



# TRICHOMONADS

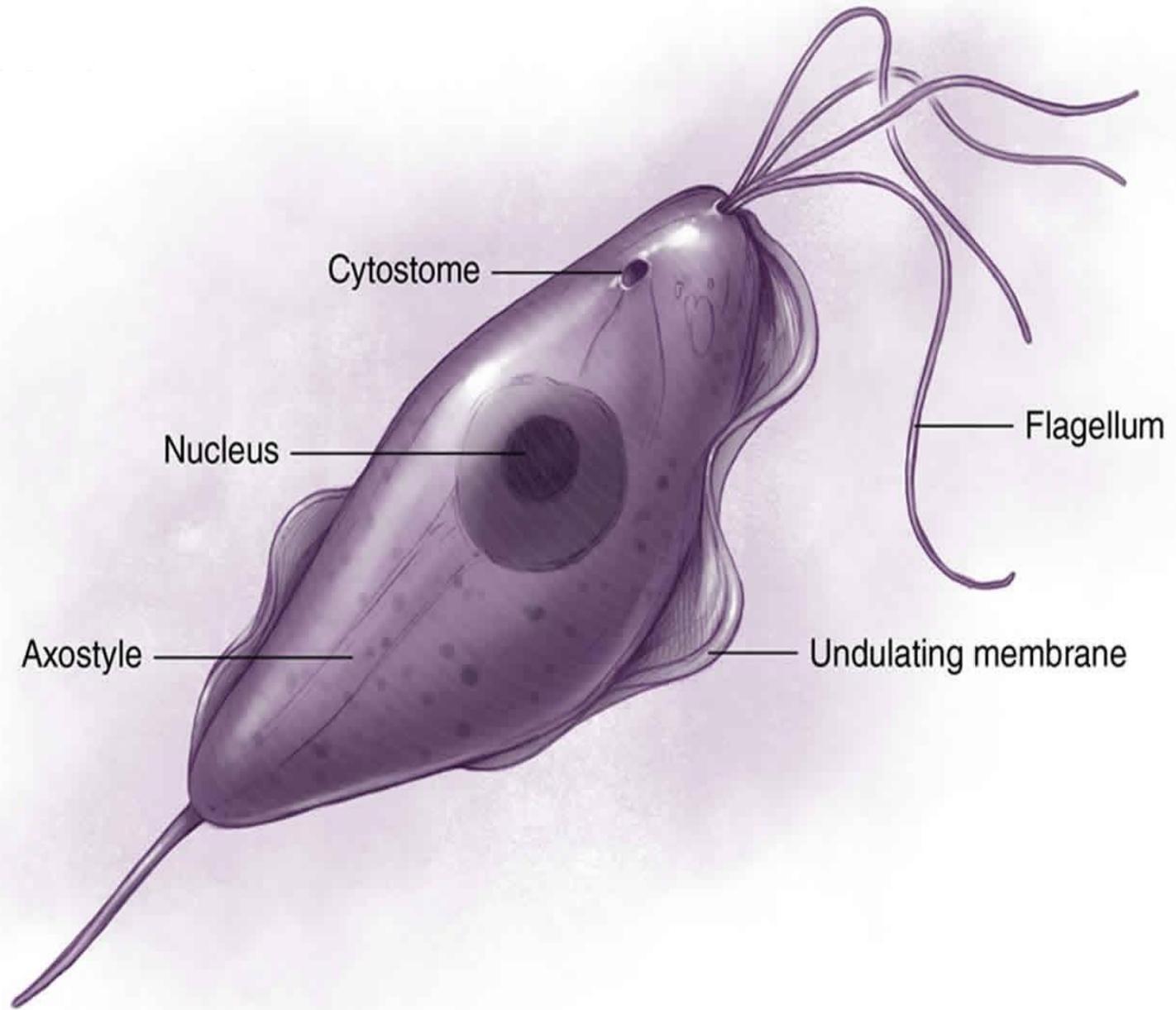
Prof. Dr. Muna M.Jori

**CLASS: TRICHOMONADA**  
**ORDER: TRICHOMONADIDA**  
**Family: Trichomonadidae**

Members of this family are rather similar to one another in structure.

They are easily recognized because they have:

- 1-** an anterior tuft of flagella.
- 2-** a stout median rod (the **axostyle**).
- 3-** **undulating membrane** along the recurrent flagellum. These structural features produce a characteristic jerky, twisting, locomotion that makes trichomonads easy to recognize in fresh preparations.



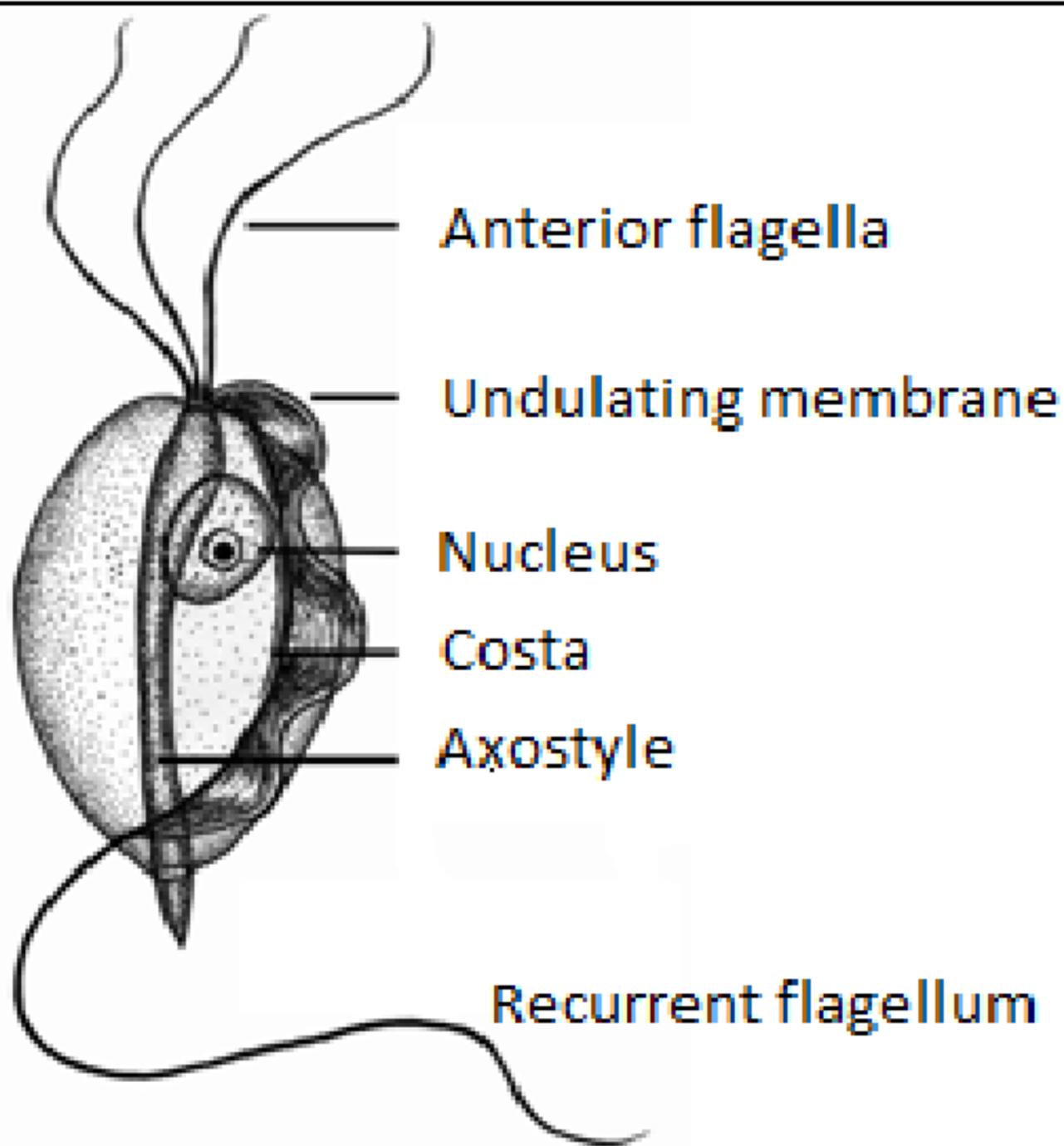
- Trichomonads are found in intestinal or reproductive tracts of vertebrates and invertebrates.
- Unlike other protozoa ,most members of this order do not form cysts.
- Trichomonads have three to five flagella, of which one is usually recurrent and attached to an undulating membrane, and have been found in the caecum and colon of virtually every species of mammals and birds, and also in reptiles, amphibians, fish and invertebrates.

**Life cycle:** The trichomonads reproduce by longitudinal binary fission. No sexual stages are known and there are no cysts.

# *Tritrichomonas foetus*

*Tritrichomonas foetus* is responsible for a serious genital infection in cattle, and possibly other large mammals . It is one of the leading causes of abortion in cattle .

- Morphology:** -The cells are spindle to pear shaped.
- There are three anterior flagella, and a fourth flagellum, which is recurrent, extends free from the posterior end.
  - The costa is prominent .
  - Its undulating membrane structure is curious, consisting of two parts. The proximal part is a foldlike differentiation of the dorsal body surface, and the distal part, which contains the axoneme of the recurrent flagellum.
  - A thick axostyle protrudes from the posterior end of the body. Numerous paraxostylar hydrogenosomes “**chromatic ring.**”are present in the posterior part of the organism.



**Biology:** These trichomonads live in the preputial cavity of bulls, although testes, epididymis, and seminal vesicles also may be infected. In cows the flagellates first infect the vagina, causing a vaginitis, and then move into the uterus.

Bovine genital trichomoniasis is a venereal disease transmitted by coitus, although transmission by artificial insemination is possible.

**Pathogenesis:** The most characteristic sign of bovine trichomoniasis is early abortion, which usually happens 1 to 16 weeks after insemination. Because the fetus is quite small at that stage. If all fetal membranes are passed after abortion, a cow may recover spontaneously. However, if they remain, she usually develops chronic endometritis, which may cause permanent sterility.

Pathogenesis is not observable in bulls, but an infected bull is worthless as a breeding animal; unless treated, it usually remains infected permanently.

**Control** of bovine genital trichomoniasis depends on proper herd management. Cows that have been infected should be bred only by artificial insemination to avoid infecting new bulls.

Bulls should be examined before purchase. Unless they are extremely valuable, infected bulls should be killed.

Vaccines are most effective when used in conjunction with other control measures, including replacement of older bulls with younger ones.

# *Tritrichomonas enteris*

**Hosts:** Ox, zebu.

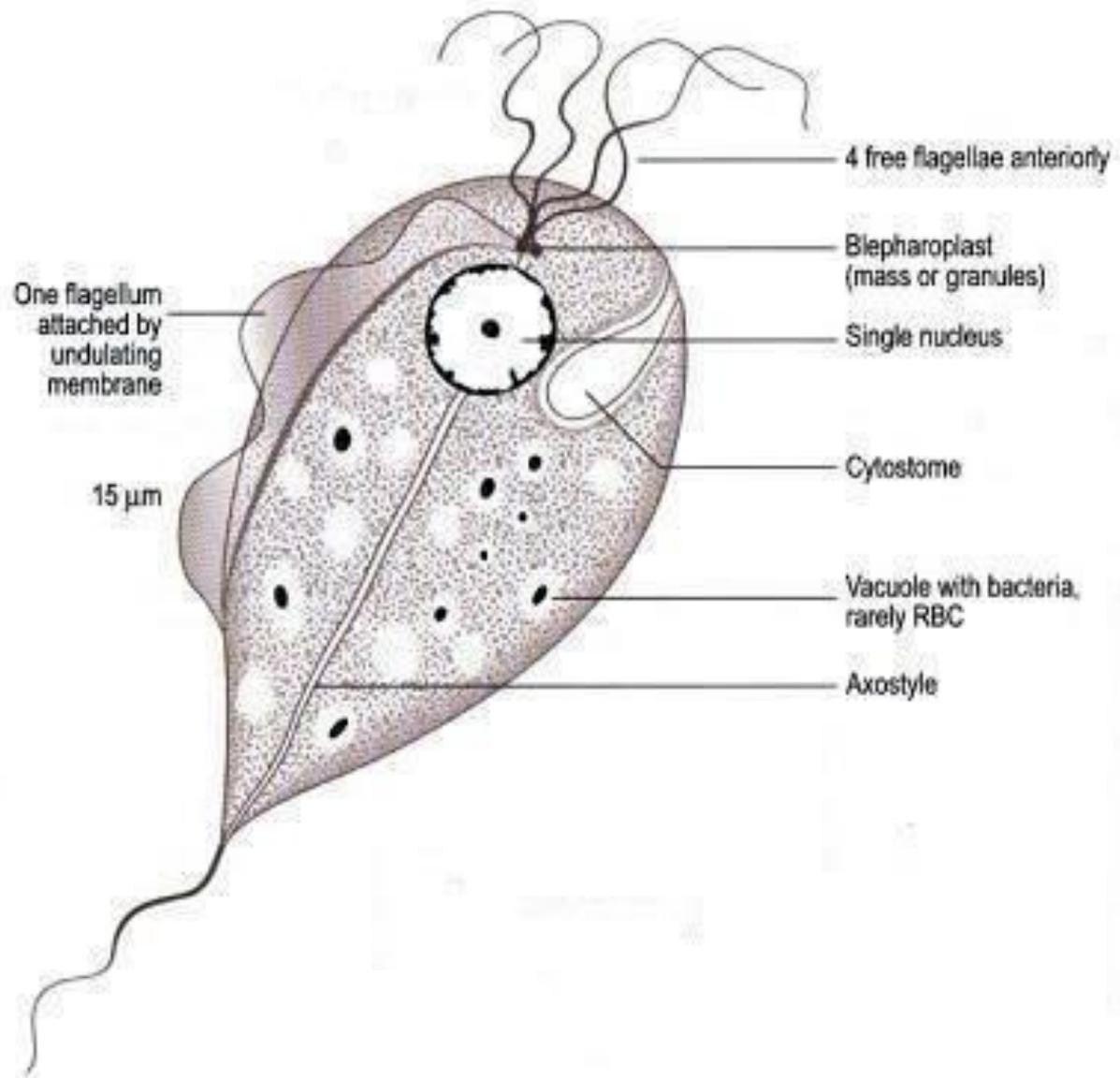
**Location:** Cecum, colon.

**Morphology:** Three anterior flagella of equal length.

- The flagellum at the edge of the undulating membrane is single, without an accessory filament.

- The undulating membrane extends  $3/4$  of the body length, and a free flagellum extends beyond the undulating membrane. The axostyle is straight, slender.

- Subcostal granules are present.



# *Tritrichomonas equi*

**Host:** Horse.

**Location:** Cecum, colon.

**Morphology:** *T. equi* possess 3 anterior flagella and the fourth in an undulating membrane. The axostyle is slender.

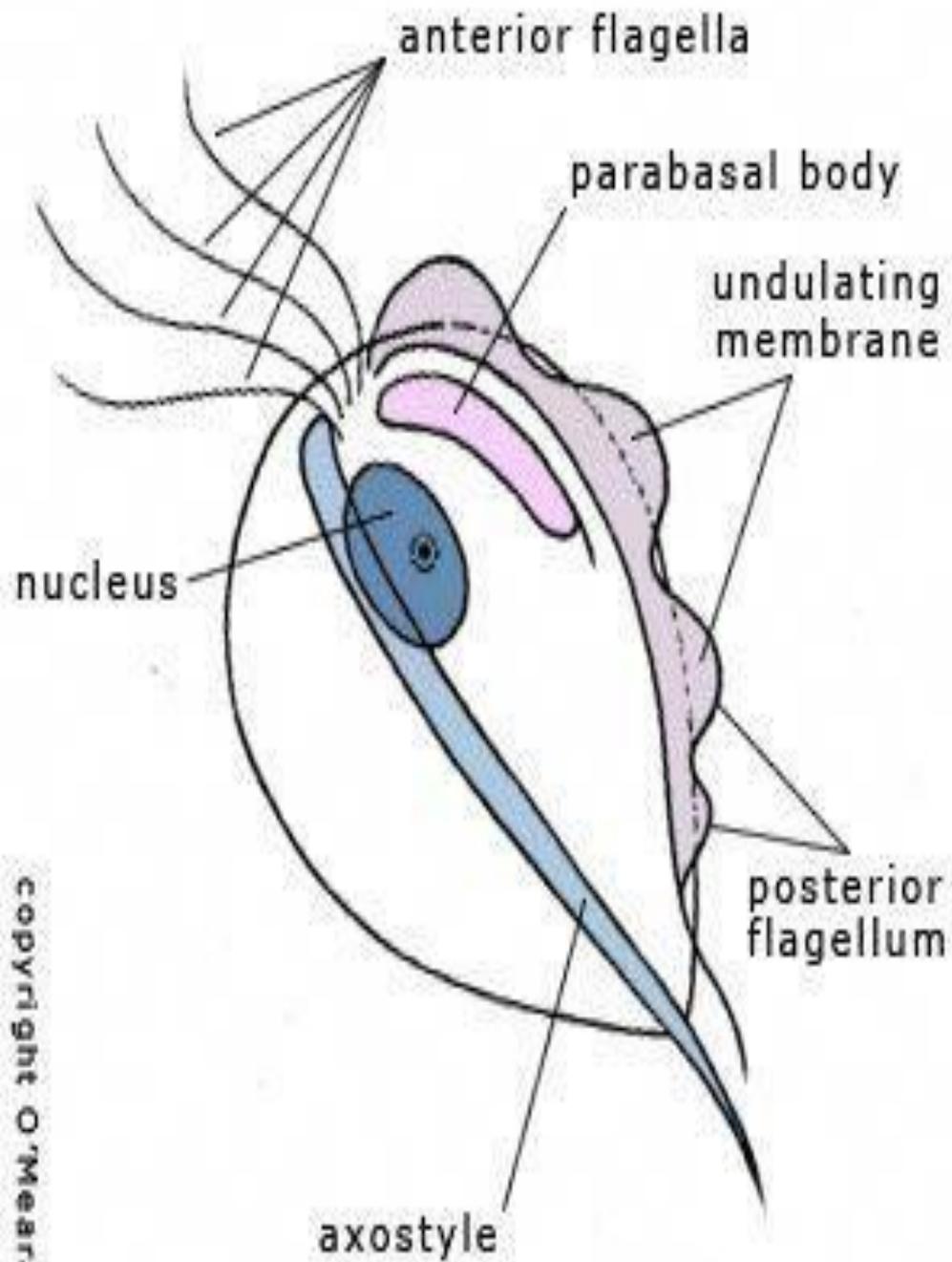
This trichomonad is a parasite lives in the intestine of horses and can be a potential cause of diarrhea in foals.



***T. axei***

# *Trichomonas gallinae*

- Agent of avian trichomoniasis.
- A parasite of the upper digestive tract of many gallinaceous birds and doves .
- Some strains may also produce liver and lung lesions.
- The parasite is transferred to young from the mother during feeding. Transmission between birds may also occur from contaminated feed and water.
- Most deaths occur very acutely and young appear in good condition.
- The presence of this organism in doves is a common source for infections in both free-ranging and trained falcons and hawks.



# *Tetratrichomonas ovis*

**Host:** Sheep

**Description:** The body is pyriform, and the four anterior flagella are of unequal length.

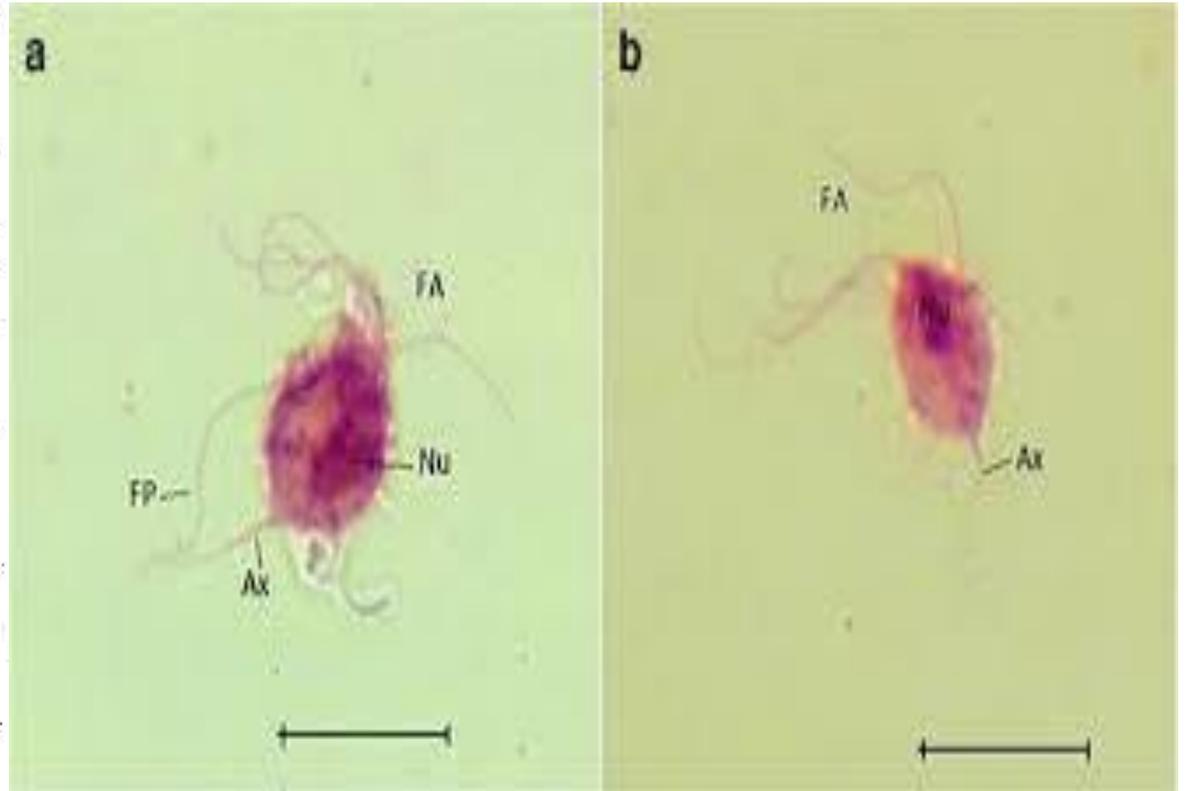
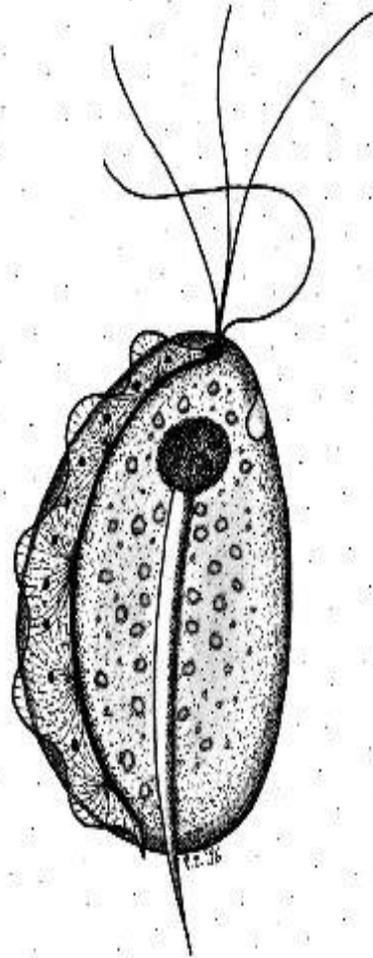
There is a slender hyaline axostyle which extends beyond the body and gradually tapers to a point.

There is an anterior nucleus.

There is a prominent undulating membrane and which continues as a free posterior flagellum

The costa is prominent and there are several. irregular rows of paracostal granules, and an ovoid or club-shaped

parabasal body containing an intensely chromophilic body, and a parabasal filament.



THANK YOU

