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, pcp

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