

Lymphatic Filariasis :  $\Rightarrow$  commonly known as "Elephantiasis"

Distribution of disease :— It is endemic in the tropics and subtropics of Africa, Asia and some parts of America. The disease is endemic in U.P. Bihar & Kerala and Gujarat.

Agent factors :  $\Rightarrow$

① Agent :  $\Rightarrow$  There are 8 species of filarial parasites, but only three of them causing lymphatic filariasis, others are responsible for non-lymphatic filariasis, which is not found in India.

(i) *Wuchereria bancrofti*  
 (ii) *Brugia malayi*  
 (iii) *Brugia timori*

} Nematode worms

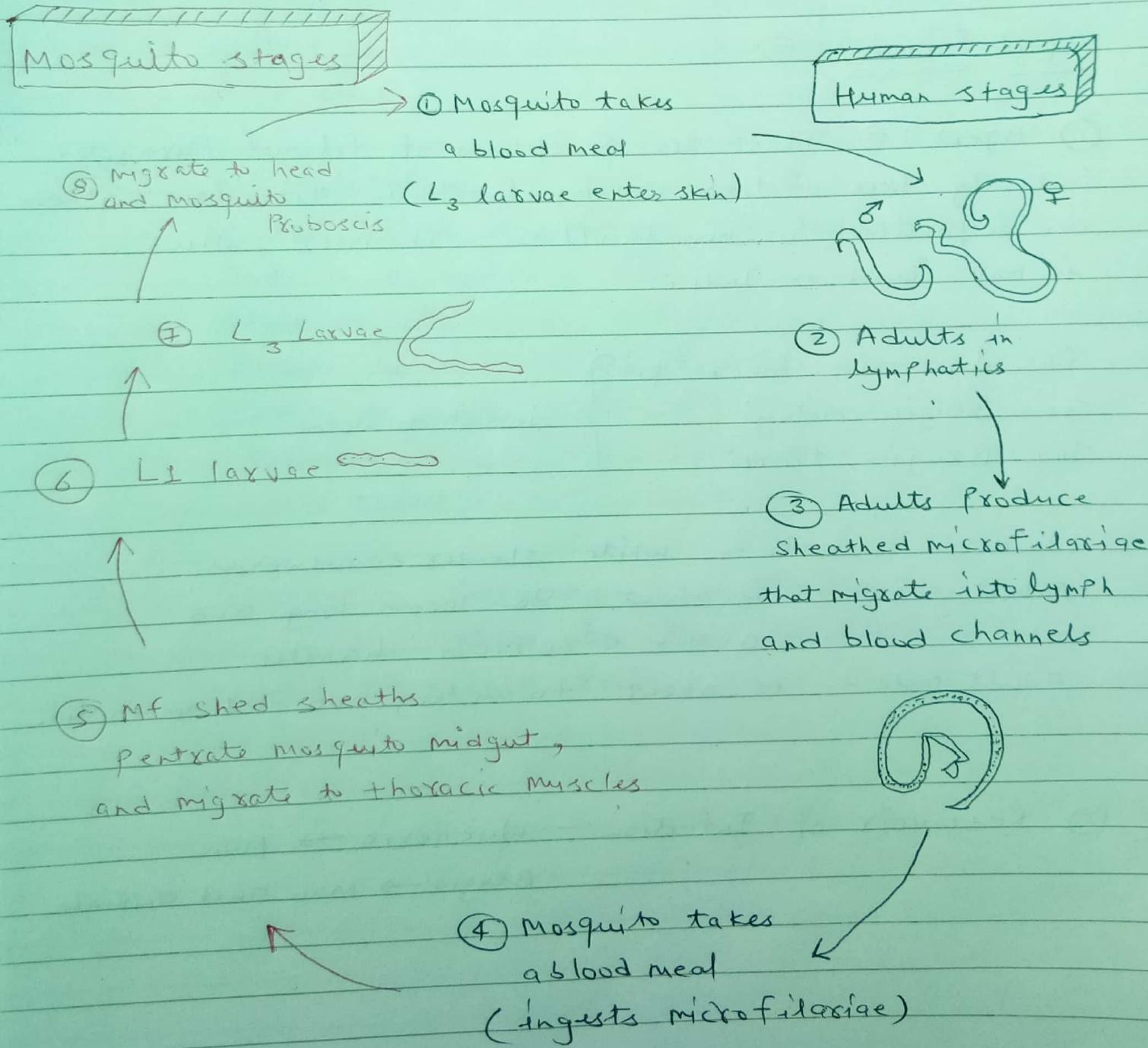
*Wuchereria bancrofti* — white, slender round worms.

Adult female — is about 80–100mm long and 0.24–0.30 mm in diameter

Adult male — is about 40 mm long and 0.1 mm in dia.

② Reservoir of Infection — *Wuchereria*  $\rightarrow$  Man  
*Brugia*  $\rightarrow$  Man and animals.

③ Life cycle:  $\Rightarrow$  The adult worms found in lymphatic system of man (definitive host), where they give birth to as many as 50000 microfilariae (MF) per day. The mosquito picked up the MF during feeding. In mosquito (Intermediate host) MF get developed to Infective larvae.



Host Factors :  $\Rightarrow$  Man is the natural host.

(i) Age - All age groups

(ii) Sex - In both, but higher in males

(iii) Migration - Disease transmitted from endemic to non-endemic areas.

(iv) Immunity - It may develop only after many years of exposure.

(v) Social factors - It is associated with urbanization, industrialization, illiteracy, poverty and poor sanitation.

Environmental factors :  $\Rightarrow$

(i) Climate :- Temperature between 22-39°C and relative humidity of 70% is favourable for mosquito breeding.

(ii) Drainage :- In bad drainage and polluted water vectors breed profusely.

Vectors :  $\Rightarrow$  Female Culex mosquitoes - Wuchereria  
Female Mansonia Mosquitoes - Brugia

Mode of transmission :  $\Rightarrow$  By bite of Infected Vectors.

Incubation Period - 8-16 months (Sometimes longer).

Clinical features :  $\Rightarrow$  There are four stages.

- (i) Asymptomatic microfilaraemia :— There is no MF in blood or no clinical features.
- (ii) Asymptomatic microfilaraemia :— There are carrier of MF in blood but do not show clinical features.
- (iii) Stage of acute manifestations :— In the first months and years there is fever, lymphangitis, lymphadenitis, lymphoedema of the various part of the body and epididymoorchitis in male.
- (iv) Stage of chronic obstructive lesions :— It develops after 1-15 yr. There is fibrosis and obstruction of lymphatic vessels causing permanent structural changes. The features are hydrocele, elephantiasis and chyluria.

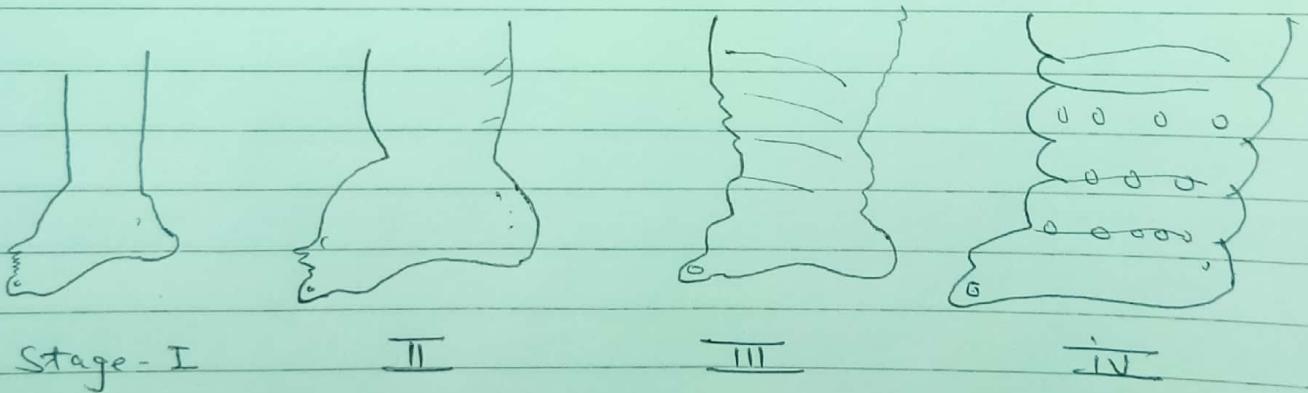
Elephantiasis may affect the legs, scrotum, arms, penis, vulva and breast.

Laboratory diagnosis :—

Elephantiasis :— Thickening and hardening  $\cong$  swelling of limbs and genitalia.

The lymphedema of the limbs is commonly graded as -

- (i) grade I :- pitting edema, reversible on elevation of the affected limb.
- (ii) grade-II :- pitting or non-pitting edema, which does not reverse on elevation of the affected limb and there are no skin changes.
- (iii) grade-III - Non-pitting edema that is not reversible,  $\in$  thickening of the skin
- (iv) grade-IV - Non-pitting edema that is not reversible,  $\in$  thickening of skin along  $\in$  nodular or warty excrescences - the stage of elephantiasis



Laboratory diagnosis:-

- ① A thick blood film (blood collected between 8:30 PM - 12 mid-night) - MF Present

② Membrane filter concentration (MFC) of blood

③ DEC (diethylcarbamazine) Provocation Test -

Induction of MF in blood during day time by administering DEC - 100mg orally. MF begin to react their peak within 15 minutes to 2 hr.

④ Serology :- Patients  $\in$  active filarial infection, typically have elevated levels of anti-filarial IgG4 in blood.