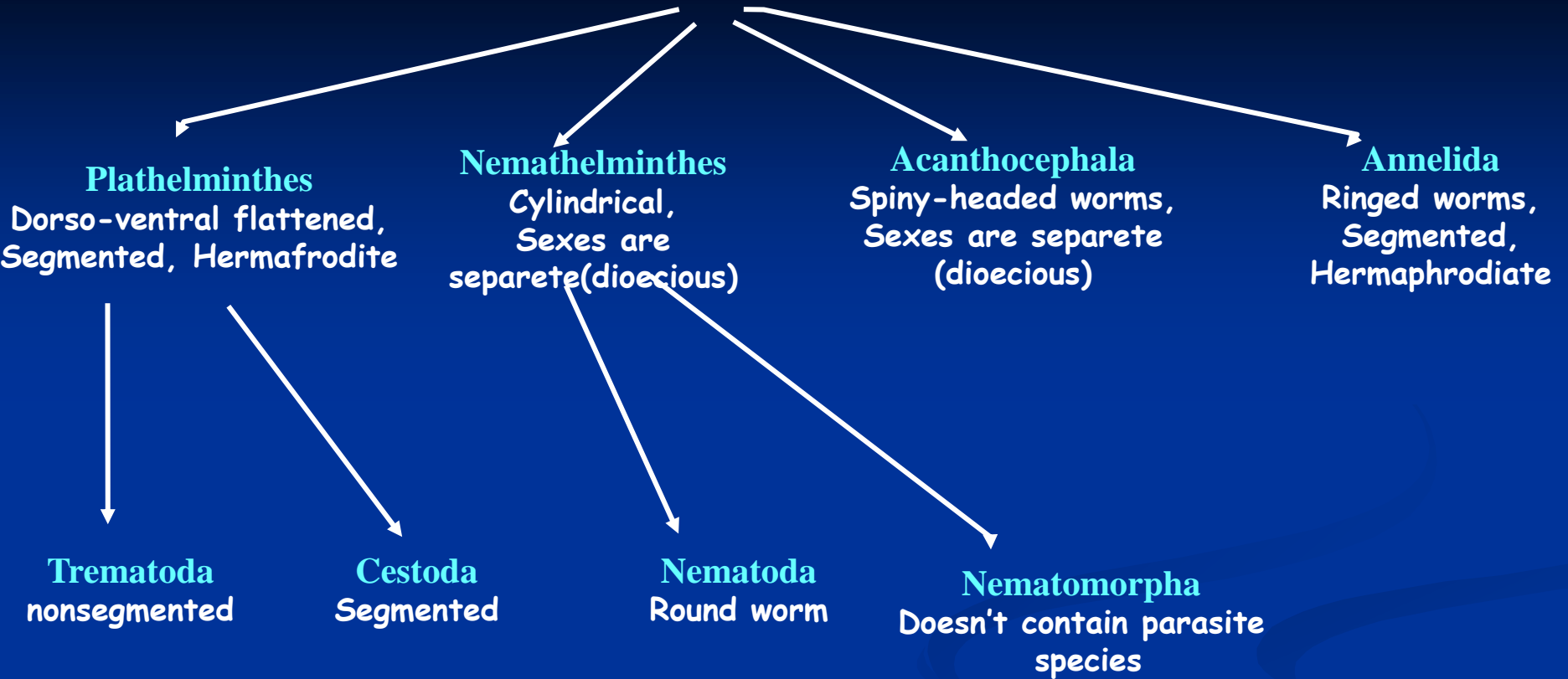


HELMINTHS



Acanthocephala=Spiny-headed worms

<u>Species</u>	<u>long</u>	<u>Definitive host</u>	<u>Intermediate host</u>
<i>Macrocanthorhynchus hirudinaceus</i>	10-35 cm	pig	Coleoptera
<i>Oncicola canis</i>	5-14 mm	dog, cat (Parathenic host: armadillo, turkey)	Artropodes
<i>Moniliformis moniliformis</i>	4-27 cm	dog, mice	blattela
<i>Polymorphus boschadis</i>	3-10 mm	goose, duck	Gammarus
<i>Filicollis anatis</i>	6-25 mm	goose, duck	Crustacea

- Live in intestine.
- There is barbed hose/proboscis over the front which can move back and forward.
- Sexes are separated (i.e. dioecious)
- There is no digestive system, food is absorbed.
- Life cycles are indirect.
- **Intermediate host** for **Acanthocephalous** with terrestrial life cycles include insects (especially *Coleopptera* and *Orthoptera*).
- Larval development takes place (occur) in intermediate arthropod hosts.

Proboscis

- ❑ The remainder of the body forms a cylindrical or flattened trunk often bearing rings of small spines.
- ❑ Most *Acanthocephalans* are less than 20 cm long.
- ❑ Females are generally larger than males.
- ❑ Digestive tract has been completely lost and most other organ systems are notably reduced, with the exception of reproductive system.

Life cycle, Patogenesis, Clinical signs and Diagnosis

- Adult ***Acanthocephala*** attach to their host intestinal wall with their retractable proboscis hooks which can be pulled back into pockets like the claws of a cat.
- Much of the early development of ***Acanthocephala*** takes place within the female's body cavity.
- Eventually a shelled "**acanthor larvae**" develops.
- Exiting to the outside World in the host's feces.
- Developing *Acanthocephala* must be ingested by an arthropod intermediate host to continue its life cycle.
- The "**acanthor**" larvae penetrates the gut wall of intermediate host and enters the body cavity.
- Where it eventually develops into an encapsulated form known as a "**cystacanth**".

Life cycle, Patogenesis, Clinical signs and Diagnosis-2

- Larvae "**acanthor**" are found in the egg, laid out by feces.
- This eggs are taken up by intermediate host in 1 to 3 months infective larvae which "**cystacanth**" develops in intermediate host.
- The last (definitive) host infected by eating infected intermediate hosts.
- The larvae hold in the gut, develop and mature.
- Prepatent time in **Macrocanthorhynchus hirudinaceus** is 2-3 months.

Patogenesis:

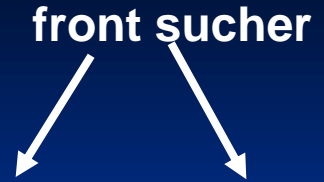
- Due to the proboscis is embedded in the intestinal mucosa, inflammation, hemorrhagic, intestinal perforation, peritonitis and death.
- Diarrhea, abdominal pain, weight loss

Diagnosis:

- Eggs in faces are searched (oviform, thick-shelled, there is a circle-shaped hooks on the front of the "**acanthor**" in the egg.

Hirudinea(Annelid)=Leeches

- Leeches are typically dorsoventrally flattened
- Do not full segmented.
- Hermafroditic but do not self-fertilize
- There are front and back suckers,
 - Front sucker has blood-sucking task.
 - Back sucker has movement and gripping task.
- There is digestive system.
- Eggs are in cocoon.
- Life cycle is direct.



Life cycle

- **Leeches** usually live in muddy freshwater. some live in the sea or on land.
- eggs stay on a cocoon,
- young **leeches** out of egg.
- Life expectancy is about 1 year.
- Some are predators, others are scavengers.
- Those who are parasites suck blood (temporary parasite)

Leechs species

- *Hirudo medicinalis* (medicinal leech)
 - 8-12 cm. long
 - Dorsal face greenish brown color, there are 6 red bands.
 - Ventral face olive's green
and there is one black band in each side of the lateral.
- *Hirudo officinalis*
 - 8-12 cm. long
 - green color
 - There is black stain and black band
- *Limnatis nilotica* (horse leech)
- It lives in stagnant water, in ponds and lakes.
 - 8-12 cm. long
 - Dorsal face is dark brown color. There are several longitudinal black spots.
 - Ventral is darker. There is orange band on both sides.
- *Hemadipsa zeylanica*
 - 2-3 cm. long

Patogenesis, Clinical signs, Treatment and Control

Patogenesis, Clinical signs:

- It is attached to the skin and the oro-pharyngeal mucosa of the host's organs, shrinks the epidermis or mucosa.
- Anemia
- Nasal cavity or pharyngeal cough, coughing sputum, mouth and mouth light-colored foam blood, wheezing and respiratory distress.
- If parasite is adherent to the larynx, oedema, asphyxia, and death.

Treatment:

- Mechanical removal with fire and saline water.
- Washing the nose with 50% chloroform water (removed in 10 minutes)

Control:

- Where the animals drink water and shallow-dip muddy places should not be allowed to drink water.