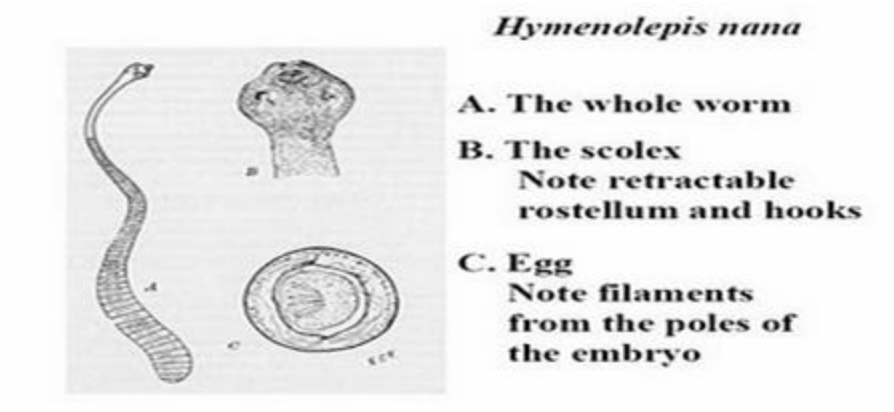
Family Hymenolepididae

This is a large family that occurs in both birds and mammals
Only 2 species *Vampirolepis nana* and *Hymenolepis diminuta* infect humans

Hymenolepis nana

Kingdom:	Animalia
Phylum:	Platyhelminthes
Class:	Cestoda
Order:	Cyclophyllidea
Family:	Hymenolepididae
Genus:	*Hymenolepis*
Species:	***H. nana***

Hymenolepis nana

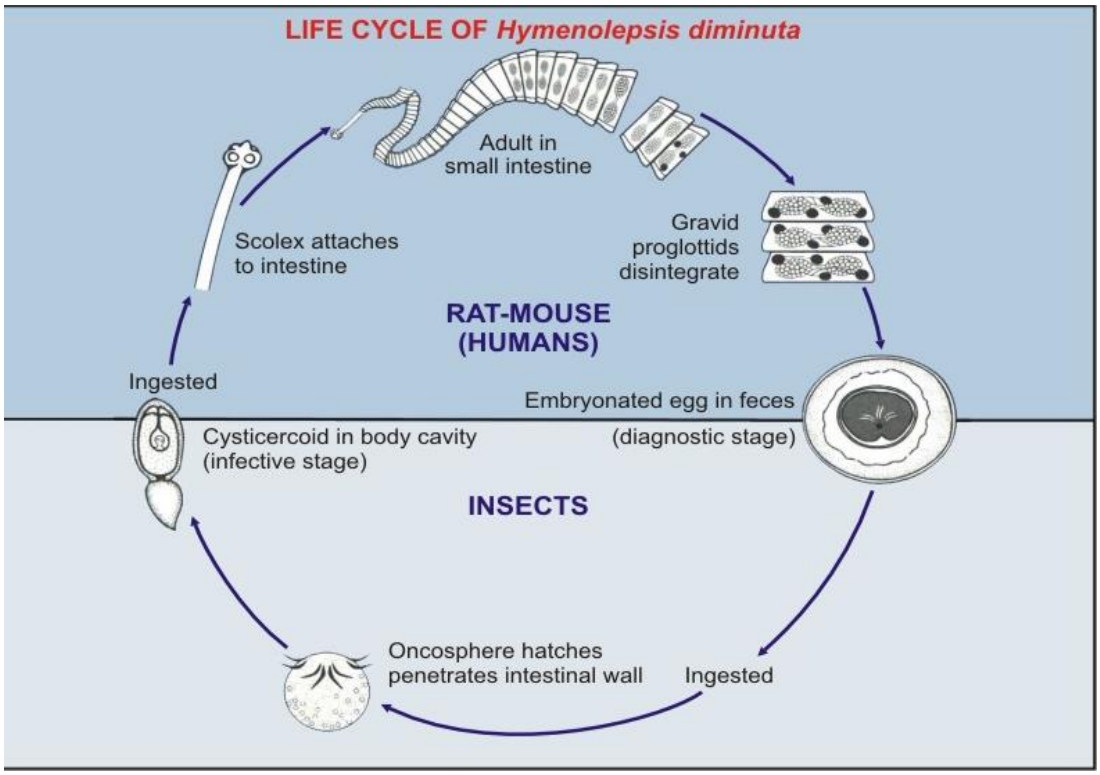


Known as the dwarf tapeworm of mice and humans
Mature proglottids are much broader than they are long
Male system has 3 spherical testes, bi-lobed ovary

Life Cycle

The life cycle of *Vampirolepis nana* represents a modification of the typical cyclophyllidea life cycle pattern in that the parasite requires only one host to complete its development
Natural definitive hosts, in addition to humans, are rodents like mice and rats
Gravid proglottids from adult worms rupture, releasing onconsphere containing eggs into the host intestine to be eliminated with the feces
The eggs are infective upon release
Upon being ingested by a new host, the oncosphere, freed in the small intestine penetrates a villus
There it sheds its 6 hooklets and in a few days becomes a modified cysticercoid larva known as a **cercocystis**
It erupts from the villus into the lumen of the small intestine, attaches itself to the mucosal lining, and develops into the sexually mature adult
In the case of rodents, an insect (flour beetle) may serve as an intermediate host

In this case, when the insect host is ingested by a rodent the cysticercoid attaches to the intestinal wall and develops to maturity
Autoinfection can exacerbate the condition by increasing the number of worms
Eggs released from gravid proglottids, instead of passing to the exterior to infect new hosts, hatch in the small intestine and re-infect the same host
The freed oncosphere penetrates a villus and repeats the cycle
Vampirolepis nana is cosmopolitan in distribution and possibly the most common cestode parasite of humans in the world, especially among children
The usual mode of transmission in humans is hand-to-mouth, although infection may also occur through ingestion of contaminated food

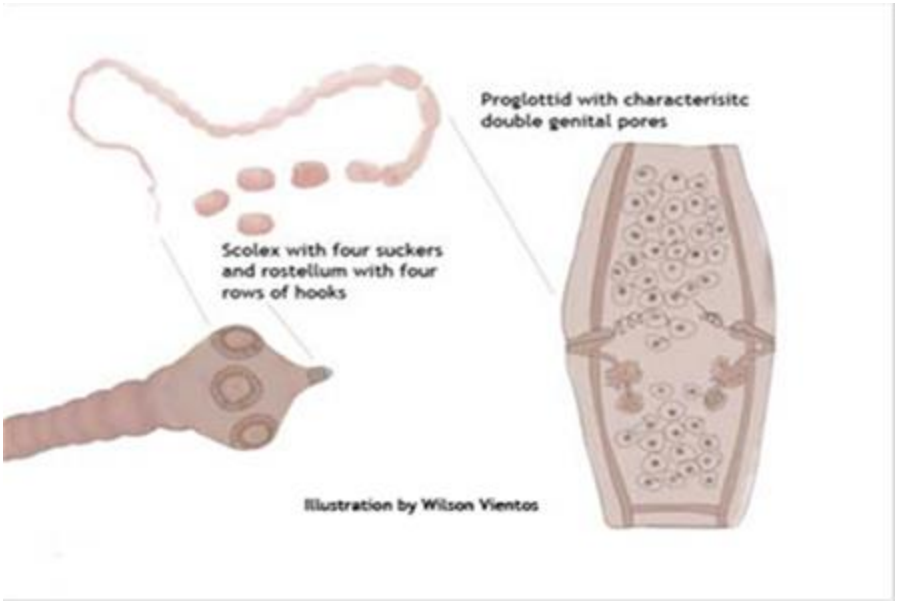


Hymenolepis diminuta

Hymenolepis diminuta is a common parasite of rats throughout the world, occasionally parasitizing humans
It exhibits a typical 2 host life cycle, utlilizing a grain-ingesting insect such as a flour beetle as an intermediate host
Insects are infected when they consume rodent feces containing either gravid proglottids or eggs
The oncosphere penetrates the intestinal wall of the insect and enters the hemocoel where it develops into the cysticercoid stage
The most common intermediate hosts are grain beetles belonging to the genus *Tribolium* or *Tenebrio*
Humans acquire infections by eating cereals, dried fruits, etc. that contain infected insects

Family Dilepididae

Dipylidium caninum



Kingdom: Animalia

Phylum: Platyhelminths

Class: Cestoda

Order: Cyclophyllidea

Family: Dipylidiidae

Genus: *Dipylidium*

Species: *caninum*

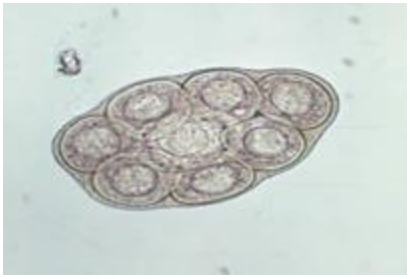
A common tapeworm of dc
It is easily recognizable because each proglottid has 2 sets of reproductive organs with a genital atrium on each lateral edge
The eggs are encapsulated in egg capsules; each capsule contains 8-25 eggs

Life Cycle

Adults live in the small intestine of the definitive host where large gravid proglottids separate from the strobila in groups of 2-3
Proglottids are passed with feces
Eggs and capsules are ingested by larva of fleas or by the dog louse
The oncospheres hatch in the gut of the arthropod, burrows through the wall, and develops into a cysticercoid in the hemocoel when the flea or louse matures
When the infected insect is ingested by a suitable definitive host, the cysticercoid is liberated in the small intestine and develops into an adult

Epidemiology

Transmission to humans usually results from accidental ingestion of infected fleas or lice or from allowing dogs and cats to lick the mouths of children soon after the pet has bitten an infected arthro



***D. caninum* egg packet, containing 8 visible eggs**