

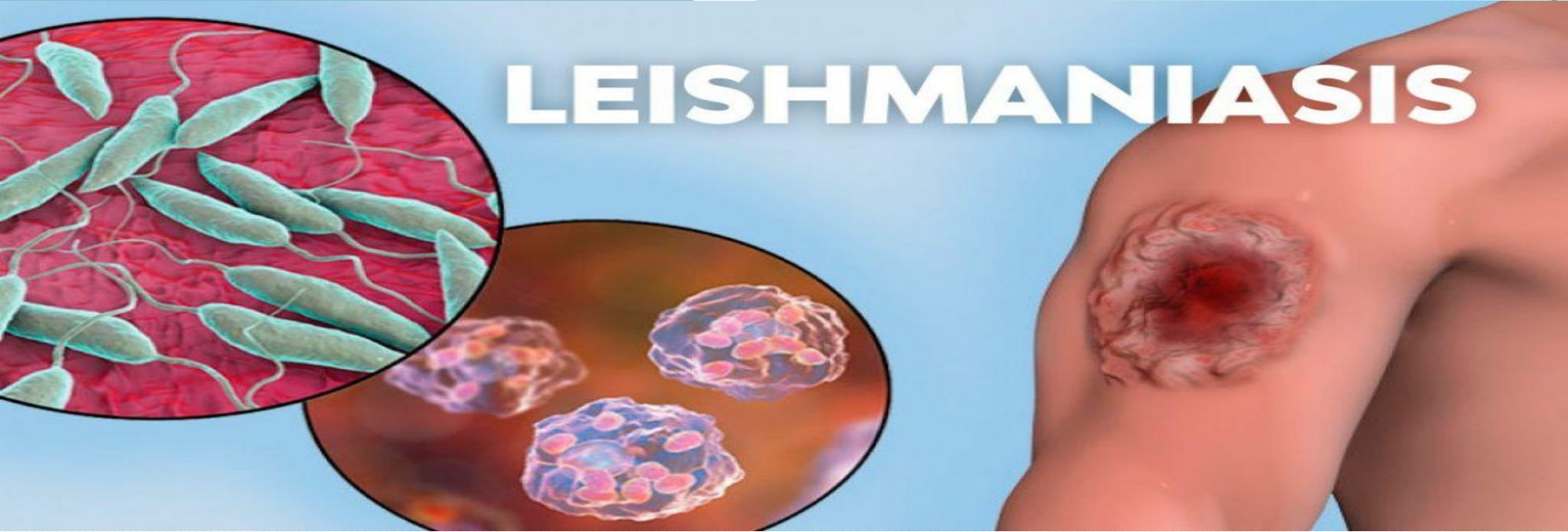


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

*In the name of Allah
the most beneficent, the most merciful*

Overview

- Introduction
- Morphology
- Clinical forms
- Life cycle
- Biological Vectors
- Reservoir hosts
- Geographical distribution
- Treatment
- Prevention and control



- ❑ **Leishmaniasis** is a vector-borne disease caused by flagellated protozoans of the genus *Leishmania*.
- ❑ **Leishmaniasis** is one of the most important of Neglected Tropical Diseases (NTD)

Taxonomy of *Leishmania*

- Phylum: **Protozoa**

- Subphylum: **Sarcomastigophora**

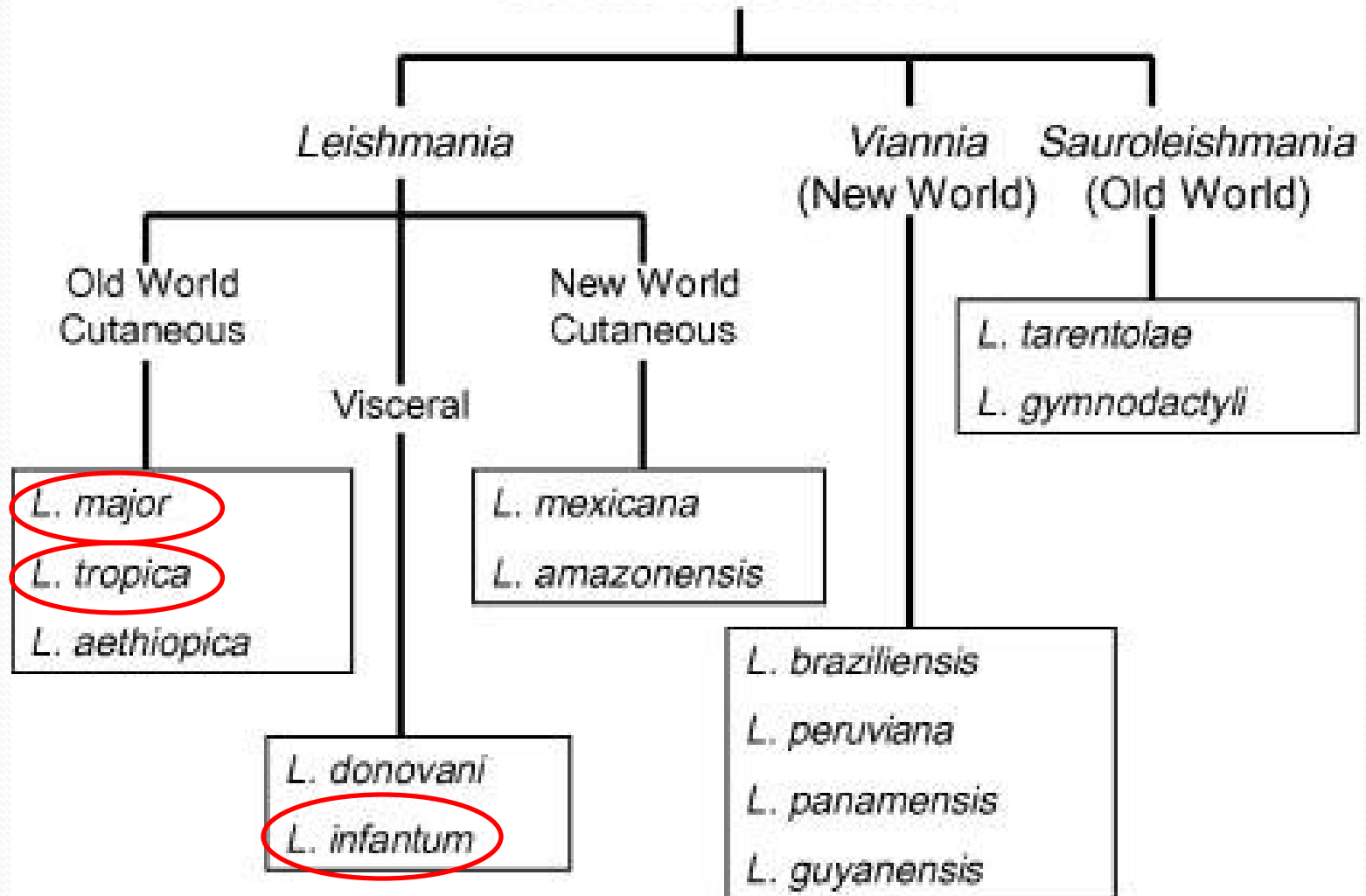
- Class: **Zoomastigophora**

- Order: **Kinetoplastida**

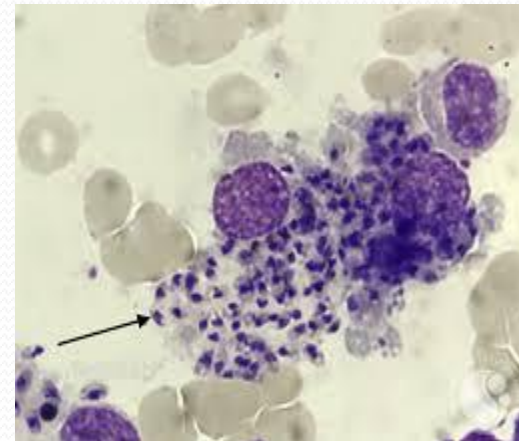
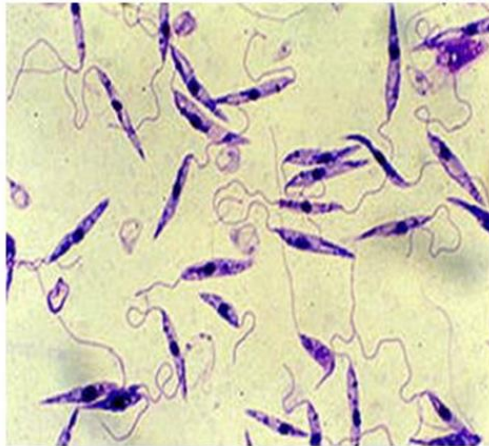
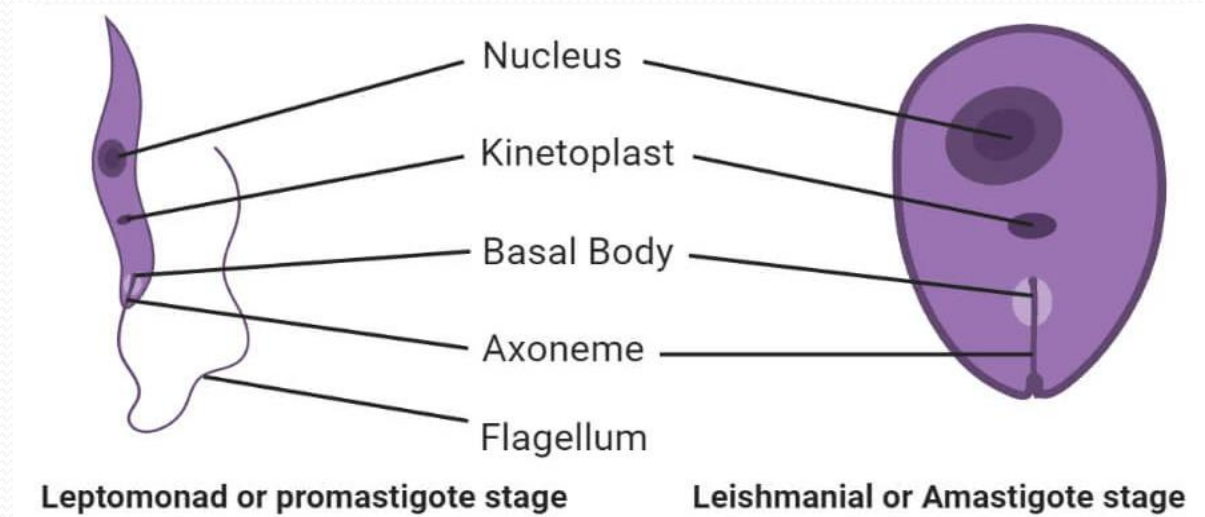
- Family: **Trypanosomatidae**

- Genus: ***Leishmania***

Genus Leishmania



Morphology



Clinical forms

□ The Leishmaniasis have three main clinical forms:

1. **Cutaneous leishmaniasis (CL)**
2. **Mucocutaneous leishmaniasis (MCL)**
3. **Visceral leishmaniasis (VL)**

VL



MCL



CL

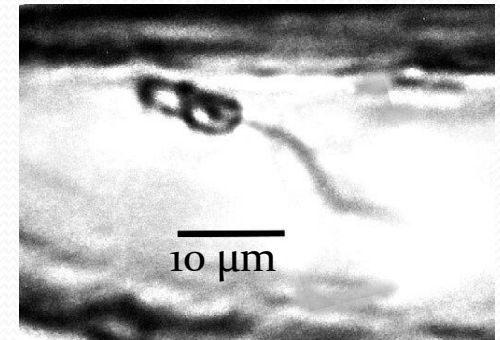


Origin of the genus *Leishmania* (fossil evidence)

- The *Paleoleishmania* spp. are Leishmania-like species that was found in:

1) *Palaeomyia burmitis* (100 my ago)

2) *Lutzomyia adiketis* (20-30 my ago)



Paleoleishmania spp.



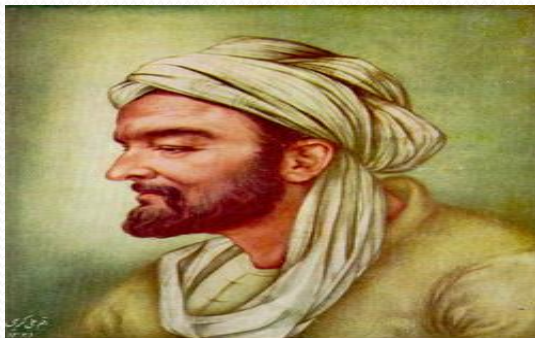
Palaeomyia burmitis



Lutzomyia adiketis

Description of CL by Persian philosophers

- In 930, the Persian polymath **Rhazes**, described the occurrence of cutaneous sores (**Baghdad boil**) in the Baghdad region.
- The first accurate description of **Oriental sore** was by the great Persian philosopher and physician **Avicenna**.

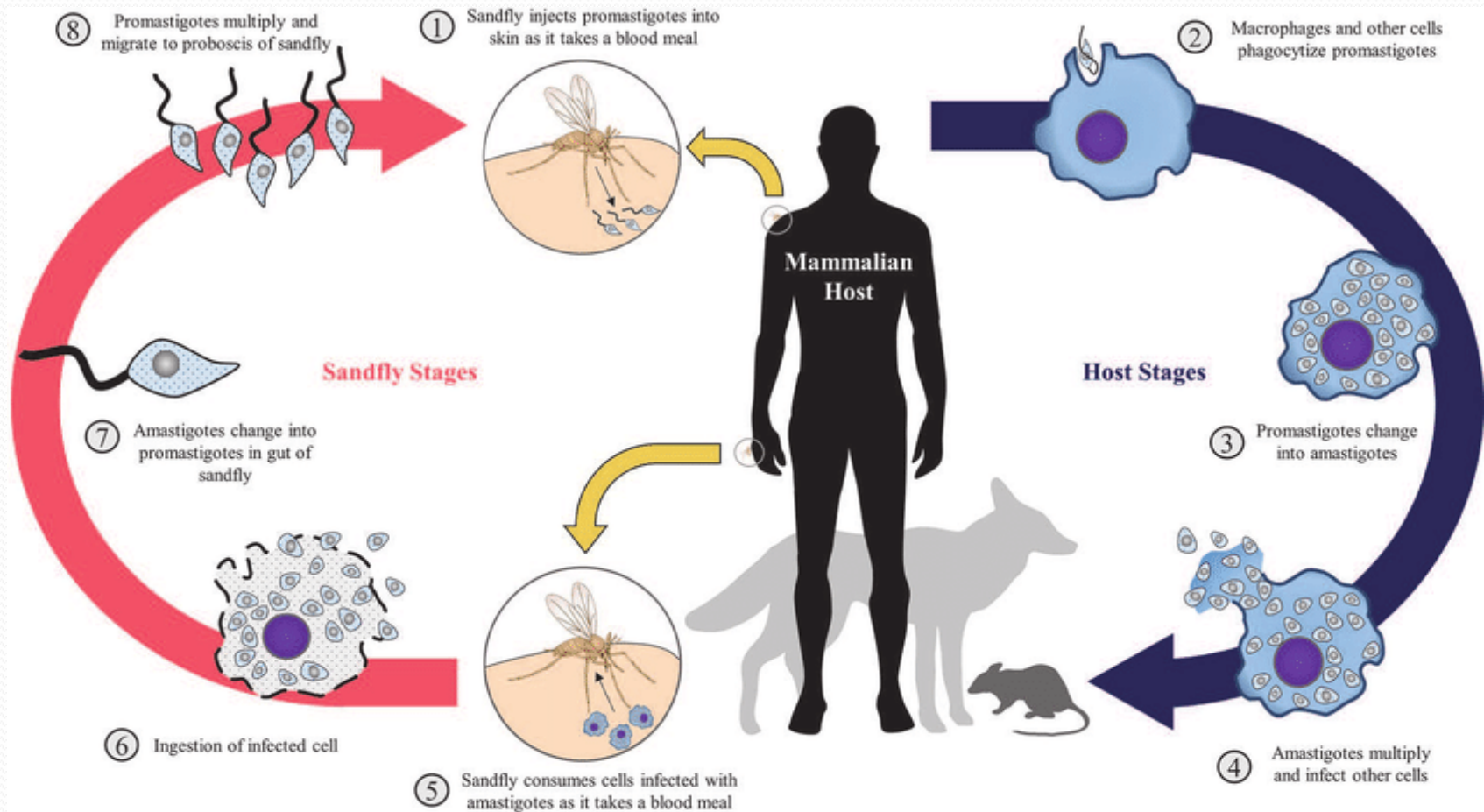


Avicenna (980 – 1037)



Rhazes (854 – 935)

Life Cycle of CL



Biological vectors

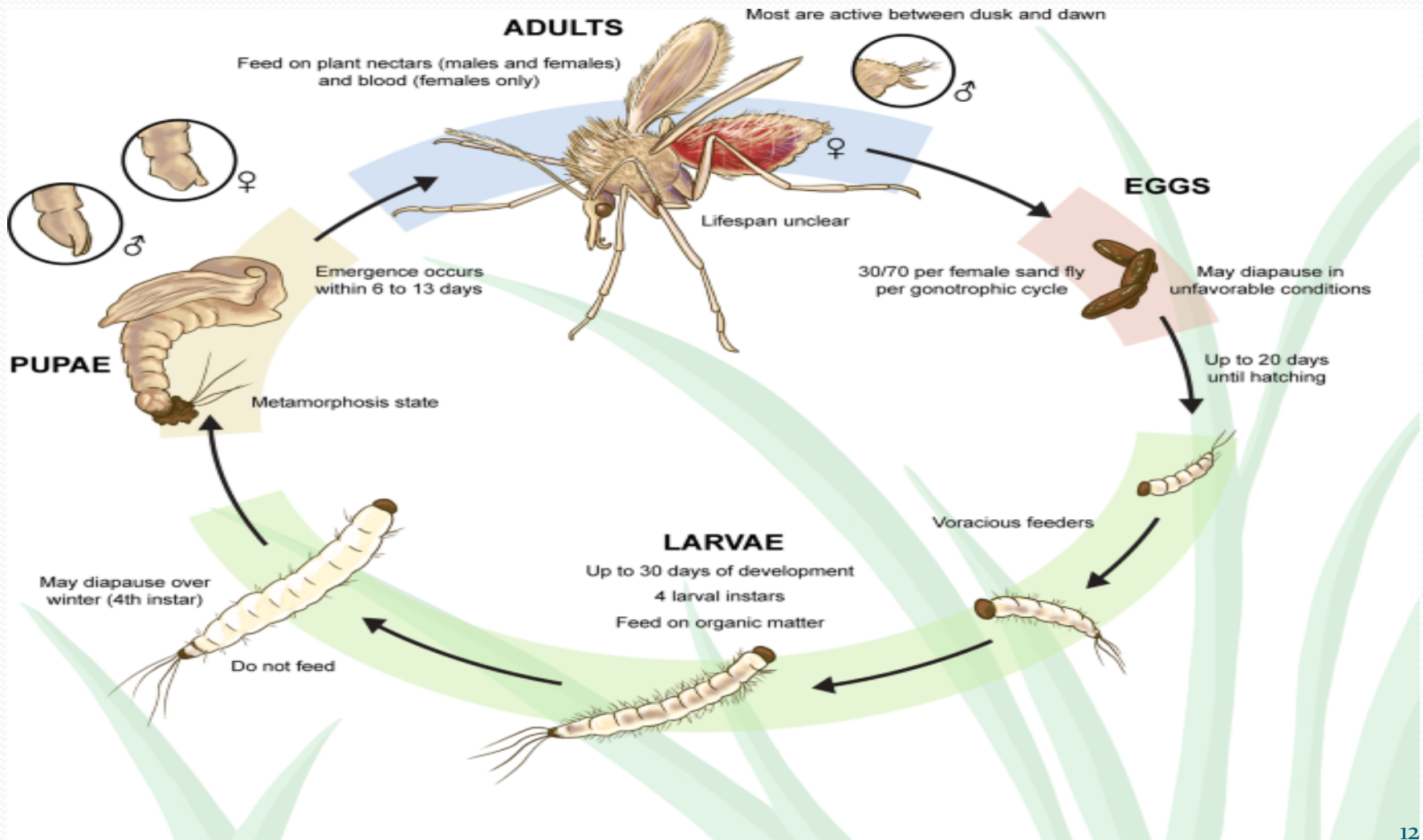
- Approximately 1000 species of sand fly have been described to date, and of these about 70 species are proven or suspected vectors.

Phlebotomus and *Sergentomyia* → Old World.

Lutzomyia → New World.



Life cycle of sand fly



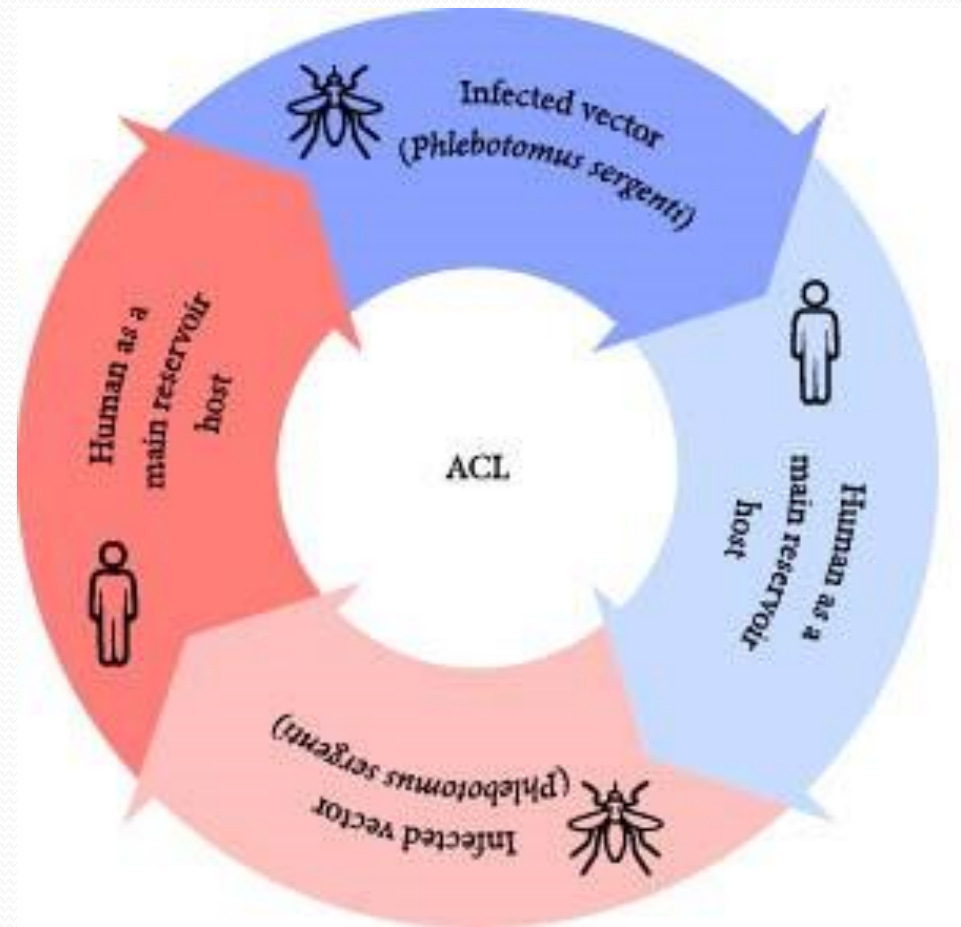
Habitat of sand flies



Clinico-epidemiological forms of CL

1. Anthroponotic CL (ACL)

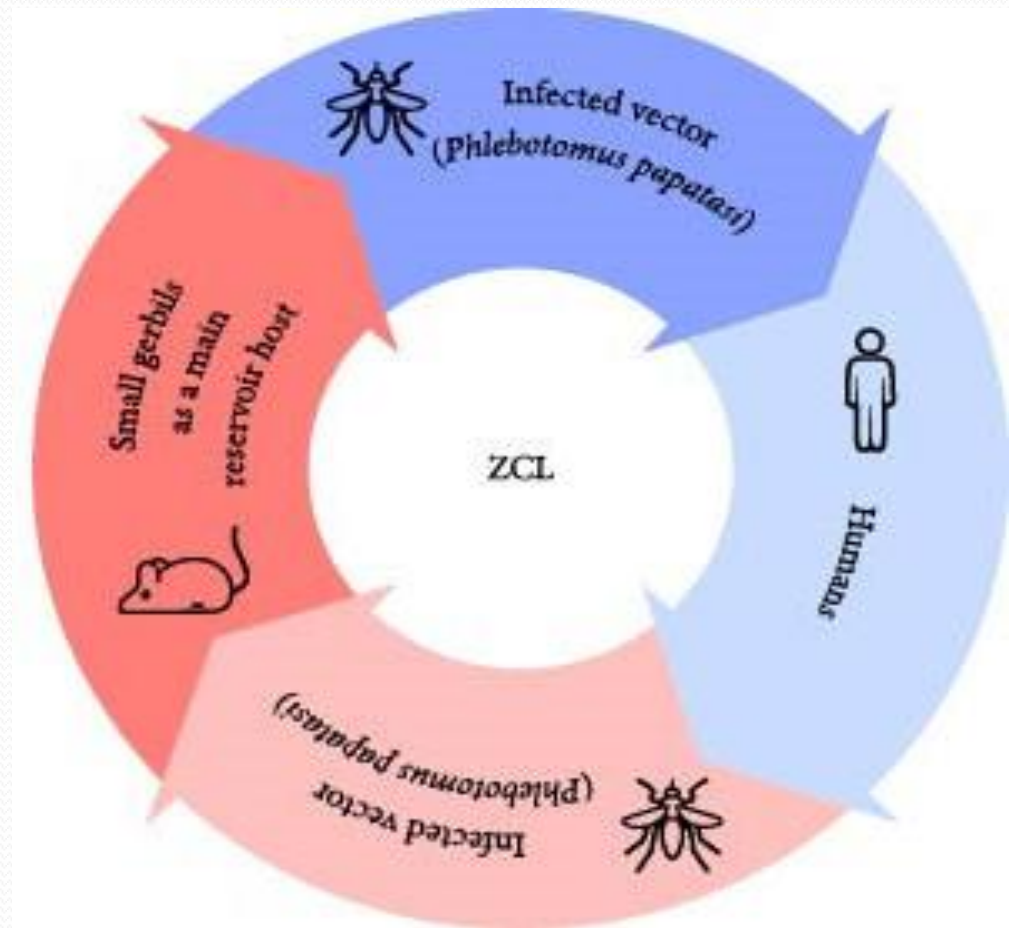
is caused by *L. tropica* and transmitted by the female *Phlebotomus sergenti* sand flies from human to human.



Clinico-epidemiological forms of CL

2. Zoonotic CL (ZCL)

is caused by *L. major* and transmitted by the female *Phlebotomus papatasi* sand flies from small gerbils to humans.



Clinical spectrum of CL



Stages of CL lesion Progression

I. Papule

II. Nodule

III. Ulcer

IV. Scar



Reservoir hosts of ZCL in Iran

- Four species of small rodents belonging to the family **Cricetidae** are designated as the principal reservoir hosts for ZCL in Iran.



4) *Rhombomys opimus*
(central and northeast of Iran)



1) *Tatera indica*
(south of Iran)



2) *Meriones hurrianae*
(southeastern Iran)

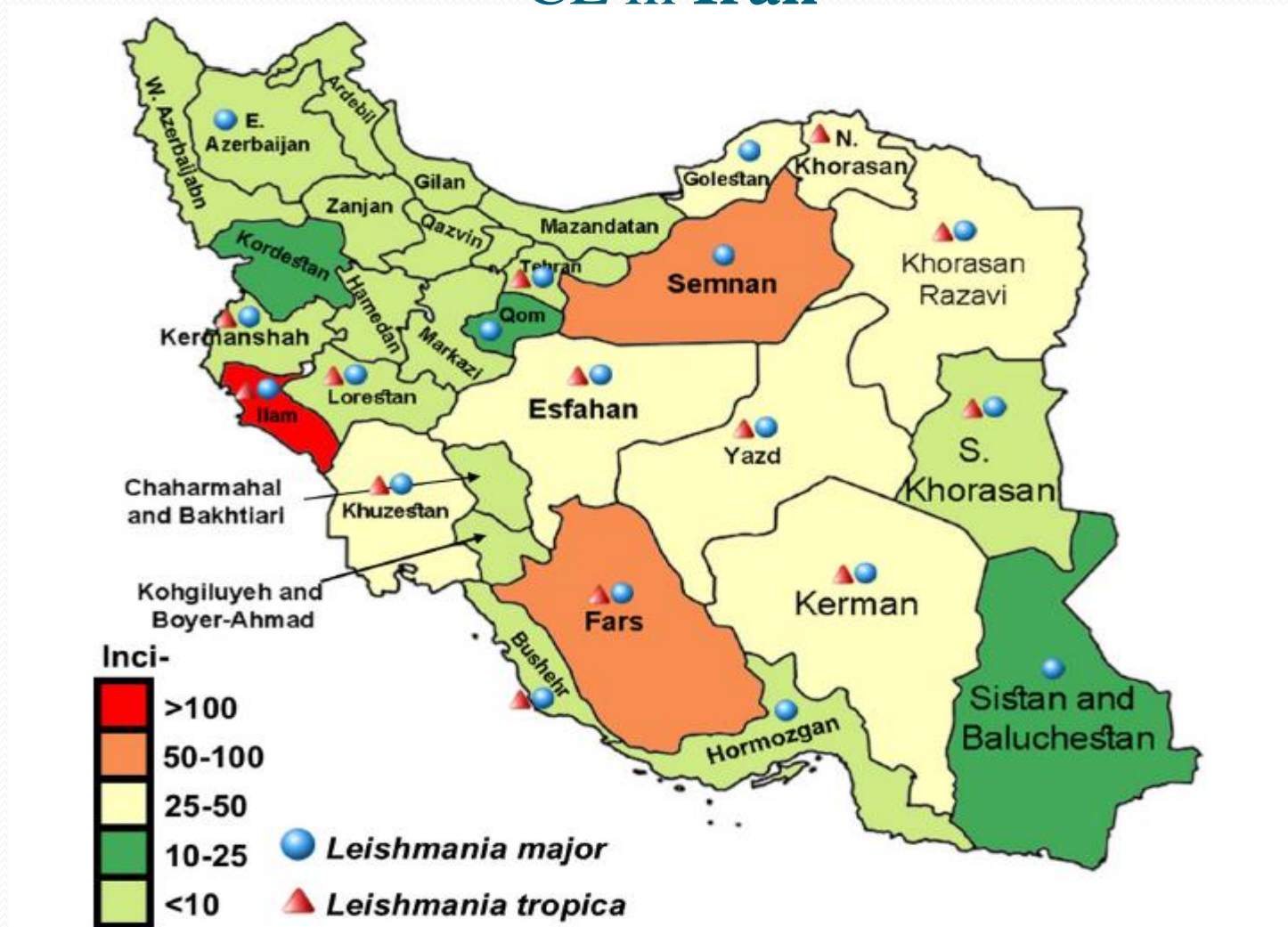


3) *Meriones libycus*
(central and south of Iran)

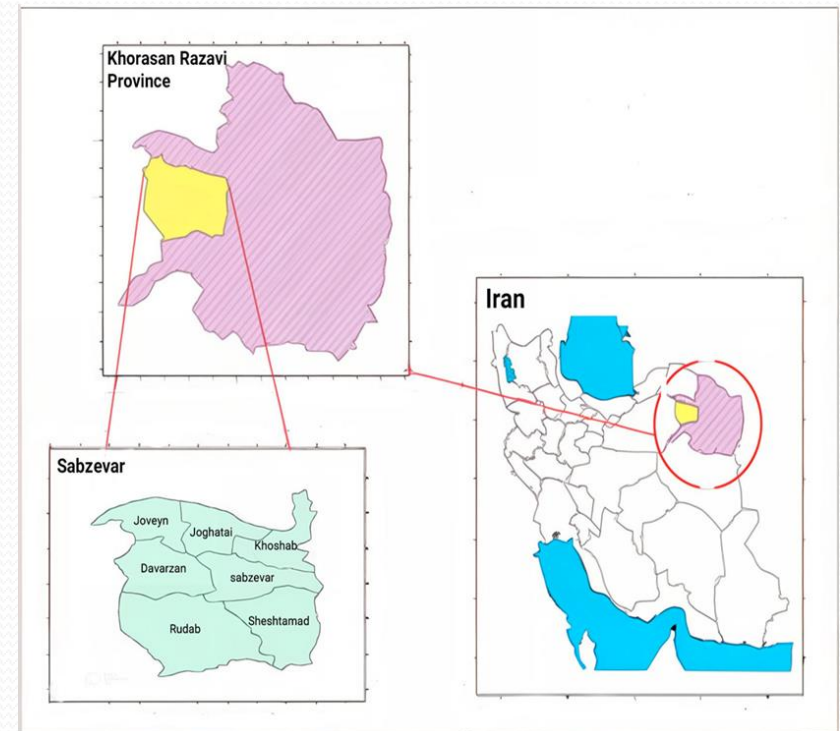
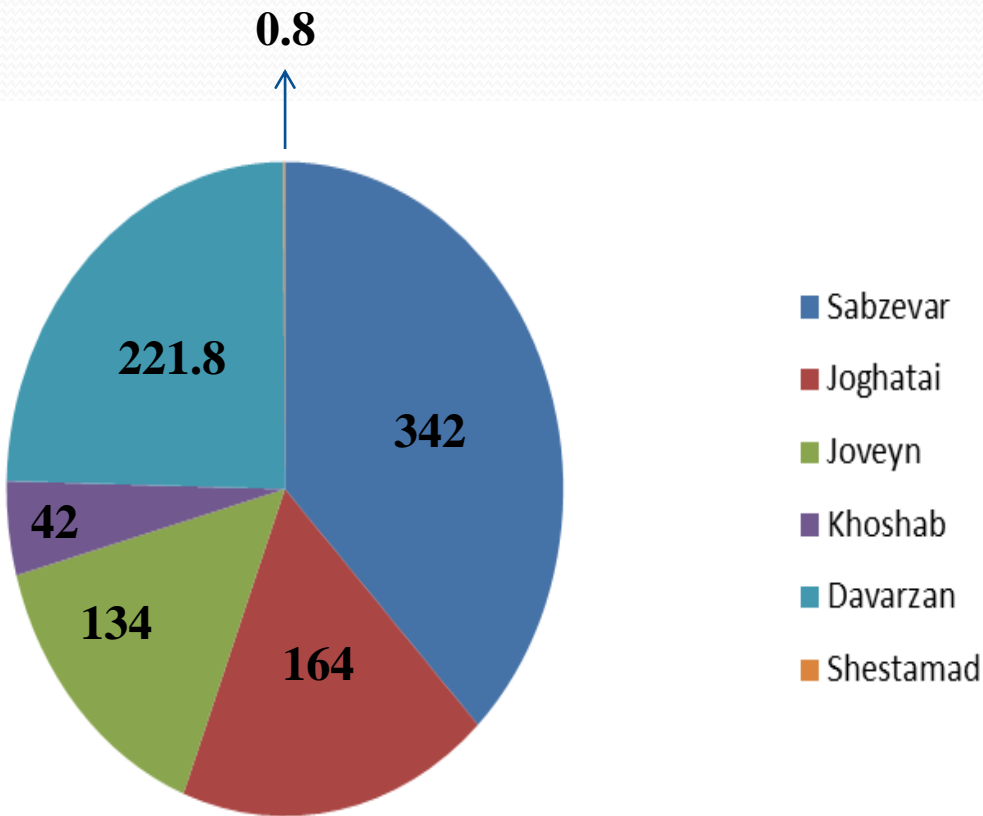
Global distribution of CL

- ❑ The disease is widespread in the tropical and subtropical areas and found in **98** countries in **Europe, Africa, Asia** and **America**.
- ❑ Over 90% of new cases occur in just 13 countries: **Afghanistan, Algeria, Bangladesh, Bolivia, Brazil, Columbia, Ethiopia, India, Iran, Peru, South Sudan, Sudan** and **Syria**.

Distribution and average incidence rate (2013–2020) of CL in Iran



The average reported cases of CL in Sabzevar city, 1398-1402



Treatment

(based on WHO guideline)

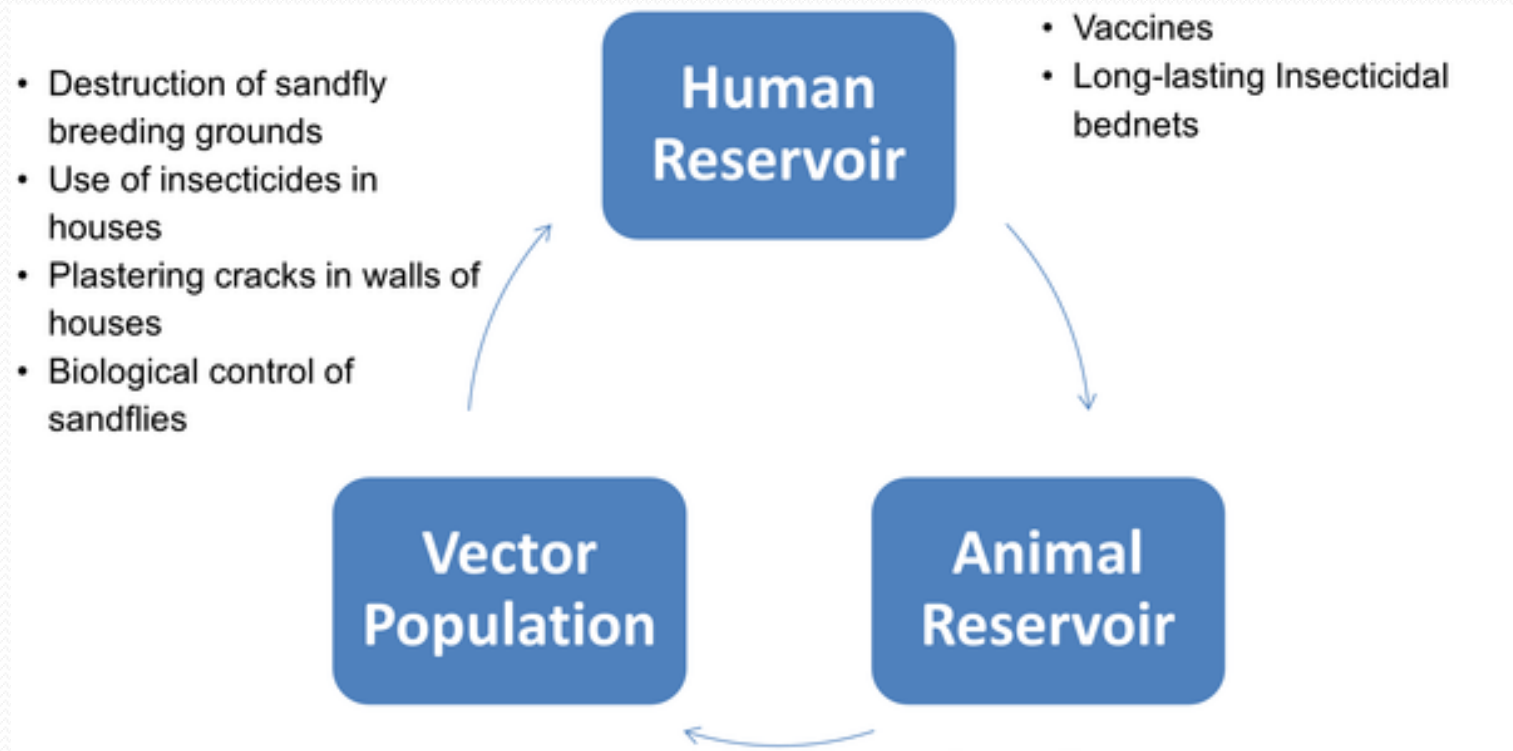
- **Meglumine antimoniate (Glucantime)** is the drug of choice, administered intralesionally once a week for 8–12 weeks along with biweekly **cryotherapy**.



Cryotherapy



Prevention and control measures



Thank You
For Your Attention!

Any Questions



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