

PLASMODIUM

The malarial parasite Plasmodium is an intracellular blood parasite which causes malaria in man. There are four species of Plasmodium (*P. vivax*, *P. ovale*, *P. falciparum*, and *P. malariae*) which causes different types of malaria in man.

Systematic Position

Phylum: Protozoa

Class: Sporozoa

Order: Haemosporidia

Type: Plasmodium

History: Charles Laveran (1880) discovered Plasmodium in the blood of infected man. In 1891 Ronald Ross showed that Plasmodium is transmitted by female *Anopheles* mosquito. He worked out the life cycle of Plasmodium causing malaria in birds. Grassi (1890) and others investigated the life cycle of Plasmodium causing malaria in man.

Plasmodium spends its life in two hosts:

1. Primary host is the man in which its asexual cycle takes place.
2. Secondary or intermediate host is the female Anopheles mosquito in which its sexual cycle occurs. The mosquito also acts as vector or carrier of disease by which Plasmodium is transmitted from one man to other.

Life History:-

PLASMODIUM

1. In Man (Asexual cycle)

When an infected female Anopheles bites to suck the blood of man, to prevent blood



A. Sporozoite

clotting it pours some saliva. Along with saliva large number of sporozoites enter into the human blood. The sporozoite is the infective stage. The sporozoites are microscopic, pickle shaped about 14μ long and 1μ broad. The body is covered by cuticle containing a centrally placed nucleus.

On man asexual cycle of the parasite occurs. The asexual cycle is differentiated into three in size. Its nucleus undergoes multiple fission

which is called sporogony, forming numerous uninucleate bodies called sporoblasts. The nucleus of each sporoblast divides repeatedly forming spindle shaped sporozoites. There may be about 10,000 sporozoites in an oocyst. The oocyst bursts and the sporozoites are liberated into the haemocoel of the mosquito and most of them come into the salivary gland. Now the female anophales becomes infective and when it bites a man it injects numerous sporozoites along with saliva.