Introduction to Biology. Lecture 19

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Outline

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Questions and answers

Where we are?

Evolutionary cascade resulted in skeletal revolution

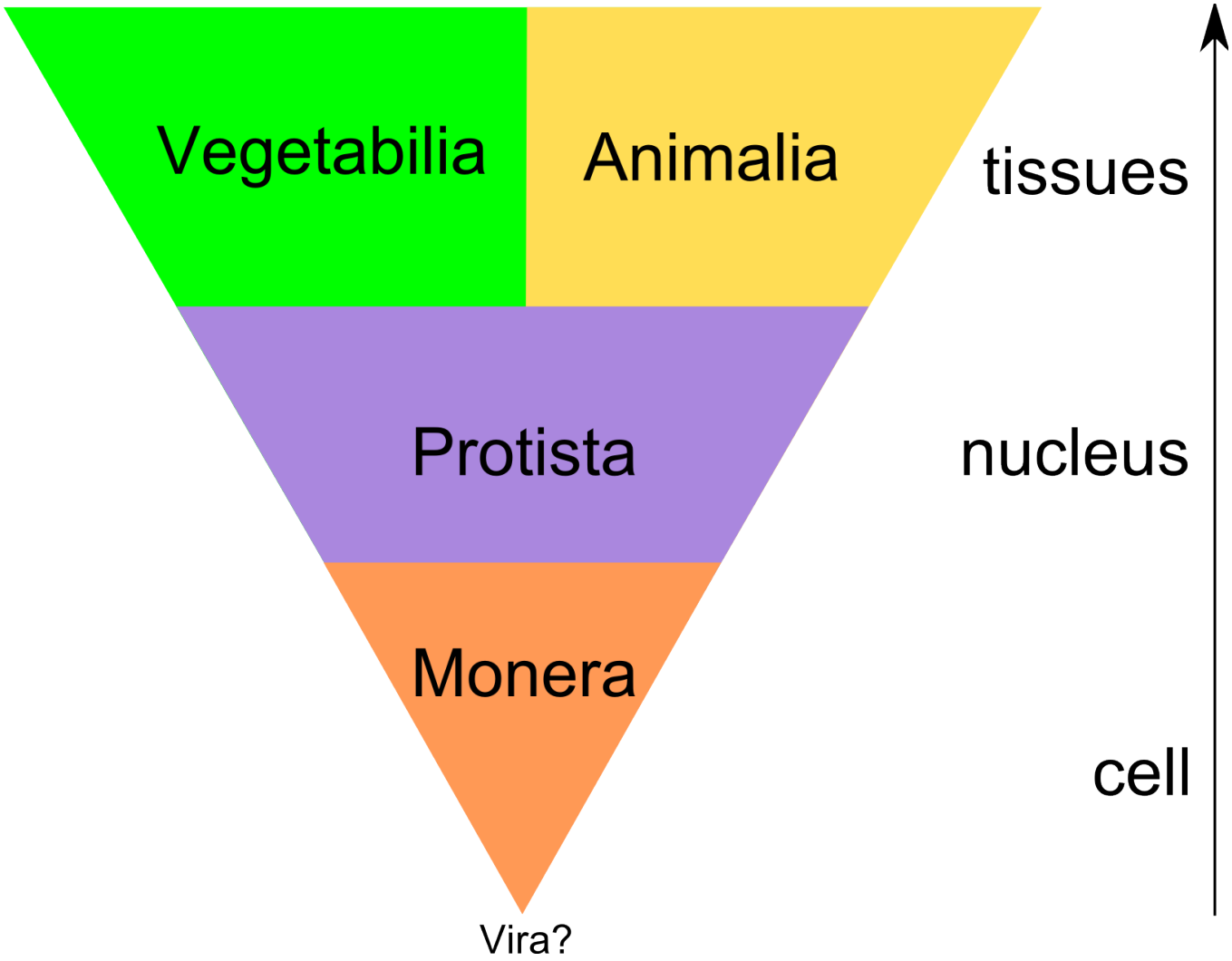
- Muddy water: all dust and microscopic feces is slowly subsiding down
- Plankton arthropods appeared, they are making pellets from dust and excretions
- Water became more transparent, oxygen is not spending for dust oxidation
- More photosynthesis, more oxygen, more organic on bottom
- Animals became more active
- Big predators appeared
- Animals acquire skeleton and other defensive structures

Skeleton

- Internal (endoskeleton): hydrostatic (worms), spicules (sponges), bones and cartilage
- External (exoskeleton): chitinous, shells, skin plates

Animals
Origin of animals

Cells, tissues and kingdoms



Origin of animals

- Blastaea: not the animal yet. *Volvox*, *Proterospongia*.
- Phagocytella. Two tissues: kinoblast and phagocytoblast. *Trichoplax*.
- Gastraea. Three tissues: ectoderm, entoderm and mesoderm. Closed gut.

Main organ systems in animals

- In higher animals, tissues are members of organs, and organs—of organ systems
- Every organ system is reesponsible for the particular aspect of animal life:
  - locomotion and support;
  - feeding, excretion and osmoregulation;
  - circulation and gas exchange;
  - signaling and reception;
  - reproduction.

Summary

- The main driving force of animal evolution was feeding on bigger and bigger pray

For Further Reading

Skeleton.
http://en.wikipedia.org/wiki/Skeleton

Animal.
http://en.wikipedia.org/wiki/Animal