

## **SUBKINGDOM PROTOZOA (Ch. 16)**

### **1. KINGDOM PROTISTA**

protists - unicellular eukaryotes

- also *Protoctista* (includes multicellular algae)

4 subkingdoms

- ( Protophyta ) - plant-like
- ( Protomycota ) - fungi-like
- ( Myxomycota ) - fungi-like
- **Protozoa** - animal-like

evolution - from Monera (prokaryotic)

- led to 3 multicellular kingdoms

### **2. SUBKINGDOM PROTOZOA**

diversity - 60k species in up to 10 phyla

- unicellular animals, ingestive mode of nutrition
- no cell wall, most lack chloroplasts

cells - eukaryotic, protoplasmic grade,  
size microscopic, symmetry varied

ecology - all habitats (marine, freshwater, land)

- most solitary (some colonial), diseases & parasites

### **3. 'PHYLA'**

1. amoeboid - naked cell, pseudopod

2. shelled amoeboid - foraminifera & radiolaria

3. flagellates - flagellum

4. ciliates - cilia, most complex

5. endoparasites - internal tissues

### **4. LOCOMOTION**

pseudopod - extend cytoplasmic 'foot'

flagellum - 1-2 spin like propeller

cilia - many rows pulsate in waves

non-motile - parasitic or stalked

## **5. NUTRITION**

herbivores & carnivores - majority

- engulf prey in pseudopod or vacuole

endoparasitism - absorbs nutrients from host tissues

- tsetse, giardia, dysentery, malaria, pcg

photosynthesis - chloroplasts in some flagellates

mutualism - symbiotic green algae in flagellates

- wood-digesting flagellates in termites

digestion - lysosomes digest food vacuole

## **6. REPRODUCTION**

asexual - most binary fission (into 2 daughter cells)

- also multiple fission (into 3 or more cells)

sexual - some conjugate (exchange genes)

colonies - remain together after fission

- share cell membrane (also cytoplasm)

## **7. OTHER SYSTEMS**

diffusion - food, oxygen, waste

nervous - taxis (photo, chemo, thigmo)

skeletal - only cell membrane

shell - siliceous needles in radiolaria

- calcareous chambers in foraminifera