

Phylum Annelida

“segmented worms”

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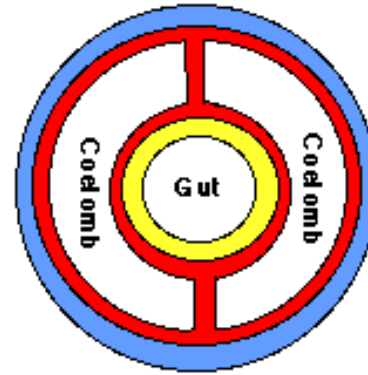
I UG Zoology (SF)

Phylum Annelida

- Segmented round worms
- Parapodia – each segment has extensions of bristles called Setae
- Body systems are also segmented (repeating)
- Bigger /more complex requires better gas exchange (some w/ gills), and circulation (closed)

Next Big Advance

- Coelom (body cavity)
- Body Segmentation
- Closed Circulatory system



- 2 major groups depending on how coelom formed and how the embryo develops
 - Protostomes
 - Deuterostomes

Annelida



ANNELIDA

Class Polychaeta

- Family Amphinomidae
- Bearded fireworm
(*Hermodice carunculata*)
- White bristles, extended in defense, are venomous

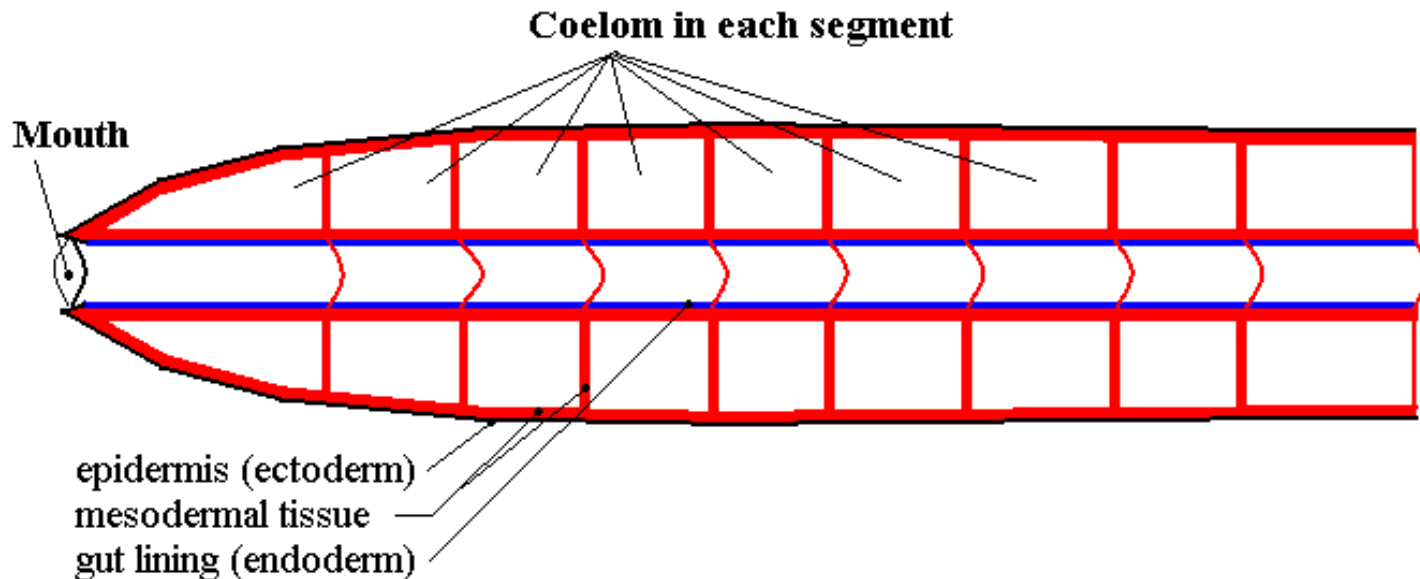


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Setae

Phylum Annelida

- ~ 9000 species
- Segmentation highly developed
 - Mesodermal “blocks,” each with own coelom
 - **Septa** between segments



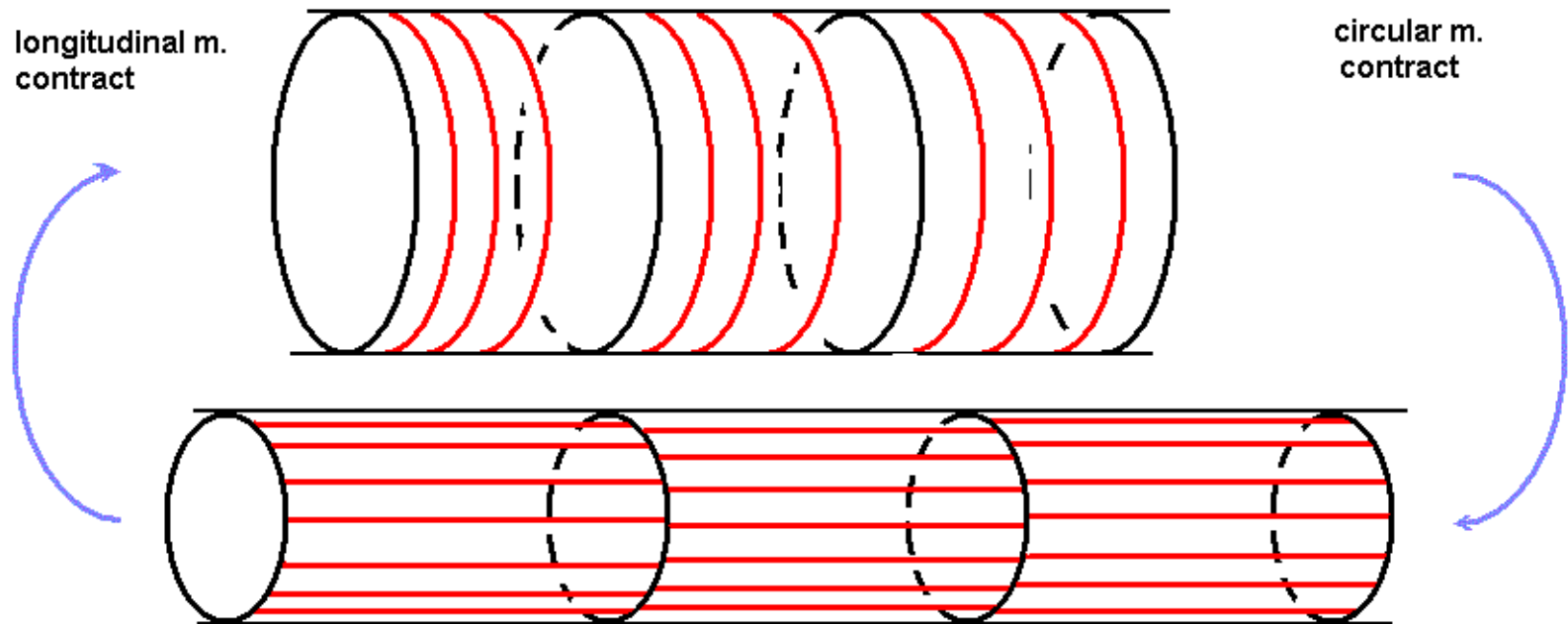
Phylum Annelida

- Hydrostatic skeleton
 - Fluid pressure in coelom provides support & locomotion
 - Circular muscles
 - Longitudinal muscles
 - Peristaltic locomotion



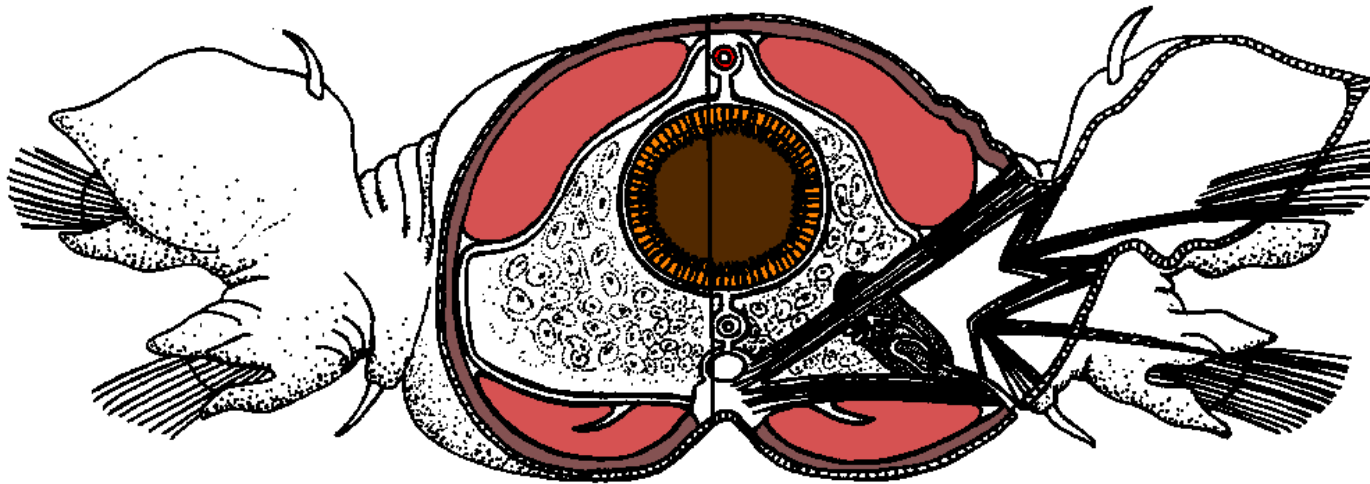
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Function of a hydrostatic skeleton



Phylum Annelida

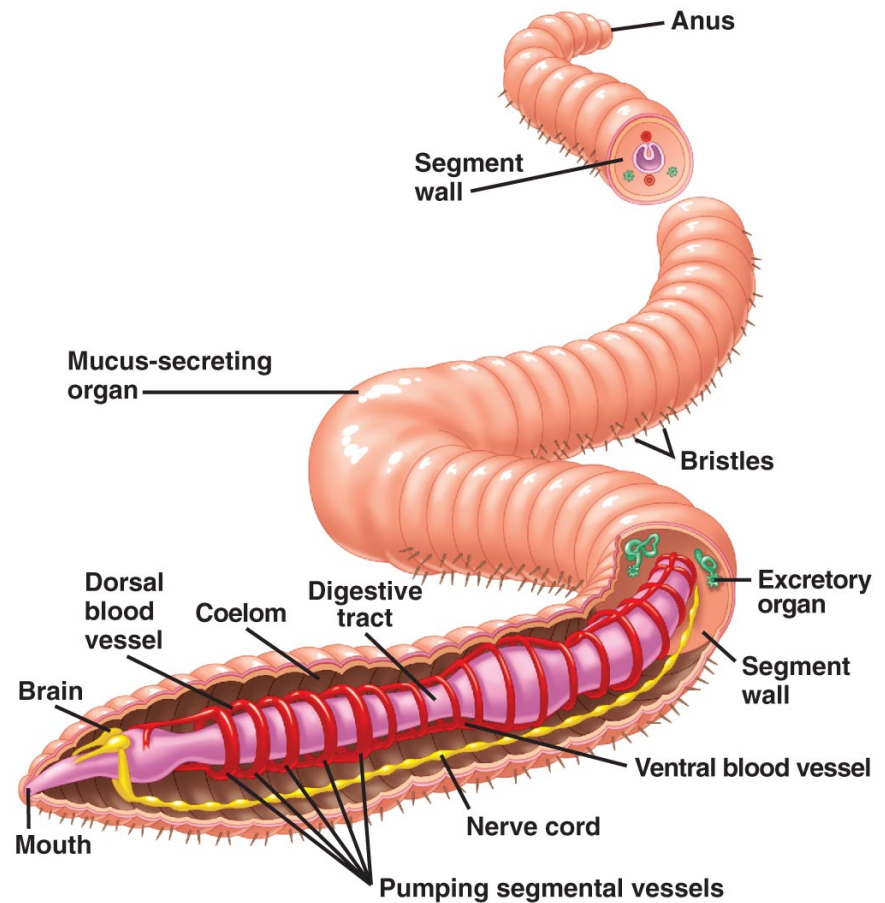
- Setae (“bristles”) of chitin
 - “anchors” for earthworm
 - “paddles” for polychaete
 - Enlarged as jaws in leeches, some polychaetes



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Phylum Annelida

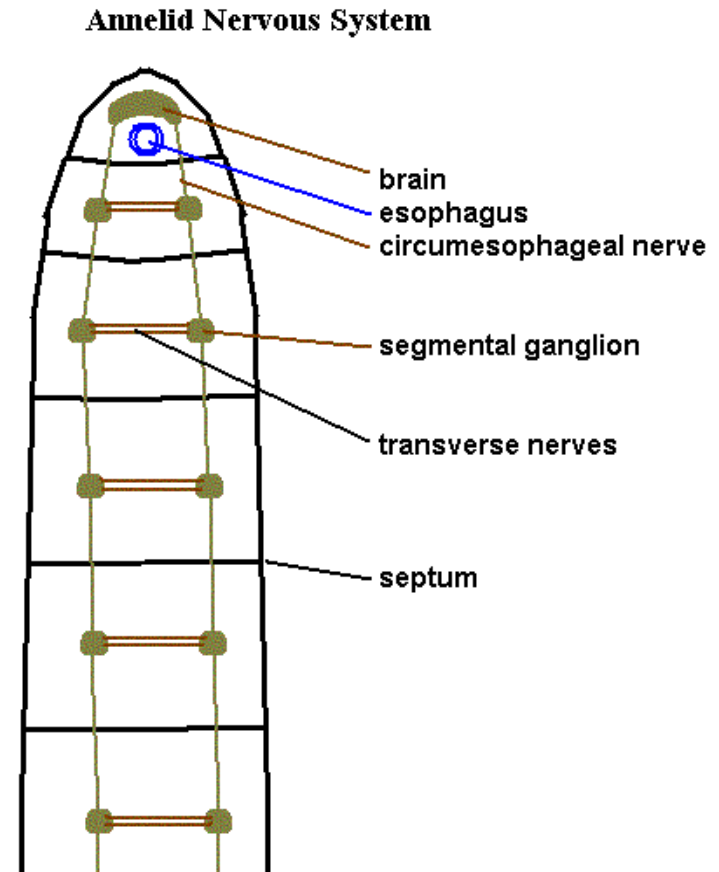
- Closed circulatory system
 - Multiple “hearts”
 - Hemoglobin not in blood cells
 - reddish-pink color



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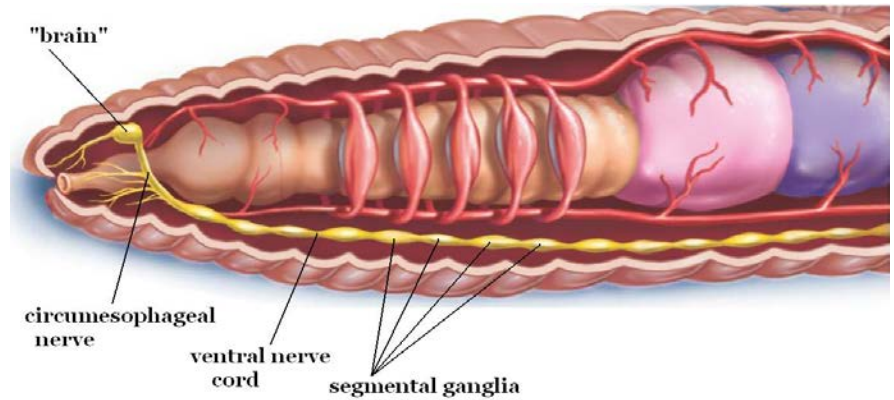
Phylum Annelida

- Central nervous system
 - Dorsal brain
 - Pair of nerves on sides of esophagus
 - Paired ventral nerve cords with paired ganglia in each segment
 - Transverse nerves connect ganglia in each segment

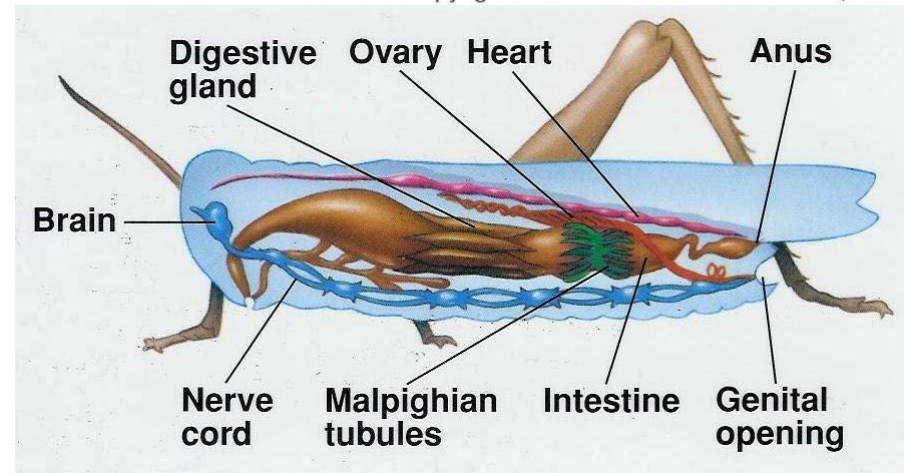


Phylum Annelida

- Earthworms' paired nerve cords are fused into single ventral cord
- Arthropod better illustrates primitive nervous system of both phyla.



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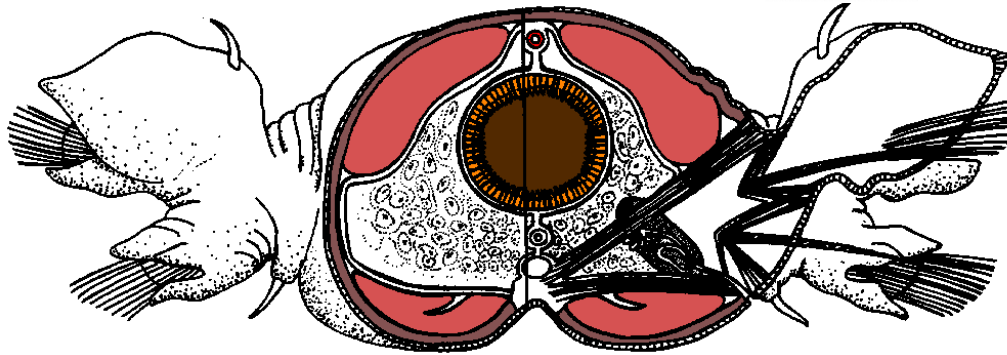


Phylum Annelida

- Class Polychaetes
 - “many setae,” clusters with 20+ setae
 - parapodia



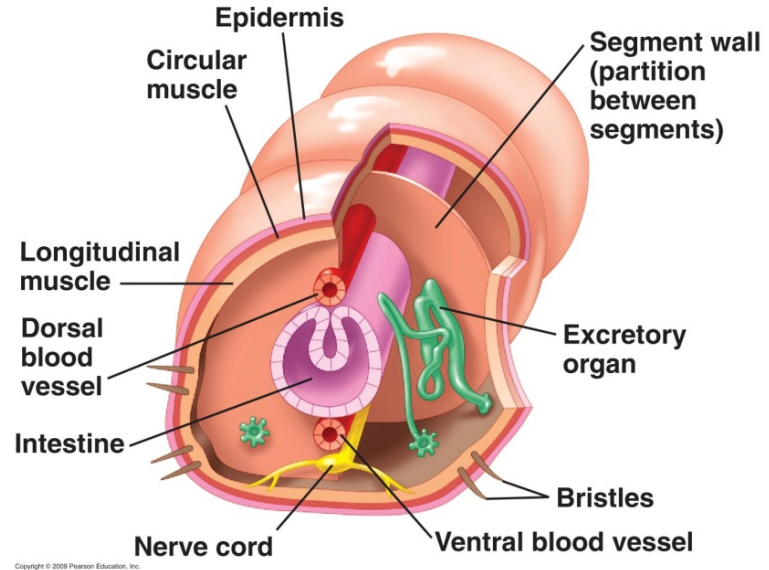
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Phylum Annelida

- Class Earthworms
 - few setae in 2-4 clusters per segment
 - Clitellum – stores fertilized eggs until they hatch
 - Reproduce Sexually
 - Can regenerate



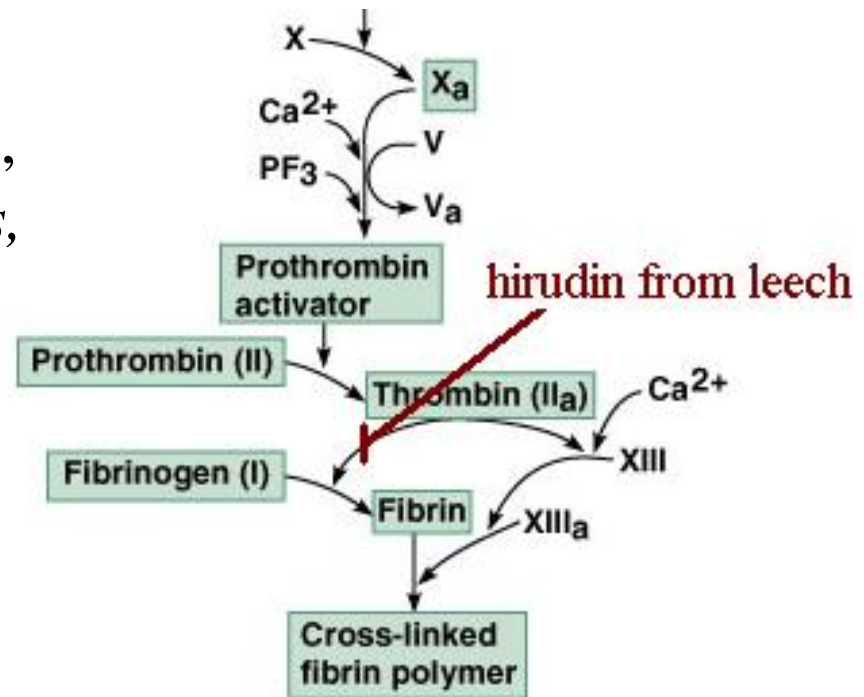
Phylum Annelida

- Class Leeches
 - pair of blade-like “jaws”
 - posterior “suction cup”
 - Predators
 - External parasites, “bloodsuckers”
 - Secrete anticoagulants
 - Medicinal use



Phylum Annelida

- Leeches
 - Hirudin from leech, *Hirudo medicinalis*, inhibits blood clotting



Thank you