

# Introduction to Biology. Lecture 23

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## 1 Animals

- Animal phyla and their phylogeny
- Classes of chordates and their phylogeny



# Animals

## Animal phyla and their phylogeny



# Where we are?

- Basic organ systems of animals are responsible for
  - locomotion and support;
  - feeding, excretion and osmoregulation;
  - circulation and gas exchange;
  - signaling and reception;
  - reproduction.



# Four subkingdoms

- Spongia: asymmetric filtrators
- Phagocytellozoa: asymmetric crawlers
- Cnidaria: radial stinging predators
- Bilateria: bilateral



# Nine phyla

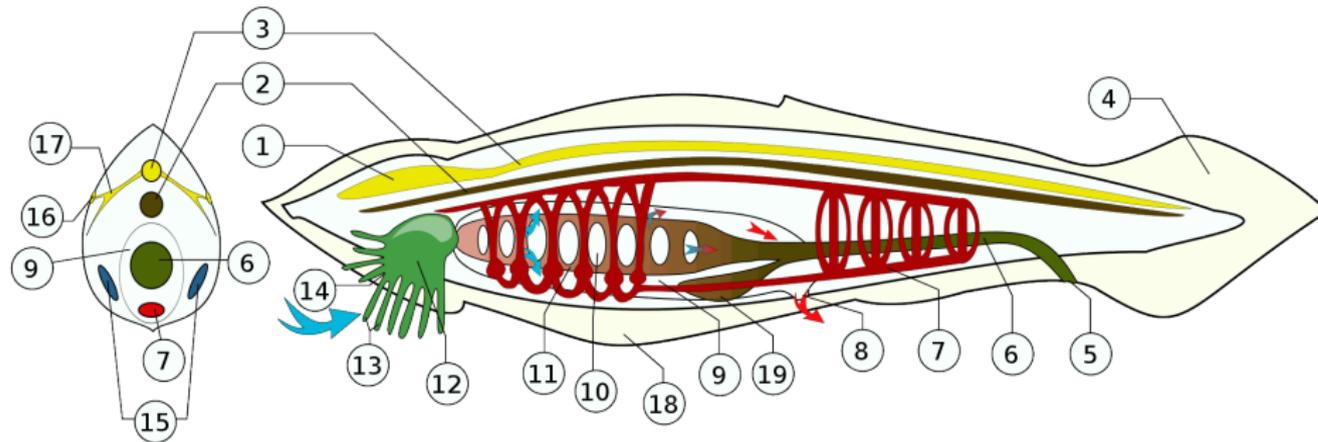
- Spongia
  - Porifera, sponges
- Phagocytellozoa
  - Placozoa, *Trichoplax*
- Cnidaria
  - Anthozoa, corals
  - Medusozoa, jellyfish
- Bilateria
  - Mollusca
  - Annelida
  - Arthropoda
  - Echinodermata
  - Chordata



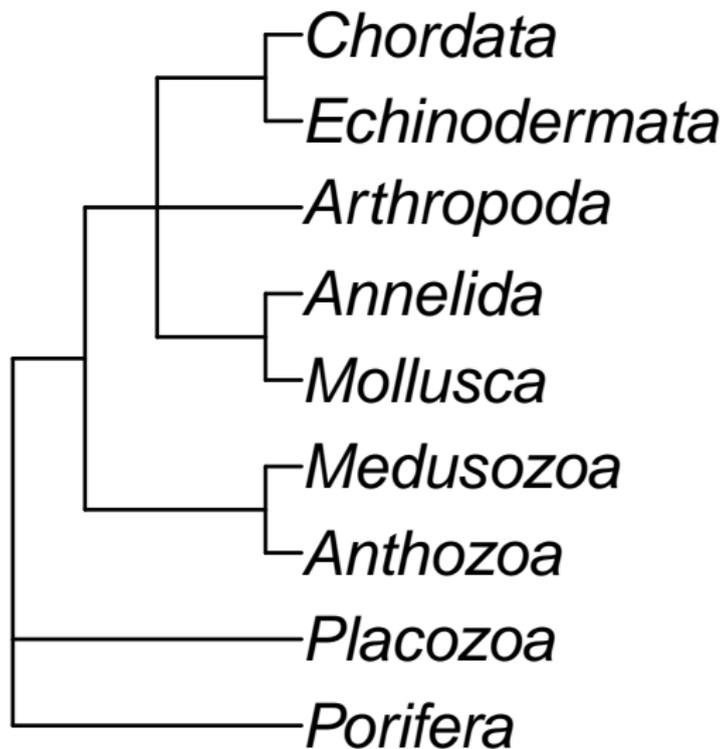
*Nine phyla = nine body plans*



# Chordate body plan



# Phylogeny of nine phyla



# Animals

## Classes of chordates and their phylogeny



# Eight classes of Chordata

## **Acrania:**

Class 1. Leptocardii: lancelet

## **Vertebrata:**

- Pisces:

Class 2. Chondrichthyes

Class 3. Actinopterygii

Class 4. Dipnoi

- Tetrapoda:

Class 5. Amphibia

\*Amniota:

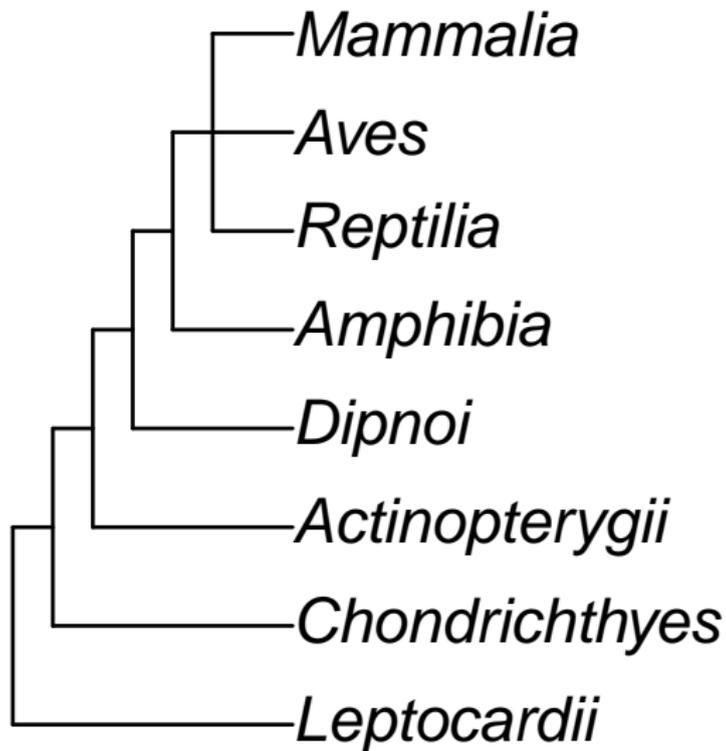
Class 6. Reptilia

Class 7. Aves

Class 8. Mammalia



# Phylogeny of eight classes



# Optional homework: in preparation for the 3rd test, fill this table:

	1	2	3	4	5	6	7	8	9	10
Porifera										
Placozoa										
Anthozoa										
Medusozoa										
Annelida										
Mollusca										
Arthropoda										
Echinodermata										
Chordata										

Characters: 1 ...

Characters will not be necessary relevant to all members of phylum!



# Summary

- Classes of vertebrates differ mostly in overall optimization of their body functions and in adaptations to the specific environment



# For Further Reading



## Animal phyla.

[http://en.wikipedia.org/wiki/Phylum#Animal\\_phyla](http://en.wikipedia.org/wiki/Phylum#Animal_phyla)



## Vertebrates.

<http://en.wikipedia.org/wiki/Vertebrate>



## Fishes.

<http://en.wikipedia.org/wiki/Fish>

