

ZOOLOGY 101 SECTION 6 LECTURE NOTES

Pseudocoelomate Animals:

- False cavity animals; includes nine phyla

Characteristics:

1. Pseudocoel (derived from embryonic blastocoel rather than mesoderm)
2. Body wall of syncytial epidermis surrounding pseudocoel
3. Digestive tract complete (except in Acanthocephala)
4. Digestive, excretory, and gonad organs contained in pseudocoel
5. Organs bathed in *perivisceral fluid*
6. Specialized epidermis; such as bristles, spines and barbs
7. Found in fresh and marine water, terrestrial habitats, and parasitic
8. Demonstrate **eutely**: a condition where an individual of a species maintains a constant number of cells in the body

!The best example is Nematodes!

I. Phylum Nematoda: Roundworms

Characteristics:

1. Body bilaterally symmetrical, cylindrical in shape
2. Body covered with a flexible, nonliving cuticle
3. Motile cilia and flagella completely lacking
4. Muscles in body wall run in longitudinal direction only

5. Excretory system of one or more **gland cells** and canals, **flame cell protonephridia** lacking
6. Muscular pharynx
7. Male reproductive opening forms cloacae, female reproductive opening a separate gonopore
8. **Hydrostatic skeleton** of fluid in pseudocoel
9. Dioecious

Form and Function

- High hydrostatic pressure in pseudocoel
- Outer cuticle secreted from underlying epidermis (hypodermis)
- Cuticle composed of several layers of *collagen*
- Under epidermis four bands of longitudinal muscles
- Pseudocoel
- Digestive tract:
mouth > pharynx > intestine > rectum > anus

Life Cycle

- Normally exist in host
- Separate sexes, male smaller than female
- Male posterior end bears *copulatory spicules*
- Fertilization is internal
- Shelled zygotes (embryos) stored in uterus until deposition
- Juvenile worm hatches from "egg"
- Four juvenile stages, each separated by a molt
- Juvenile may be free living or in intermediate host
- Claim new primary host

Nematode Parasites

Ascaris lumbricoides = human intestinal roundworm

Necator americanis = hookworm

Trichinella spiralis = trichina worm, TRICHINOSIS

Enterobius vermicularis = pinworm

Wuchereria bancrofti = filarial worm

Other Phyla

❖ Phylum Rotifera

- Unique ciliated crown called corona
- Sexual and asexual eggs

❖ Phylum Gastrotricha and Phylum Kinorhyncha

- Range in size from ~500 micrometers to 1 mm
- Marine and fresh water animals living in ponds, lakes and seashores

❖ Phylum Loricifera

- Discovered in 1983

❖ Phylum Priapulida

❖ Phylum Nematomorpha

- "Horsehair worms" may be seen emerging from well taps or faucets

❖ Phylum Entoprocta

❖ Phylum Acanthocephala

- Lack a digestive tract, tubular body wall muscles, lacunar internal system