

**Tikrit University**

**College of Nursing**

**Basic Nursing Sciences**



**Second Year - 2023-2024**

**Microbiology**

**Hymenolepis nana**

**By: lecturer**

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## **A.Hymenolepis nana**

\* Hymenolepiasis nana is an infection by adult and larval stage of H. nana. It is found world wide, primarily limited to children in war climate.

**Common name** : Dwarf tape worm .

**Disease** : Hymenolepiasis nana, Dwarf tape worm infection .

**Habitat** : small intestine

**Intermediate host** : fleas, beetles, rats, and house mice.

**Definitive host** : humans and rodents

**Body region** :

1. Scolex (Head): The hold fast organ
2. Strobila .
3. Mature proglottids .
4. Gravid proglot .

**Stages** : Adult worm , Egg , Larva .

**Infective stage** : Embronated egg .

**Diagnostic stages** : Embronated egg

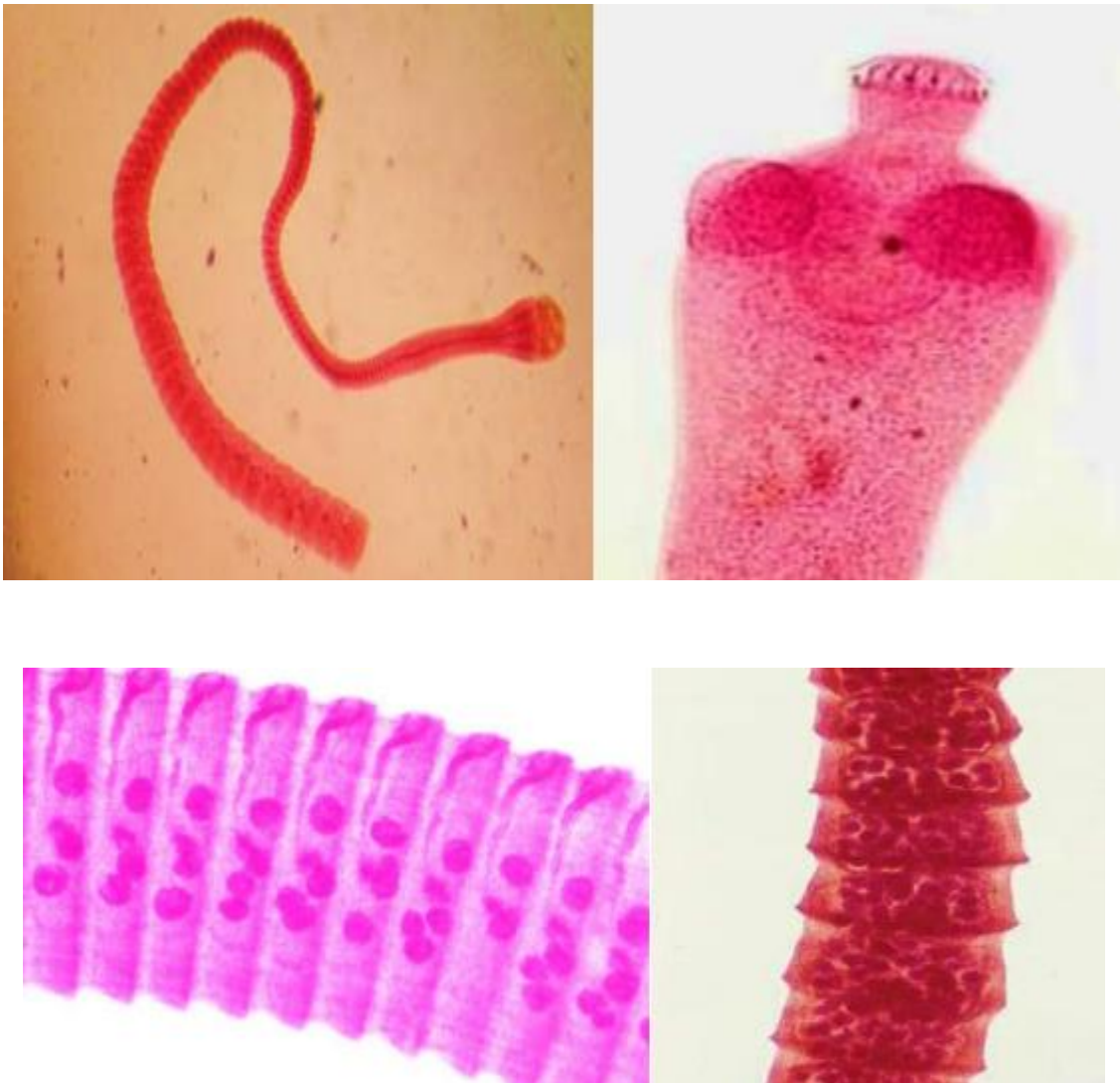
**Morphology:**

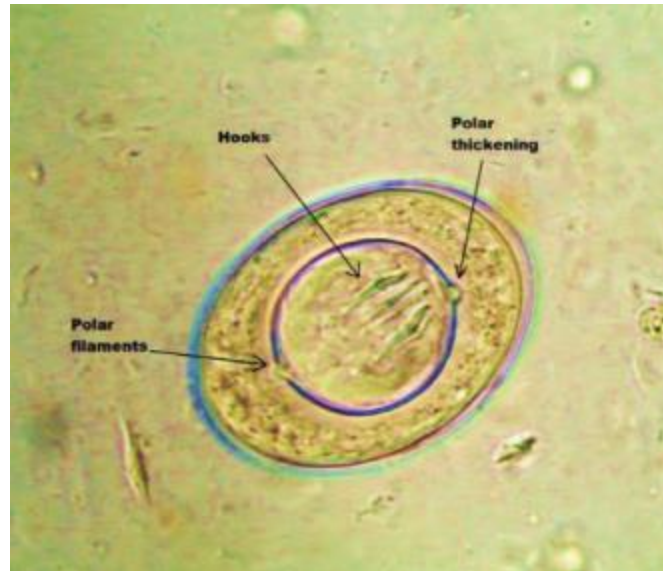
□ It is a small species, The scolex bears a retractable rostellum armed with a single circle of 20 to 30 hooks. The scolex also has four suckers. The neck is long and slender, and the segments are wider than long.

- The oncosphere is covered with a thin, hyaline, outer membrane and an inner, thick membrane with polar thickenings that bear several filaments.
- The neck is long and slender, the region of growth.
- The strobila starts with short, narrow proglottids, followed with mature ones.

### **Laboratory Diagnosis:**

Laboratory diagnosis of *H. nana* is accomplished by examining stool samples for the characteristic eggs.





## **B. Hymenolepis diminuta**

### **General Properties :**

**Common name :** Rat tape worm infection.

**Disease :** Hymenolepiasis, rat tapeworm disease .

**Habitat :** in the small intestine of Rat and mice and rarely in human.

**Intermediate host :** grain beetle or flea .

**Accidental intermediate host :** Human

**Definitive host :** Mice , Rate .

### **Body region :**

1. Scolex (Head): The hold fast organ
2. Strobila .

3. Mature proglottids .

4. Gravid proglot .

**Stages :** Adult worm , Egg , Larva .

**Infective stage :** Embronated egg .

**Diagnostic stages :** Embronated egg

### **Laboratory Diagnosis:**

Laboratory diagnosis is accomplished by examining stool samples for the characteristic eggs.

### **A.Dipylidium caninum**

#### **General Properties :**

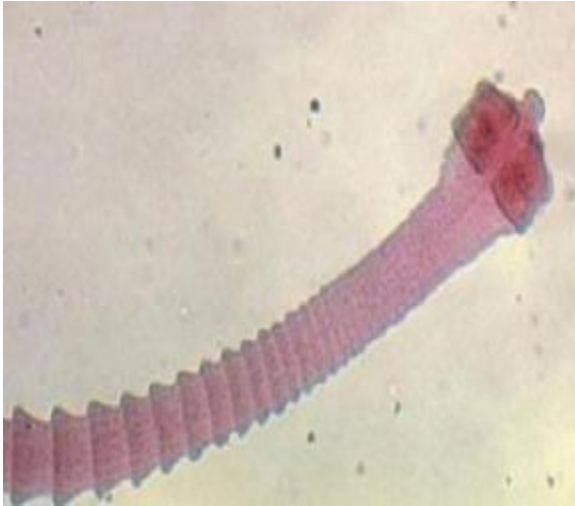
- Common name : Dog / cat tape worm , pumpkin seed tapeworm .
- Disease : Dipylidiasis , dog or cat tapeworm disease.
- Habitat : Adult in the small intestine of dogs and cats. Occasionally in human mostly in children, infants.
- Intermediate host : fleas .
- Accidental intermediate host: Human
- Definitive host: dogs and cats.
- Body region: 1. Scolex .
- 2. Mature proglottids.
- 3. Gravid proglot.

- Stages: Adult worm, Egg , Larva .
- Infective stage: larval stage.
- Diagnostic stages: egg packets or gravid proglottids .

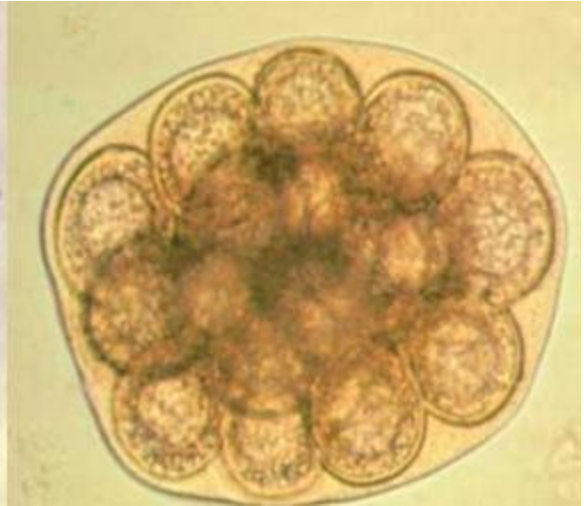
## **Morphology :**

- Adult:
- Length :median size 10 \_ 70 cm in length, 60\_170 proglottid
- Scolex shape: Four suckers Rostellum Present; club-shaped, with one to seven  
circlets of Spines . Hooks Absent
- Mature segment: Contain paired reproductive organs with a genital pore at each lateral margin
- Gravid segment: Resemble cucumber seeds in shape, size. Uterus disappear early in development and replaced by hyaline , non-cellular masses of egg  
capsules, each egg capsule filled with 1 to 2 o fully embryonated eggs.
- Egg :**
- Number of eggs in enclosed packet: 5-30
- Diameter range per egg : 30-60  $\mu\text{m}$
- Individual egg features: Six-hooked oncosphere.
- Laboratory Diagnosis:**

D. caninum diagnosis is based on the recovery of the characteristic egg packets or gravid proglottids in stool samples



Adult (scolex)



Egg