Zoology Lab Notebook Entry #5

Invertebrates: Phylum Nematoda

Background:

The roundworms!!! Organisms in phylum nematoda are both free living and parasitic animals all found at the organ system level of organization. They are bilateral, triploblastic, eumetazoans with a tube-with-a-tube plan and show more advanced cephalization than flatworms. Roundworms are pseudocoelomates, meaning they have a false body cavity, allowing for further organ system specialization. They mostly reproduce by sexual (dioecious-separate sexes) reproduction. Nematodes lack cilia and flagella. They have a tough cuticle which allows them to maintain a higher level of pressure in their body, creating their round shape. Classes of nematodes are defined by their anatomy.

Class Enoplea (smooth/finely striated cuticle, esophagus cylindrical or bottle-shaped)

Class Chromadorea (cuticle annulated(rings), may have setae, esophagus divided into bulbs)

Class _____

Class _____

Figure 2

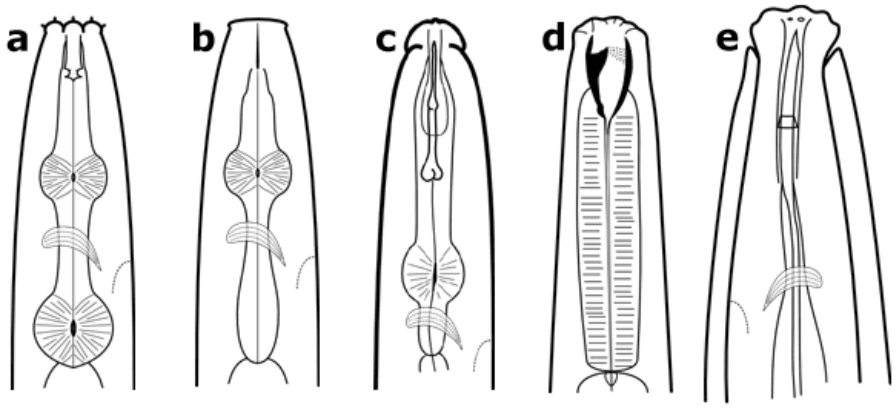

Figure 2. Nematodes can be classified into different feeding groups based on the structure of their mouthparts. (a) bacterial feeder, (b) fungal feeder, (c) plant feeder, (d) predator, (e) omnivore. Figure credit: Ed Zaborski, University of Illinois.

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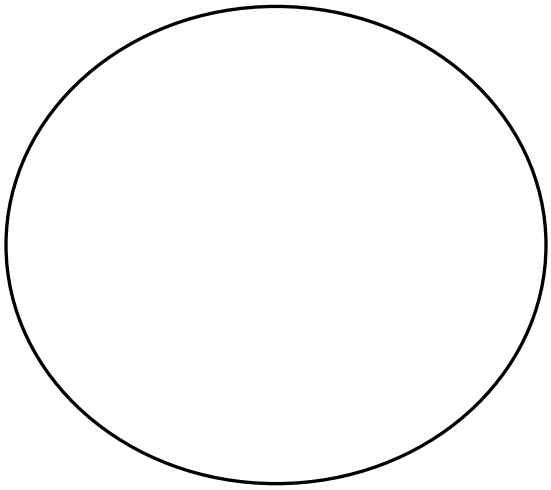
<u>Instructions</u>:

1. Look at the following nematodes under the microscope: *Ascaris, male/female; Trichinella larval cysts in muscle.* Make a sketch of each in the space below (use accurate color!). Label each sketch and note the Slide Name, Class, and magnification (objective lens X eye piece).

Slide Name:_____

Class: _____

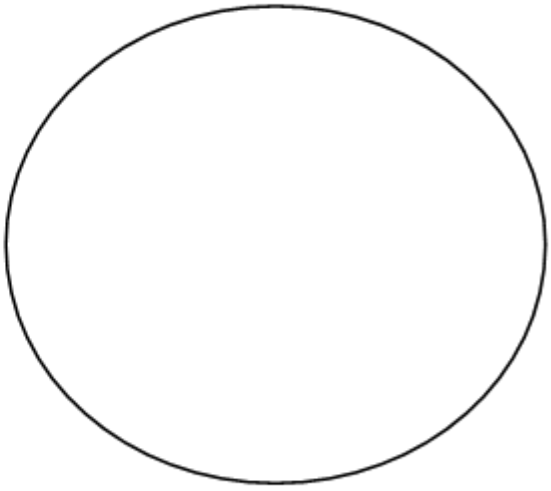
Magnification: _____X



Slide Name:_____

Class: _____

Magnification: _____X



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2. Ascaris Dissection Lab (*adapted from http://www.noelways.com/)*

Background Information

1. Read the CDC handout on an *Ascaris* Infection.
2. Review the life cycle of *Ascaris lumbricoies*

Safety

1. Wear a lab coat, gloves, and goggles. If your gloves rip, get a new glove!
2. ****Ascaris eggs are incredibly resistant to the chemical treatment used during the preservation process. There is a chance some eggs may survive this process for a short period after the process. Keep your hands away from your mouth and nose during this dissection!****

Materials

1. One specimen of *Ascaris lumbricoies.*
2. Gloves, goggles, lab apron
3. Dissection Kit
4. Dissection Tray
5. Dissection Pins
6. Paper Towels

Procedures: Follow the procedures given to you by the teacher. When you are done, throw them in the trash bin. Do not touch this paper (one with the sketches & questions) with your gloved hands.

Lab Questions:

1. Based on its structure, what do you think the pharynx is for?

2. What feature of *Ascaris* do you think allows it to survive in so many different environments?

3. Ascaris is a parasite which lives pigs and humans. What do you think it feeds on? How does the food source of Ascaris relate to its digestive system?

4. How do you know if your specimen is male or female?