

3- Flagellates of the blood stream and tissues of the body.

Leishmania donovani (visceral leishmaniasis)

tropica (cutaneous leishmaniasis).

brasilensis (muco-cutaneous leishmaniasis).

Final host: Man (amastigote stage in intracellular)

Intermediate host: Sand fly (promastigote stage in extracellular)

Infective stage: Promastigote

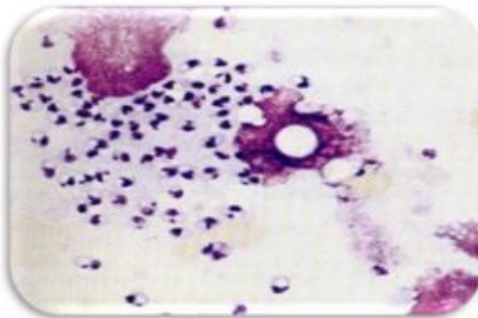
Diagnosis stage: Amastigote

Vector: Sand fly (*Phlebotomus* sp. and *Lutzomyia* spp.)

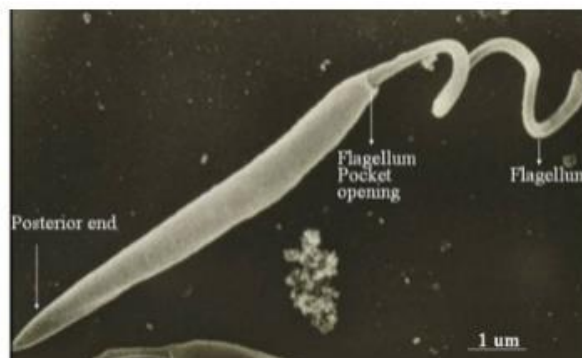
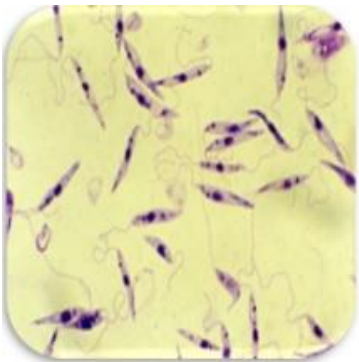


The species of *leishmania* exist in two forms in their life cycle:

1. Amastigote (a flagellate)



2. Promastigote (flagellated)



There are three species of *Leishmania* infecting man:

<i>Leishmania donovani</i>	<i>Leishmania braziliensis</i>	<i>Leishmania tropica</i>
Disease: visceral Leishmaniasis (kala-azar) or (black fever).	Disease: American Leishmaniasis or, (cutaneous-mucocutaneous Leishmaniasis), or (espundia).	Disease: cutaneous Leishmaniasis or (oriental sore), Baghdad boil, Delhi boil.
Habitat: reticulo-endothelial system of viscera especially of spleen, liver, bone marrow and intestinal mucosa.	Habitat: It lives in tissue cell, endothelial cells in the involved portion of skin and mucous membrane of the nose, mouth and pharynx.	Habitat: endothelial cells of the capillaries of the infected area of skin.
Symptoms: fever, damage to the spleen and liver, and anemia	Symptoms: skin and mucosal ulcers with damage primarily of the nose and mouth.	Symptoms: open sore at the bite sites and skin lesions which resemble leprosy

