Parasitology & Mycology

Lab 6

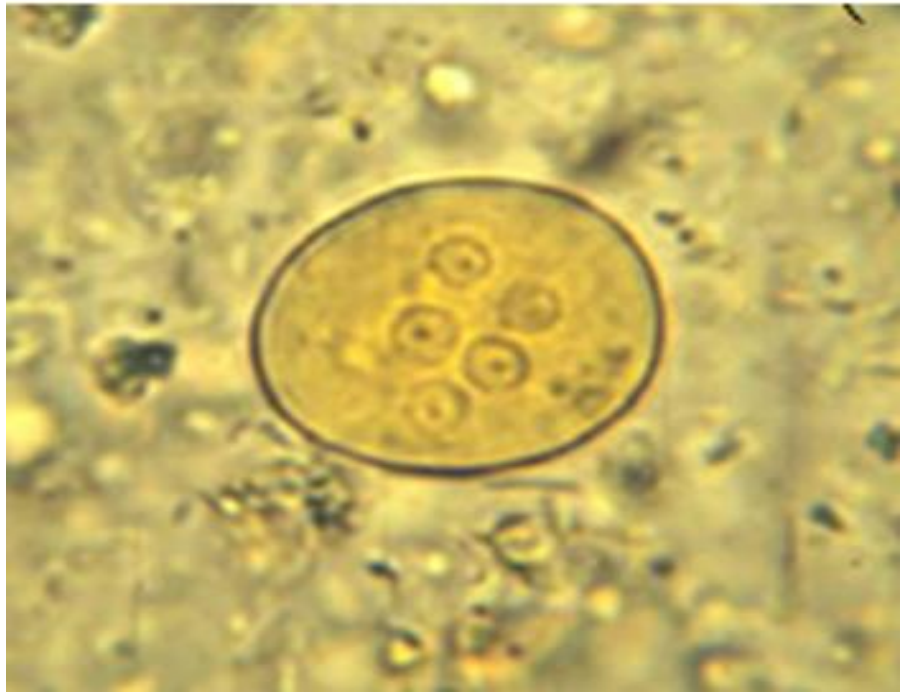
By Prof. Hala Tabl

Protozoa

Four nucleated cyst of

Giardia lamblia

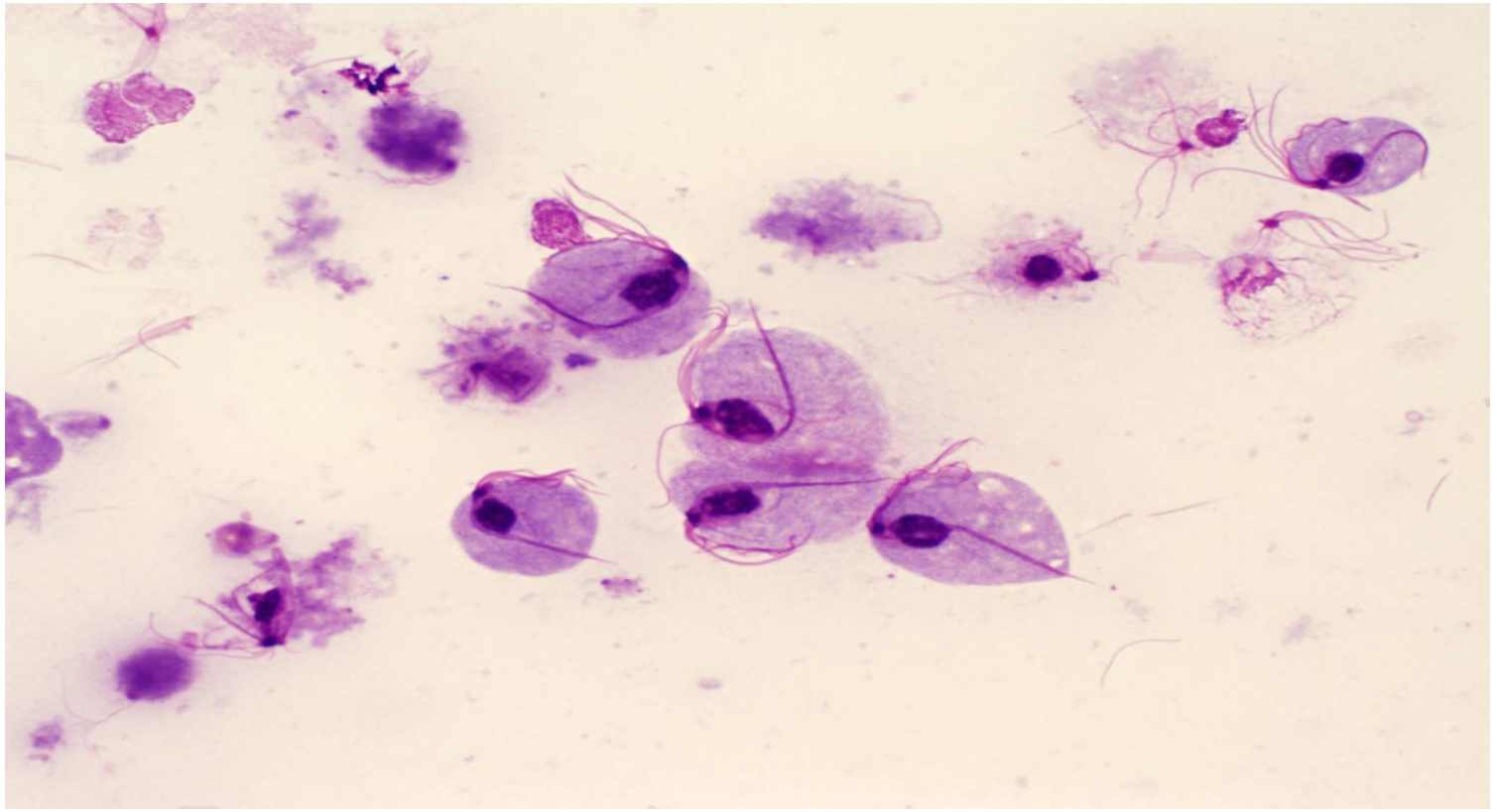
Infective stage + Diagnostic stage



Four nucleated cyst of

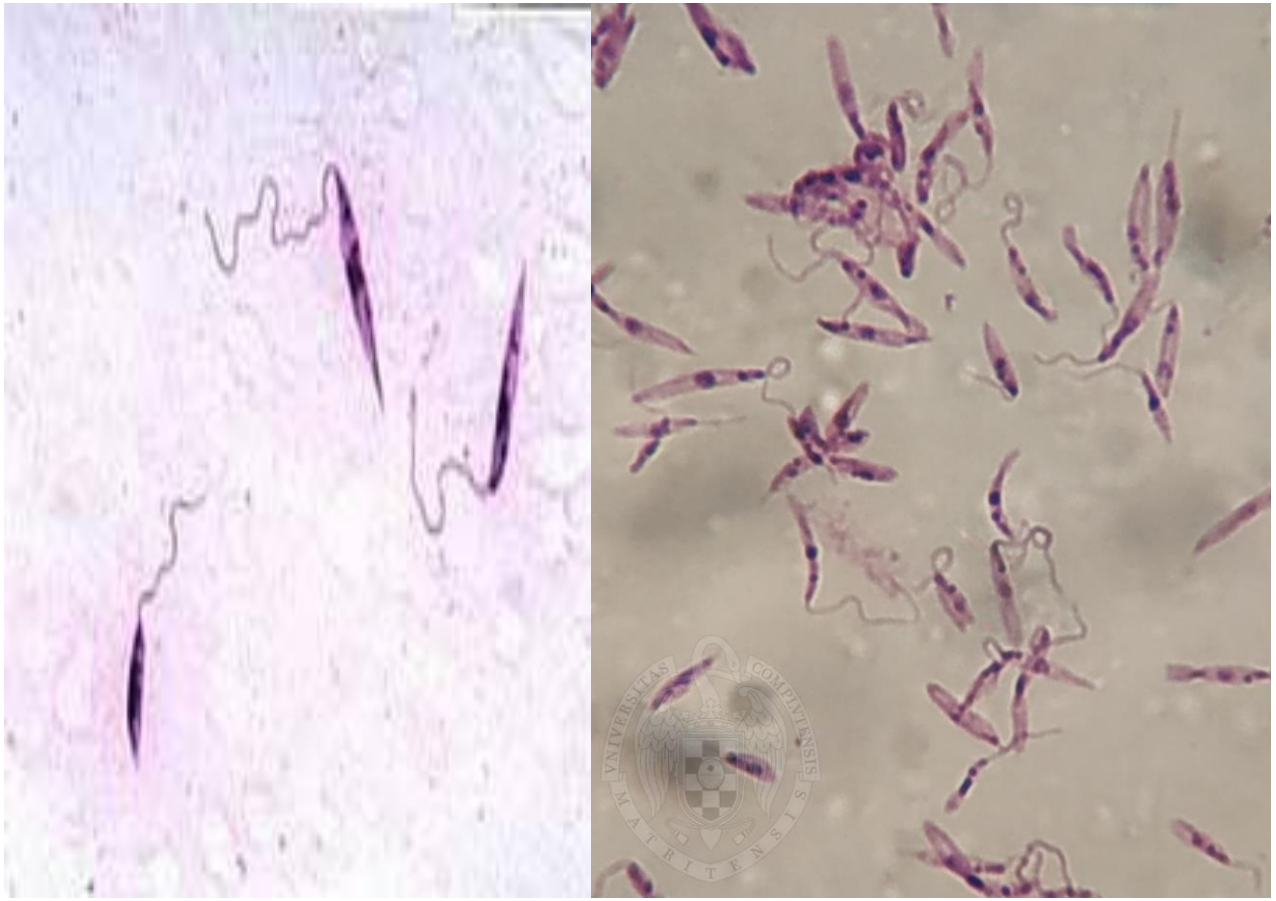
Entamoeba histolytica

Infective stage + Diagnostic stage

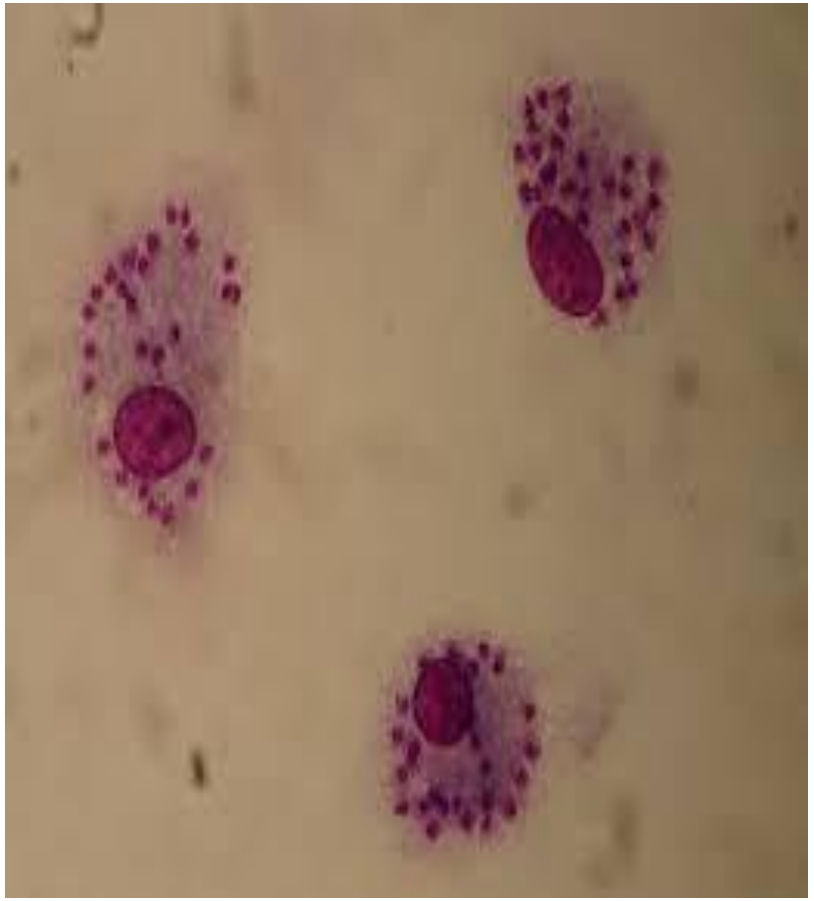


Trophozoites of Trichomonas vaginalis

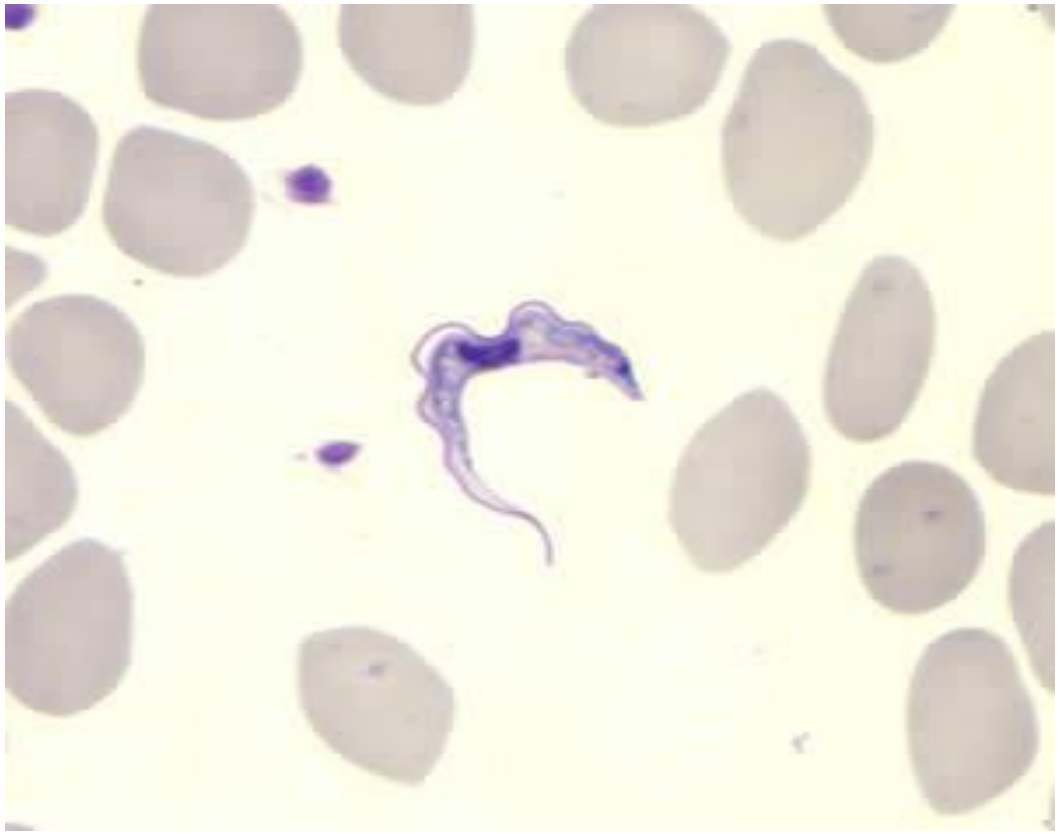
Infective stage + Diagnostic stage

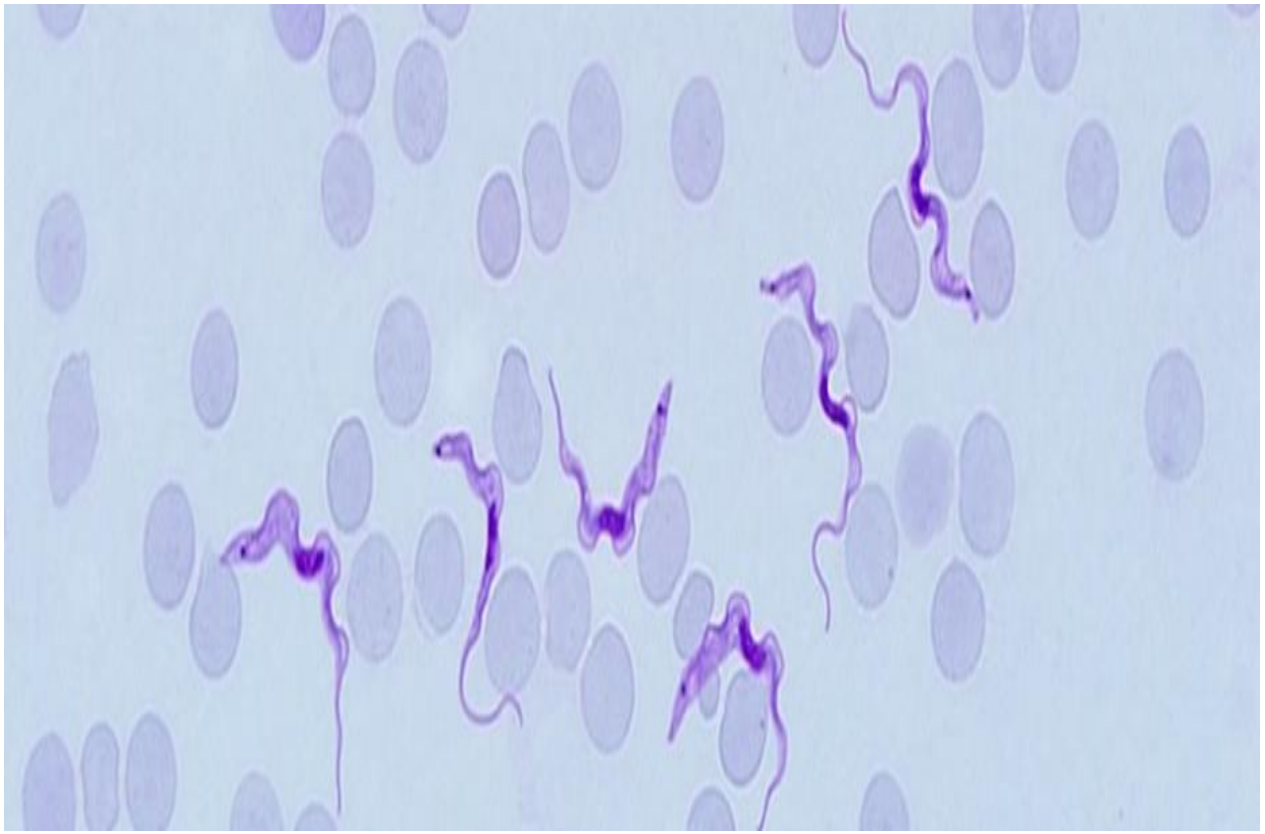


Promastigote of
Leishmania donovani
Infective stage

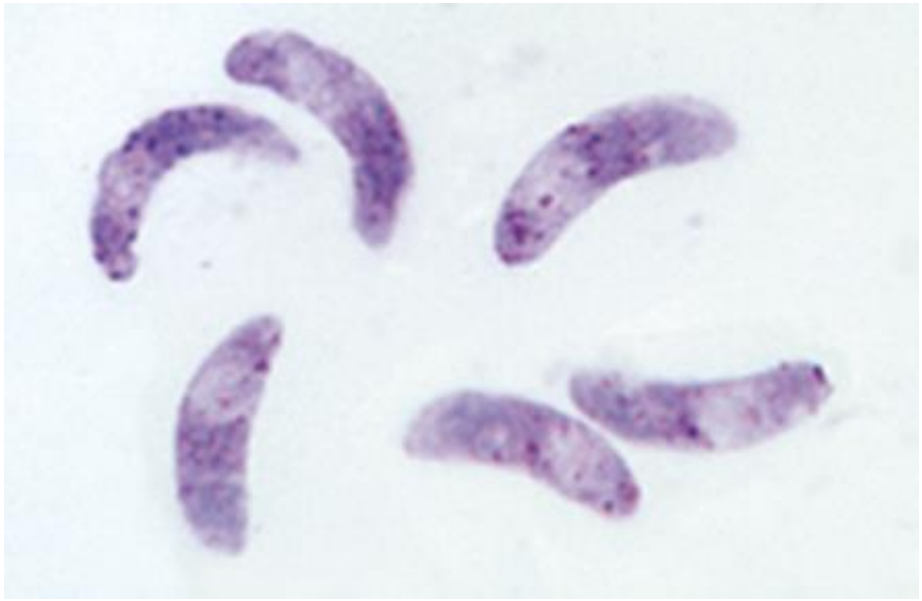


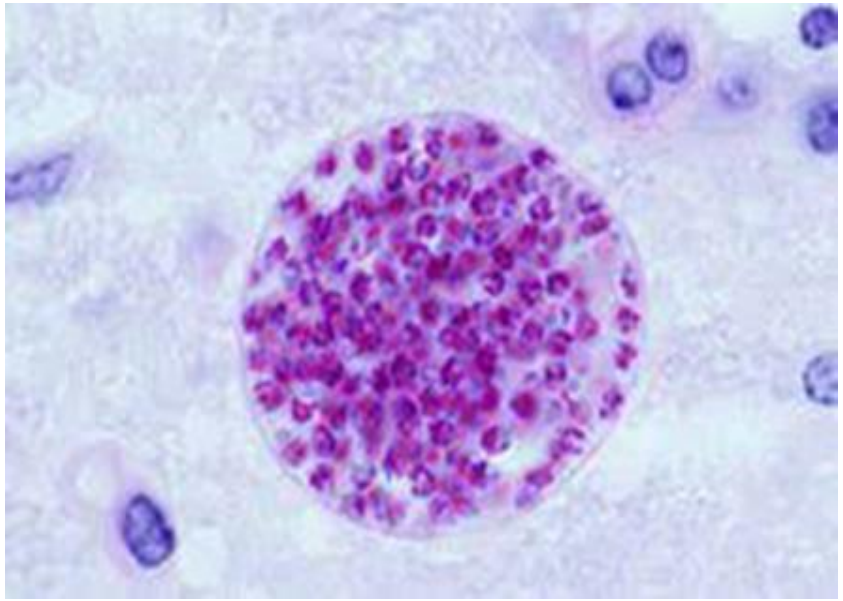
Amastigote of
Leishmania donovani
Diagnostic stage





Trypomastigote of Trypanosoma in a Giemsa-stained blood smear
Infective stage + Diagnostic stage





Tachyzoite **Bradyzoite (tissue cyst)**

Infective stages of Toxoplasma gondii

General morphology of Nematodes

- Adult is an elongated, **cylindrical** and **unsegmented** with tapering ends.
- They have lumen (cross-section of the worm shows a cavity within which lie the different organs).
- All have **toothed** mouth.
- Have **separate sex**, male is smaller than female & its posterior end is curved ventrally.

Ascaris lumbricoides

Adult worm

Fertilized Immature egg

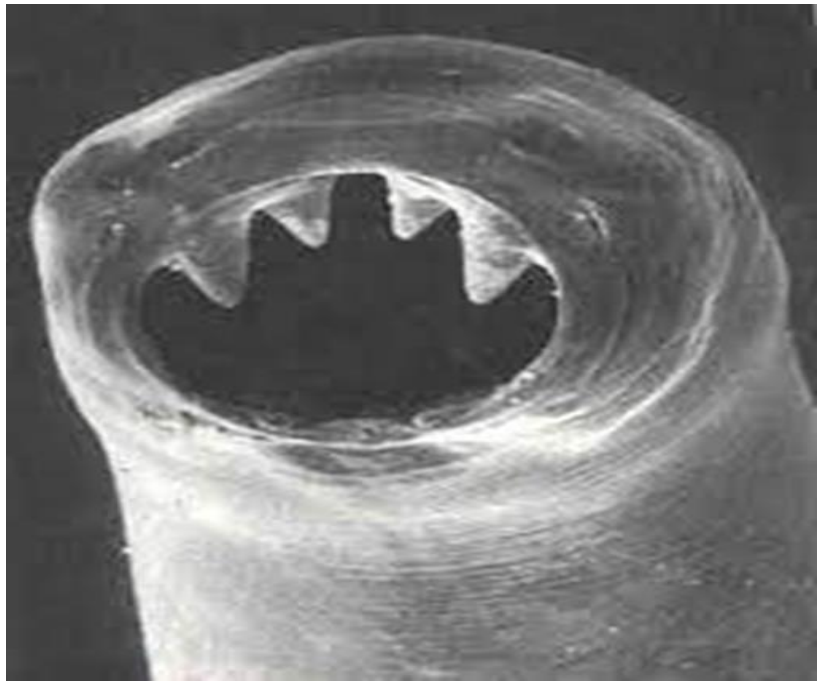
(Diagnostic stage)

Embryonated egg

(Infective stage)

Ancylostoma duodenale

(Human hookworm)



Adult worm

(with well developed teeth)

Immature egg with 4 blastomeres

(Diagnostic stage)

Enterobius vermicularis

Adult worm

Embryonated egg “D-shaped”

(Infective + Diagnostic stage)

General morphology of Trematodes

A) Adult worm:

- **Flat (NO body cavity)**, leaf-shaped **unsegmented**.
- **Organ of fixation:** They all live in lumens and so they possess **suckers**.
- All are **hermaphroditic** (The adult worm contains male and female genital organs) **except schistosomes have separate sexes.**

B) The eggs are usually oval and **operculated except for schistosomes, which are spined.**

Schistosoma

Adult male & female

Forked tailed cercaria
(Infective stage)

Egg (Diagnostic stage)
with lateral spine
S. Mansoni

with terminal spine
S. haematobium

General characteristic of Cestodes

- Adult are usually **flat (No body cavity)**, tape-like, **segmented**.

- The length of some cestodes may reach 10 meters.

- They possess scolex, neck, and proglottids.

- The scolex may be equipped with **suckers, hooks, or grooves.**

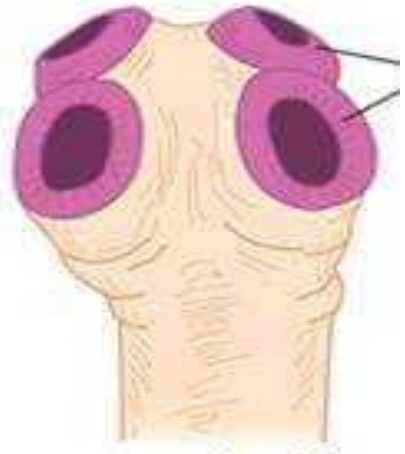
- The **neck is the actively dividing part** with regenerative capacity.

- The proglottids **near the neck, are young immature segments**, behind them are the mature segments, and at the **hind end, are the gravid segments**.

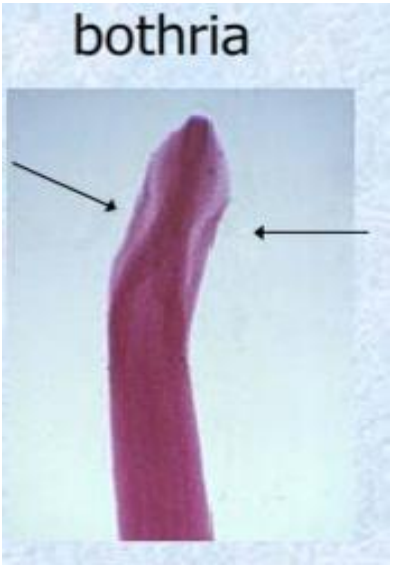
- All tapeworms are **hermaphrodites** (mature segment contains both male and female genital organs).

Echinococcus granulosus
Adult worm

Taenia solium
Scolex
(4Suckers&hook)



Taenia saginata
Scolex
(4Suckers only)

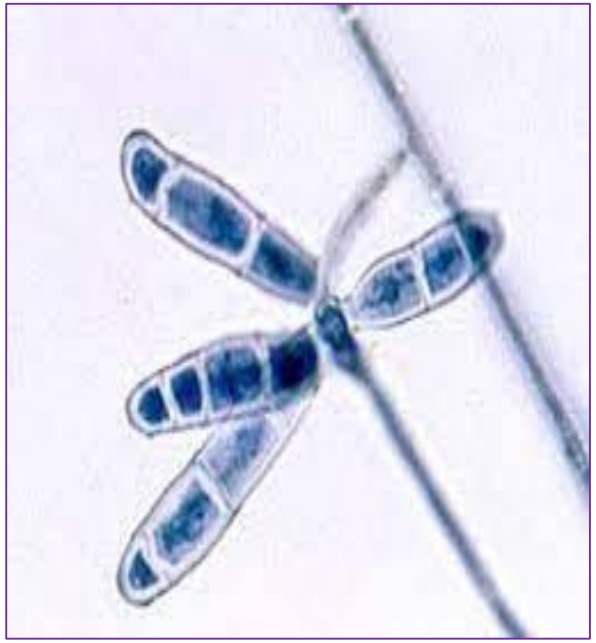


Diphylobothrium latum
Scolex
(Bothrium=Groove)

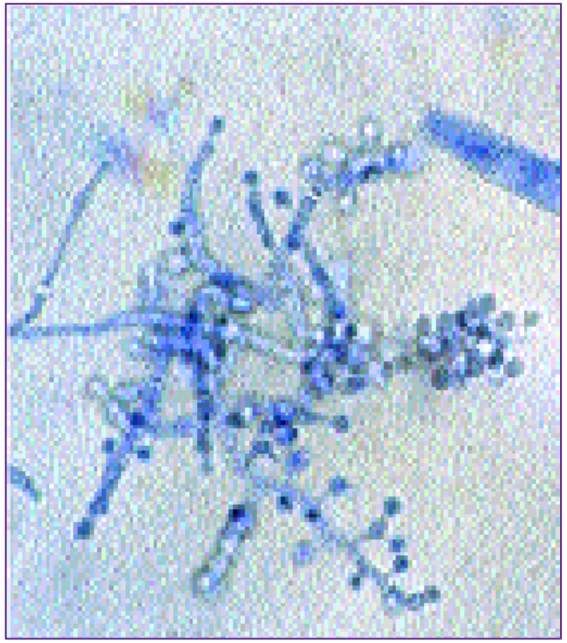
Dermatophytes (Ringworm)

KOH preparation
All species show
Septate hyphae and arthrospores

lactophenol cotton blue
Microsporum
Spindle shaped

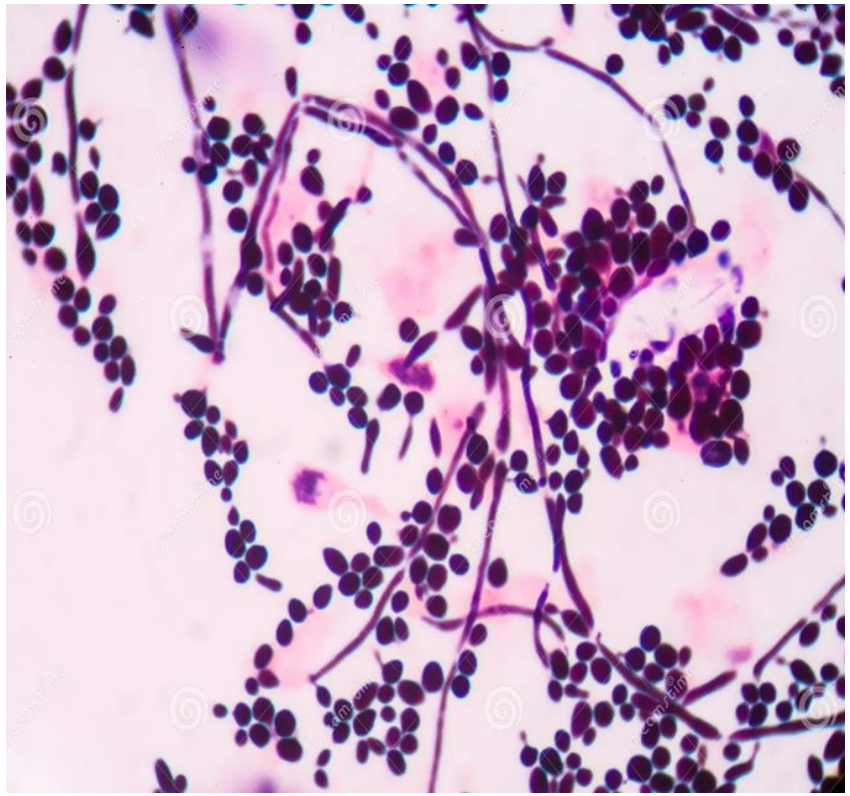


lactophenol cotton blue
Epidermophyton
Club shaped

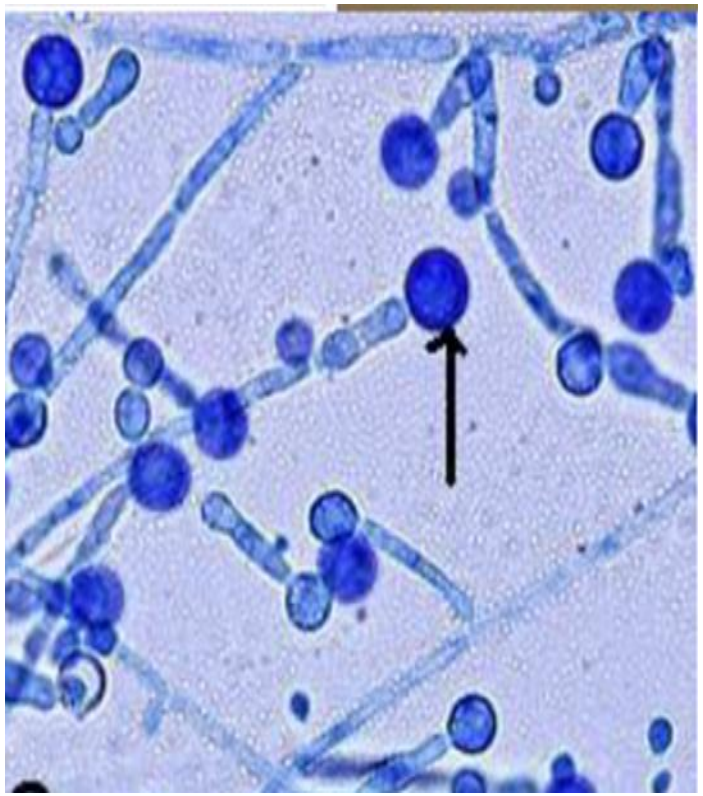


lactophenol cotton blue
Trichophyton
Rounded or oval

Candida albicans



Gram stain
Budding cells
with pseudohyphae

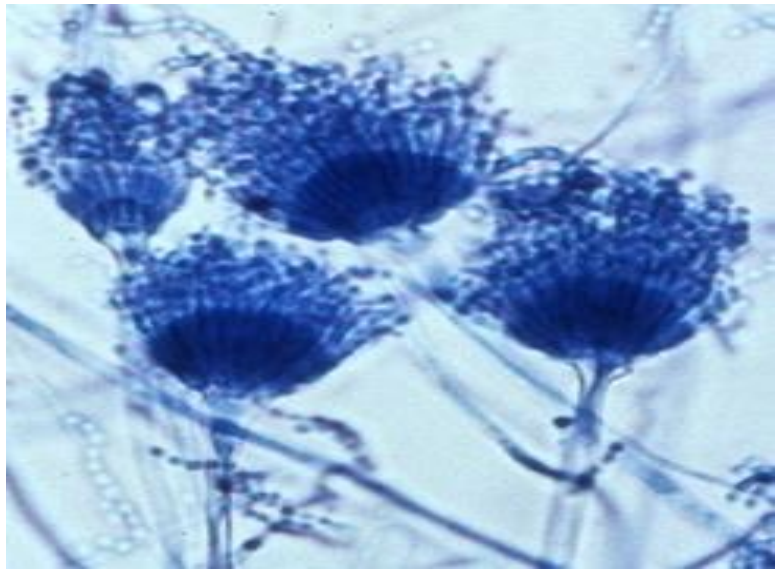


Germ tube test
Tubal outgrowth
C. albicans +ve

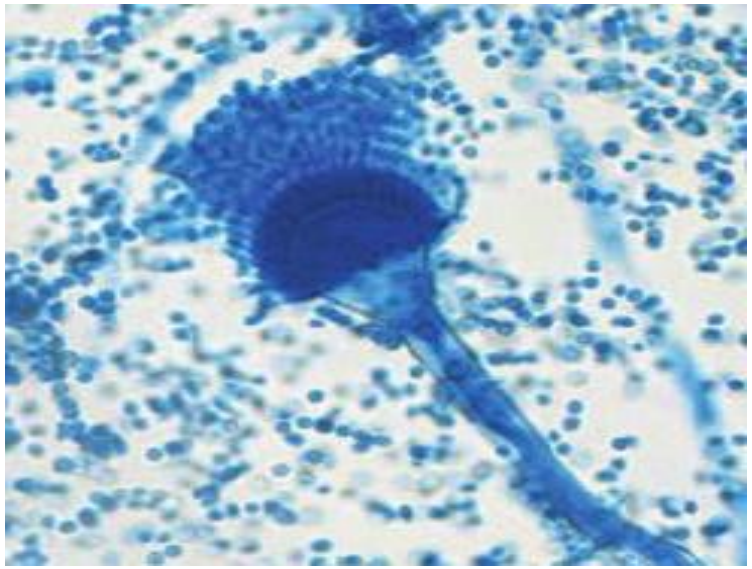
Sabouraud's agar
Cream colored, pasty colonies
with distinctive yeast smell

Aspergillus spp.

Lactophenol cotton blue preparations shows **filamentous septate hyphae** with characteristic **aspergillus head.**



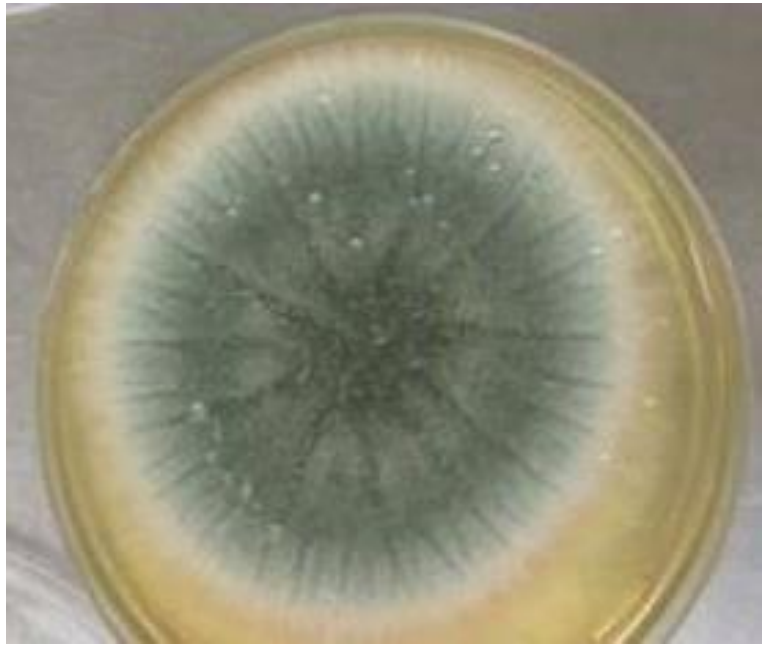
A. Fumigatus
Flask shaped head



A. Flavus
Hemi-spherical head

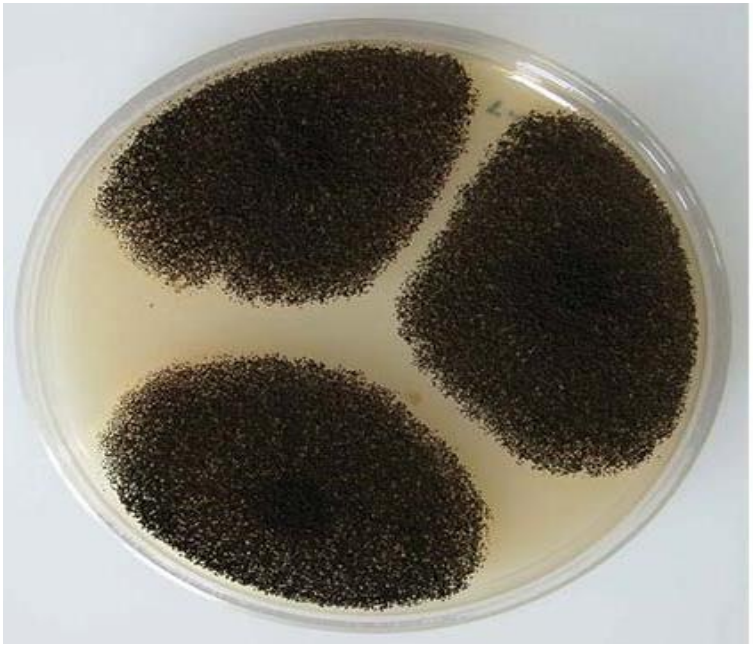
A. Niger
Rounded head

On **Sabouraud's** agar



A. Fumigatus
Smoky green spores

A. Flavus
Yellowish green spores



A. Niger
Black spores

Thank you