

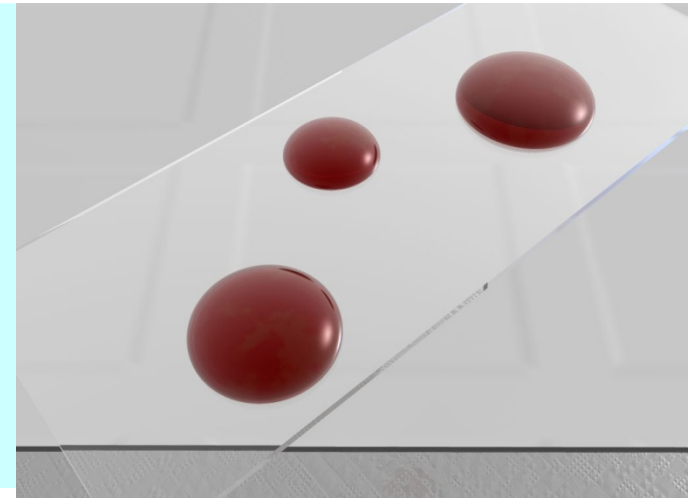
# PRACTICAL ON BLOOD PARASITES

# Common methods for parasitological diagnosis of malaria

The two methods common in use :

1: Light microscopy

2: Rapid diagnostic tests (RDTs).

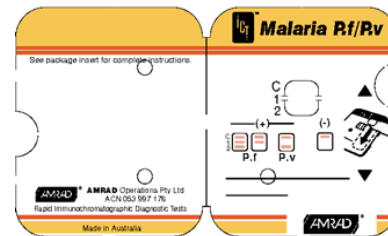


# Laboratory diagnosis of malaria

## Rapid diagnostic tests detect malaria antigens

The products come in a number of formats:

- Plastic cassette
- Card
- Dipstick
- Hybrid cassette-dipsticks



## Malaria P.f. RDT Results

### NEGATIVE RESULTS



Wait 15 minutes  
before reading  
results.

### POSITIVE RESULTS

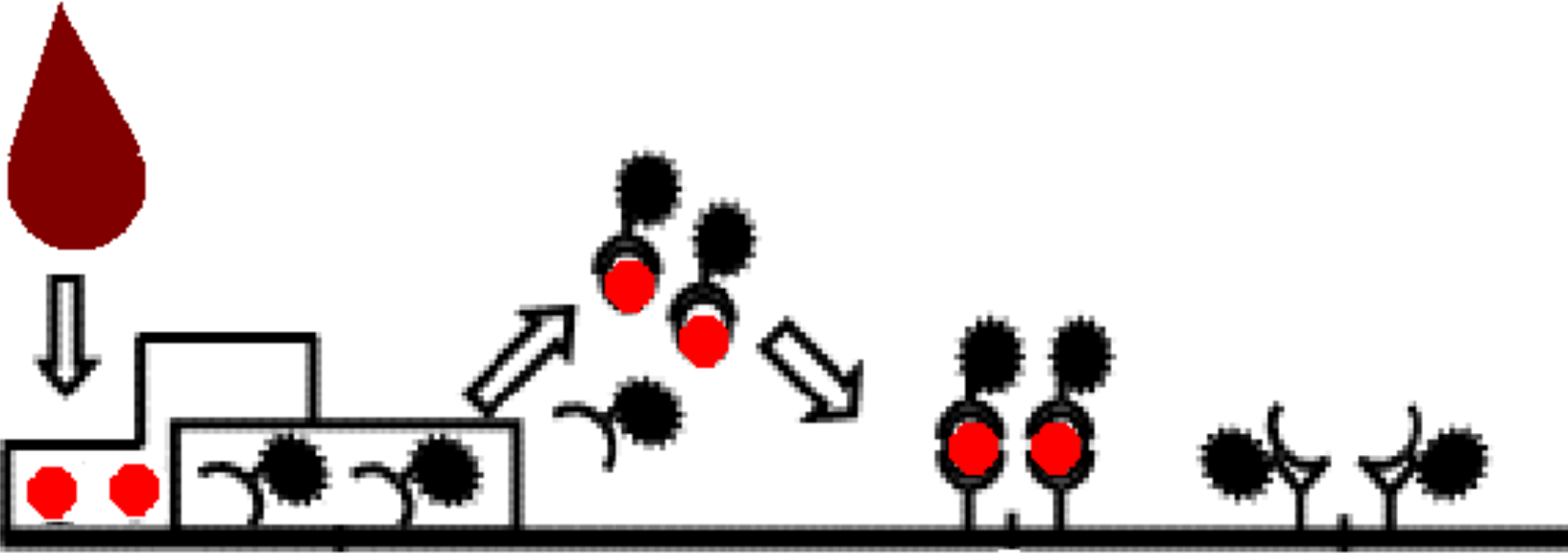


### INVALID RESULTS \*



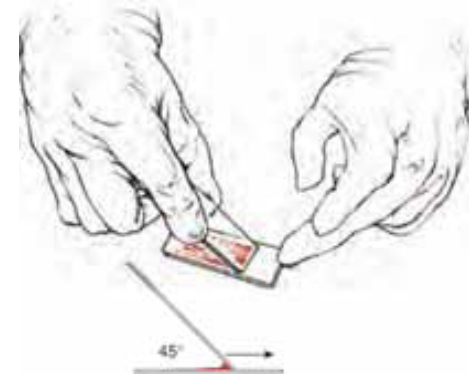
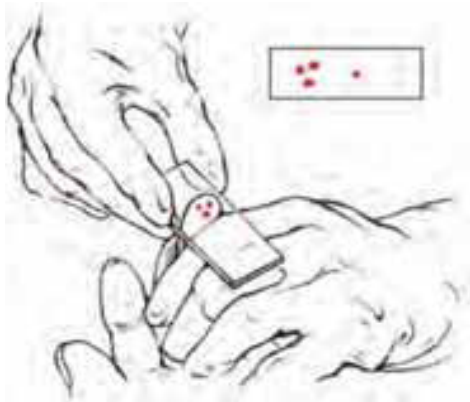
\* No Control Lines (repeat tests)

RDT procedure

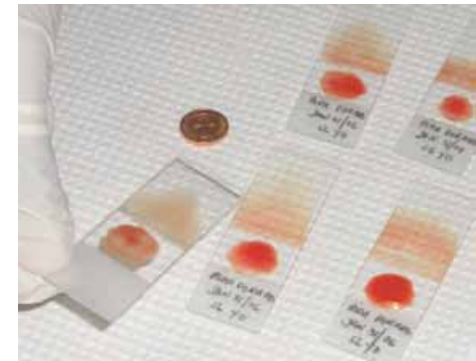
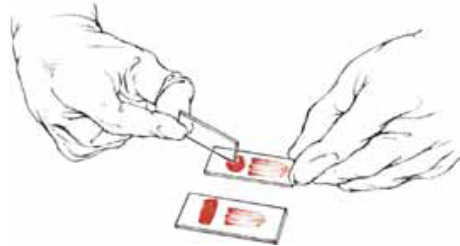
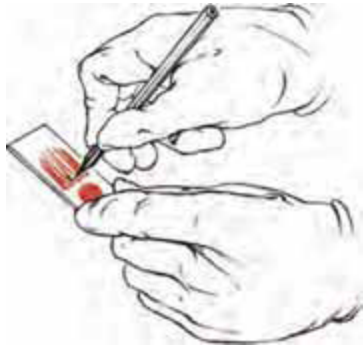


# Laboratory diagnosis of malaria

Light microscopy:1: Preparing blood film



# Laboratory diagnosis of malaria



# Laboratory diagnosis of malaria

Light microscopy: Thick and thin films

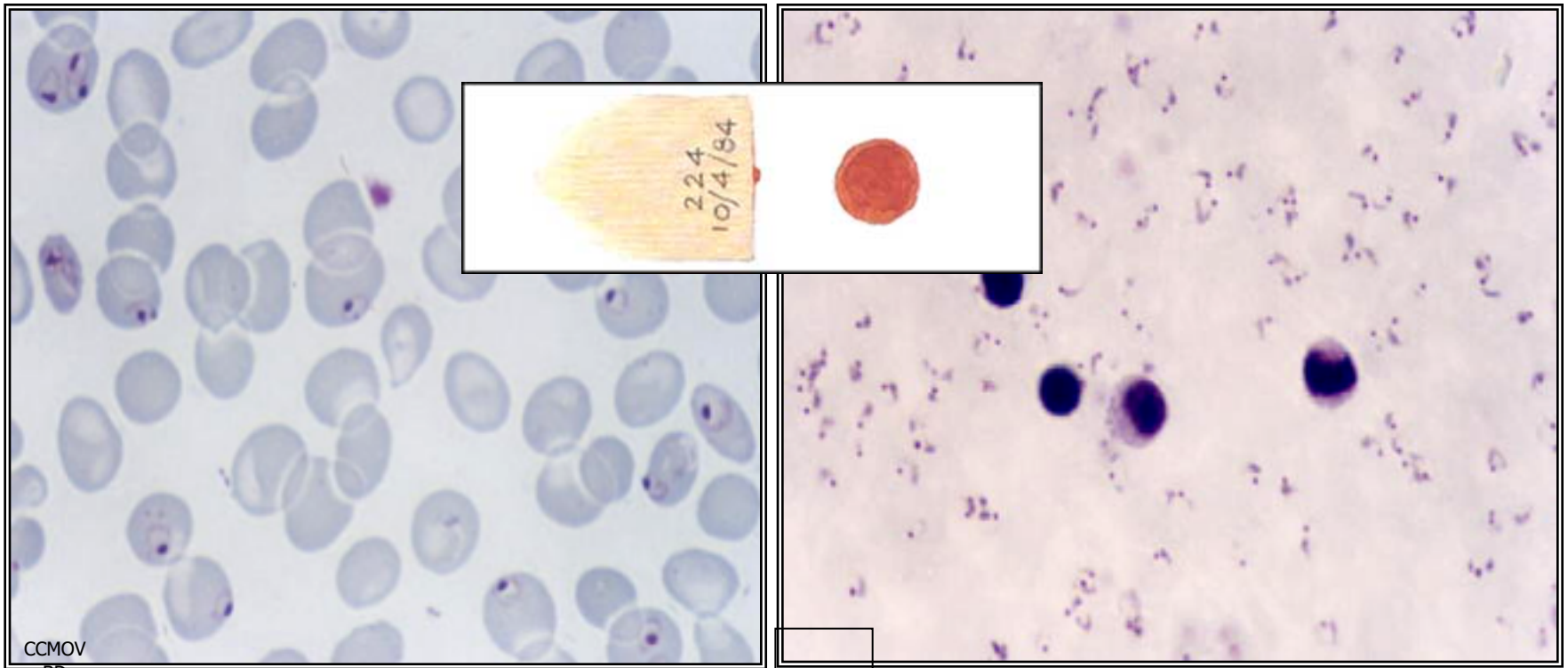




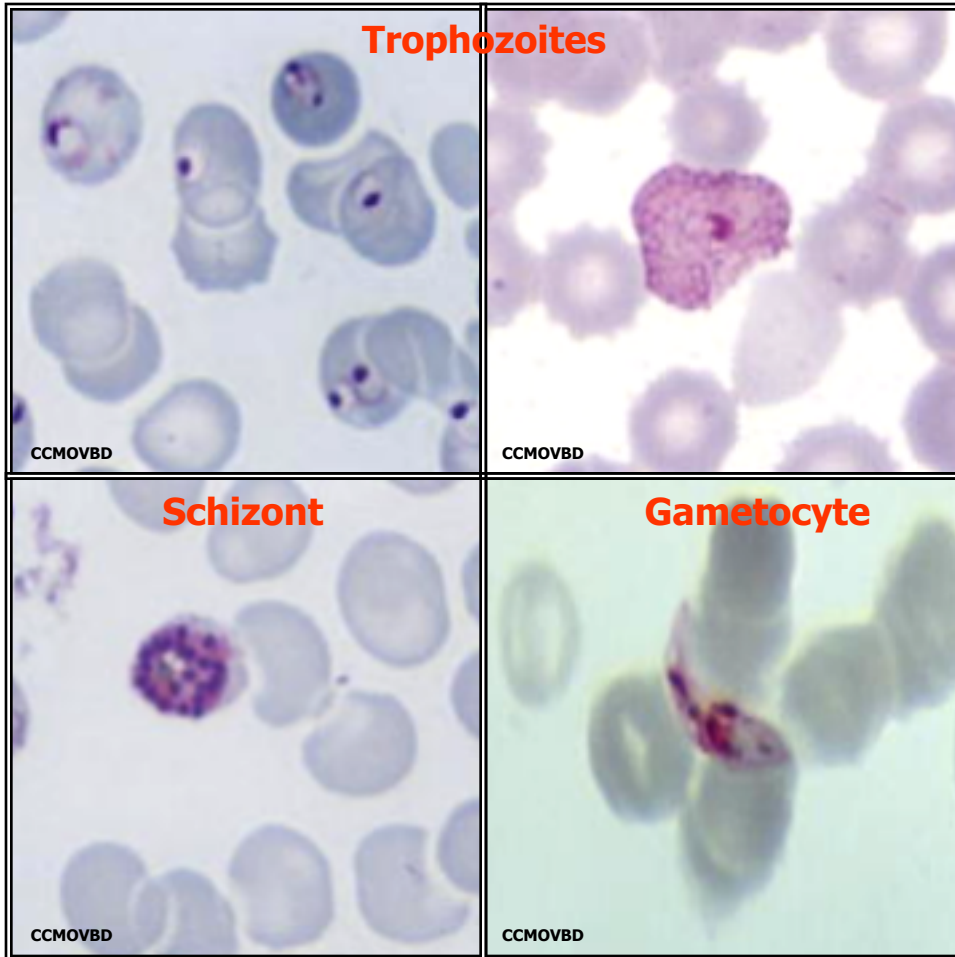
# Laboratory diagnosis of malaria

*Plasmodium falciparum* (trophozoite stage in thin smear)

*Plasmodium falciparum* (trophozoite stage in thick smear)

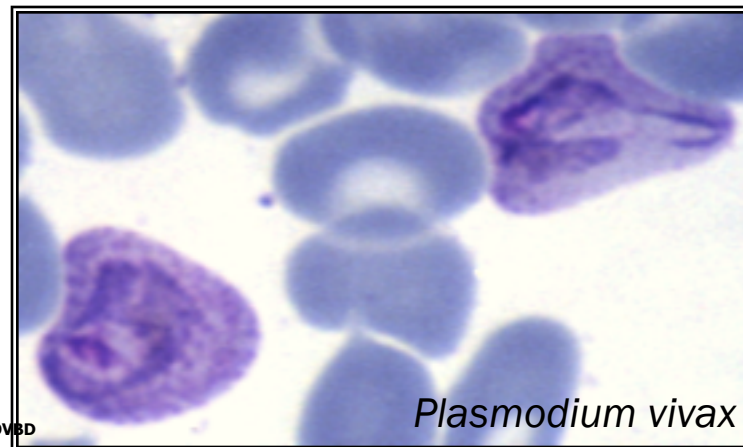
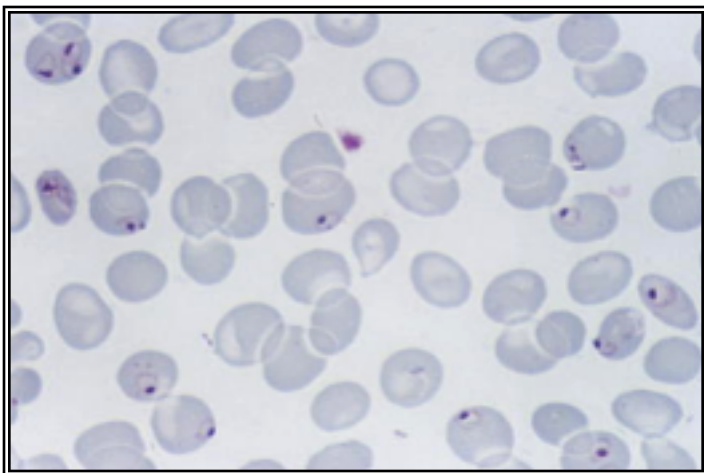


# The Malaria Parasite



**Three developmental stages seen in blood films:**

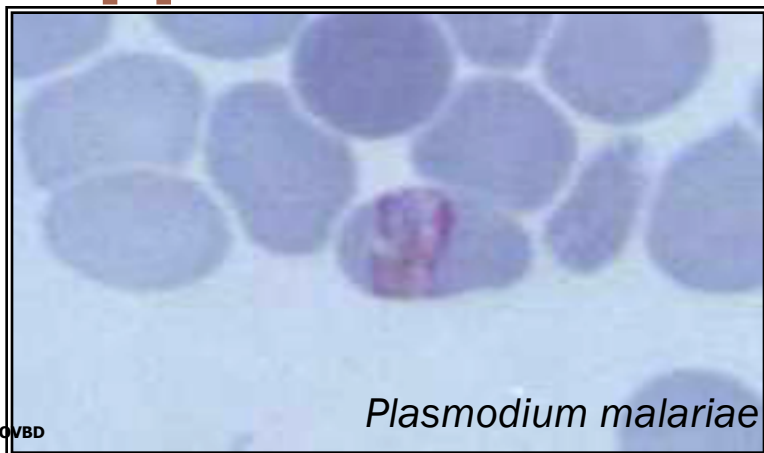
1. Trophozoite
2. Schizont
3. Gametocyte



CCMOVBD

*Plasmodium vivax*

**Species of malaria is identified by its characteristic microscopic appearance:**



CCMOVBD

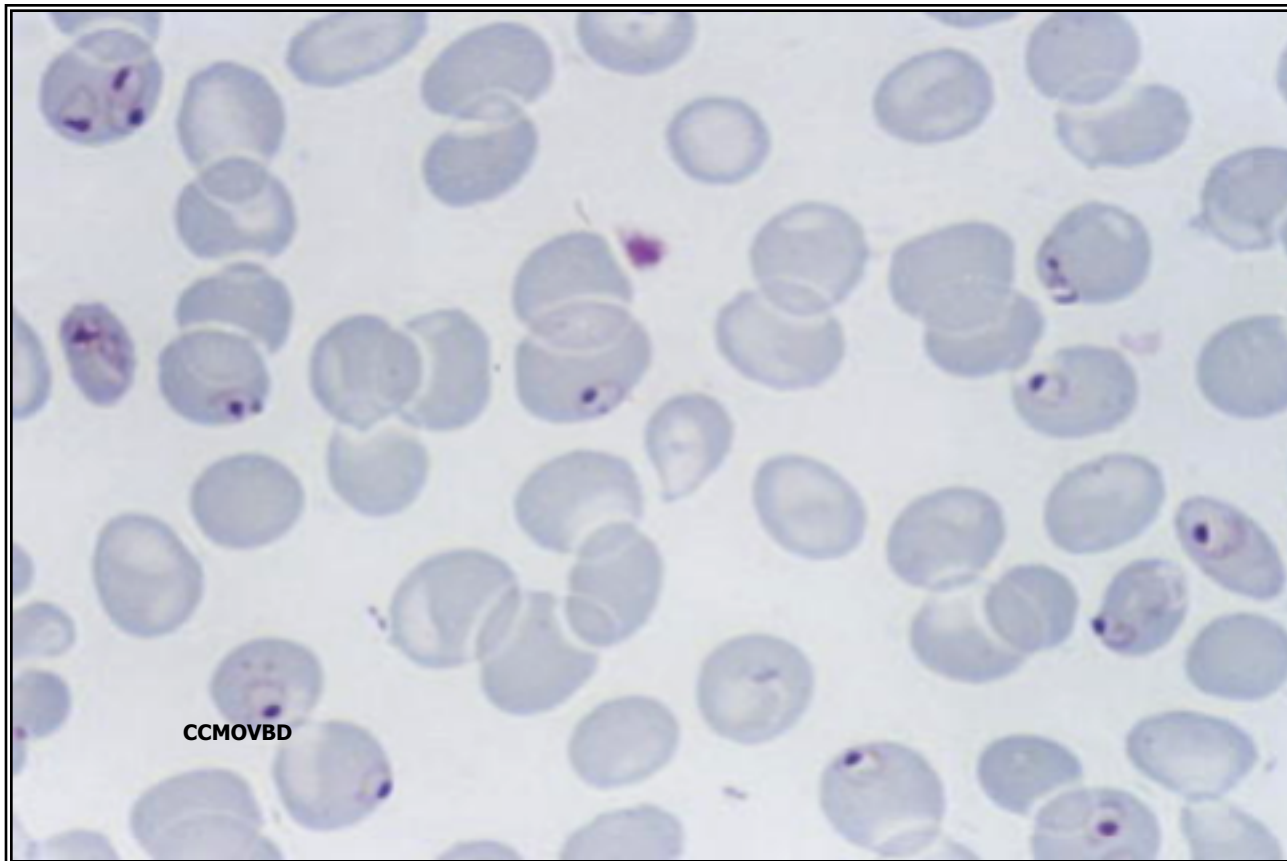
*Plasmodium malariae*



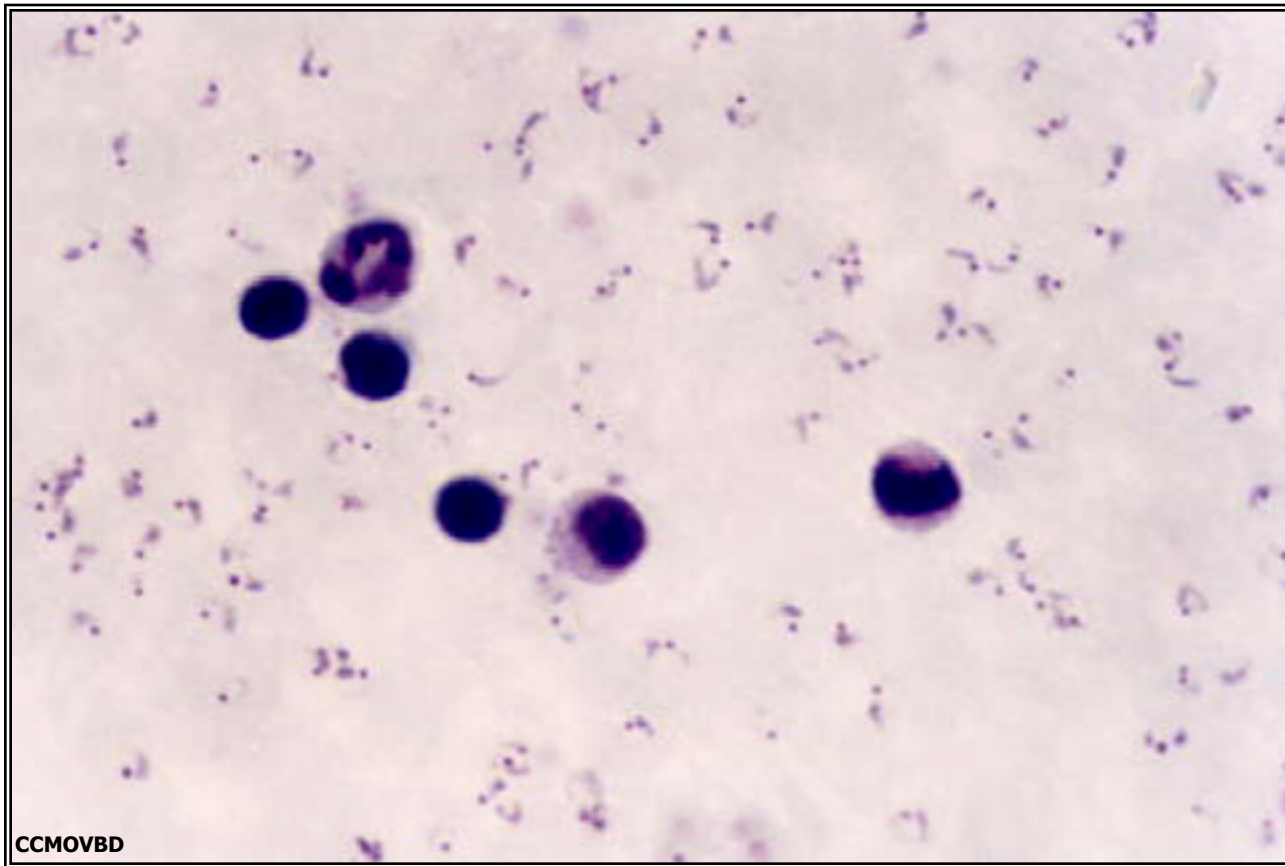
Malaria Tutorials, Wellcome Trust

*Plasmodium ovale*

***Plasmodium falciparum***  
**(trophozoite stage in thin smear)**



***Plasmodium falciparum***  
**(trophozoite stage in thick smear)**



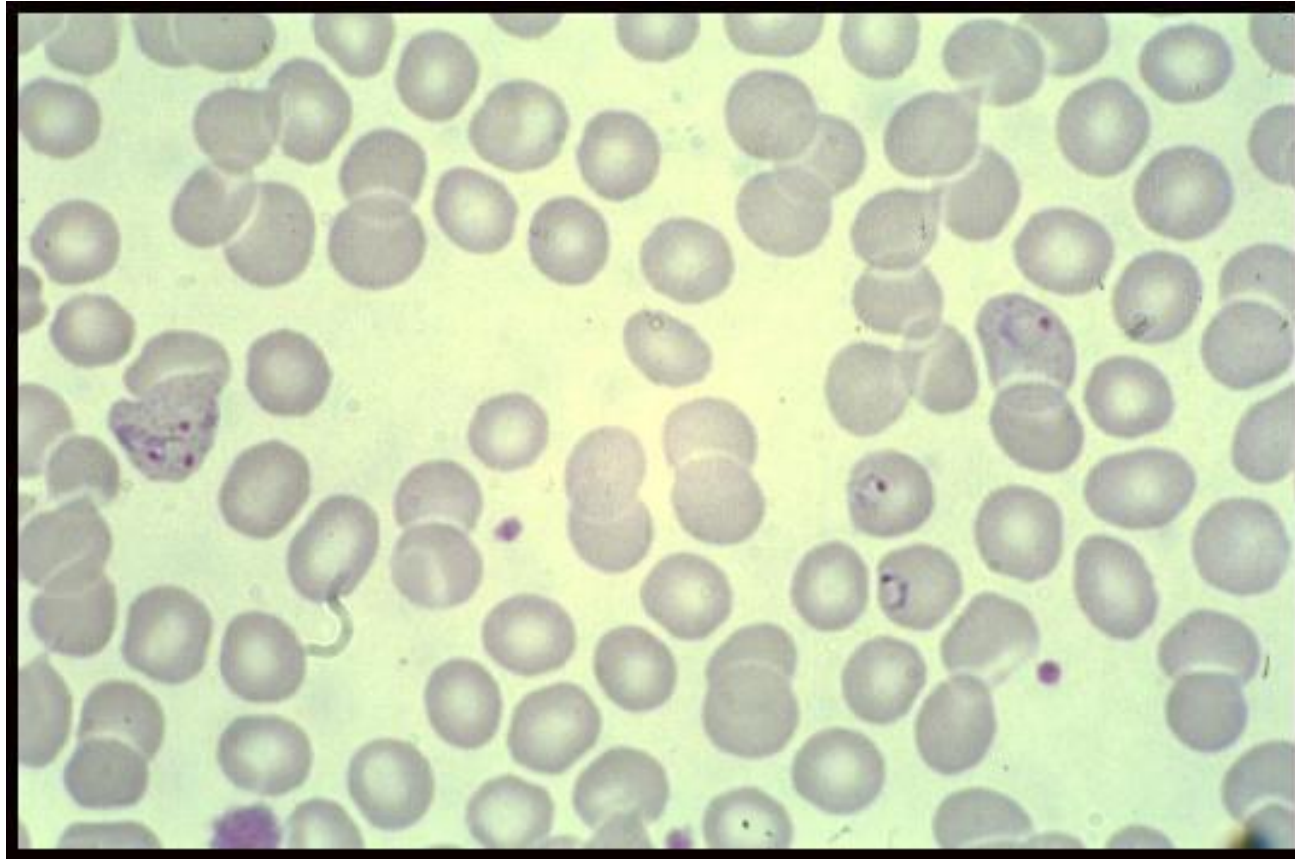
## *Plasmodium falciparum*

(characteristic banana-shaped or crescent – shaped gametocyte stage in thin smear)



A 25 year-old male from India, who came 3 months ago was admitted in KKUH with a history of severe anaemia and intermittent high grade fever for the last two months not responding to antibiotics.

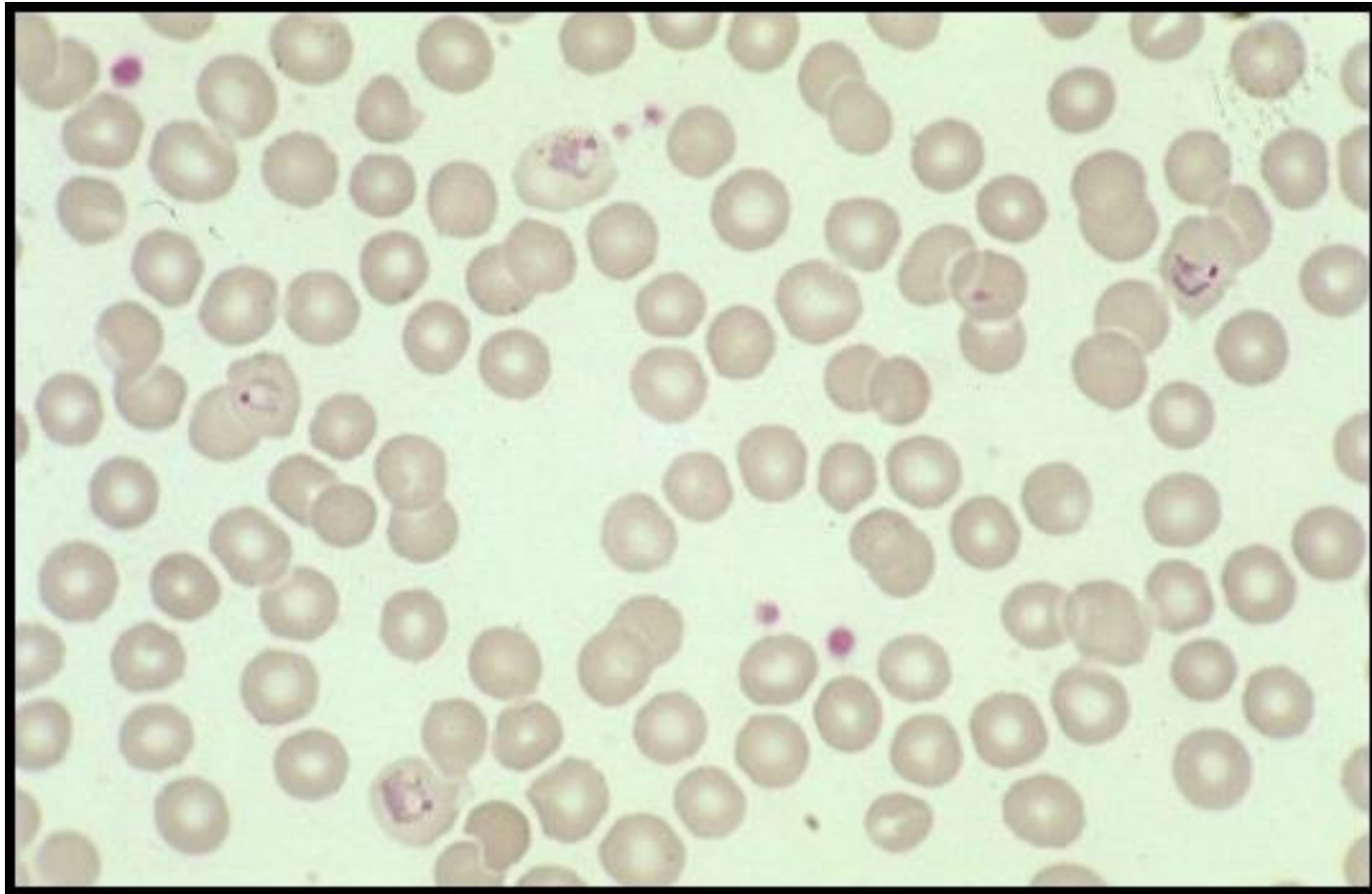
**WHAT IS THE DIAGNOSIS?**



Diagnosis: malaria or Plasmodium vivax

A businessman who makes frequent trips to Thailand , presents with intermittent fever .

**WHAT IS THE DIAGNOSIS?**

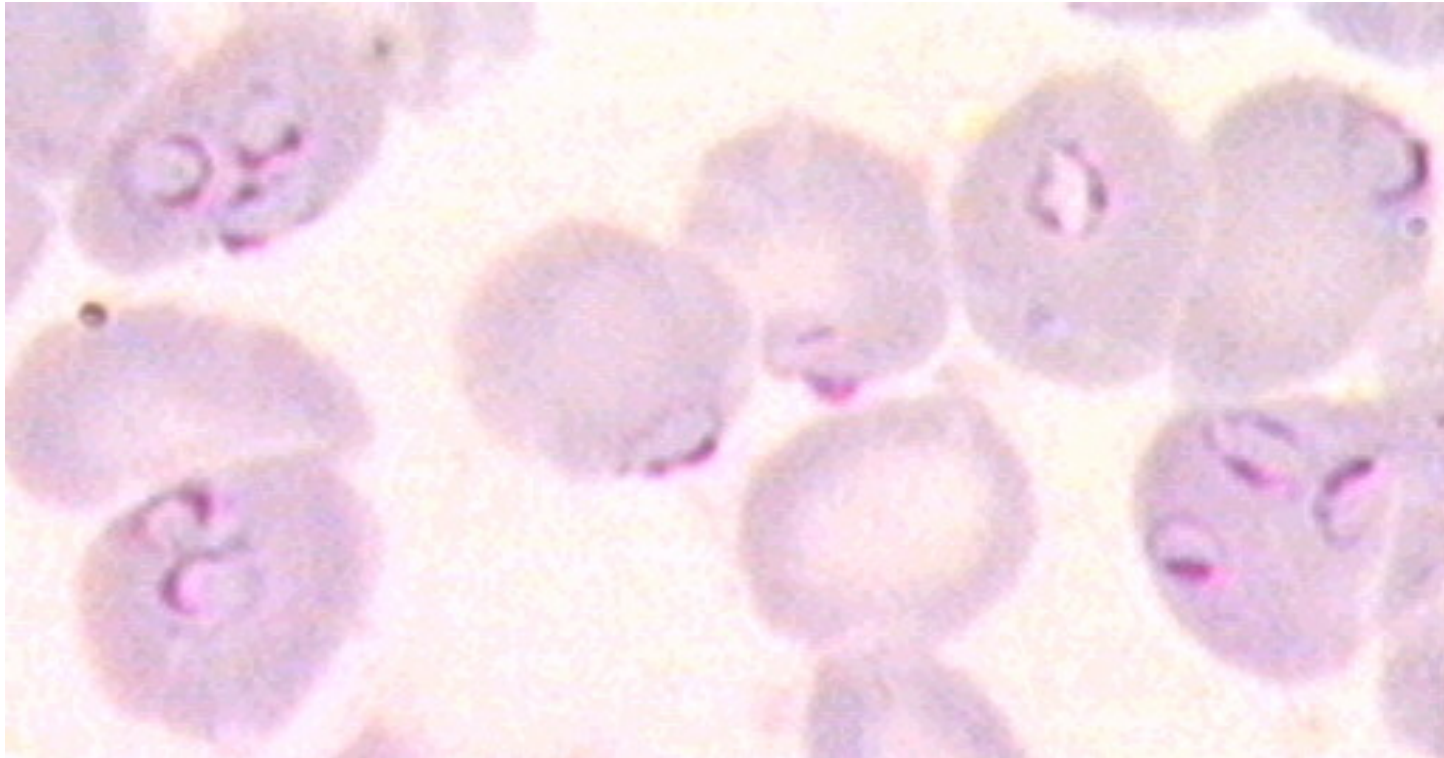


Diagnosis: malaria or Plasmodium vivax



A student in KSU who returned three weeks from vacation in Africa , he developed intermittent fever last week and lost consciousness a short time ago.

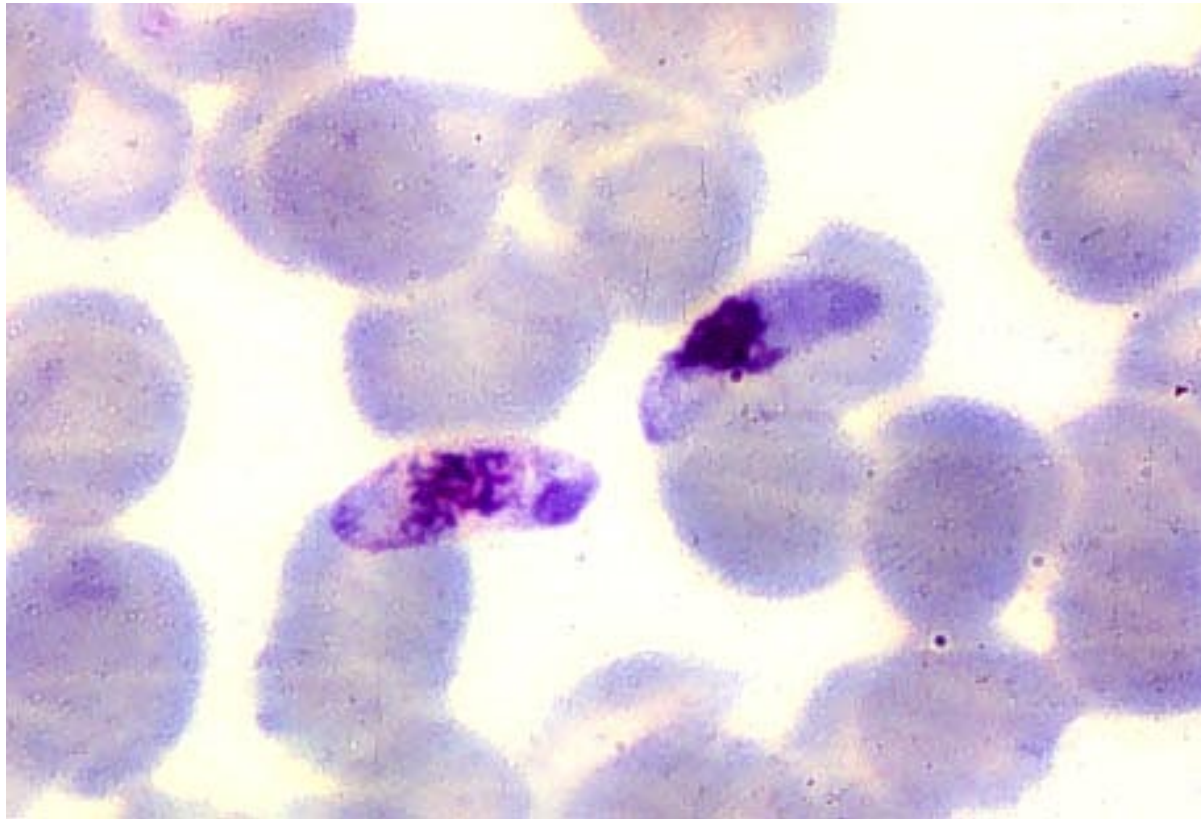
**WHAT IS THE DIAGNOSIS?**



Diagnosis: malaria or Plasmodium falciparum

The patient was then treated with schizontocidal antimalarial drugs, a follow-up blood film is shown .

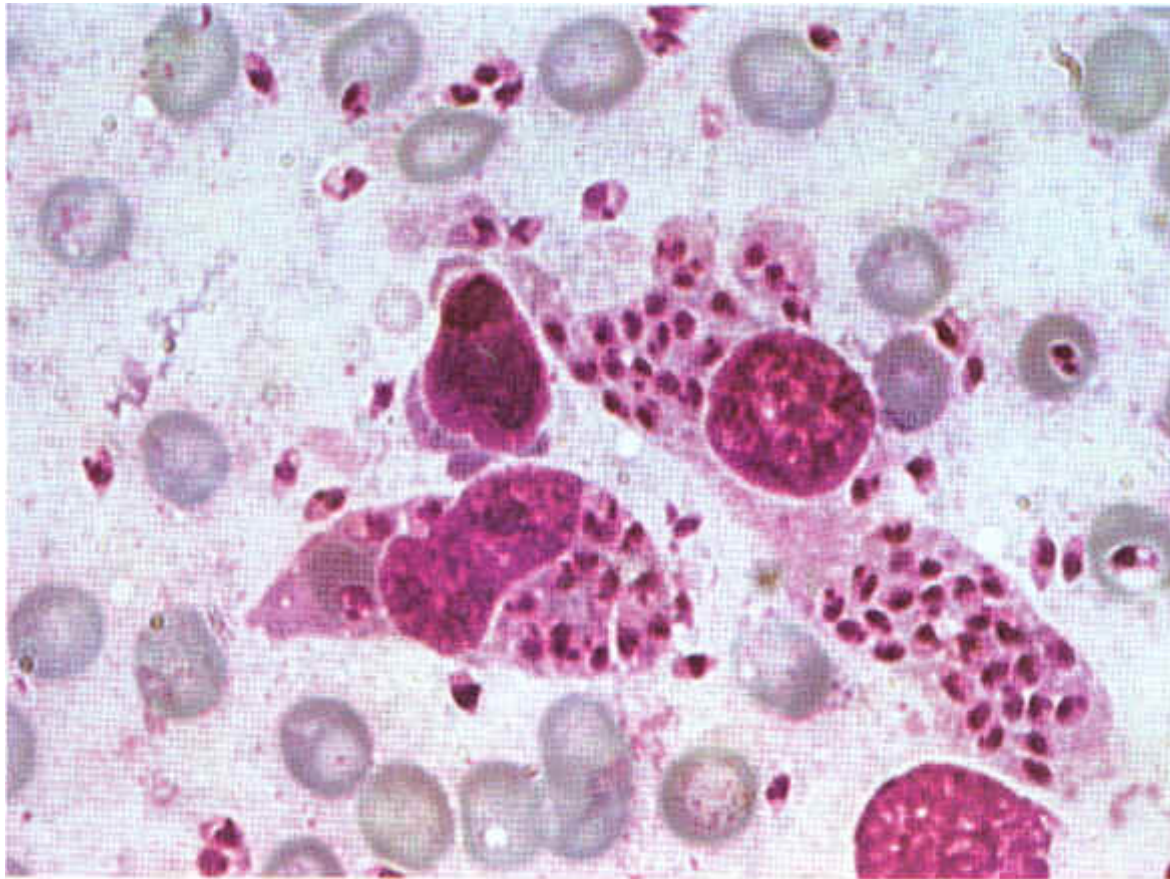
**ARE THERE ANY PARASITES? WHAT STAGE ?**



Plasmodium falciparum , gametocyte stage

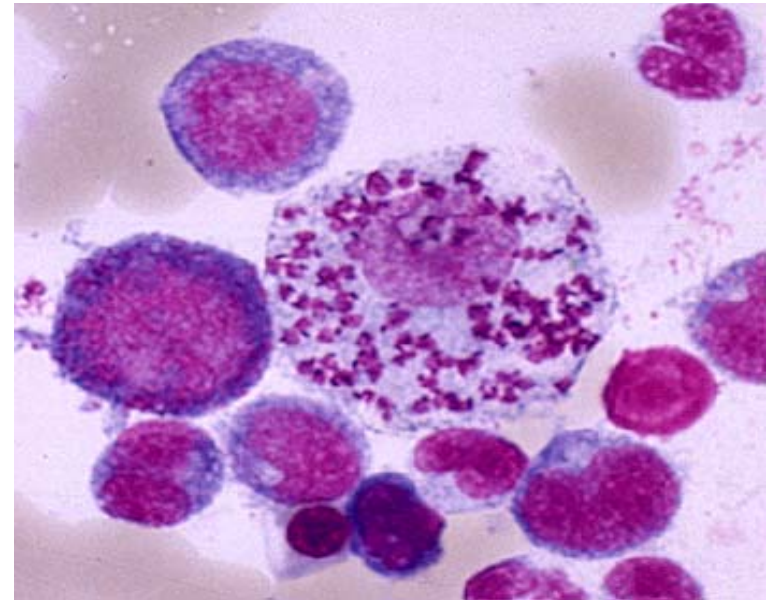
A 7 year old child presented with anemia , hepatospenomegaly and fever .Not responding to antimalarials and antibiotics . Bone marrow smear is shown

**ARE THERE ANY PARASITES? WHAT STAGE ?**



Leishmania , amastigote stage

## Bone marrow aspiration



Bone marrow amastigotes