

BIO 475 - Parasitology Spring 2009

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<http://www4.nau.edu/isopod>

Lecture 21

Order Spirurida

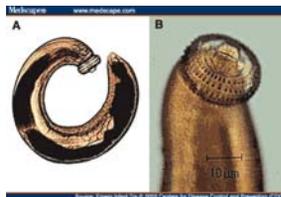
Characteristics:

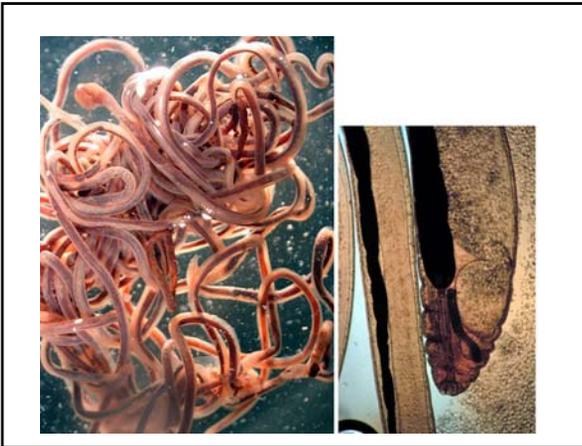
1. Adults with pseudolabia, or with lips (or not!).
2. Esophagus with anterior muscular portion, posterior glandular portion; never a bulb.
3. J1-J3 in arthropod hosts; J4-adult in intestine or deep tissue.

Family Gnathostomatidae

a. *Gnathostoma*
spp.

1. Carried by several hosts before infecting humans or other carnivores.
2. Forms cutaneous lumps, but can cause worse.





Family Spirocercidae

a. *Spirocera lupi*

1. Encysts in esophagus of dogs.
2. Can cause cancer.



Superfamily Filarioidea

Characteristics

1. Adults are tissue dwelling forms
2. Often vectored by biting insects
 - a. J3s deposited on skin
- b. They crawl into wound and enter tissues.

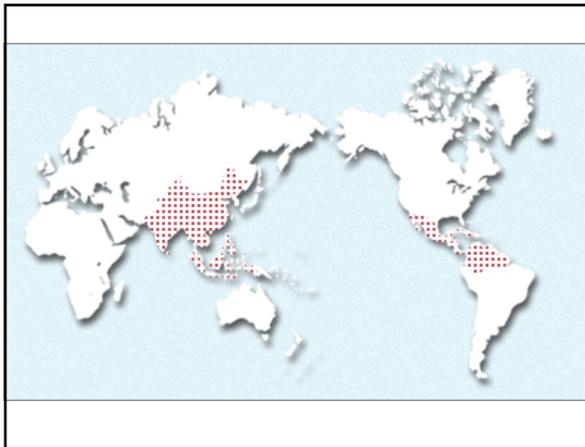
Family Onchocercidae

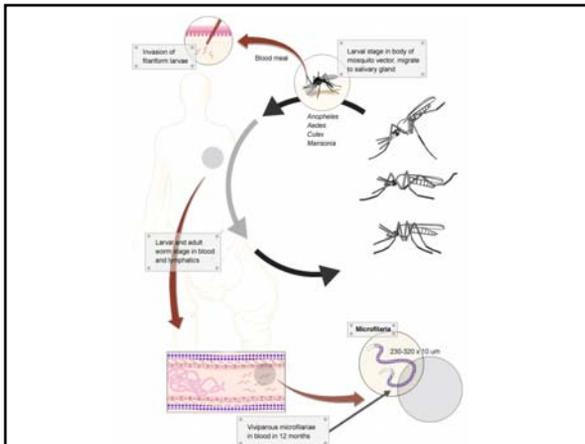
1. *Wuchereria bancrofti*

a. Vectored by several genera of mosquito.

1. *Aedes*, *Anopheles*, *Culex*, can support filariae

2. But do not always transmit it





Family Onchocercidae

2. *Brugia malayi*

- a. Similar to *W. bancrofti*
- b. Spread by mosquitos (*Culex*)
- c. primarily in South Pacific

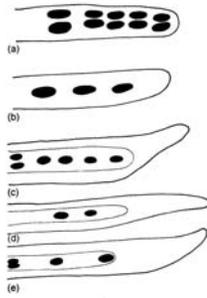


FIGURE 29.4 Presence or absence of a sheath and the arrangement of nuclei in the tail are useful criteria in identifying microfilariae. (a) *Mansonella peritans*; (b) *Mansonella ozzardi*; (c) *Loa loa*; (d) *Wuchereria bancrofti*; (e) *Brugia malayi*.

Family Onchocercidae

3. *Onchocerca volvulus*

- a. responsible for river blindness in Africa and SA
- b. Vecteded by *Simulium*



Onchocerca volvulus



Onchocerca volvulus

a. Life Cycle

1. Host with adult worms in sheathes in skin

2. Microfilariae remain in skin where they are ingested by blackflies



Onchocerca volvulus

3. Microfilariae migrate to thoracic muscles of fly

4. Develop into J1 and then J2 (sausage stage)

5. Become filariform J3s (infective)

6. J3s transferred in fly bite

7. Cutaneous adults appear in year.

Onchocerca volvulus

c. Microfilariae invade cornea and after death cause scarring;

d. *Wolbachia* bacteria in worms seems to be responsible.





***Onchocerca
volvulus***

1. Invasion of lymphatic system can also cause elephantiasis, particularly in genitalia and mammary glands.
