

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



**An-Najah N. University, Plaestine**  
**Dept of Biology and Biotechnology**



- **Course:** Title and number Parasitology
- **Date:** Tuesday ,14\4\2015
- **Faculty:** Faculty of science
- **Department:** Biology
- **Lecture time:** 9-10
- **Teacher:** Sami Bdair



# (Blood flukes) Schistosoma

- **Objectives:**

1. Study the morphology.
2. Study the life cycle.
3. Study the pathogenesis.
4. Study the diagnosis.
5. The treatment.



# Theodore Bilharz

- A German pathologist who discovered in autopsy material, the causative agent of haematuria, schistosome worms, during his work in Egypt in 1851.





# What is Schistosomiasis?

- It is a chronic debilitating disease that is caused by a parasitic trematode worm (Schistosome).





# Morphology:

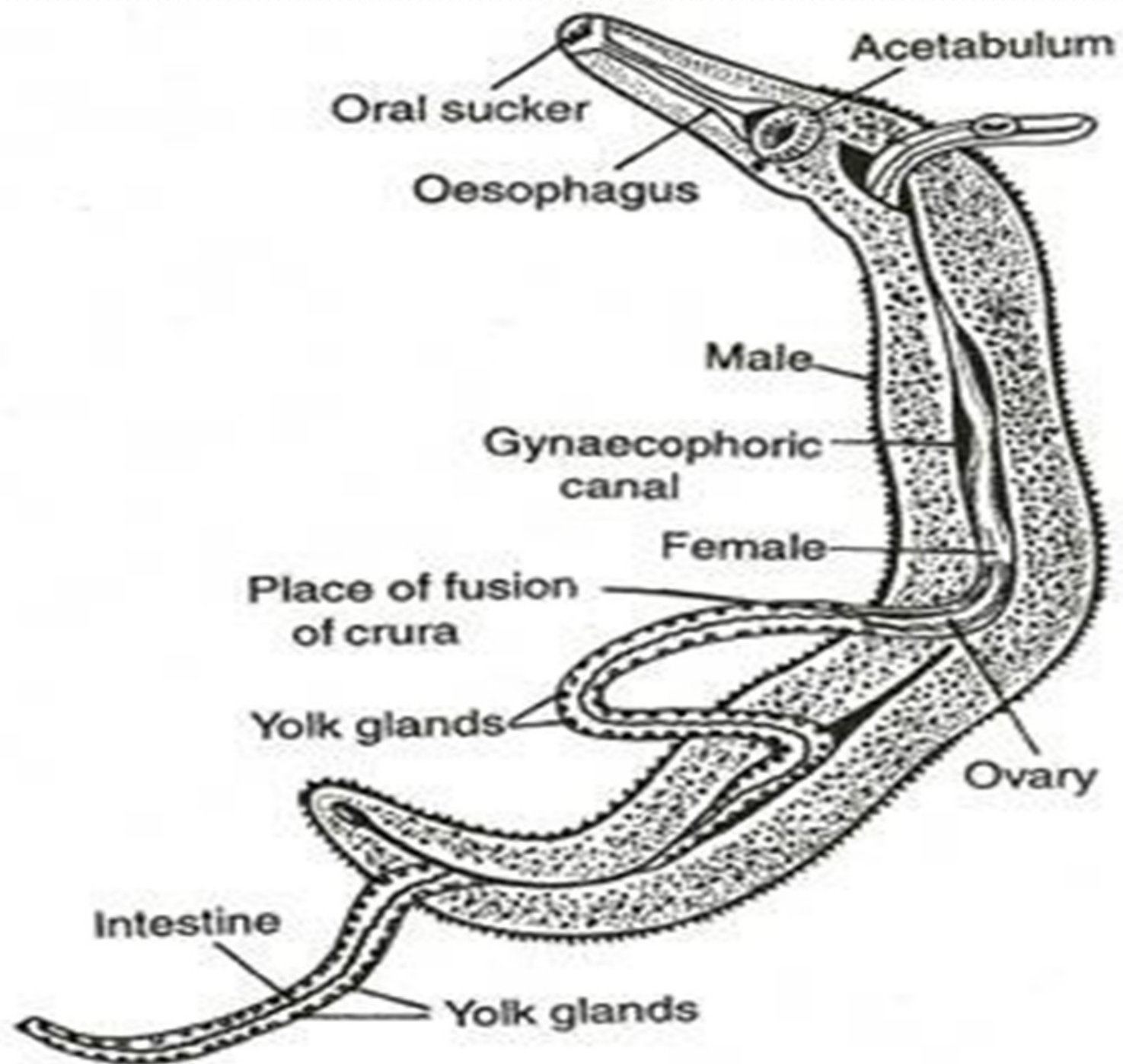


Fig. 191. *Schistosoma* (Male and female)

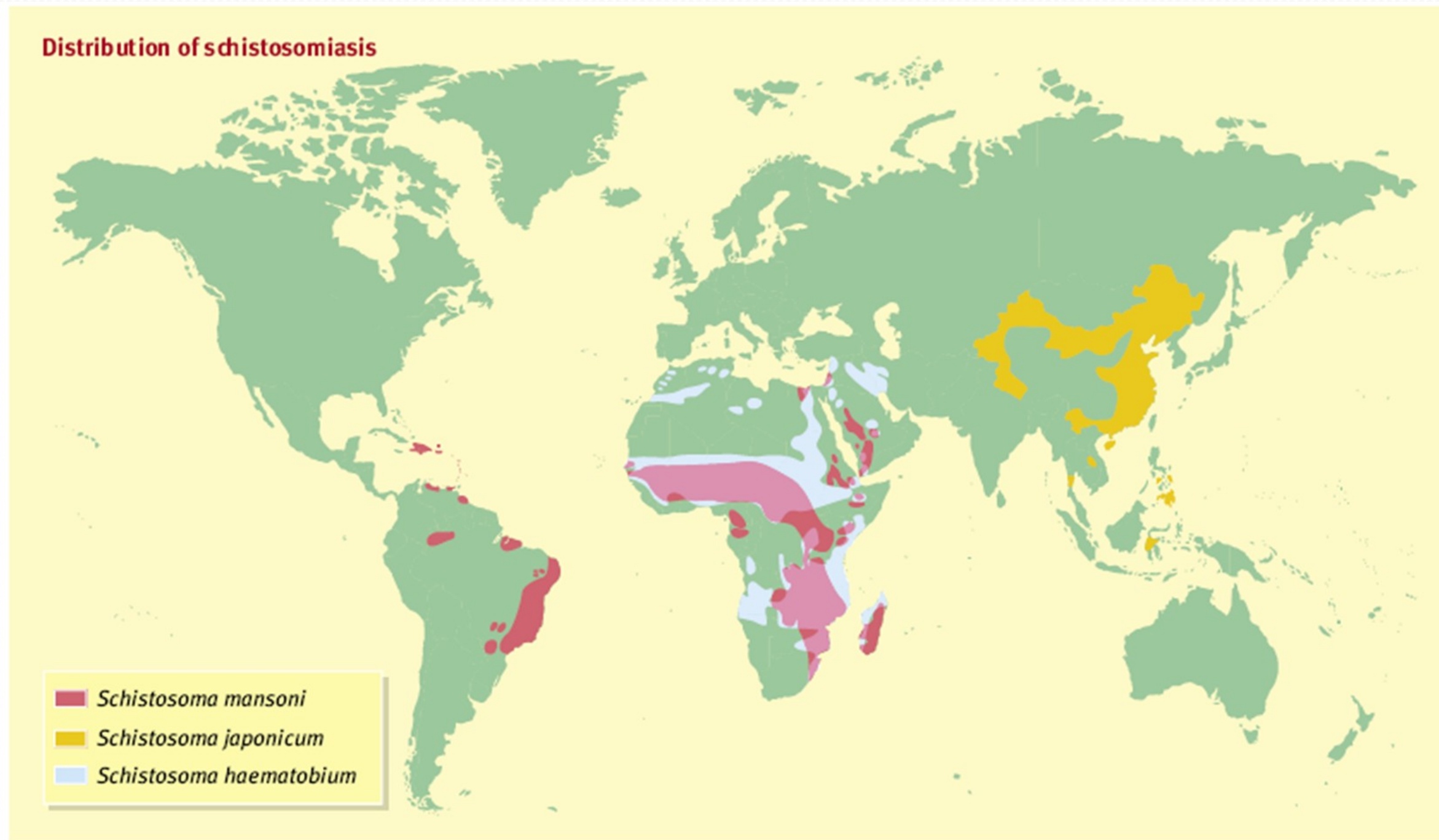




- It continues to threaten millions of people particularly the rural poor in the developing countries.
- There are three species of schistosomes that can infect humans, of which: *S. mansoni*, *S. japonicum* and *S. haematobium* are the most important ones.

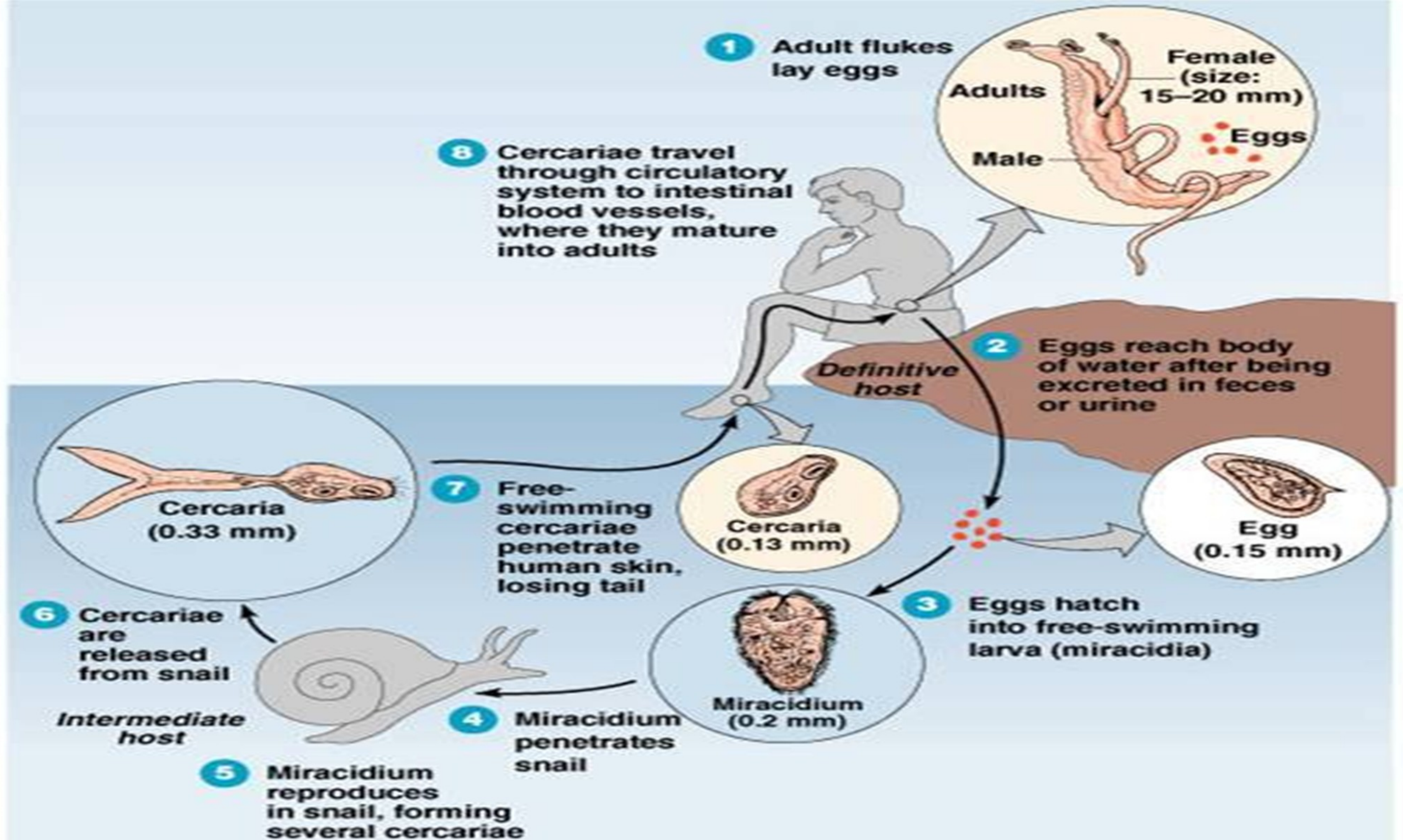


# Global Distribution of Schistosomiasis





# Life cycle:



(b) Life cycle of *Schistosoma*, cause of schistosomiasis.



# Pathogenesis & Clinical Picture

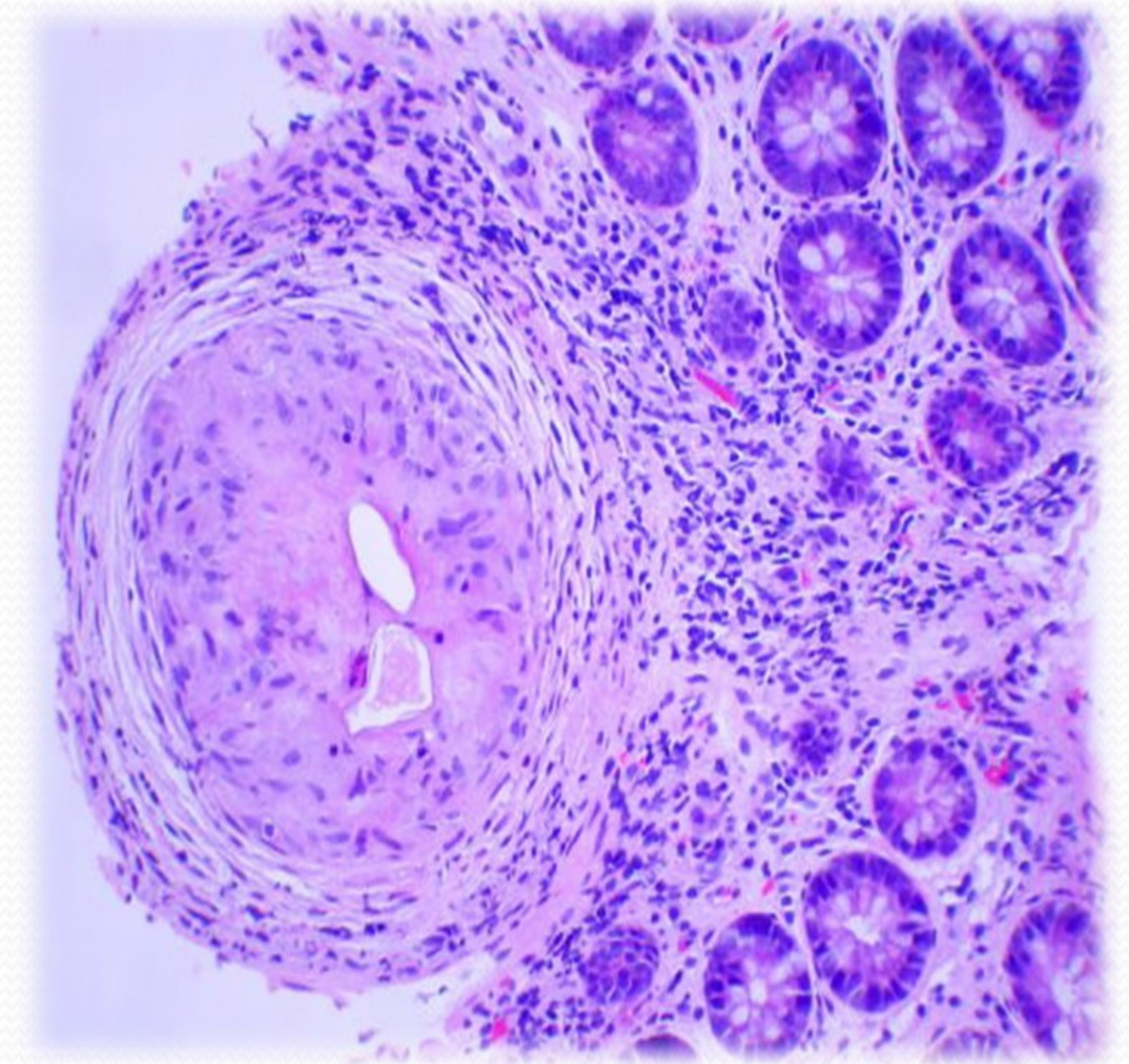
- Schistosomiasis is characterized by three distinct syndromes :
  - Cercarial Dermatitis
  - Acute Schistosomiasis
  - Chronic Schistosomiasis





# Pathogenesis:

- Rather than being excreted, however, some of the eggs may lodge in tissues of the host and it is the presence of these retained eggs with granuloma formation, that cause the pathology of schistosomiasis





# Pathogenesis (cont.)

1. Initial toxic and allergic symptoms and cutaneous lesion.
2. Fibrosis of liver leading to cirrhosis with hepatosplenomegaly.
3. Chronic phase leads to loss of weight, weakness and finally the death of the patient.





# Control:

- 1- Safe water supply.
- 2- Sanitation.
- 3- Snail control:
  - Chemical Molluscicides
  - Biological Control
  - Certain plants with molluscicidal effect



- **4- Health education :**

- • Knowledge of the complex life cycle of the parasite
- • Advertising campaigns through mass media.
- • Explaining the danger of infection & the availability of free diagnosis & treatment.



# Diagnosis:

- 1. Microscopic examination to find eggs in stool and urine.**
- 2. Liver biopsy.**
- 3. Ab/Ag reaction.**
- 4. Serologic tests by using a variety of techniques.**
- 5. PCR (polymerase chain reaction).**



# Treatment:

- Praziquantel, a prescription medication, is taken for 1-2 days to treat infections caused by all *Schistosoma* species



# Conclusion:

- **Control of Schistosomiasis is not an easy task.**
- **Even after successful treatment, re-infection easily takes place in most endemic areas, unless transmission is cut off somewhere between the intermediate host & the final host.**



