
Filariasis

Dr. (Mrs.) Mrunal Pimparkar

Professor, Community Medicine,
& Medical Education Unit (MEU) Co-ordinator,
M.G.M Medical College, Navi-Mumbai.

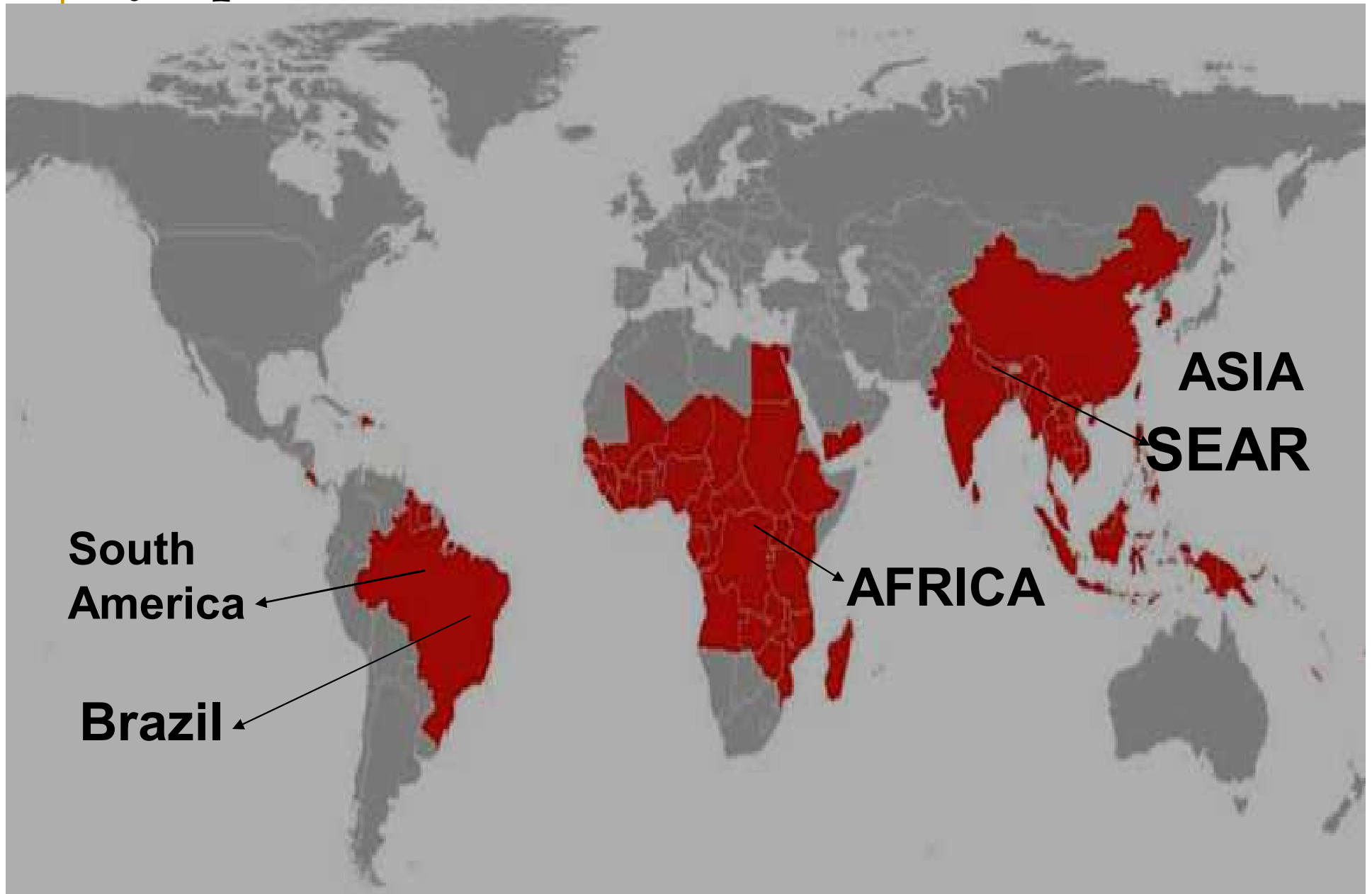
Filariasis

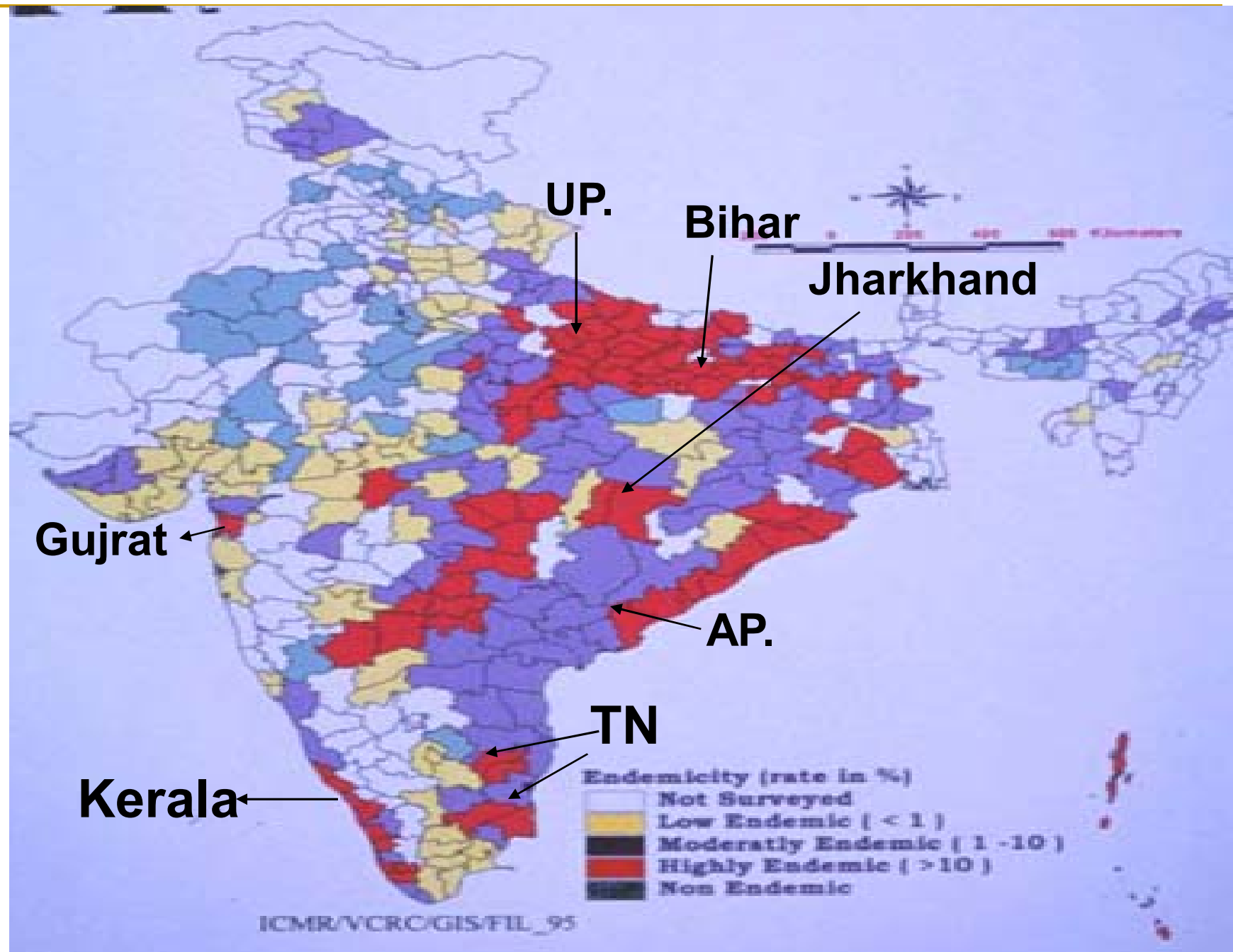
- **Distribution: Filariasis of W. bancrofti is world-wide distribution, while**
- **Filariasis of B. malayi is in Asia.**
- **Filariasis Is One Of The Five Major Parasitic Disease In INDIA except Yellow Fever**

Filariasis- Wuchereria Bancrofti &

Brugia Malayi are Found In INDIA

Lymphatic Filariasis Endemic Countries





Heavily Infected Areas

- Are –
 - UP., Bihar , Jharkhand ,
 - Gujarat ,
 - AP., Tamilnadu, Kerala
-

Agent Factors

- **Lymphatic filariasis – Infection with 3 closely related Nematodes**
 - **W.B.,**
 - **B.M., &**
 - **B. Timori**
 - **All 3 Infection Transmitted to Man by the bites of Infective Mosquitoes**
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- **Bancroftian Filariasis (>98%) is the commonest Form.**
 - **B. Malayi is confined to a few rural pockets of Kerala, Orissa, AP., West bengal**
 - **All 3 Infection Transmitted to Man by the bites of Infective Mosquitoes**
-

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- **All 3 Parasites similar Life cycles in Man-
Adult worm living in Lymphatic Vessels
whilst their offspring .**
 - **The Microfilaria circulates in Peripheral
Blood & are available to infect Mosquito
when they come to feed**
-

Agent Factor -

1) Filarial – Adult worm

2) Microfilaria

Filarial – Adult worm

The adults are white and thread-like worms.

The female is about 5-10 cm & male 2.5- 4 cm.

Adult worm of filaria

The **adults** are white and thread-like worms.

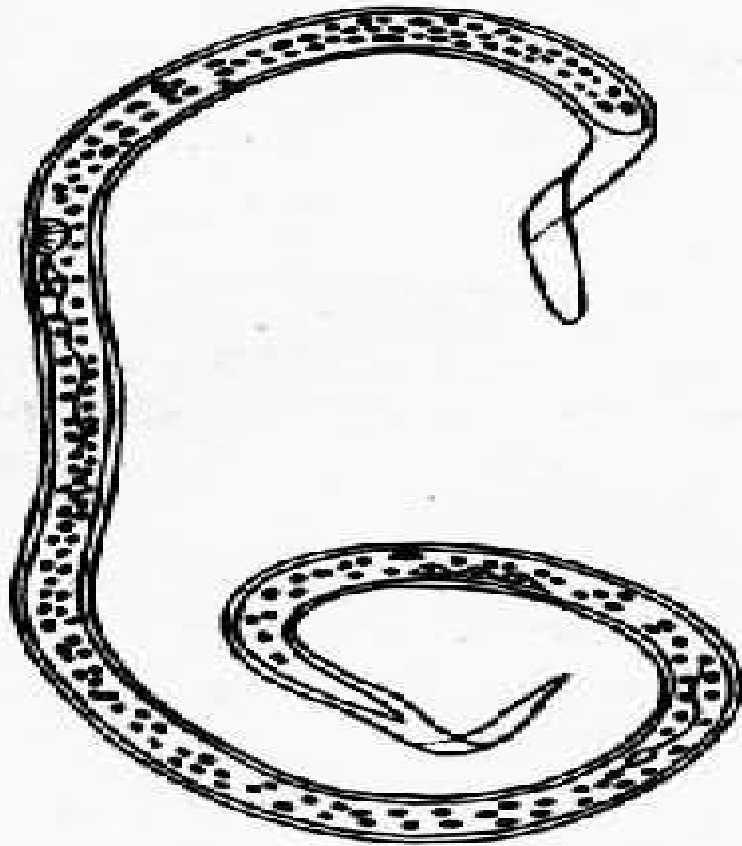
The female is about 5-10 cm and the male 2.5- 4 cm.



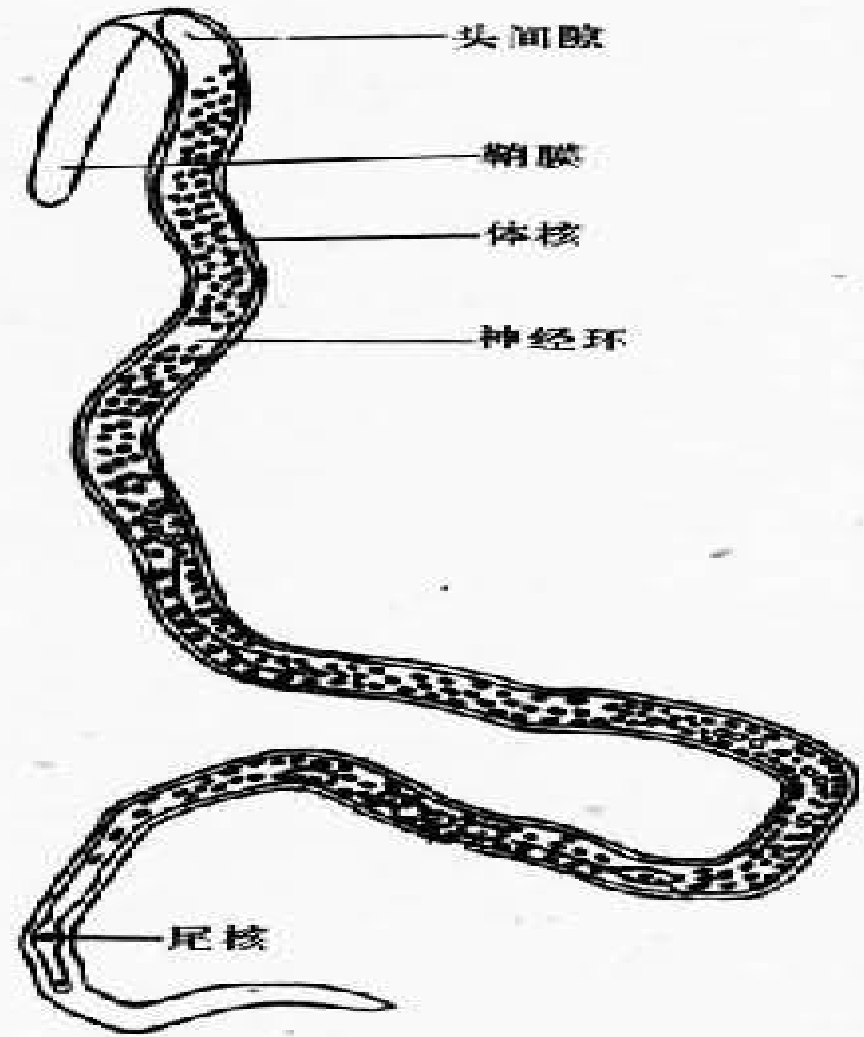
male 2.5- 4 cm.



female is about 5-10 cm



班氏微丝蚴



马来微丝蚴

Microfilaria of *W. bancrofti* and *B. malayi*

- **Filariasis**

- Vector**

- **W. Bancrofti**

- Culex fatigans**

- C. Quinque-fasciatus**

- **B. Malayi**

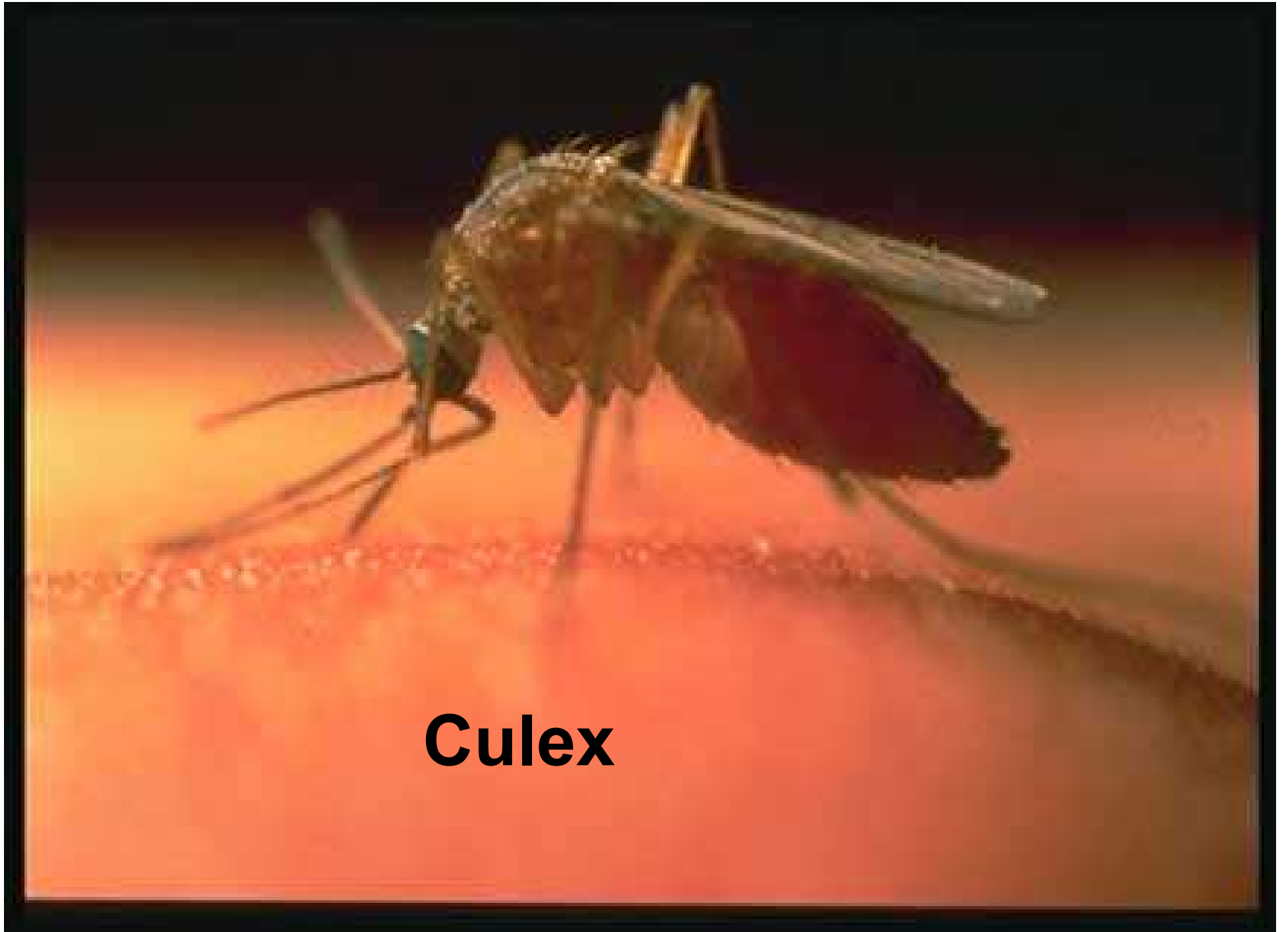
- Mansonoides Annulifera**

- M. uniformis**

- **B. Timori**

- Anopheles Mosquitoes**

- Mansonia**



Culex

Epidemiology

Source of infection: The people harbor microfilariae in the blood stream.

Vector: Culex pipiens pallens, C. fatigans for W. bancrofti,

Anopheles sinensis,

Anopheles anthropophagus transmitting B. malayi.

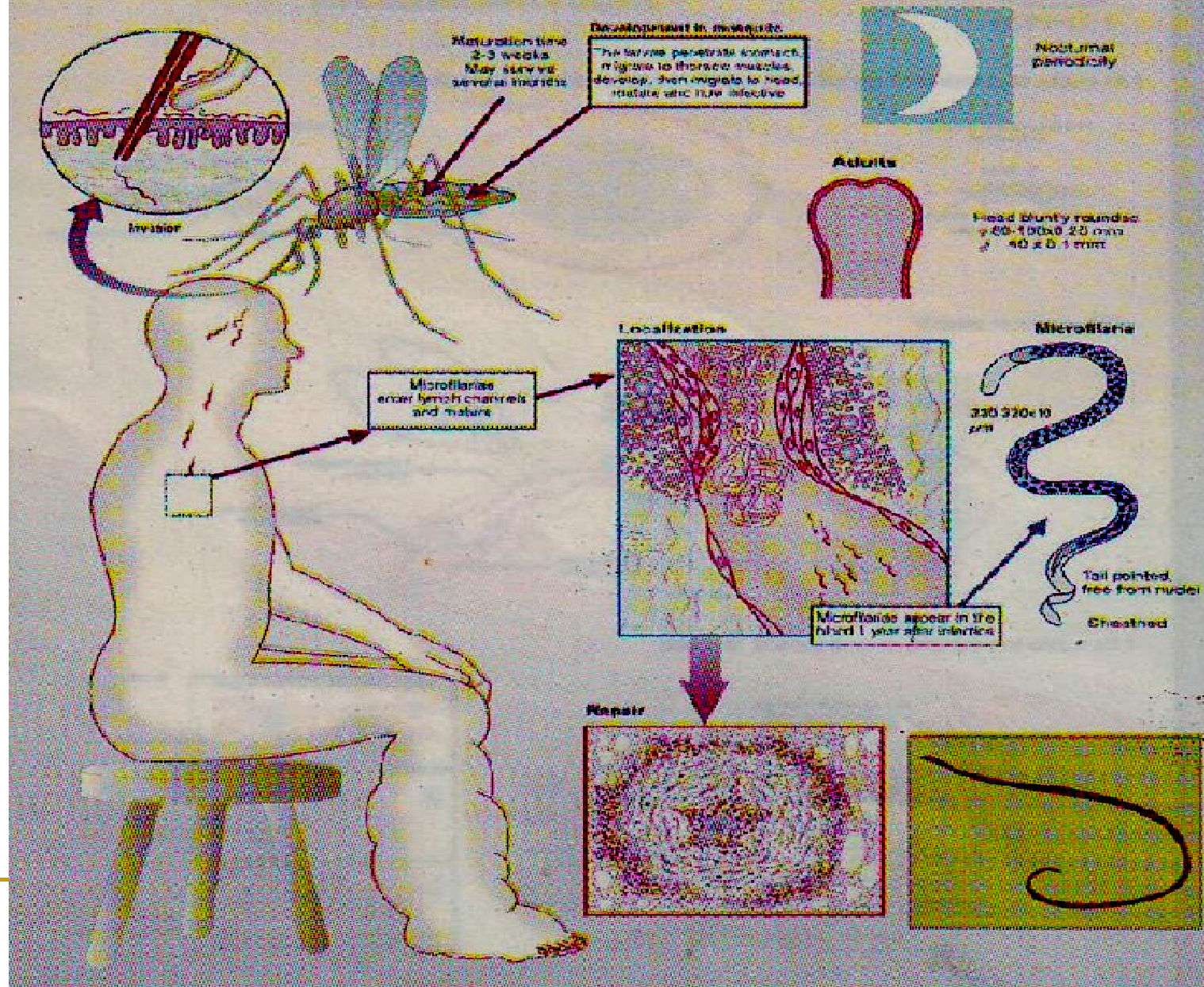
Reservoir host:

- Reservoir host: For W. bancrofti is only subclinical & clinical cases of Filariasis ,
 - There is no evidence of Animal Reservoir
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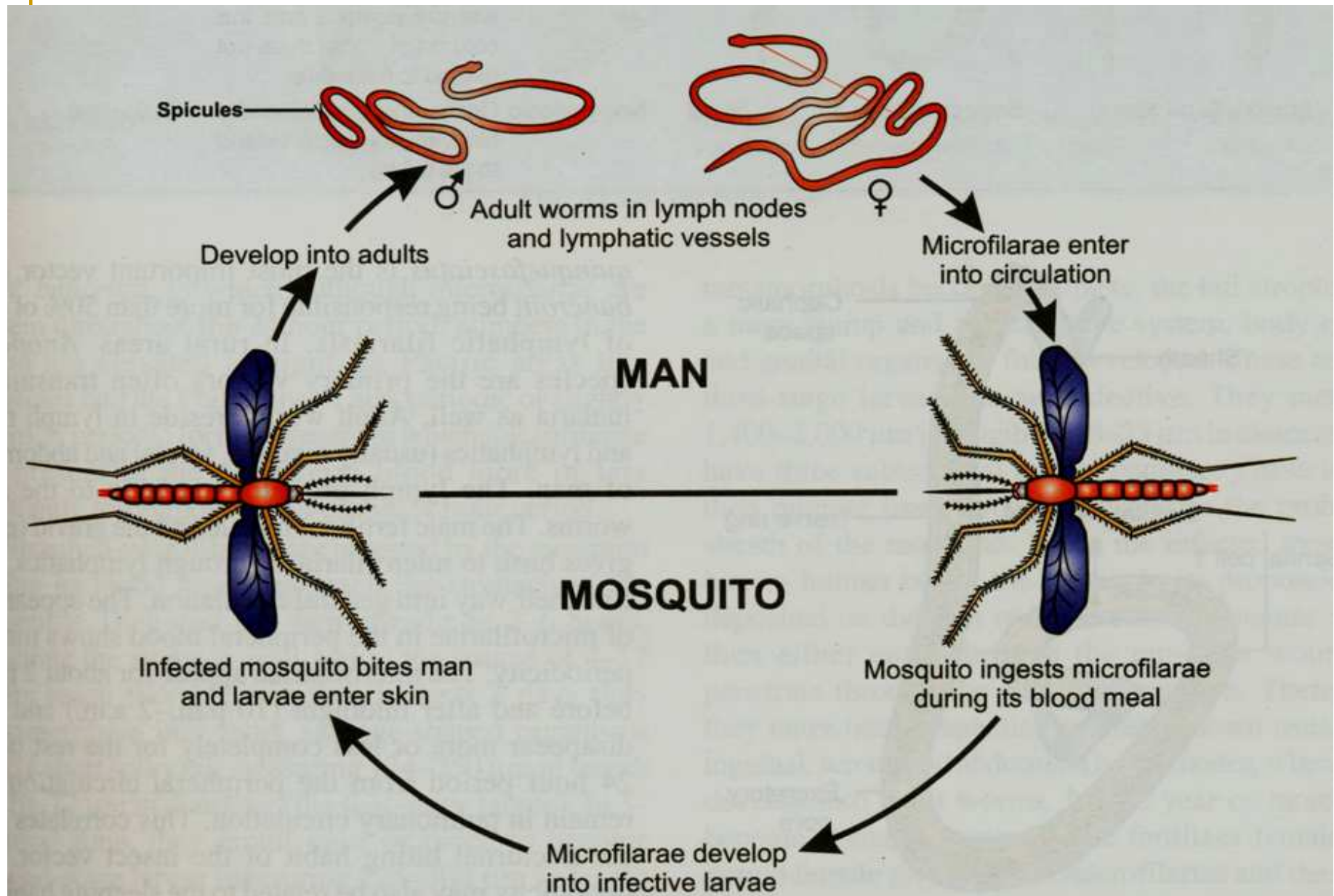
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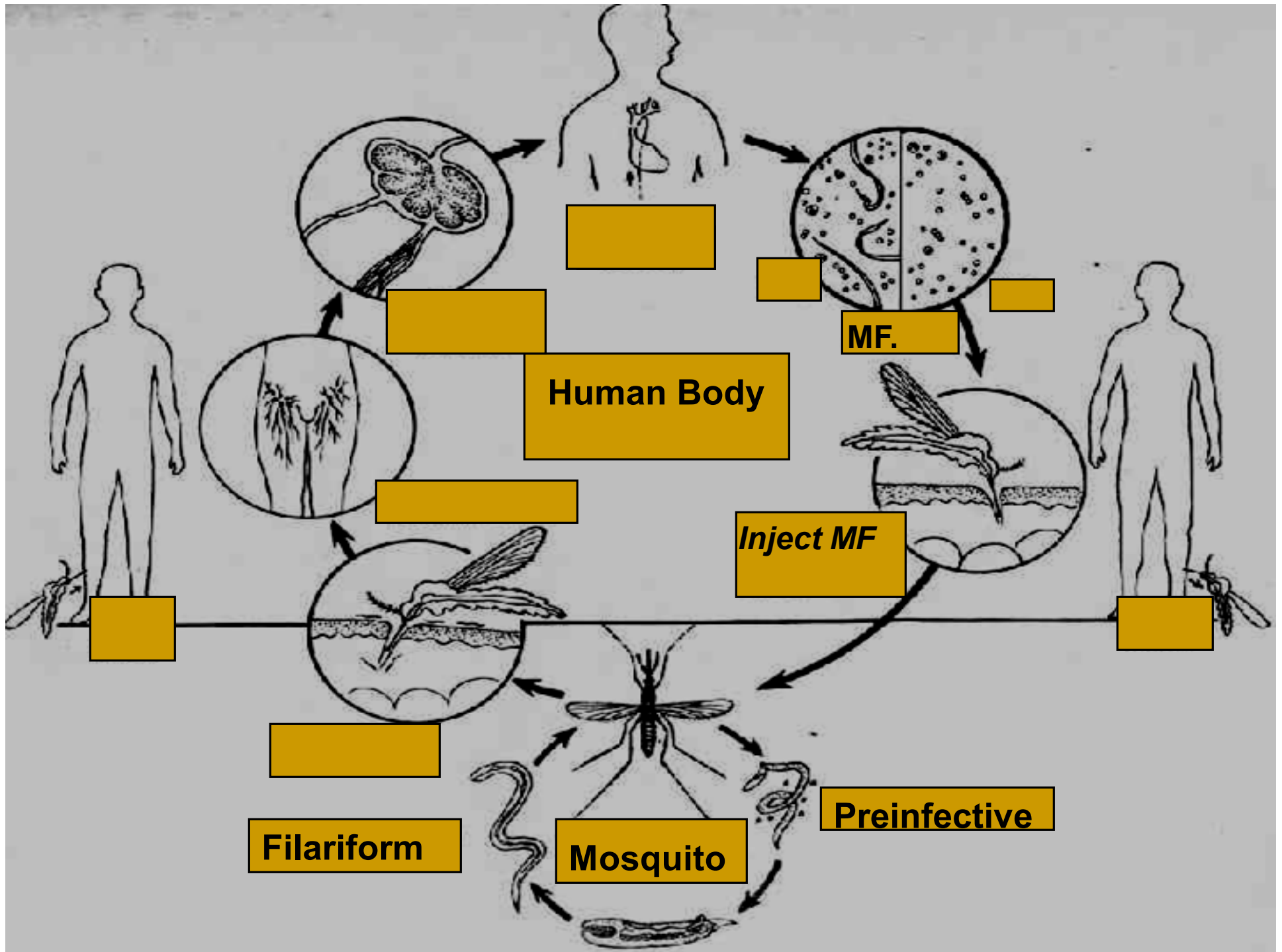
Wuchereria bancrofti (filariasis)

LIFE CYCLE



LIFE CYCLE OF WUCHERERIA BANCROFTI





II. Life Cycle:

1 Intermediate Hosts

- Vector Are Mosquitoes, Bancroftian Filaria Is Transmitted By Culex (Pipiens Pallens) In Which
 - The Larval Development Takes 10-14 Days,
 - The Development Of Malayan Filaria In Anopheles Sinensis Requires 6 - 6.5 Days;
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2. Infective Stage:

Filariform Larva (L3)

3. Infective Route:

By Skin

(The Wound Bitten By Mosquito)

4. Site Of Inhabitation: Lymphatic Tissue;

5. Life Span: 4-15 Years;

6. Microfilariae - May Survive 1-3 Months;

7. Viviparous;

Female gives birth to 50,000 Mf./ day

8. Nocturnal Periodicity

8. *Nocturnal Periodicity*: The Microfilariae Present In The Peripheral Blood During Day time Is Very Low In Density.

The Number Of Microfilaria Gradually Increase From Evening To Midnight.

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- **The Disease Manifestation –**
 - **Asymptomatic**
 - **Acute manifestation &**
 - **Chronic manifestation –**
 - **Lymphangitis ,**
 - **Lymphadenitis ,**
 - **Elephantiasis of Genitals, Legs ,&
Arms**
-

-
- **Hypersensitivity state such as TROPICAL PULMONARY EOSINOPHILIA ,**
 - **Filarial Arthritis**
 - **Disease Responsible for Considerable suffering ,Deformity , & Disability**
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Clinical Manifestaion

- **Lymphatic Filariasis**
 1. **Asymptomatic amicro-fileria**
 2. **Acute stage**
 3. **Chronic stage**
-

Clinical manifestation

1. Acute stage:

- The symptoms are due to Allergic reaction. It begins with a chill followed by a high fever. It is called **filarial fever**.
 - The **Lymphangitis, Lymphadenitis** (may occur, Orchitis and inflammation of spermatic cord are only found in infection of *W. bancrofti*).
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- Acute Filaria
- Left Leg
- Swelling ++
- Pain in Leg

**Filariasis
Rt.Fore Arm**

Normal



2. Chronic stage:

The manifestations are caused by lymphatic lesion.

(1) Elephantiasis: Lymph edema may occur in the limbs, scrotum, breast, vulva and etc.

(2) Chyluria only caused by *W. bancrofti*.

(3) Hydrocele is only found in infection of *W. bancrofti*.



**A patient of
elephantiasis**

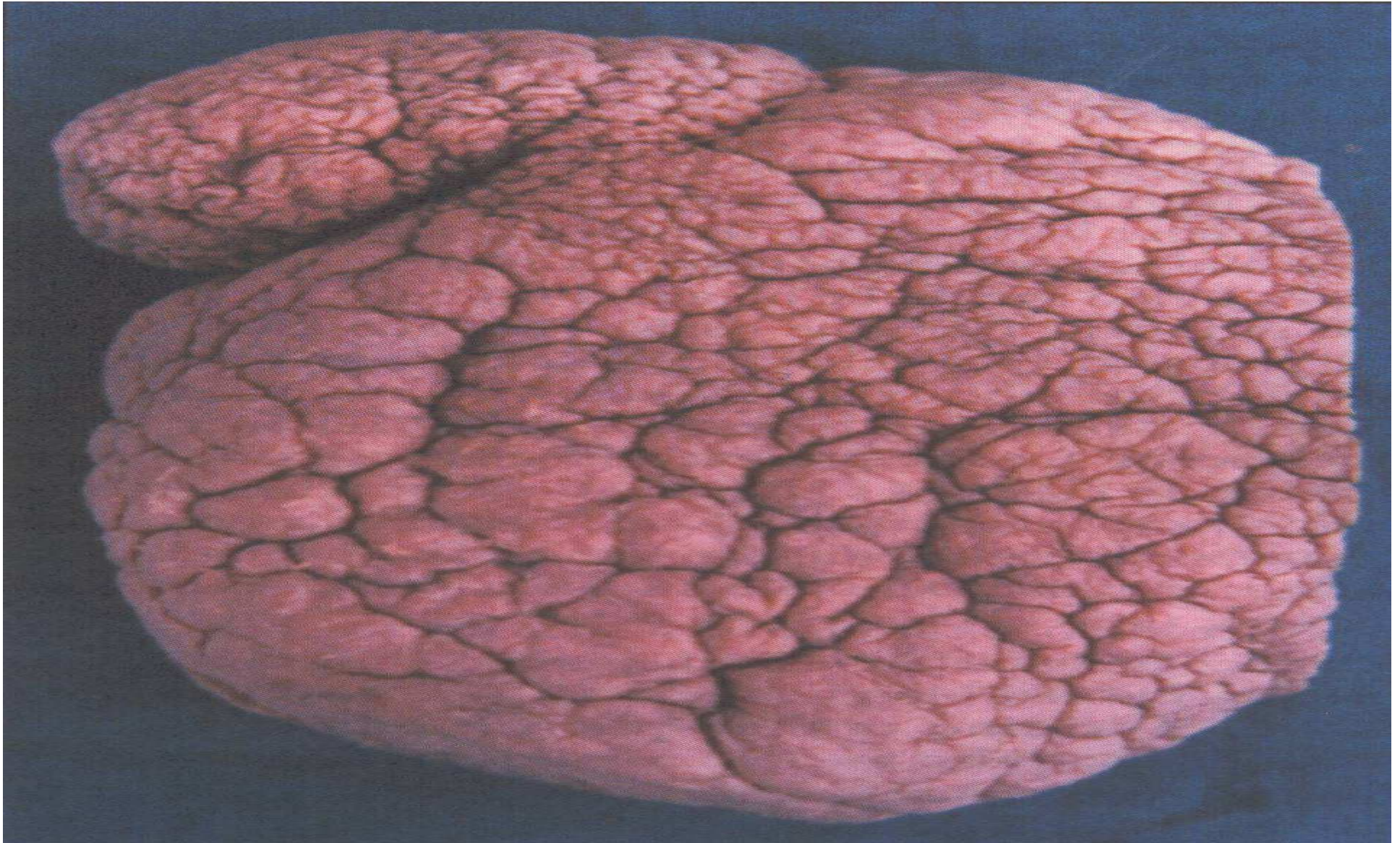
Left Leg

**Non-Pitiabile
Oedema**

ELEPHANTIASIS



ELEPHANTIASIS PENIS AND SCROTUM



IV. Diagnosis

The diagnosis depends on the
H/O - living in endemic areas,
C/O - signs and symptoms, but
Confirmative diagnosis depends
on the
demonstration of *Microfilariae*.

1. First choice method is

thick blood smear, taking blood at night from 9 pm - 2 am.

2. Millipore membrane filtration is used for screening the patients or checking curative effect in the endemic areas with the low infective rate.

3. Fresh blood smear used for mass education.

4. Immunological tests are only made reference of the diagnosis.

Prevention & Control

- **A) Chemotherapy**

- 1) Chemotherapy – DEC

- Mass Treatment

- Medicated salt

- 2) Ivermectin

- **B) Vector Control-**

- Anti-larval Measures

- Anti-adult Measures

- Integrated Vector Control

Chemotherapy

1. Diethylcarbamazine (DEC,)(Hetrazan)

Dose of DEC- 6 mg /kg of body wt./ day

For 12 Days after meals

Treatment is repeated after 2 years

The drug is effective against Mf. But not against adult worm

DEC given in various ways

- **1) Mass Therapy**
 - **2) Selective Treatment**
 - **3) DEC Medicated Salt**
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1) Mass Therapy

- **DEC given to everyone in the community irrespective of wheather Infected or No signs of infection**
 - **indicated in highly Endemic area to reduce the Prevalence of w. bancrofti**
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2) Selective Treatment

- DEC given only to those who are Mf +ve
 - More suitable areas of Low endemicity
 - Dose – 6mg/kg/day x 12 Day
 - Dosing once a wk or once a months can also be given
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3) DEC Medicated Salt

- DEC table salt (3:1000) are sold in endemic areas.
 - People take this salt over 6 months, Resulting in an
 - elimination or great reduction of microfilariae in the blood stream,
 - for treating and preventing filariasis.
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Ivermectin

- **Broad Spectrum against Nematodes & Ectoparasites**
 - **Dose – 200- 400 ug /kg x one dose**
 - **Very effective in completely clearing blood Microfilaria with in a wks.**
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- **Remove** the giant elephantiasis of the scrotum, chest and limbs.
 - **Eradicate mosquito breeding place** and control mosquitoes.
 - It is important to protect people from mosquito biting for controlling filariasis.
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Elimination of Lymphatic Filariasis

■ **Strategy**

- **The International Task Force (WHO) has Recommended that in**
 - **Mass Treatment, DEC is given to almost everyone in the Community**
 - **National health Policy Goal-**
To Eliminate Lymphatic Filariasis by 2015
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- **Two Important Approaches are Recommended for Elimination of Disease**
 - **1) Annual Mass Drug Administration for 5 Years or more in affected areas to interrupt Transmission of Disease**
 - **2) Home based management of cases who already have Disease & up-scaling hydrocele operations in identified CHCs & hospitals**
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Thank You

