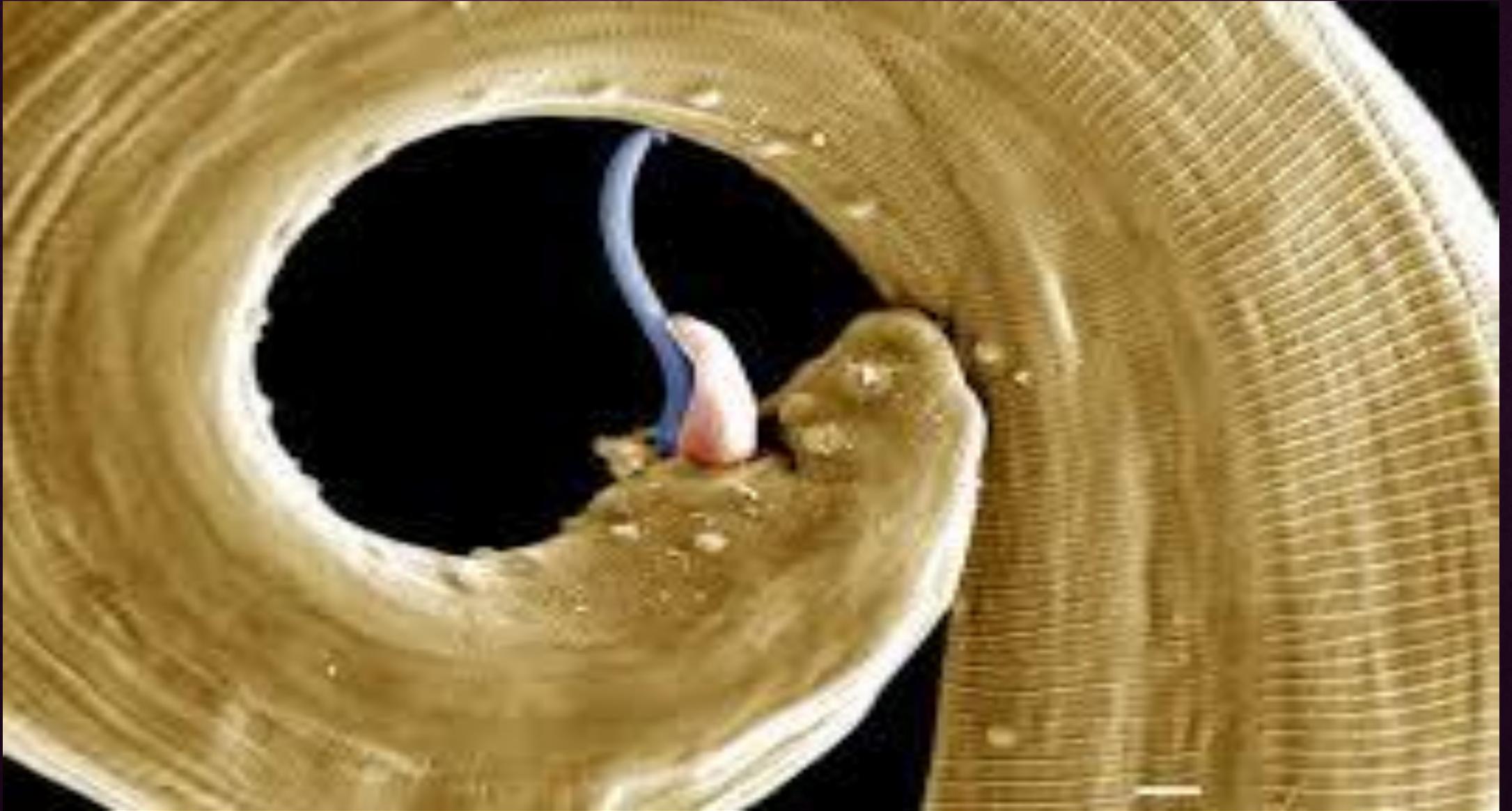
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Thelazia : Morphology

- These are parasitic worms commonly known as ‘Eye worm’.
- It was first discovered in the eyes of a dog in China.
- The adult worm typically measures 5 to 20 mm in length
- The males tend to be smaller than the females in size.
- They have a distinct buccal capsule and a cuticle with spaced transverse striations giving it a ridged appearance. This is a distinguishable character from other worms.
- Adult females identified by the position of their vulva which is anterior to the oesophagus-intestinal junction.
- The males can be distinguished by their possession of five pairs of postcloacal papillae.





Source-Google

Thelazia in eye

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Source- Google

Thelazia in eye

***Thelazia* : Life cycle**

- These worms are viviparous and having indirect life cycle.
- The eggs of *Thelazia* develop into first stage larvae (L1) in uterus of female worms in and around the eye of the definitive host.
- The female deposits these larvae, which are still enclosed in the egg membranes, in the tears (lacrymal secretions) of the host.
- When a tear-feeding fly (intermediate host) feeds, it ingests the *Theliezia* larvae.
- Inside the fly, the L1 larvae "hatch" from the egg membrane and penetrate the gut wall. . In these tissues, the larvae develop into third stage larvae (L3).
- The L3 migrates to the head of the fly, and is released in or near the eye of a new host when the fly feeds again.
- Once in the eye, eyelid, tear glands, or tear ducts of the host, the L3 larvae develop through the L4 larval stage and into adults .



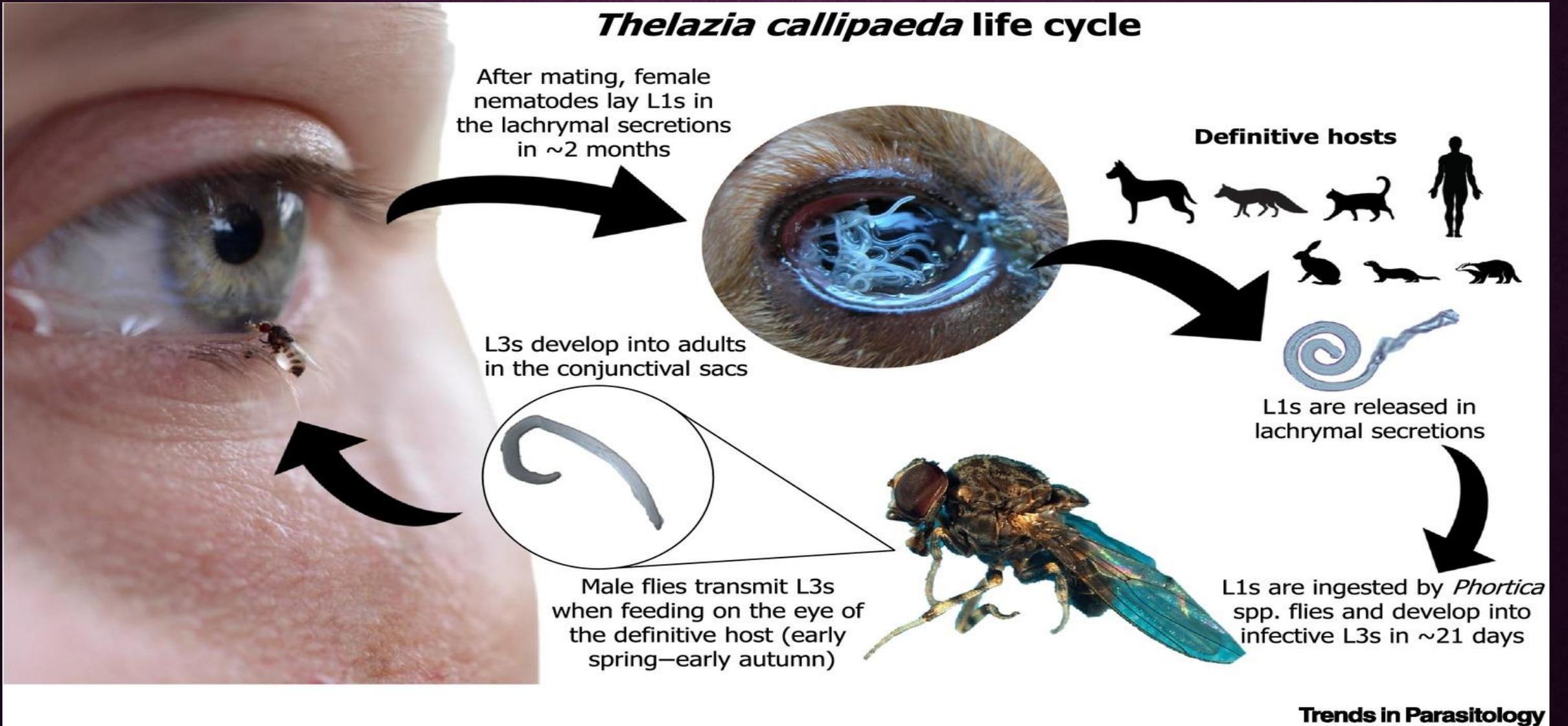
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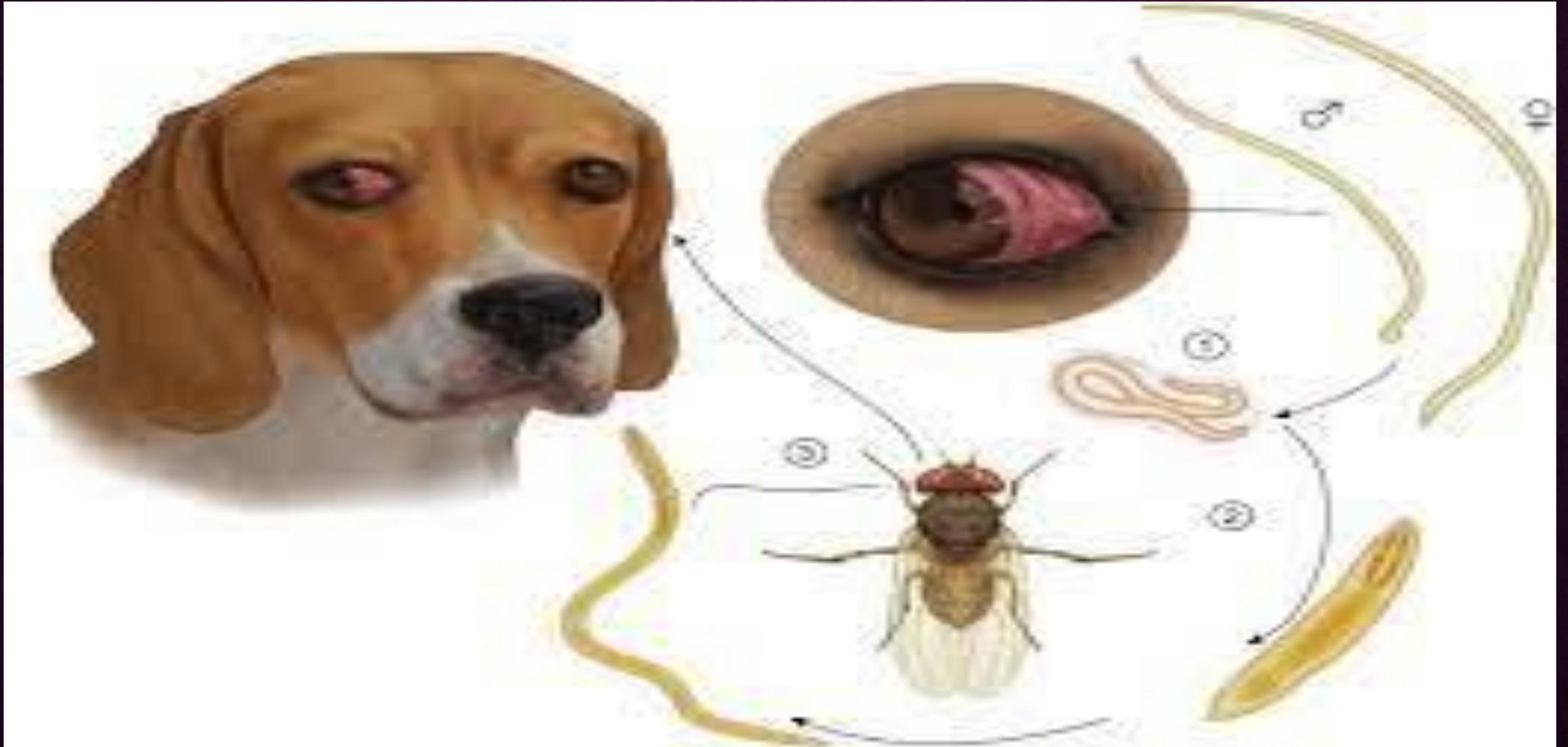
Transmission of eye worm by fly

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Thelazia callipaeda life cycle



Thelazia : life cycle in man



Thelazia :life cycle in dog

Thelazia : Pathogenesis

- The infections are more frequent during the fly season i.e from late spring to early autumn.
- Cattle aged 3 to 4 years are more often affected than older animals. Large dogs 3 to 4 years old are more likely to be infected than younger ones
- Light Infections are without clinical signs .
- But infections with 10 to 15 worms may cause conjunctivitis, keratitis, excessive lacrimation and watery eyes, swollen eyes, purulent exudation, excessive light sensitivity.
- Chronic infections can cause corneal damage and ulceration, which lead to blindness. Other parts of the eyes can also be damaged.
- The infections can also favor secondary infections with bacteria, e.g. with *Moraxella bovis*, the causative agent of bovine keratoconjunctivitis, also called "pinkeye".



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Thelazia in eye

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Thelazia in eye



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Conjunctivitis caused by Thelazia

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Corneal opacity caused by Thelazia

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Canine cherry in dog



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Canine cherry in dog

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Pink eye in dog

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Pink eye in man

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Infectious keratitis

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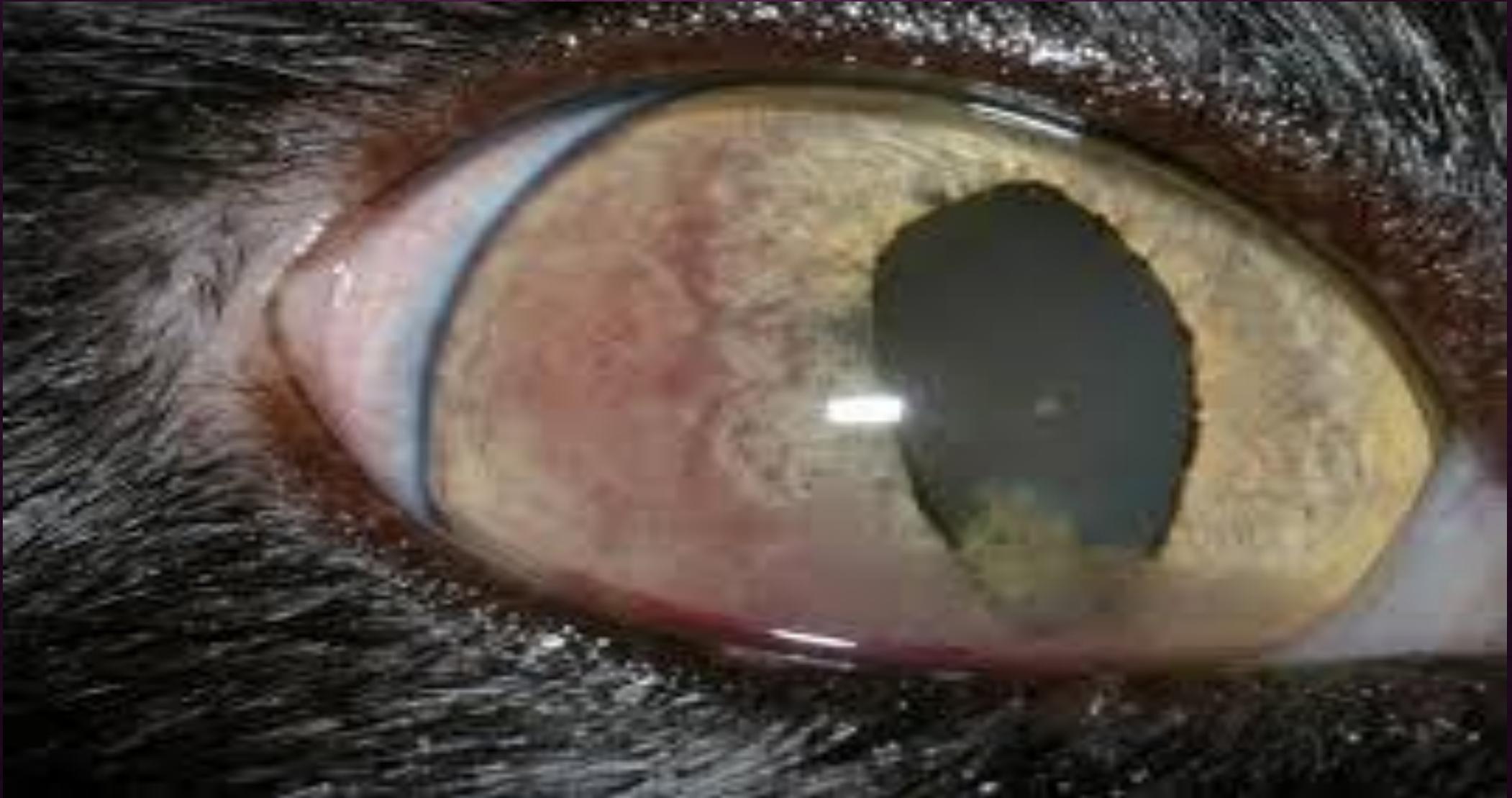
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Peripheral ulcerative keratitis

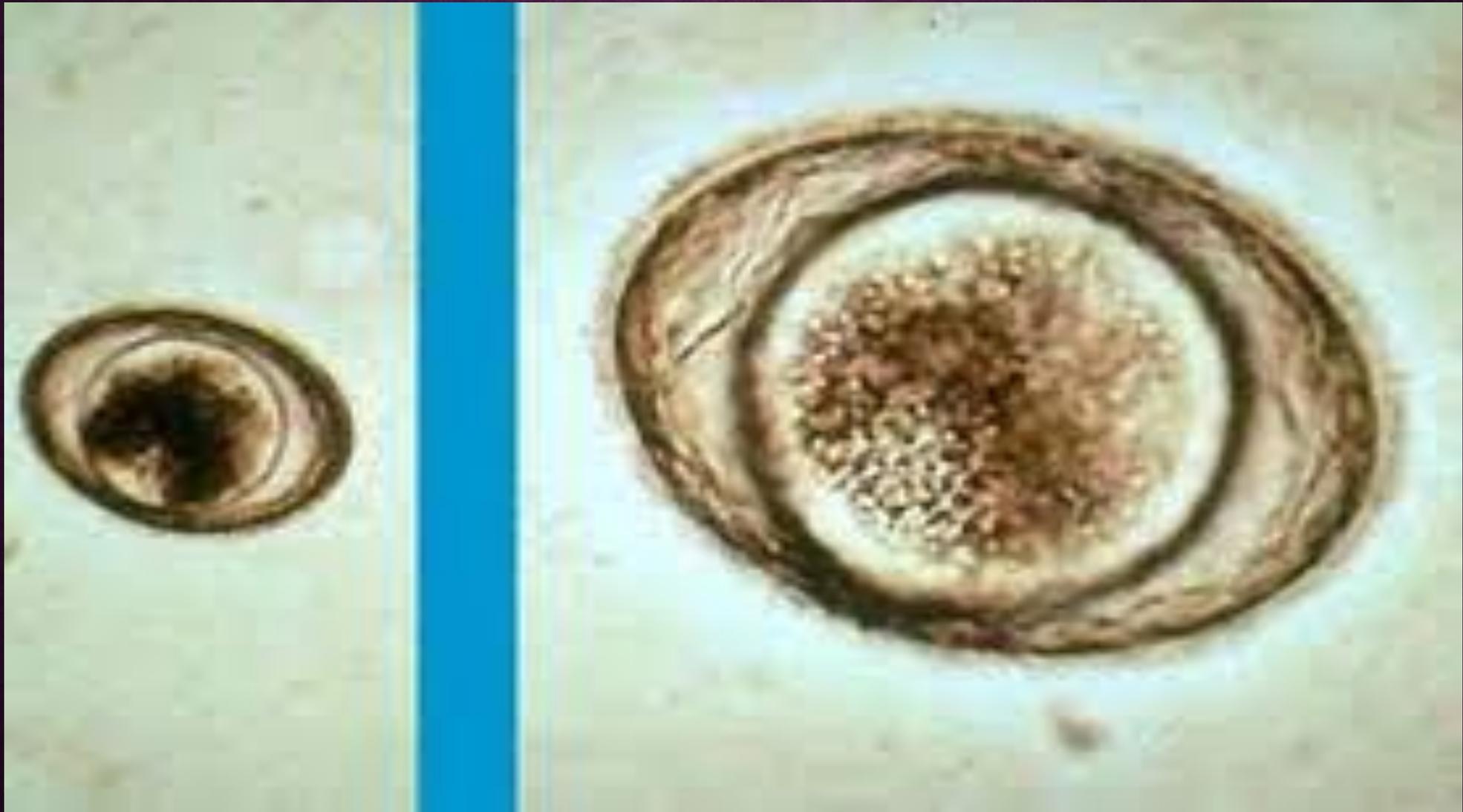
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Secondary bacterial infection in dog

Thelazia : Diagnosis

- By visual examination of the eyes and surrounding tissues.
- These worms are quite active and are seen moving quickly in the eye ball.
- It can also be examined in the sediment of centrifuged wash obtained after eye or lacrimal duct rinsing.



Thelazia : Eggs

Thelazia : Prevention & control

- The protection against house flies, face flies and filth flies during the fly season.
- Control of flies strongly depends on removal of manure and waste in farms, and general hygiene measures in gardens etc.
- Protection of pets from flies during the peak seasons of the fly by using fly repellents.
- Anthelmintics such as fenbendazole and levamisole are also available for worm control.
- For dogs and cats macrocyclic lactones e.g. ivermectin, milbemycin oxime, moxidectin), injectables e.g. moxidectin or spot-ons (e.g. selamectin). Ocular drops e.g. moxidectin + levamisole can be used .
- In cattle, sheep, goats and other livestock macrocyclic lactones are available as injectables, pouros or drenches (e.g. doramectin, ivermectin, moxidectin).