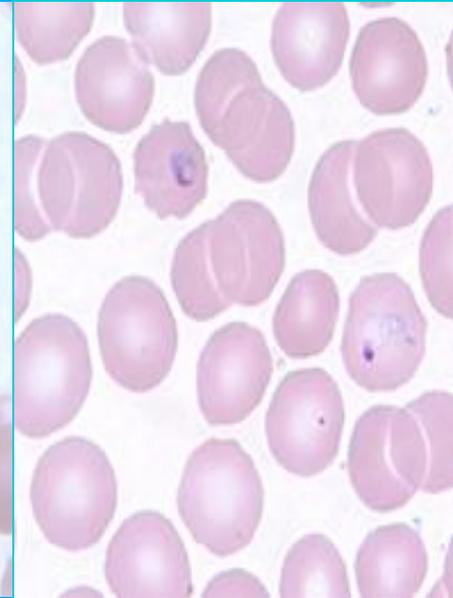
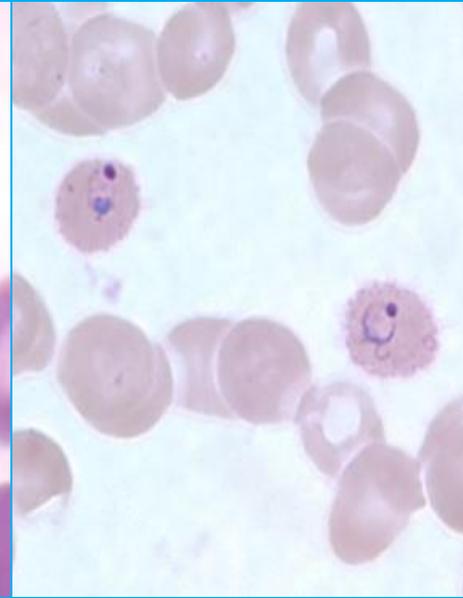
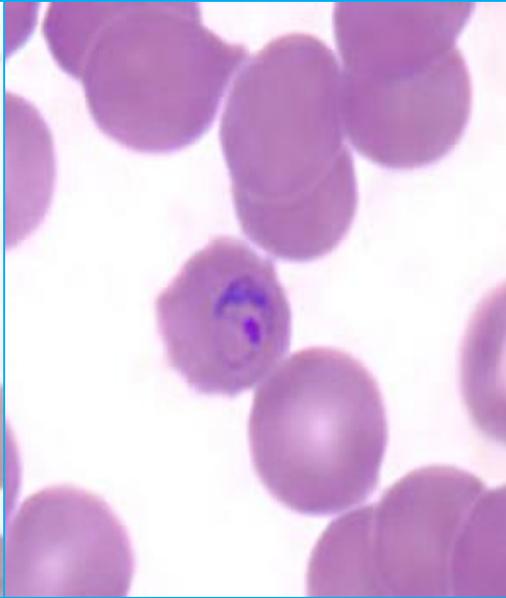
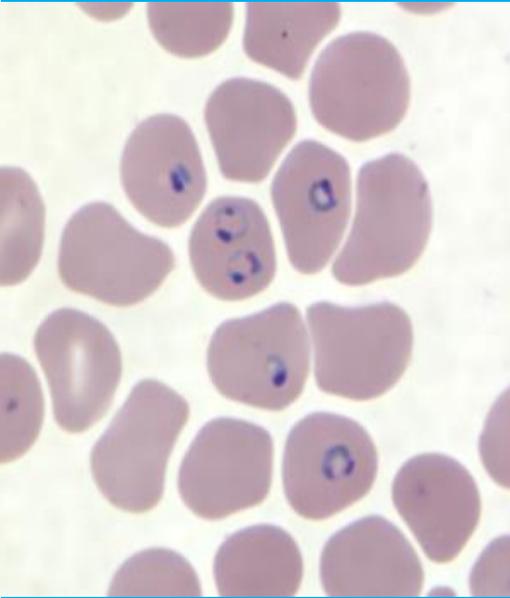


Parasitology Practical Slides
on
Haemopoetic & Lymphatic
system Module
By
Mathhar Ahmad Abomorad MD

Ring stage of malaria species



P. falciparum

- Infected RBCs are normal in size.
- Scanty cytoplasmic ring fills 1/6 RBCs surrounds a small vacuole.
- One or 2 chromatin dots (headphone).
- multiple rings are common.
- Seen in periph.blood

P. malariae

- Infected RBCs are normal in size.
- Cytoplasmic ring fills 1/3 RBCs.
- One chromatin dot inside the ring.

P. ovale

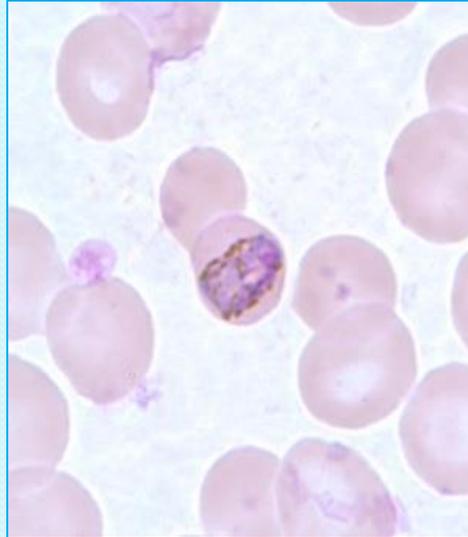
- Infected RBCs are oval, larger than non infected ones with irregular surface.
- Dense cytopl. ring larger than *P. vivax* fills 1/3 of RBCs
- Dense one chromatin mass.

P. vivax

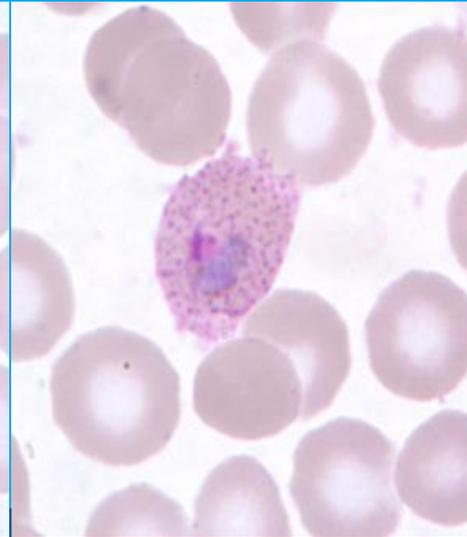
- Infected RBCs are larger than non infected ones.
- Delicate cytoplasmic ring fills 1/3 of RBCs.
- One chromatin dot.
- Ring surrounds a vacuole.

Trophozoite stage of malaria species

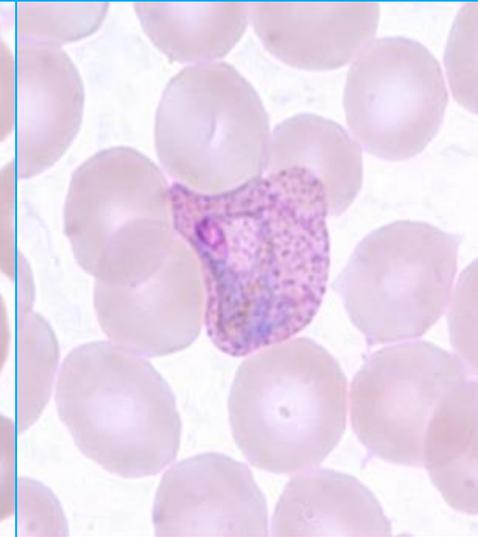
P. falciparum



P. malariae



P. ovale



P. vivax

➤ Band shaped & less vacuolated

➤ Small, compact, oval

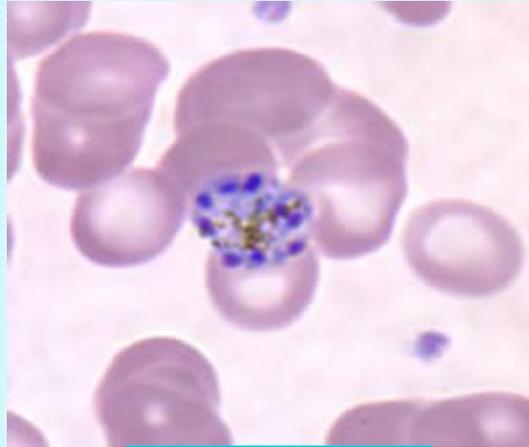
➤ Less vacuolated.

➤ Fimbrial end.

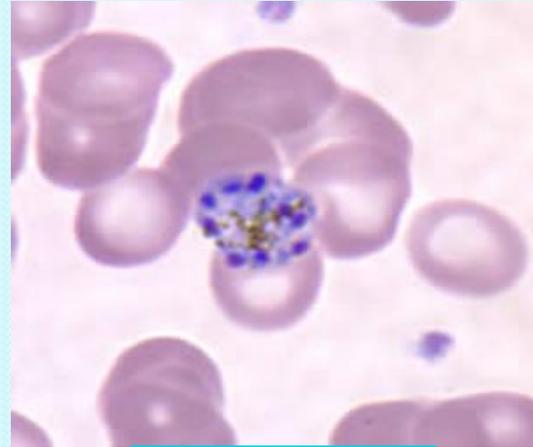
➤ Large amoeboid. & highly vacuolated.

➤ Not seen in peripheral blood due to adhesion phenomena.

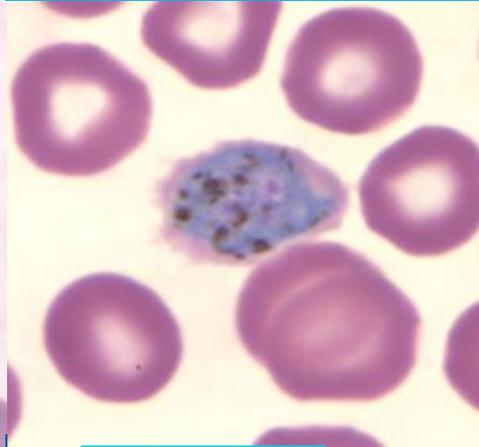
Schizont stage of malaria species



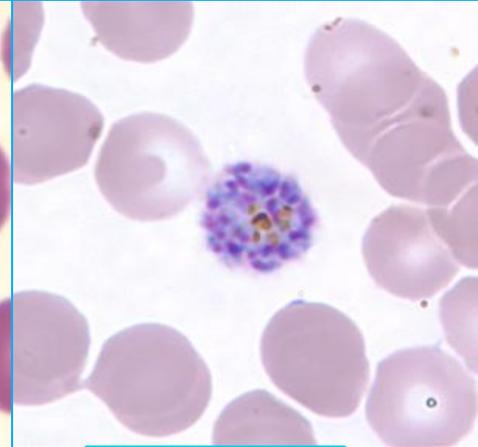
P. falciparum



P. malariae



P. ovale



P. vivax

➤ Not seen in peripheral blood due to adhesion phenomena.

- Fills RBCs.
- Contain 6-12 merozoites (8) arranged symmetrically around **central mass of malarial pigment (rosette-shaped)**

- Fills $\frac{3}{4}$ of RBCs with fimbrial end.
- Contain 6-12 merozoites (8) arranged irregularly around **central mass of malarial pigment**

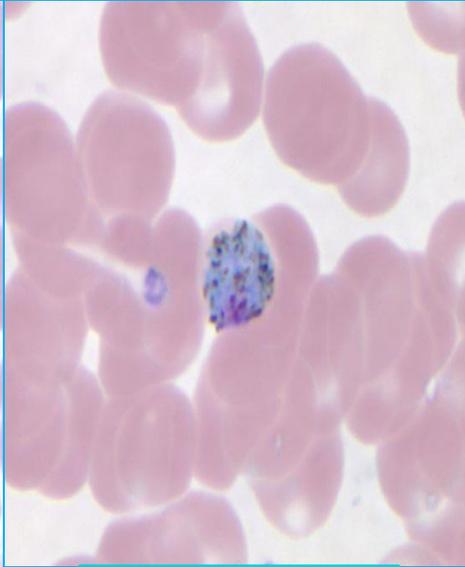
- Fills RBCs.
- Contain 12-24 merozoites (18) arranged irregularly around **central mass of malarial pigment**

Gametocytes (male & female) of malaria species



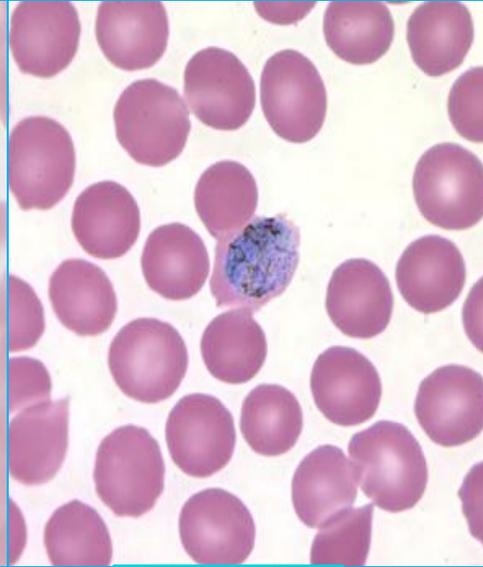
P. falciparum

- Crescent or banna-shaped.
- Seen in peripheral blood



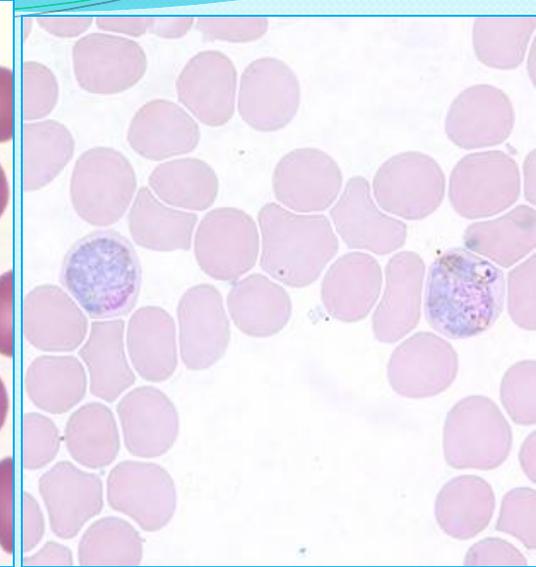
P. malariae

- Fills RBCs.
- Spherical & compact.



P. ovale

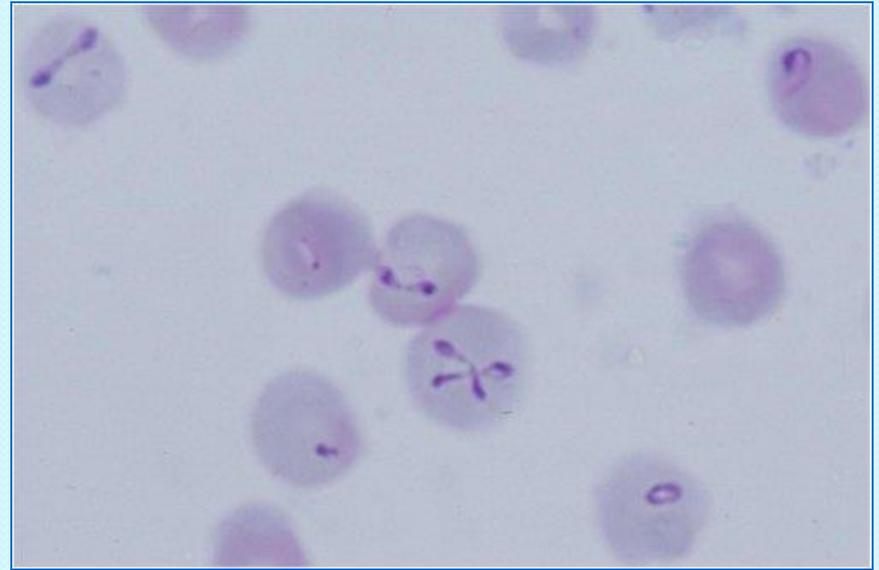
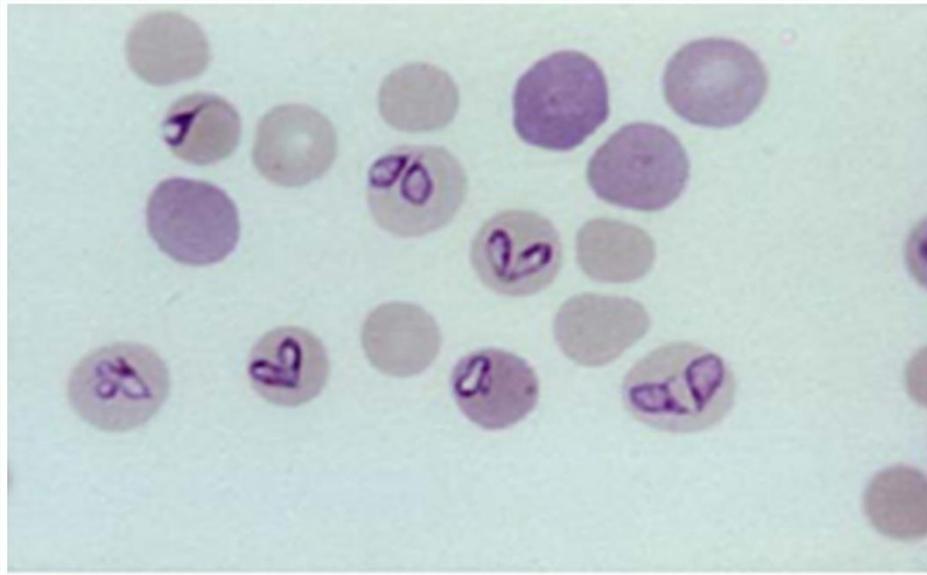
- Fills $\frac{3}{4}$ of RBCs.
- Spherical & compact & smaller than *P. vivax*.



P. vivax

- Fills RBCs.
- Spherical & compact.

Blood film of *Babesia*

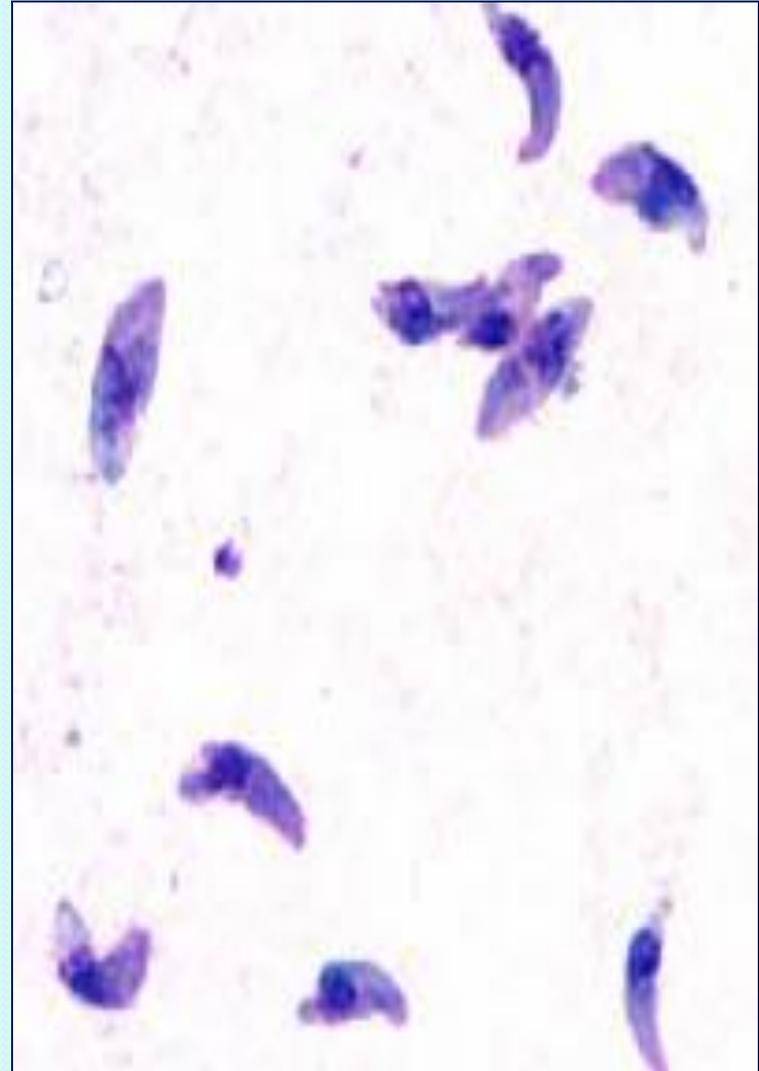


The organism resembles *P. falciparum* ring stage but differ in :

- 1- Has a white vacuole.
- 2- Found in pairs united at their tips.
- 3- No pigment.
- 4- No gametocytes

Toxoplasma gondii ***Trophozoite***

- **Obligate intracellular parasite.**
- **6 x 2 um.**
- **Crescentic in shape with one pole more pointed than the other.**
- **Vesicular nucleus nearer to one end.**
- **Multiply by longitudinal binary fission.**

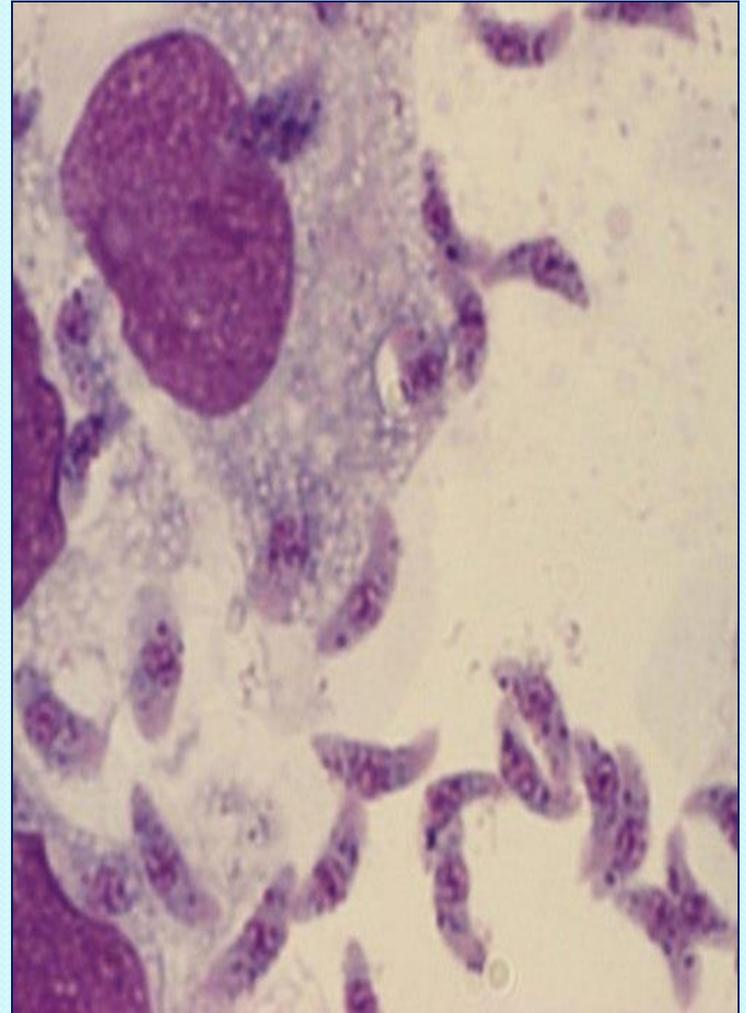


***Toxoplasma gondii* pseudocyst**

Intacellular collection of trophozoites in macrophages in acute stage of infection.

-They are multiplying rapidly (tachyzoites).

- Without cyst wall.

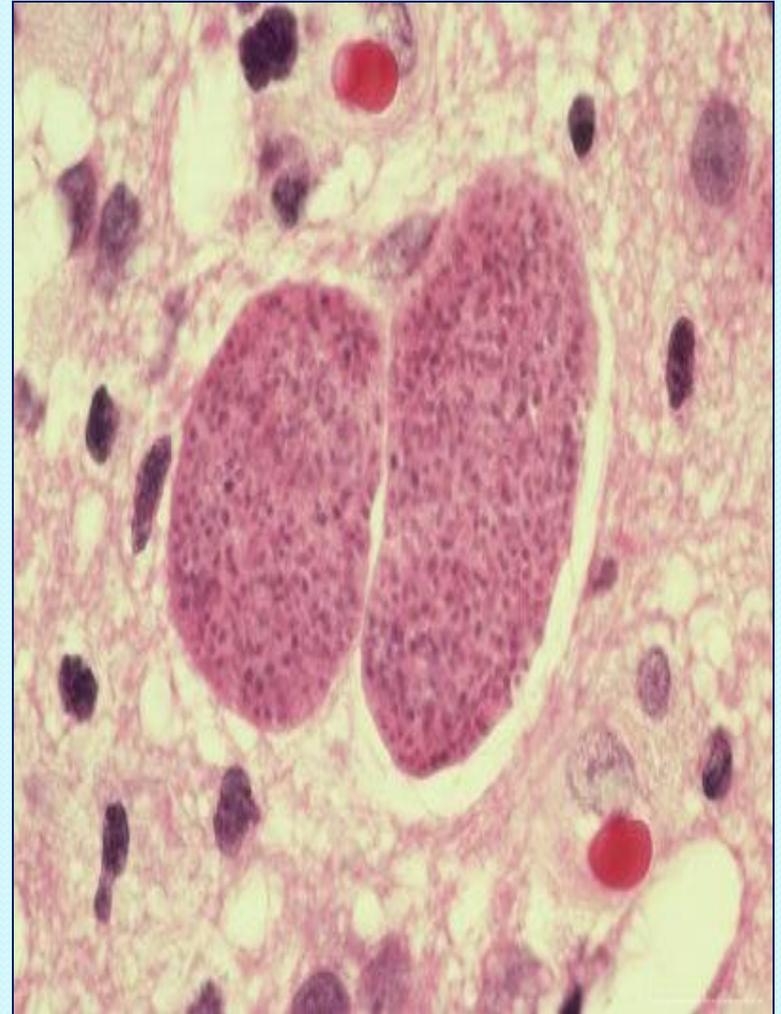


Toxoplasma gondii cyst

Collection of trophozoites enclosed in a true tissue cyst, **in the chronic stage** of infection when immunity develops.

-They are multiplying slowly (**bradyzoites**).

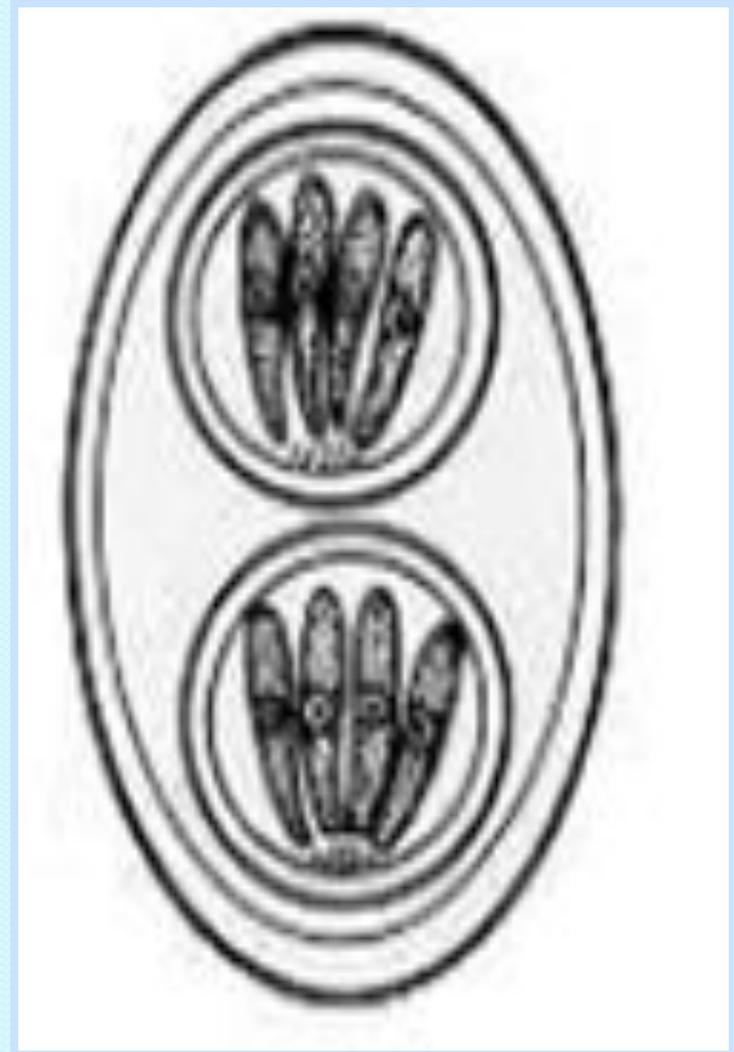
- **With cyst wall** secreted by the parasite.



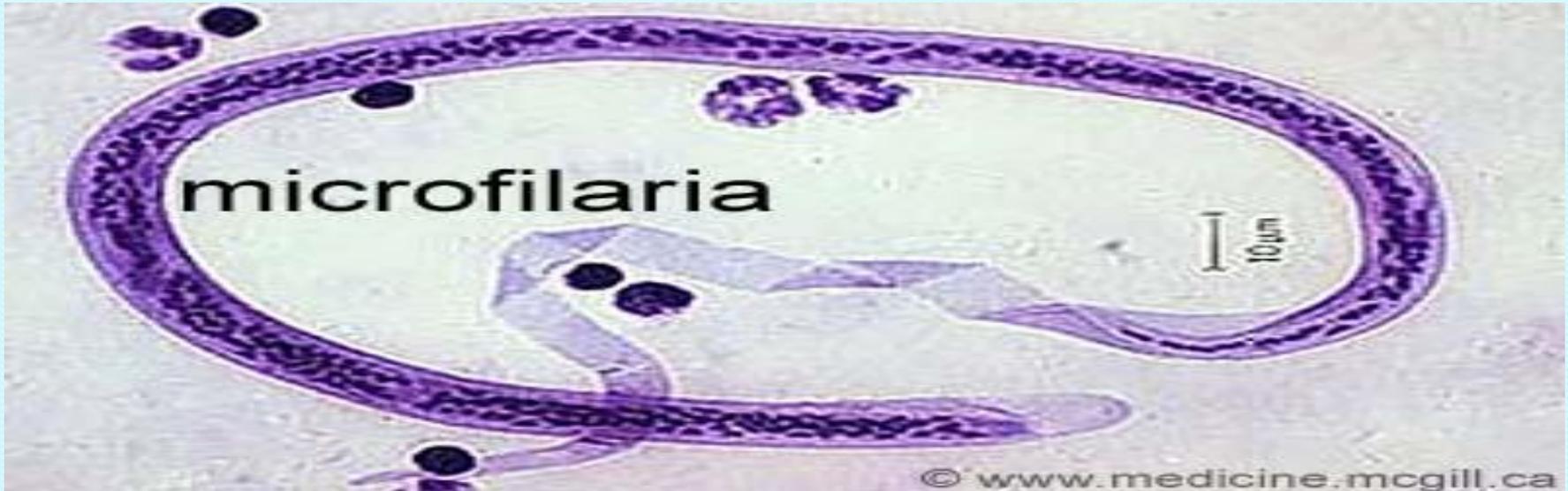
Toxoplasma gondii oocyst

- 10 x 12 μm .
- Oval in shape.
- Contents: 2 sporocysts each with 4 sporozoites (**disporocystic tetrazoic**).
- Excreted **in faeces of infected cat** & remains infective in soil for long time.

N.B. All four stages are infective to D. host and I.H hosts.



Microfilaria of *Wuchereria bancrofti*



250 μm x 8 μm , body with smooth curves, loose sheath with deeply stained nuclei with empty ant. and post. ends & have nocturnal periodicity (10 p.m. to 2 a.m.).

Amastigote (D.S) of visceral Leishmaniasis

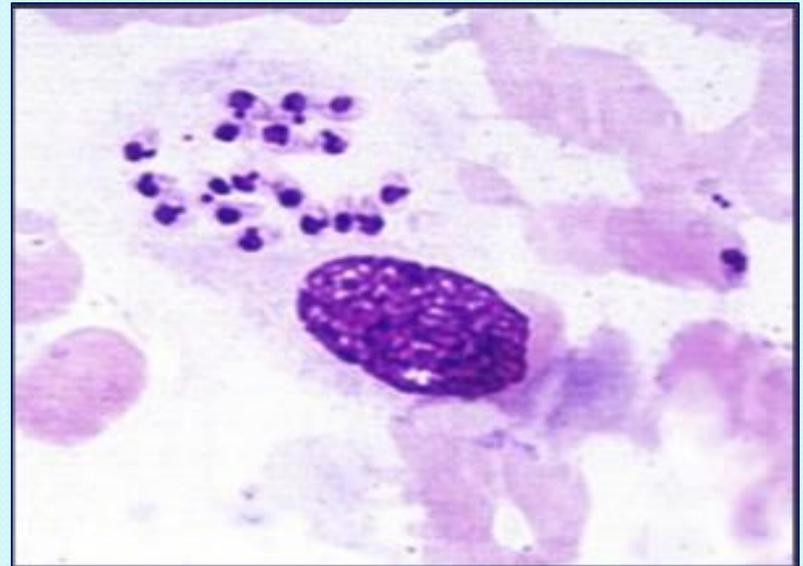
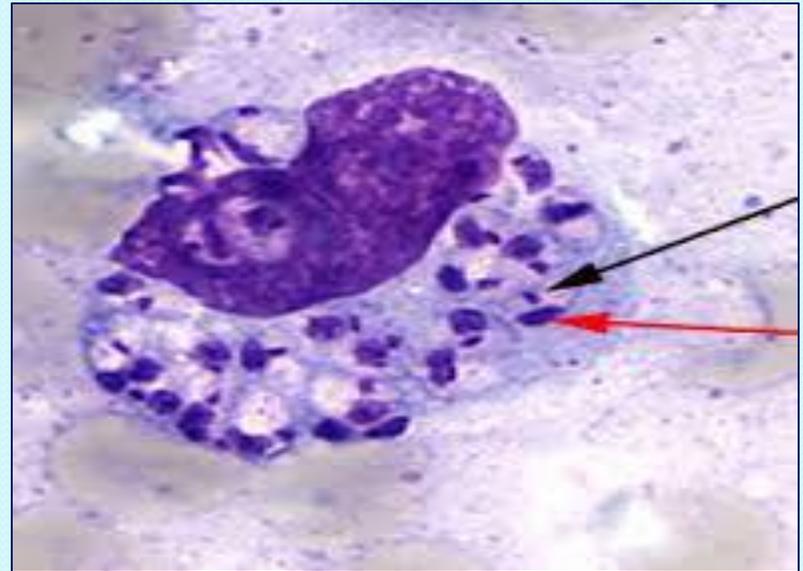
Oval in shape

Nucleus: -Eccentric with
central Karyosome .

Flagellum: Absent

Kinetoplast: Beside the
nucleus.

Habitat: -Intracellular
(macrophage) & Tissue culture



Promastigotes in culture

Shape: Fusiform or spindle.

Kinetoplast: At the anterior end

Flagellum: Present.

Nucleus: Central with central
karyosome

Habitat: Midgut of the insect &
NNN culture media.



Polymorphic trypanosomes

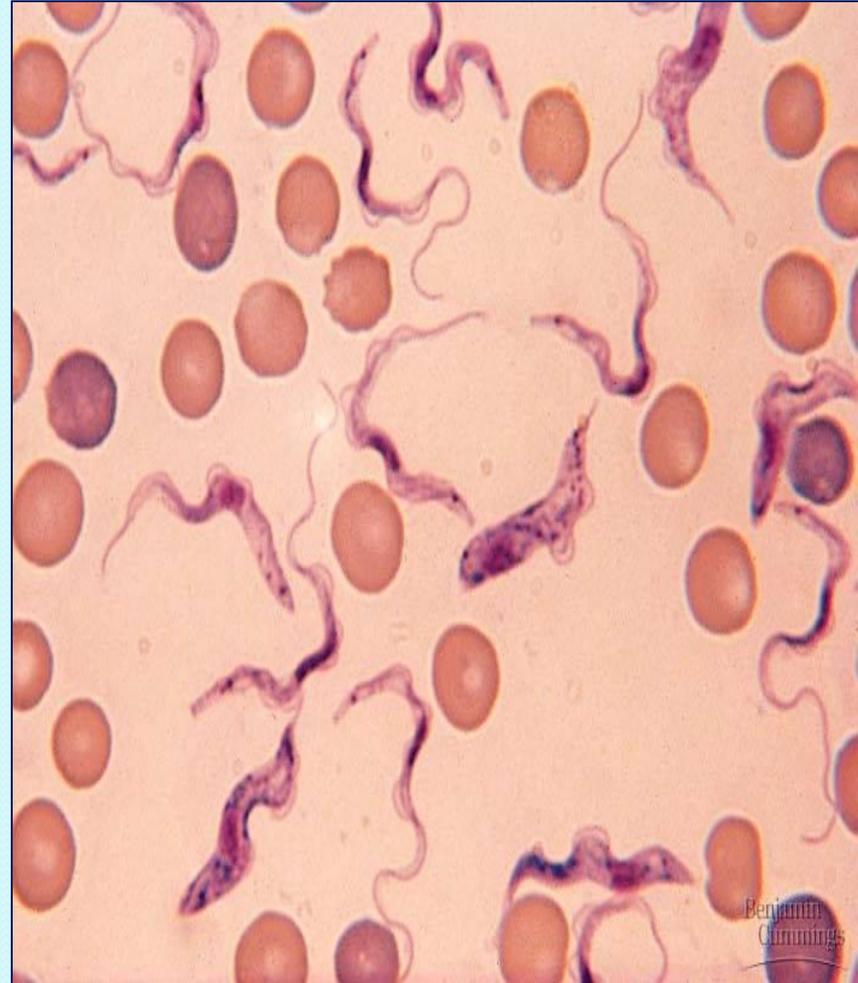
T. gambiense & *T. rhodesiense*

In the blood film, trypomastigote (*Trypanosoma*) has different shapes:

1- Long slender form (30 μm), active and with long free flagellum.

2- Short stumpy form (15 μm), sluggish in motility and without free flagellum.

3- Intermediate form (20 μm), with a short free flagellum.



Epimastigotes in culture medium

- Shape:** Fusiform or spindle
- Kinetoplast:** Anterior to the nucleus.
- Flagellum:** Present
- Nucleus:** - Slightly moved posterior.
- Undulent membrane** -Short
- Habitat:** - In the salivary glands of vector & NNN culture medium.

