

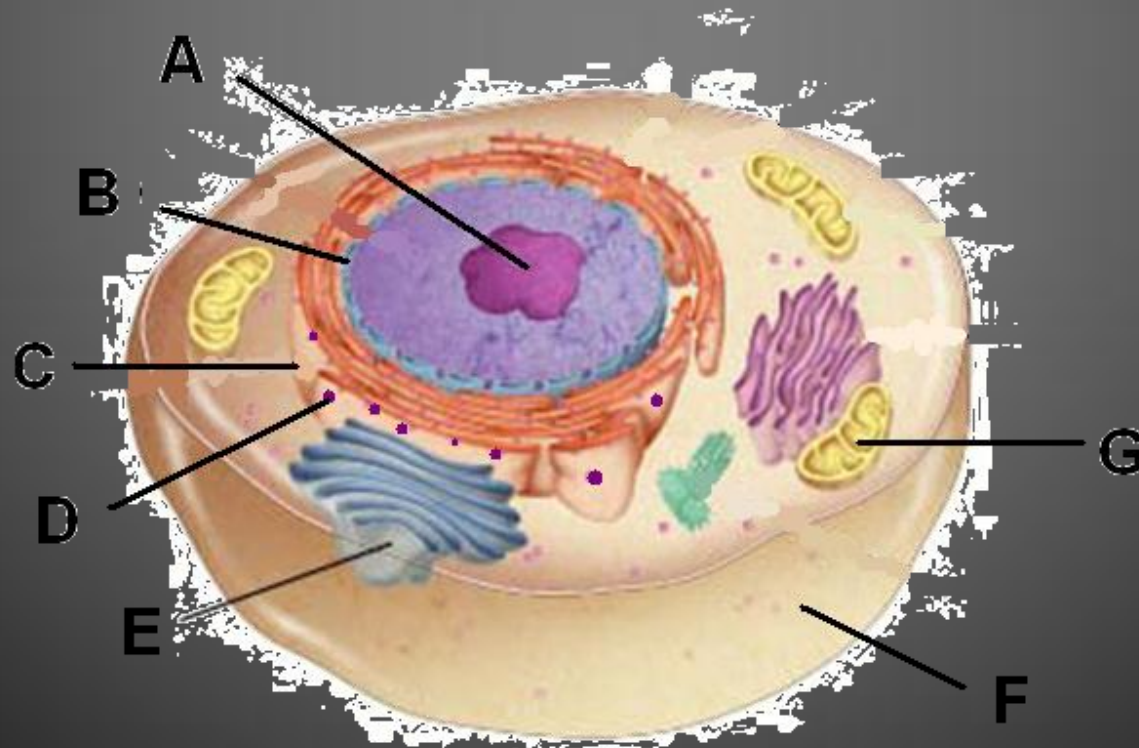
Overview of the Six Kingdoms

Cell Type

- Prokaryotic –organism with cells that do NOT have a nucleus
- Eukaryotic –organism with cells that do have a nucleus

Cellular Organization

- Multicellular – organisms are made up of more than one cell
- Unicellular – organisms are made up of one cell



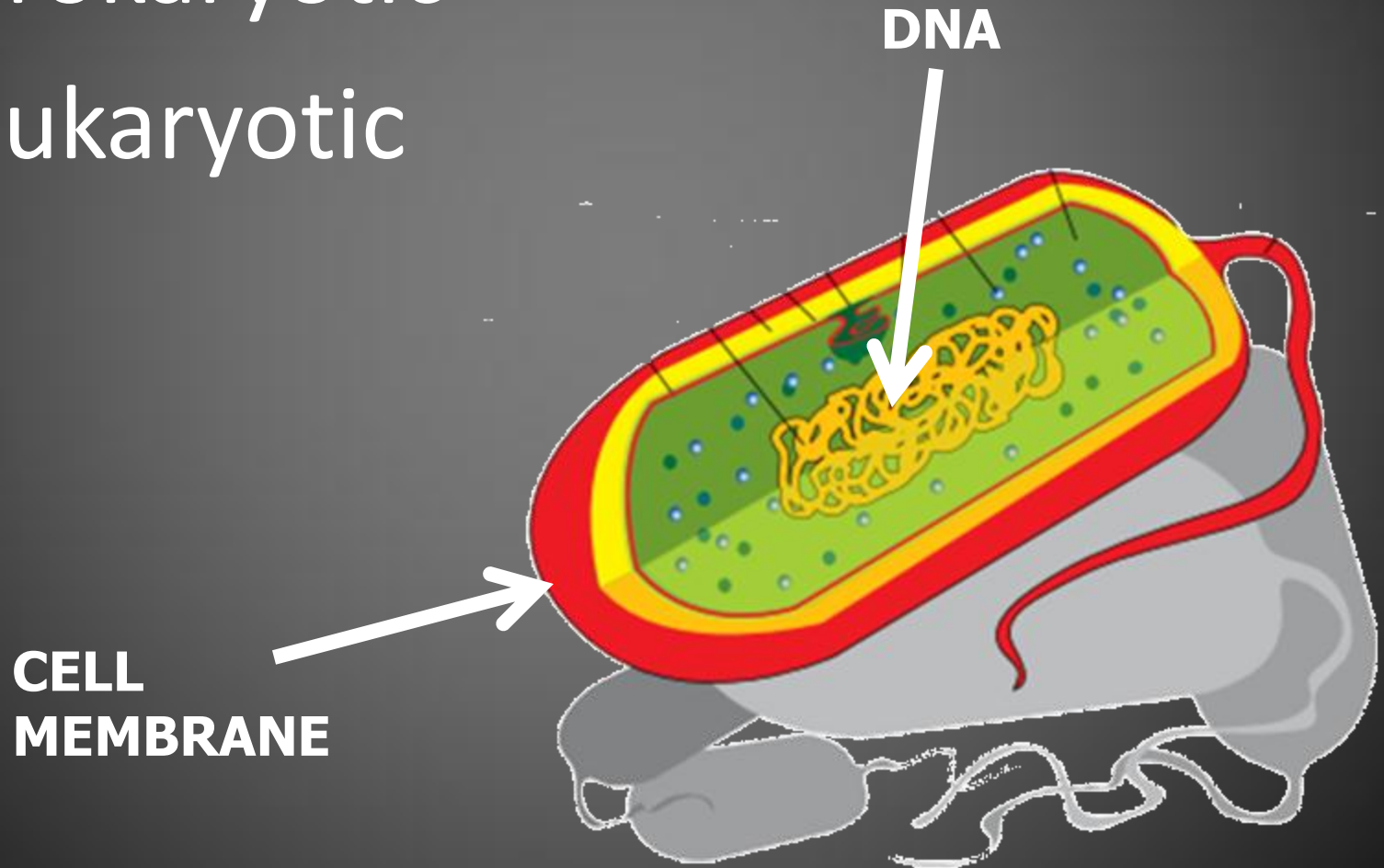
Mode of Nutrition

- Autotrophic – makes its own food
- Heterotrophic – gets nutrients from the food it consumes

1. The bacteria shown is

A. Prokaryotic

B. Eukaryotic



2. The bear and insect shown are

A. Unicellular

B. Multicellular



3. The organism shown is

A. Autotrophic

B. Heterotrophic



List of the 3 Domains & 6 Kingdoms

Domain Archaea	Domain Bacteria	Domain Eukarya
Kingdom Archaeobacteria	Kingdom Eubacteria	Kingdom Protista Kingdom Fungi Kingdom Plantae Kingdom Animalia

Kingdom Archaeobacteria

“extreme bacteria”

- **Cell Type** – Prokaryotic
- **Cellular Organization** – Unicellular
- **Mode of nutrition** – Autotrophic or Heterotrophic
 - Means that some species are autotrophs and some are heterotrophs

Kingdom Archaeobacteria

Characteristics

- **Reproduction** – asexual
- **Cell Wall** – cell walls without peptidoglycan
- **Habitat** – live in extreme habitats such as hot springs, geysers, volcanic hot pools, brine pools, black smokers

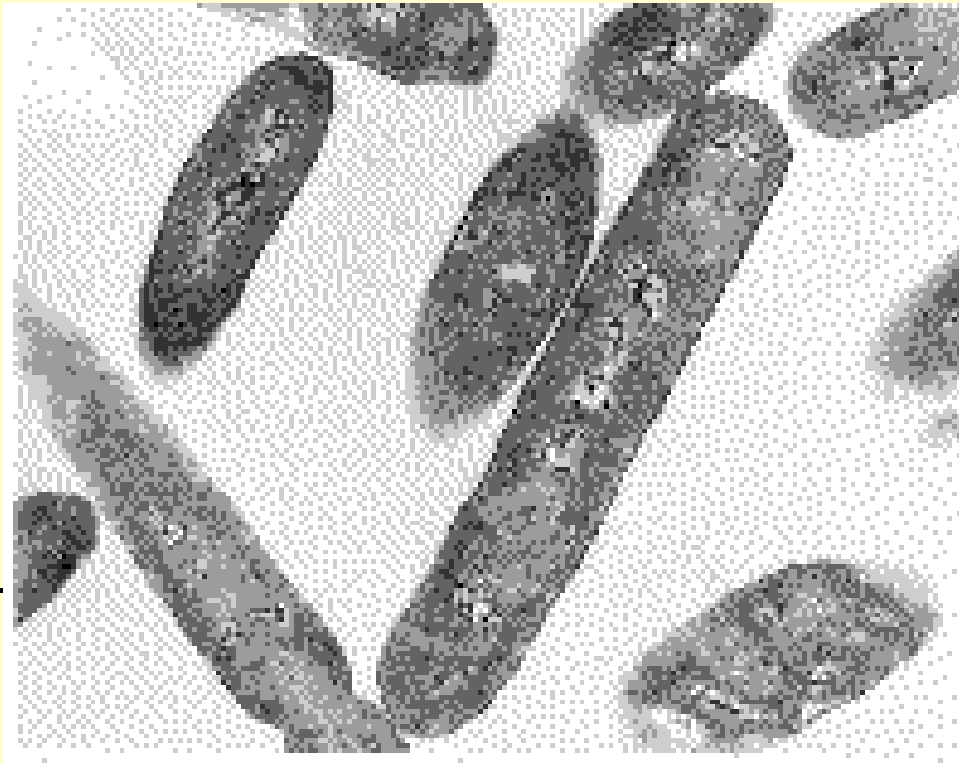
Kingdom Archaeobacteria



Morning Glory Pool in Yellowstone National Park – note the bright colors from the archaeobacteria growing in the extremely hot water.

Kingdom Archaeobacteria

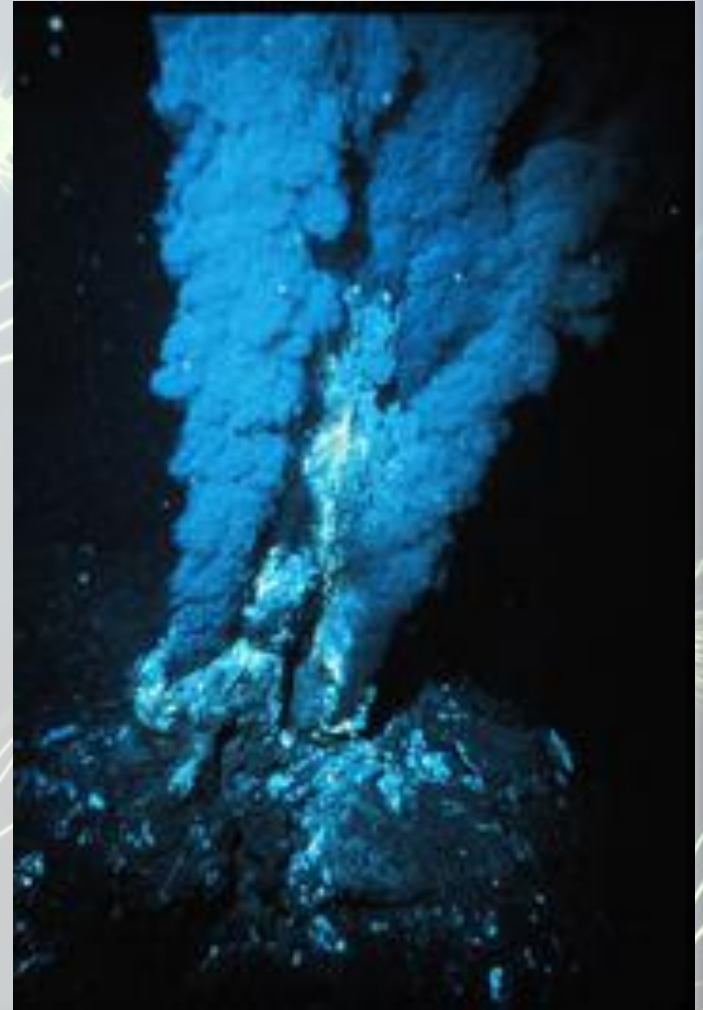
Henry C. Aldrich/Univ. of Florida



*Some like it hot: Cells of
Bacillus infernus.*

Kingdom Archaeobacteria

- Archaeobacteria can live deep in the ocean near geothermal vents called black smokers
- There is no light, so they carry out chemosynthesis instead of photosynthesis



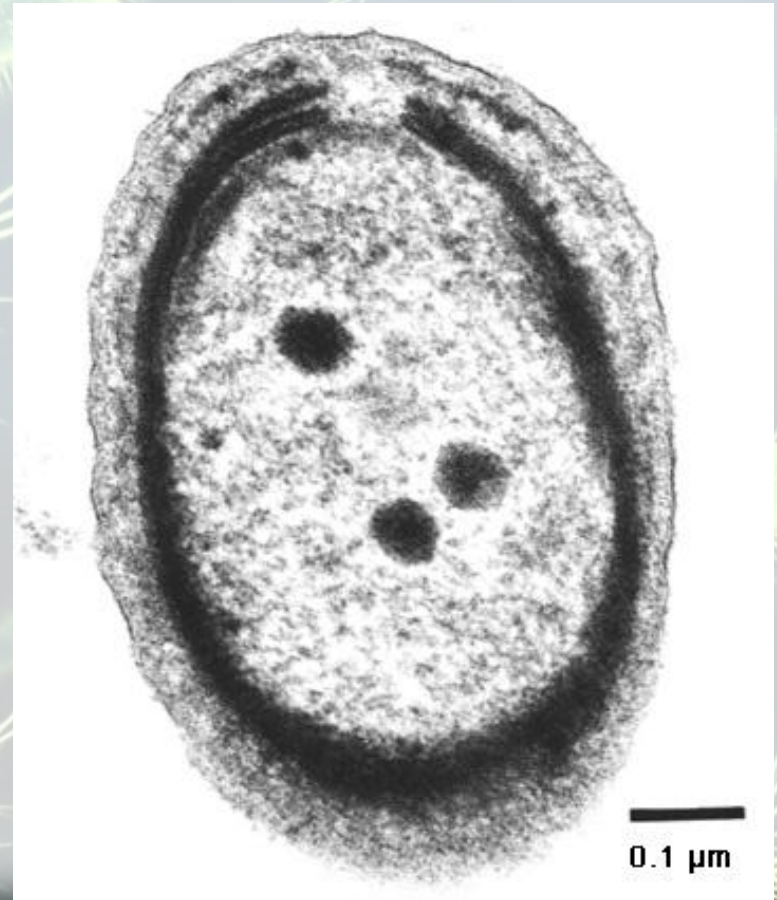
Kingdom Eubacteria



- **Cell Type** – Prokaryotic
- **Cellular Organization** – Unicellular
- **Mode of nutrition** – Autotrophic or heterotrophic
- **Reproduction** – asexual
- **Cell Wall** – Thick cells walls with peptidoglycan
- **Habitat** – everywhere!!! (even inside you)

Kingdom Eubacteria

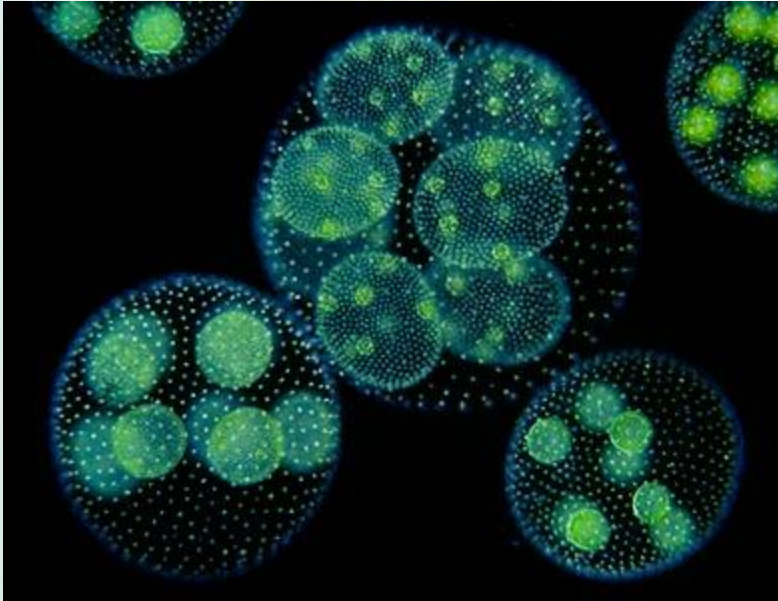
- Prochlorococcus – an autotrophic bacterium



Kingdom Protista: “Catch All Kingdom”

- **Cell Type** – Eukaryotic
- **Cellular Organization** – Most unicellular, some multicellular
- **Mode of Nutrition** – Autotrophic and heterotrophic
- **Reproduction** – sexual and asexual
- **Cell Wall** – Some with cell walls containing cellulose
- **Habitat** – all aquatic

Kingdom Protista



Volvox – a colonial protist



A slime mold



Euglena – autotrophic



Amoeba - heterotrophic

Kingdom Fungi

- **Cell Type** – Eukaryotic
- **Cellular Organization** – Most multicellular
- **Mode of Nutrition** –heterotrophic
(decomposers)
- **Reproduction** – sexual and asexual
- **Cell Wall** –cell walls containing chitin
- **Habitat** – terrestrial

Kingdom Fungi



Stilton cheese



Bread mold



Kingdom Plantae

- **Cell Type** – Eukaryotic
- **Cellular Organization** – multicellular
- **Mode of Nutrition** – Autotrophic
- **Reproduction** – sexual
- **Cell Wall** – cell walls containing cellulose
- **Habitat** – aquatic and terrestrial

Kingdom Plantae



Kingdom Animalia

- **Cell Type** – Eukaryotic
- **Cellular Organization** – multicellular
- **Mode of Nutrition** – heterotrophic
- **Reproduction** – mostly sexual
- **Cell Wall** – none
- **Habitat** – aquatic and terrestrial

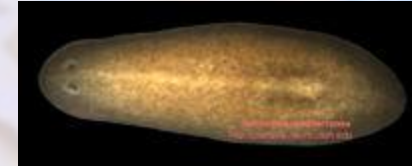
Kingdom Animalia



Sponge



Jellyfish



Flatworm



Coral snake



Bear



Octopus