

Dr. F. Ahmed

MALARIA PARASITE

Plasmodium vivax discovered by Charles Laveran and female Anopheles mosquito was declared its vector by Dr. Robert Ross. Its life cycle was studied by Grassi

Life cycle:

The Primary host is man in which asexual phase of life cycle occurs. It occurs by Schizogony.

It passes through pre- and exo-erythrocytic cycles in liver and erythrocytic cycle in RBC.

The Infective stage is sporozoites. And product of pre and exo-erythrocytic cycle are cryptozoites and micrometacryptozoites and passes through trophozoite, signet ring stage, amoeboid and schizont stage.

Merozoite along with haemozoin are produced. Haemozoin is product of haemoglobin and is poisonous. After repeated erythrocytic cycle merozoites change into micro (male) and macrogametocytes (female). Due to higher body temperature they do not proceed life cycle.

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Sporozoite → Cryptosporid → Schizogony → Schizont → Merozoite



Fcg → Pre-erythrocytic Cycle.

metacrypto-merozoite → Metacryptoschizont → Cryptomerozoite



Fig. Exo-erythrocytic cycle.

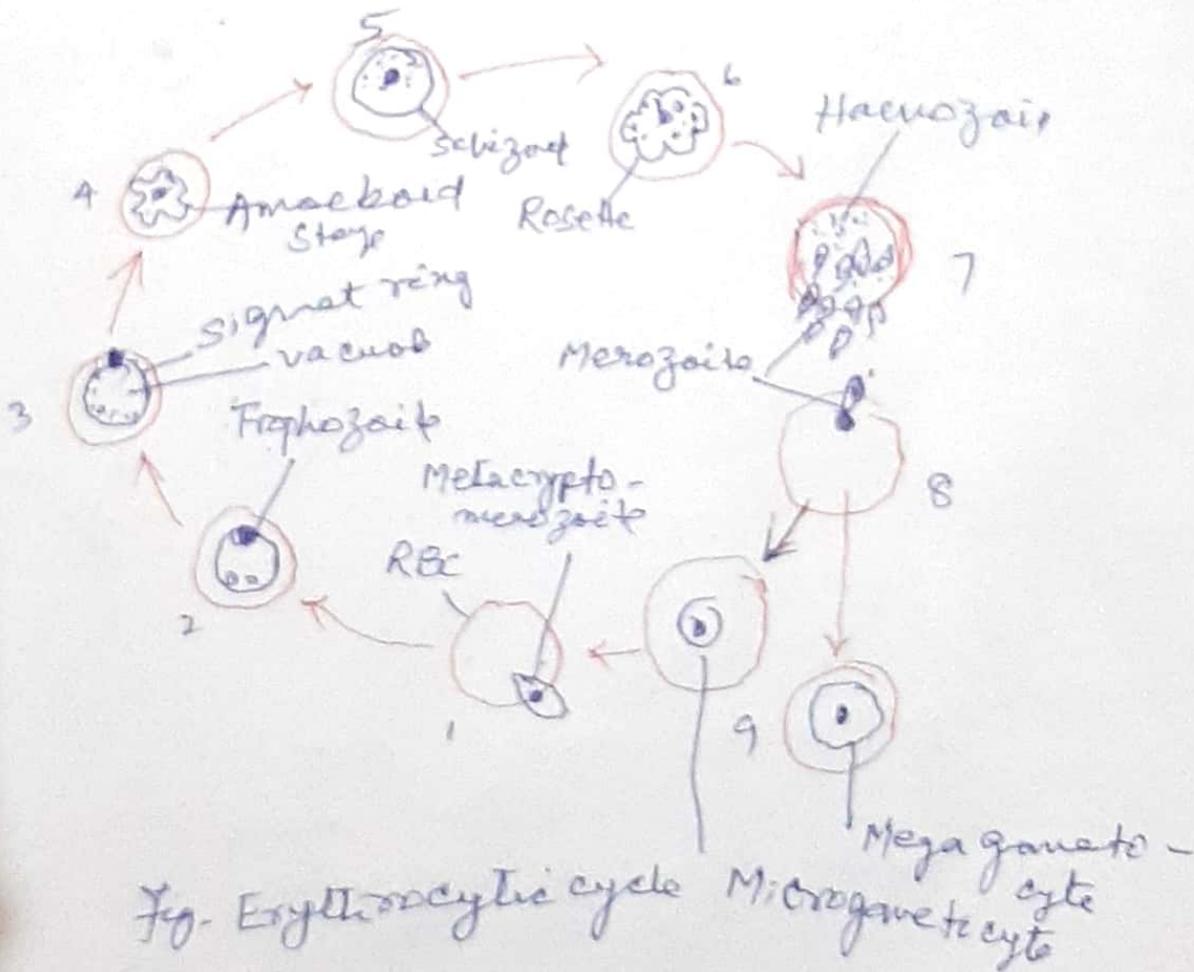


Fig. Erythrocytic cycle

IN MOSQUITO

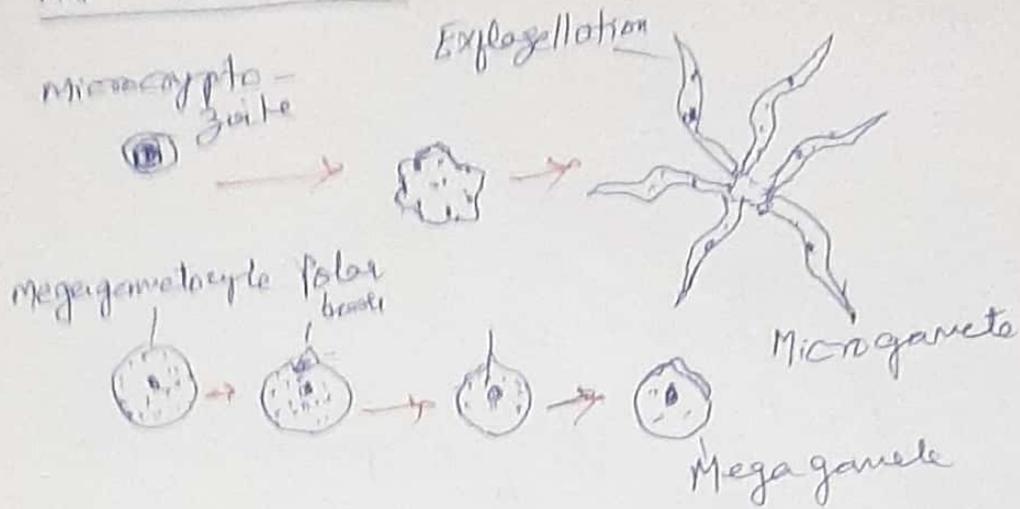


Fig - Gametogenesis

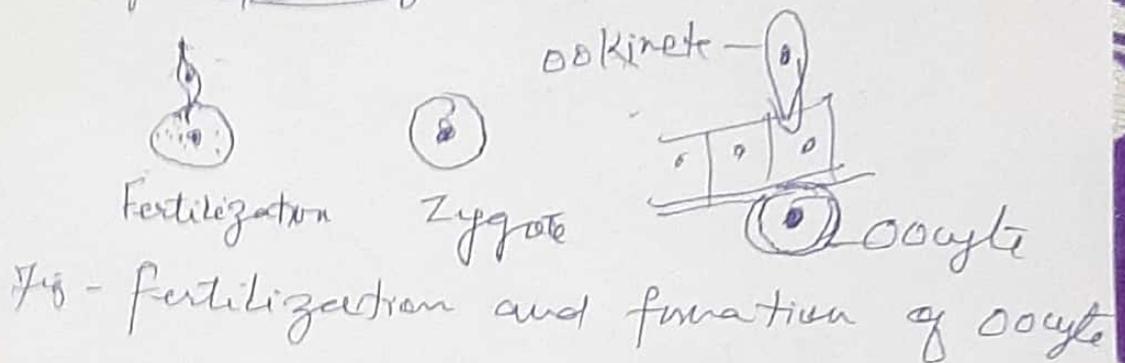


Fig - fertilization and formation of oocyte

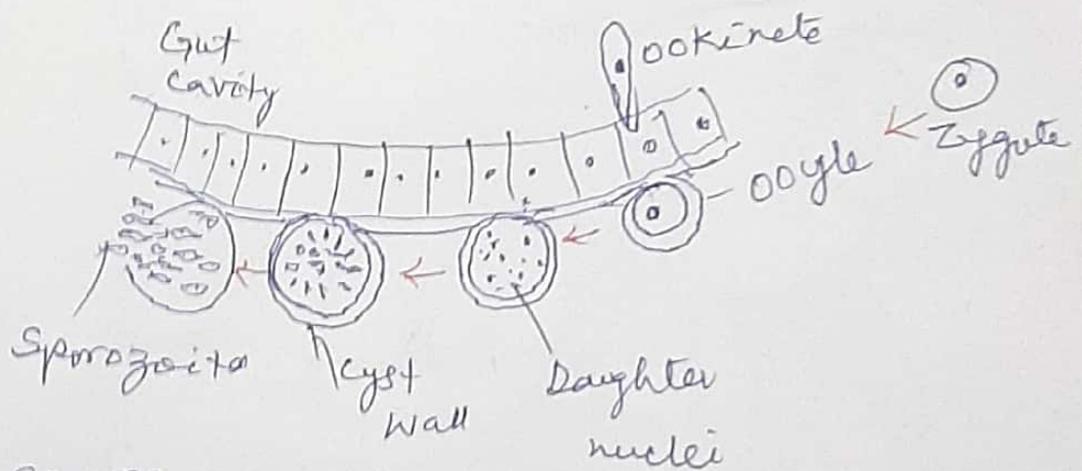


Fig - Sporogony on the wall of stomach of mosquito.

Life cycle in Mosquito:

In mosquito sexual phase of life cycle is completed by the process of Sporogony

Gametogenesis and fertilization takes place in stomach.

Zygote penetrates through the wall and comes on surface of stomach, get encysted and form oocysts. Sporogony takes place and sporozoites are produced.

Ookinetes are elongated zygotes which pass out.

Prevention:

Malaria can be prevented by preventing the accumulation of water, killing of larvae and adult of mosquito and use of mosquito net.