

Classification

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- Organizing species into groups based on shared characteristics

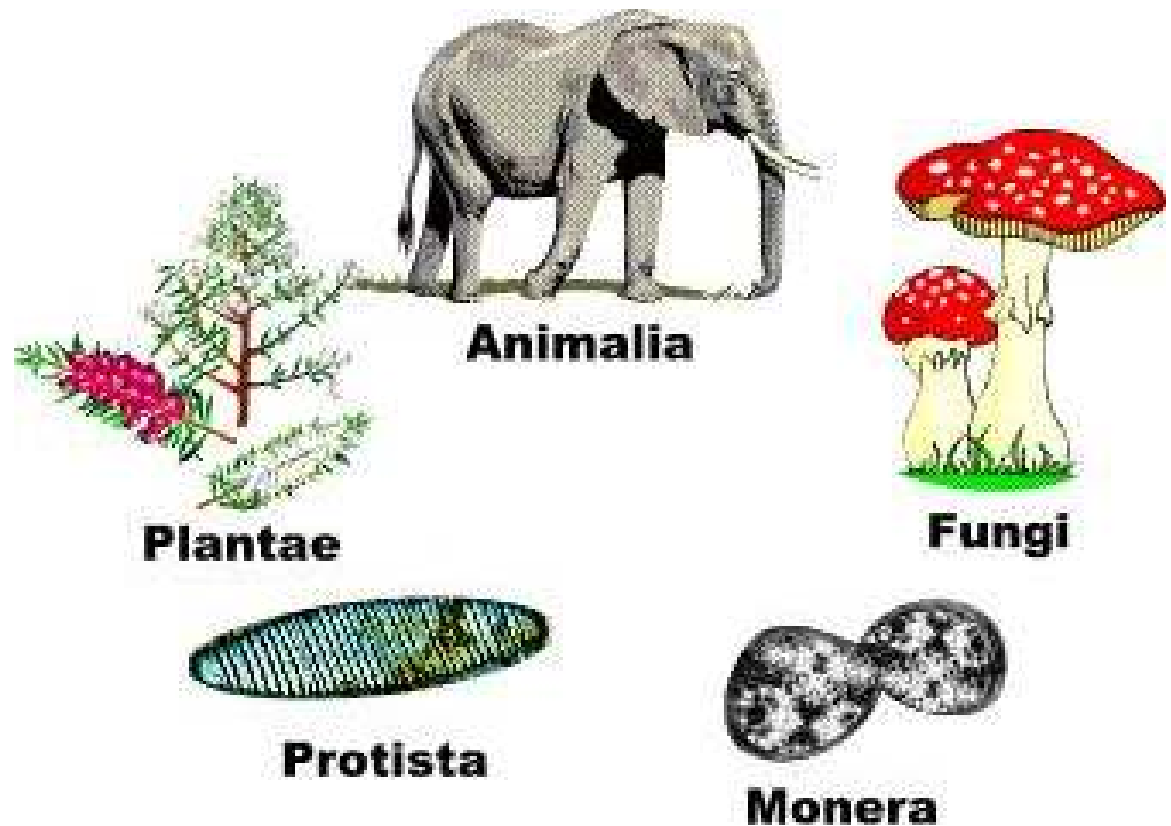
Classification

- EX: The housefly shares characteristics with other flies, which form a group: Flies
- Flies share characteristics with other insects (bees, butterflies, beetles) creating a more inclusive group: Insects



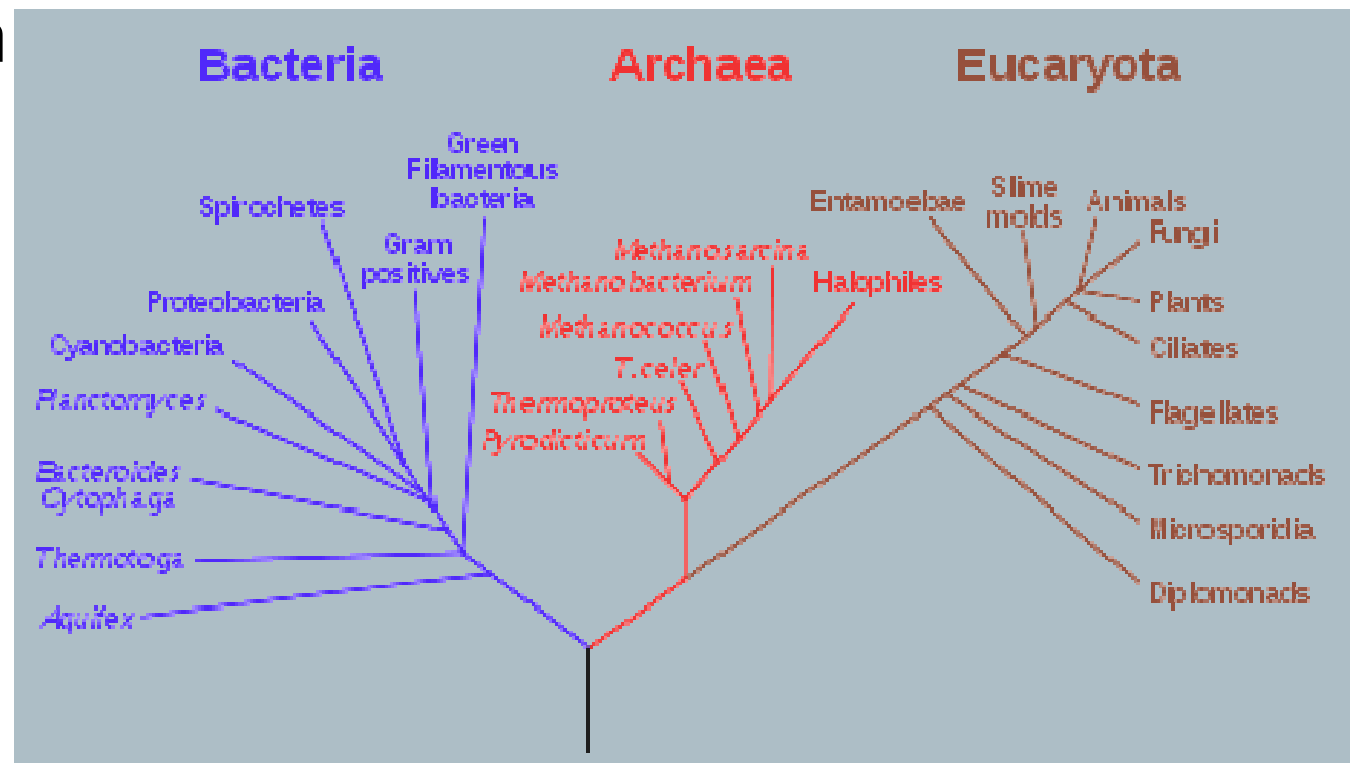
Old School Classification

- The 5 kingdom system:
- Plantae
- Animalia
- Fungi
- Protista
- Monera



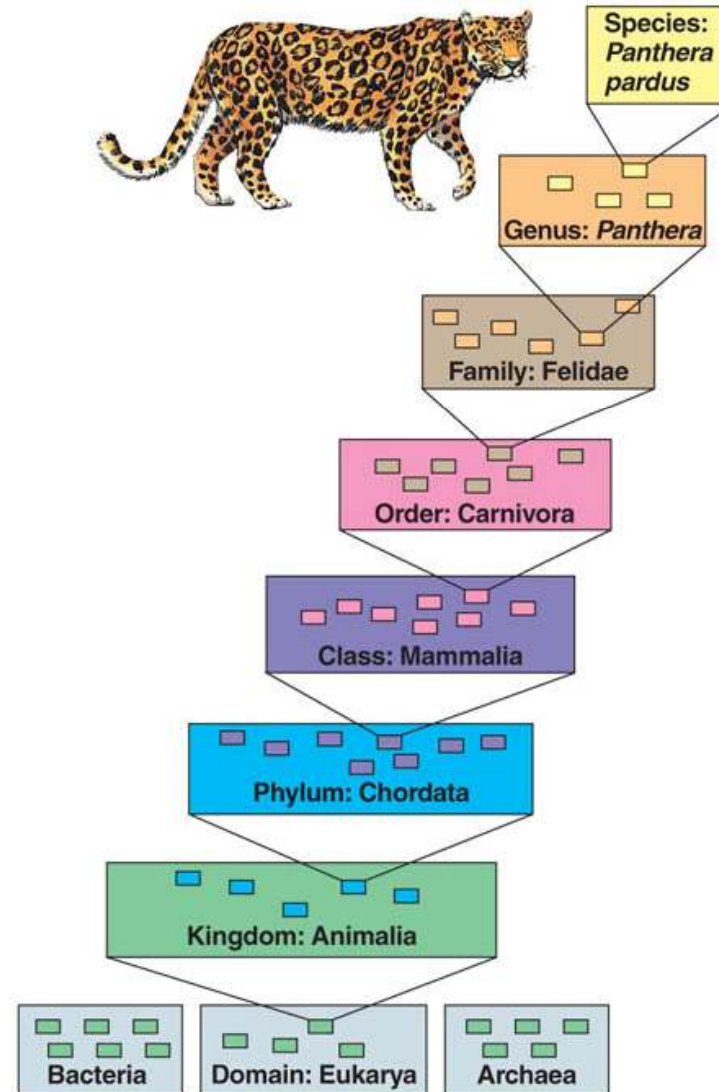
Current Classification

- The 3 domain system:
- Archaea
- Eubacteria
- Eukarya



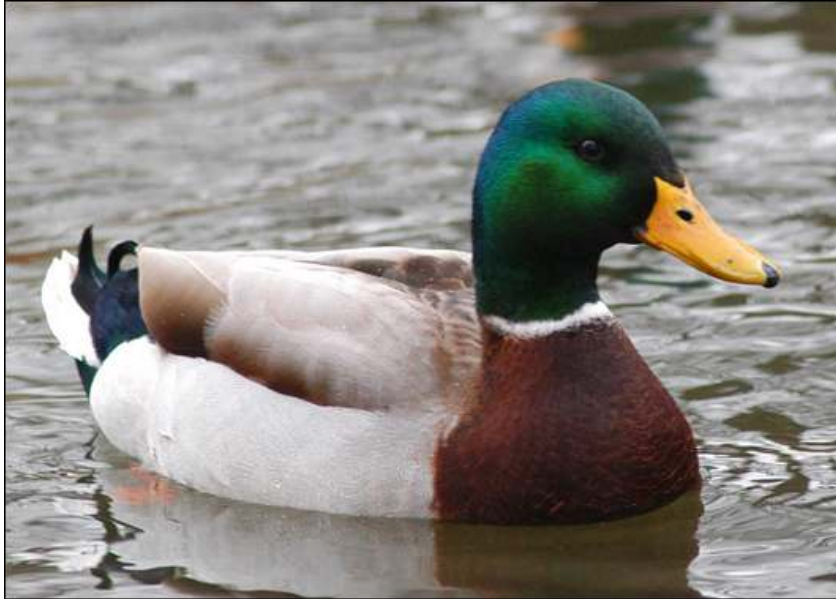
Hierarchical Classification

- Domain
- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species



Scientific names: *Genus species*

- Genus: shows the group
- Species: unique description
- Example: Genus- *Anas*



Anas platyrhynchos



Anas acuta

Scientific Nomenclature

- Why use scientific names?



Armadillidium vulgare



Orconectes virilis

- Animals you might be familiar with

- *Homo sapiens*
- *Canis familiaris*
- *Mus musculus*

- *Choose 3*

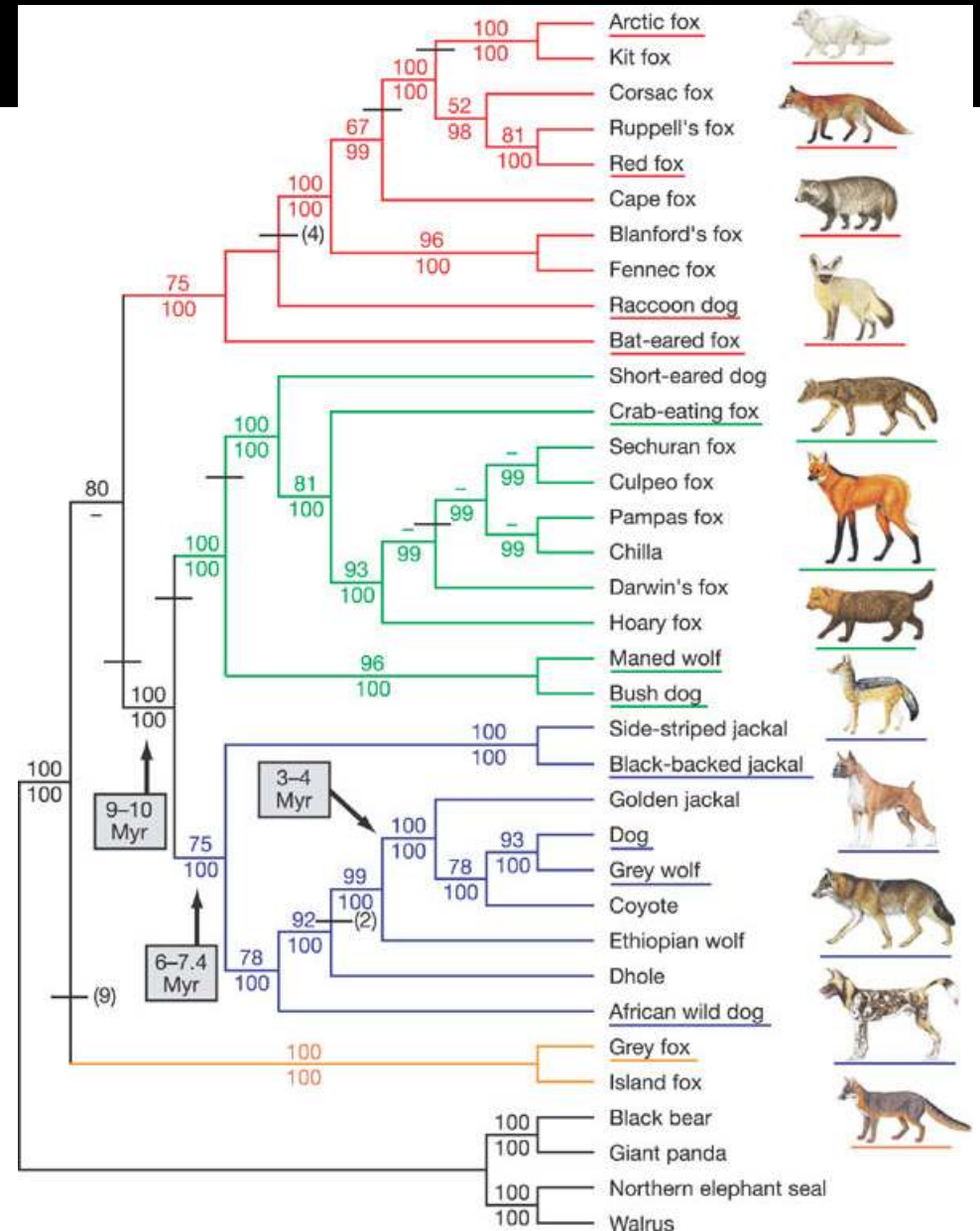


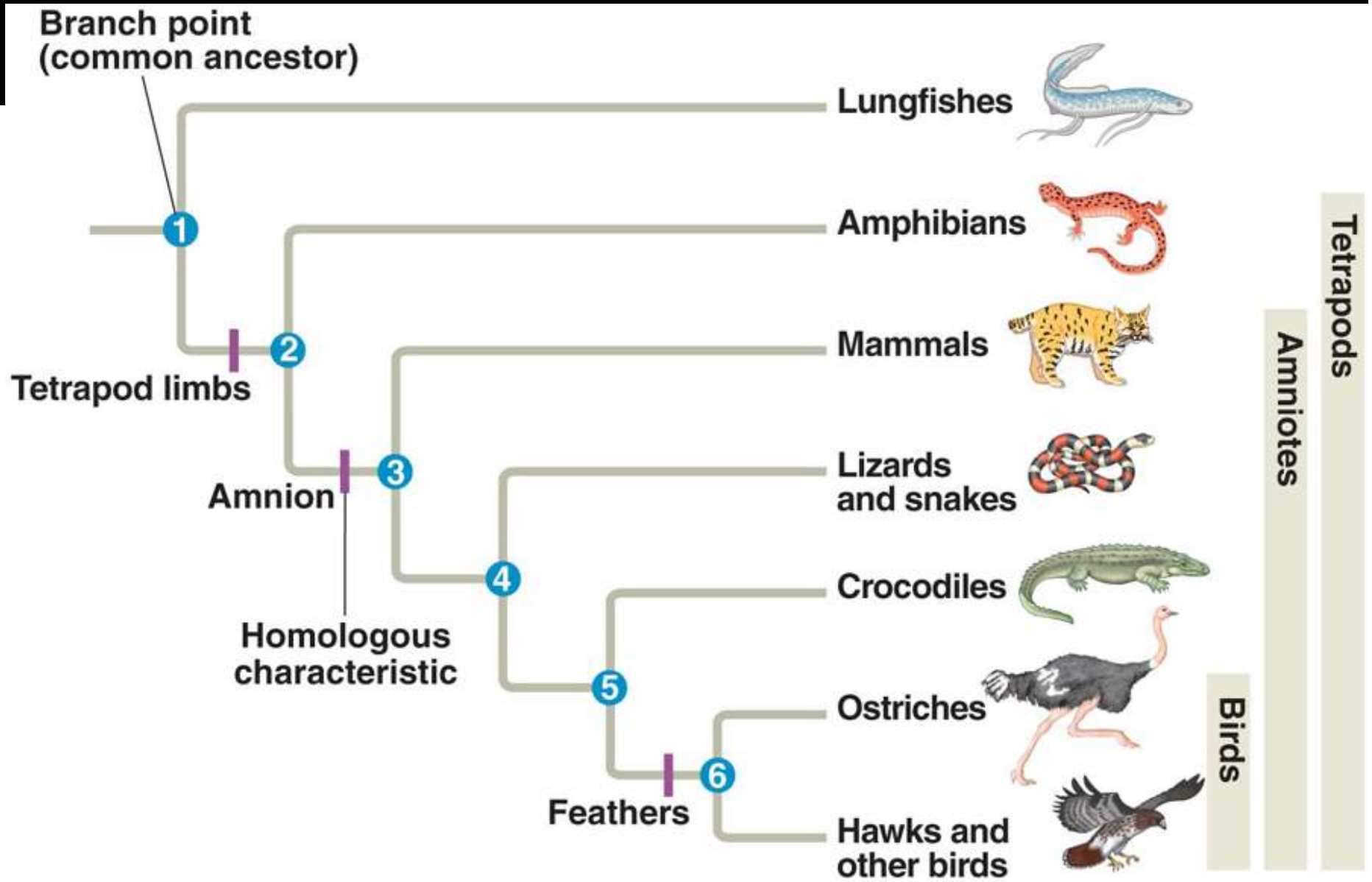
Problems with classification based on observed characteristics?



Using evolutionary relationships for classification

- Tree diagrams
 - Show how species are related
 - Branches show shared evolutionary traits
 - Like a time line







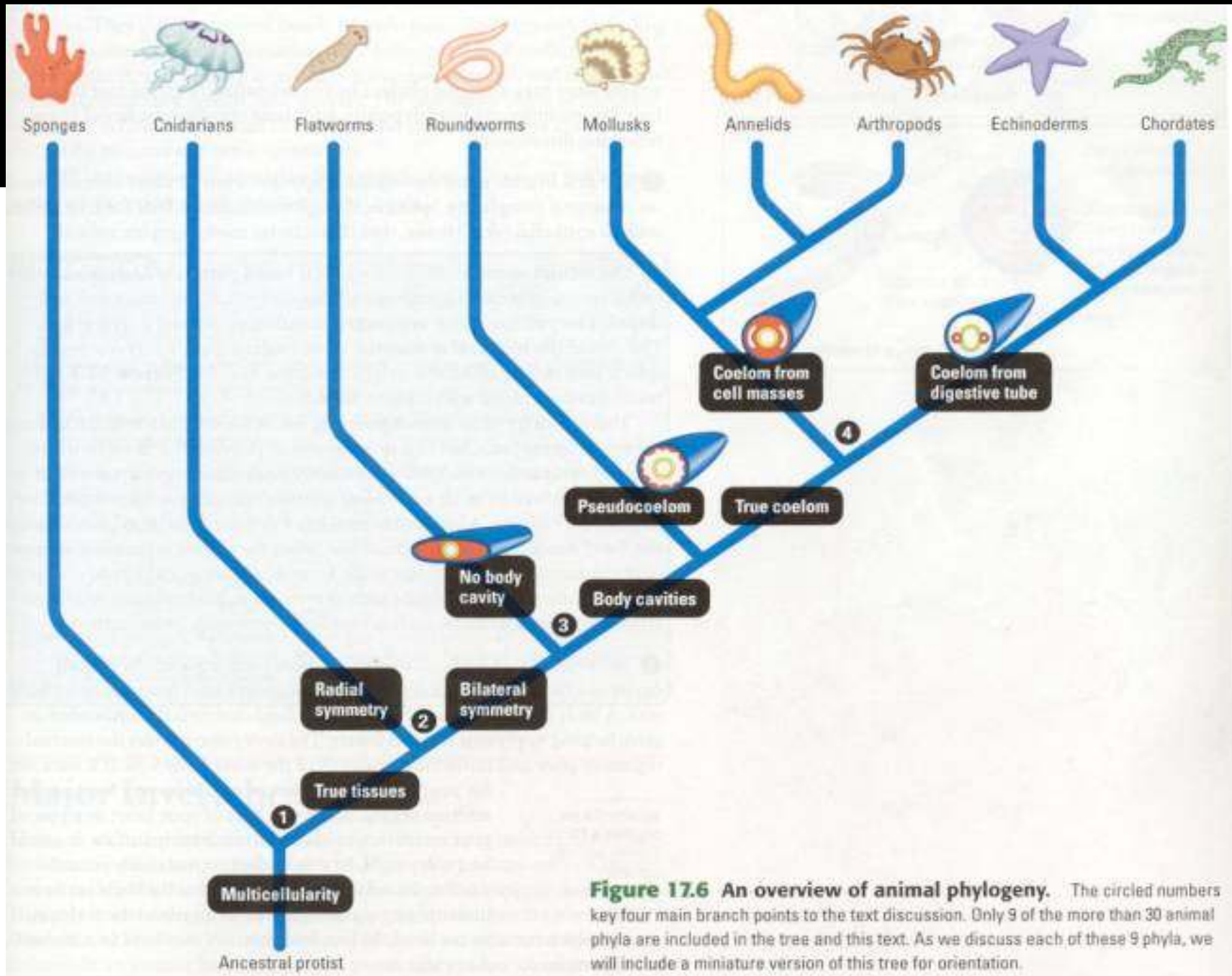
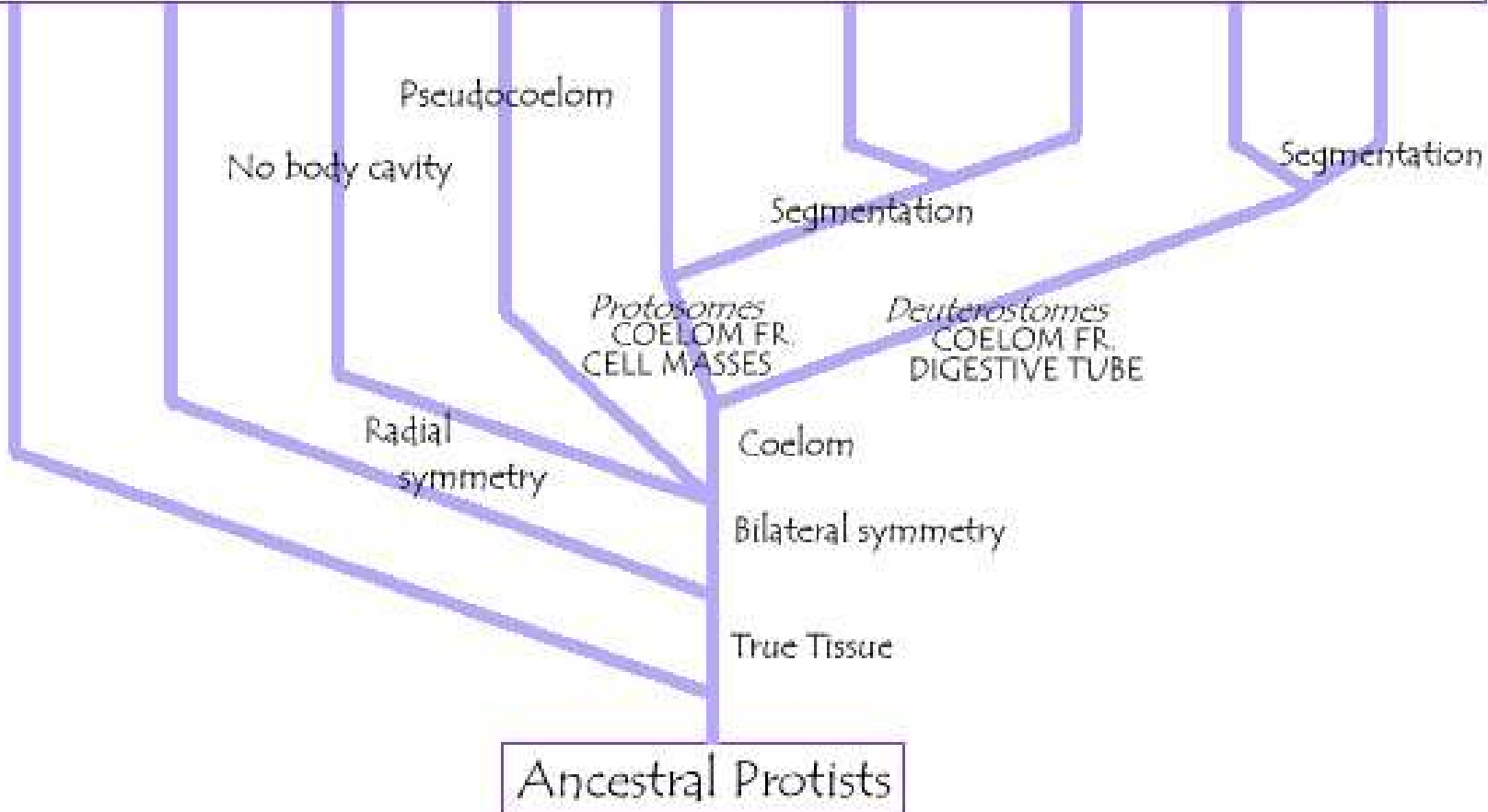


Figure 17.6 An overview of animal phylogeny. The circled numbers key four main branch points to the text discussion. Only 9 of the more than 30 animal phyla are included in the tree and this text. As we discuss each of these 9 phyla, we will include a miniature version of this tree for orientation.

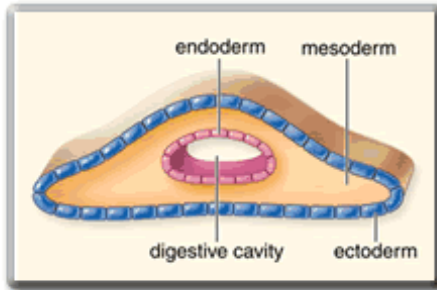
Present Day Phyla



Phylogenetic Tree of *KINGDOM ANIMALIA*

Protostome - mouth develops first
 Deuterostome - anus develops first

Ectoderm - outside layer, skin
 Mesoderm - middle layer, muscles
 Endoderm - inside layer, gut



Coelom - body cavity
 Pseudocoelom - partial body cavity

Radial Symmetry - Body parts arranged in a wheel

Bilateral Symmetry - right and left sides

