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9) Wuchereria Bancrofti (ब्रिफिले) (filarial worm)

classification

Phylum - Nematelminthes

class - Nematoda

Genus - Wuchereria

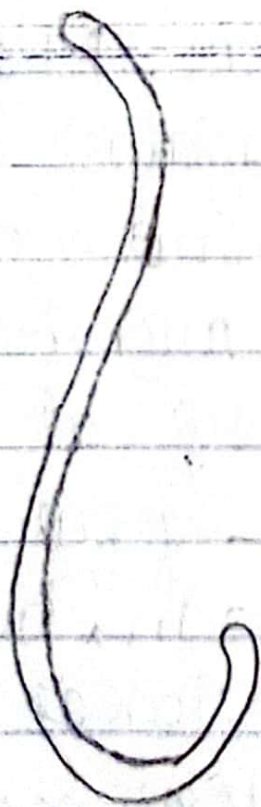
Species - Bancrofti

common name : Filarial worm

Habit / Habitat

It is largely confined to the tropics and sub tropics of Nepal, India, South China, Japan and South America. Adult worms lives in the lymphatic vessels and lymph nodes of human beings.

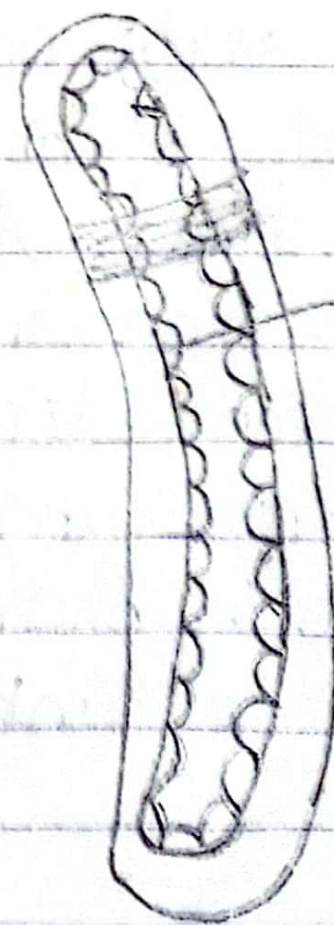
Morphology



Male



Female



microfilariae

sheath

These are long hair like transparent nematode. They are filiform and both ends are tapering. Male and female are remain coiled together usually in the abdomen.

### Male

They are 2.5-4cm in length. Its tail end is curved ventrally and contain hood spicule.

### Female

It measures about 8-10 ~~cm~~ in length. Its tail end is narrow and pointed.

### Microfilarae

female are oviparous, i.e. female give birth to larva called microfilarae. Microfilarae are very active and can move against the blood stream. They show peripheral circulation of blood. A large number of microfilarae are seen in peripheral blood only at night between 10pm - 4am. The larval form donot undergo any further development in <sup>the</sup> human body. Their further development takes place in the intermediate host, i.e. culex mosquito.

## Lifecycle

*Wuchereria Bancrofti* is a digenetic parasite. It requires two hosts to complete its lifecycle. The primary host is man and the secondary host is female *Culex* mosquito.

### 1) Lifecycle in mosquito

In female *Culex* mosquito microfilariae larva undergoes further development and forms infective stage of larva i.e. 4<sup>th</sup> stage larva.

It is completed into following steps:-

- i) When mosquito sucks the blood of infective person then sheath of microfilariae are digested and microfilariae becomes free in the stomach. This microfilariae penetrates the stomach wall and migrate to the thoracic muscle where they undergo further development.
- ii) In the next two days microfilariae changes into short and thick larva called as second stage larva.
- iii) In 3-7 days second stage larva grows rapidly and changes into third stage larva.
- iv) On the 10<sup>th</sup> - 11<sup>th</sup> day metamorphosis becomes complete and genital organs are developed and larva change into 4<sup>th</sup> stage. 4<sup>th</sup> stage larva is the infective to man. It enters the proboscis sheath of mosquito on about 14<sup>th</sup> day.

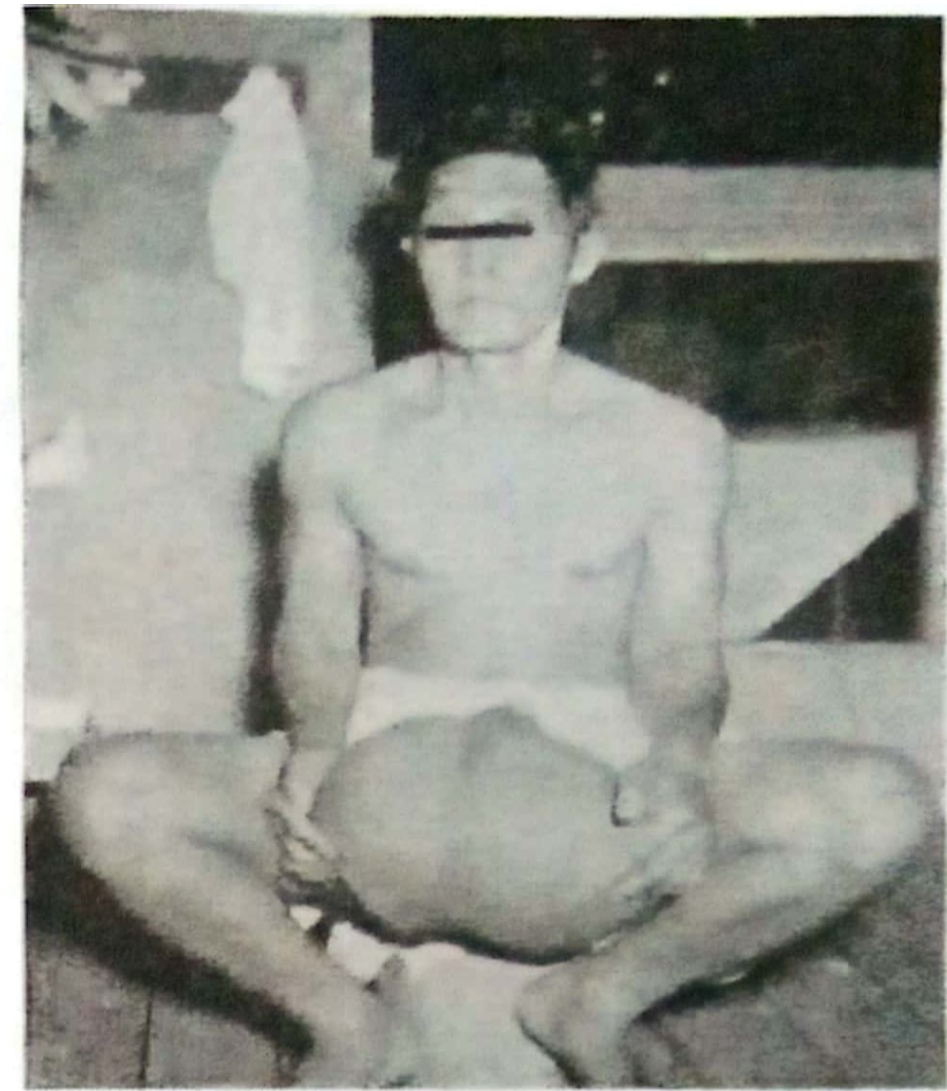
## 2) Lifecycle in man

When an infected culex mosquito bites the healthy person, infective larva or 4<sup>th</sup> stage larva deposited on the skin near the site of puncture. Later on microfilariae larva enters into the body through puncture or wound of skin.

After penetration through the skin, the fourth stage larva reaches to the lymphatic vessels, settle down at some part (thigh, foot, etc) and began to grow into adult worm. In the course of time probably after a period of 5-18<sup>th</sup> month they become sexually mature. The male fertilizes the female and female give birth to larva. A new generation of microfilariae are passed into the ~~per~~ peripheral circulation through lymph vessel and blood vessel. In this way lifecycle of wuchereria bancrofti is completed.



**Fig: Infected persons from *Wuchereria bancrofti***



**Fig: Infected persons from *Wuchereria bancrofti***

**Disease:** Elephantiasis or filariasis.

- **Symptoms:** Fever, revolting swelling often in legs or genital system (scrotum epididymis and mammary glands).

**Control:** With Drugs: Di-ethyl carbamazine and Hetrazan.

**Prophylaxis:**

- a. Destruction of vector mosquito
- b. Environmental cleanness