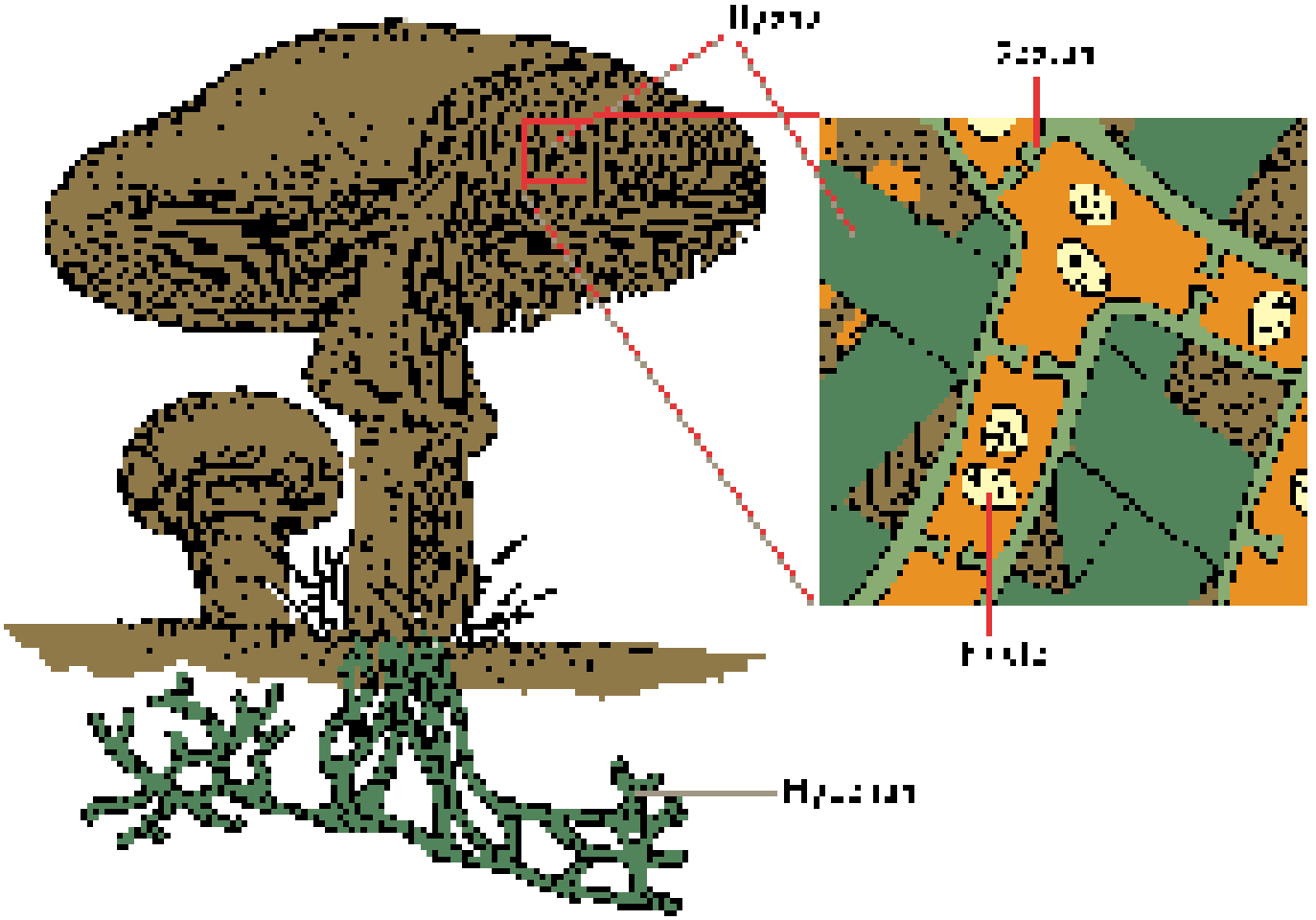
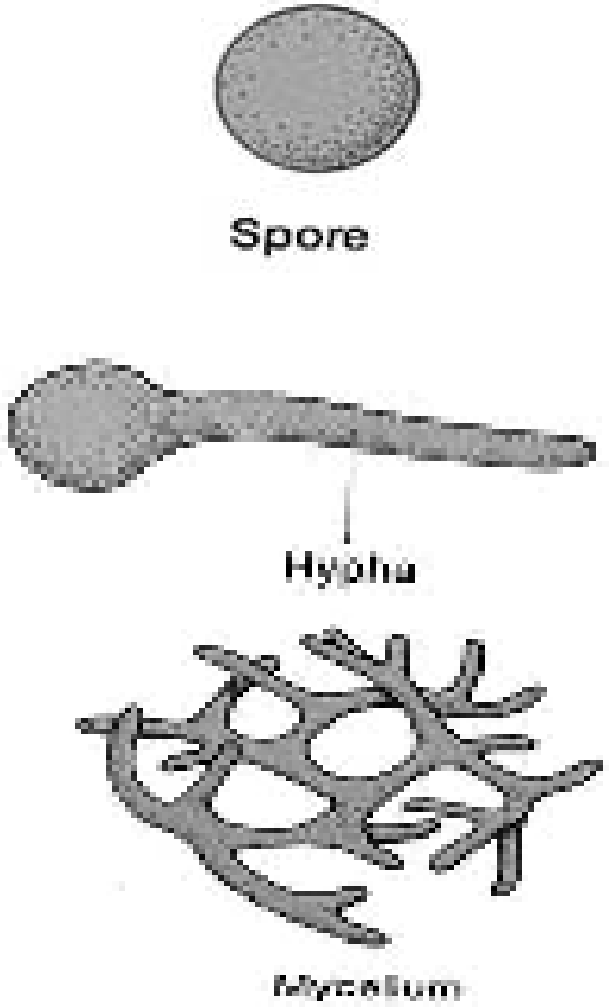
FUNGI



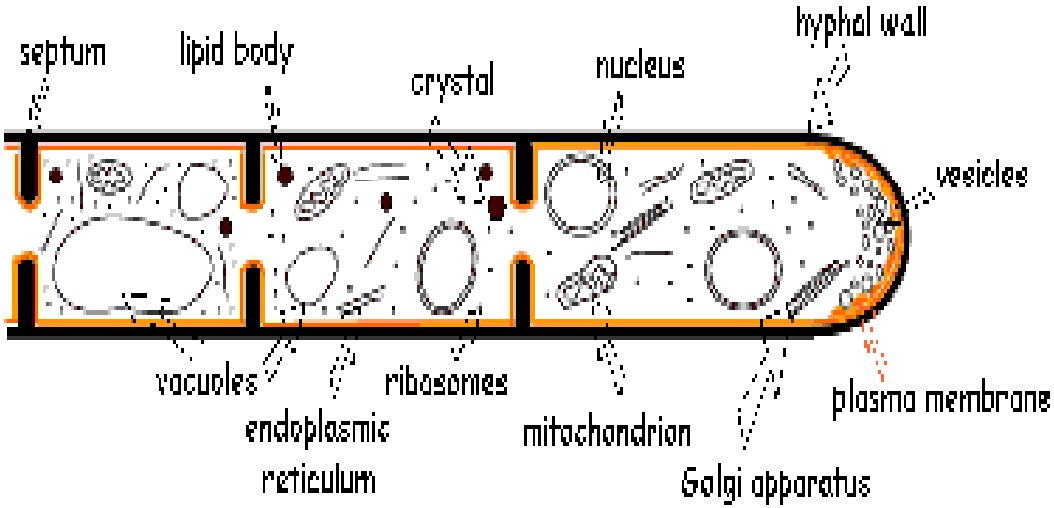
STRUCTURE

- FUNGI ARE EUKARYOTIC ORGANISMS
- BASIC STRUCTURE OF FUNGI IS HYPHAE WHICH IS LONG TUBULAR BRANCHED FILAMENT
- NEW HYPHAE ARE GENERALLY ARISE FROM SPORE WHICH ON GERMINATION PUTS OUT A GERM TUBE
- MASS OF INTERWOVEN HYPHAE IS MYCELIUM.



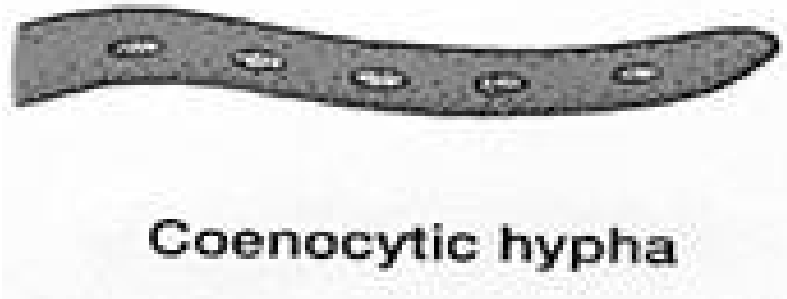
INTERNAL STRUCTURE

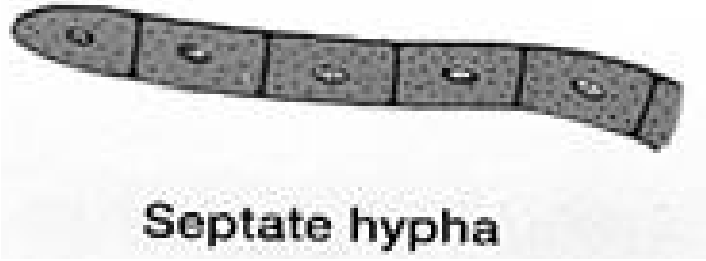
- Hyphae are composed of an outer tube like wall surrounding a cavity called lumen
- Hyphal wall contains microfibrils,proteins,lipids, and other substances
- Plasma membrane is double layered
- Growth of hyphae is distal,near the tip.



STRUCTURE

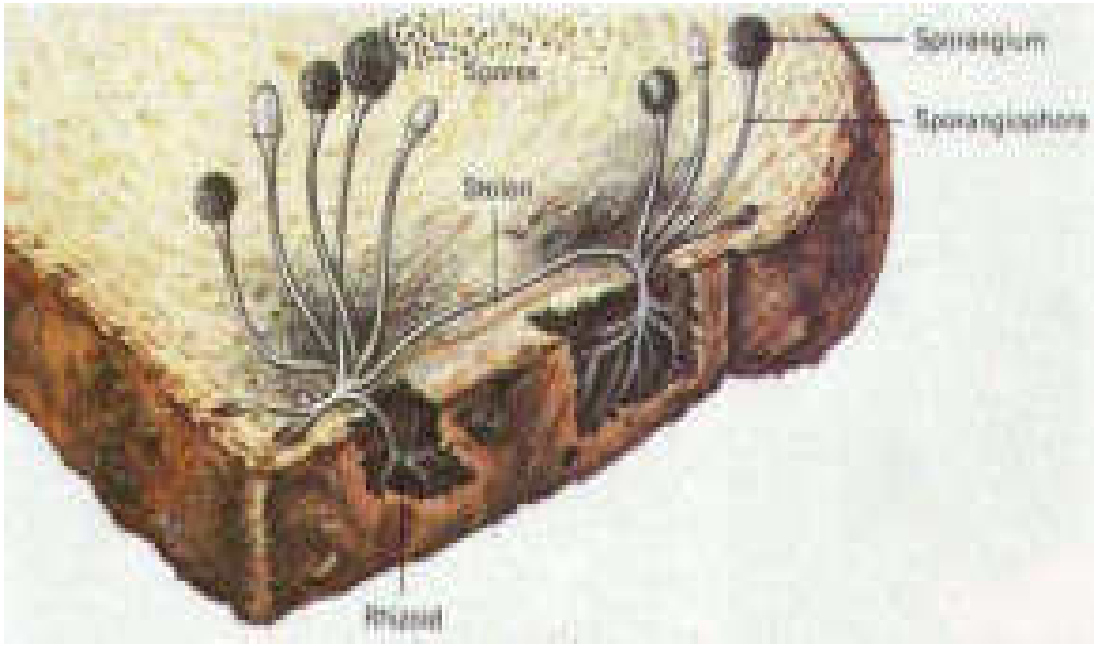
- Septa are formed by centripetal invagination from existing cellwall
- Hyphae occurs in three forms based on septa
  - Nonseptate or coenocytic
  - Septate with uninucleate cells
  - Septate with multinucleate cells

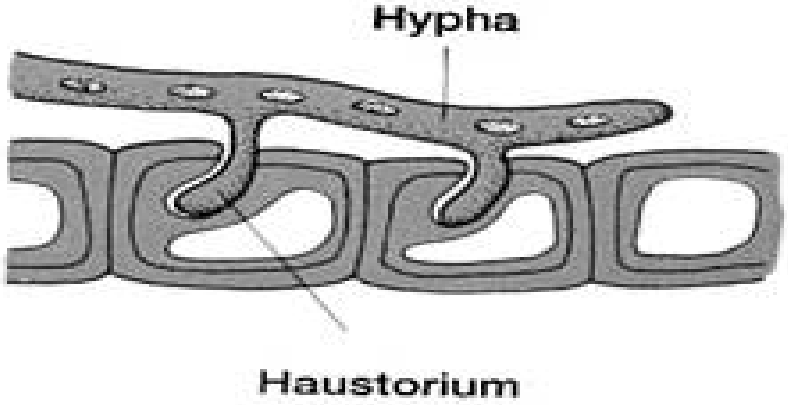




NUTRITION

- Fungi feed on many types of substrates
- Saprophytes-they feed on dead organic matter
- Parasites-feed on living organism
- Parasitic fungi have modified hyphae called haustoria
- Hyphae secrete enzymes for extracellular digestion

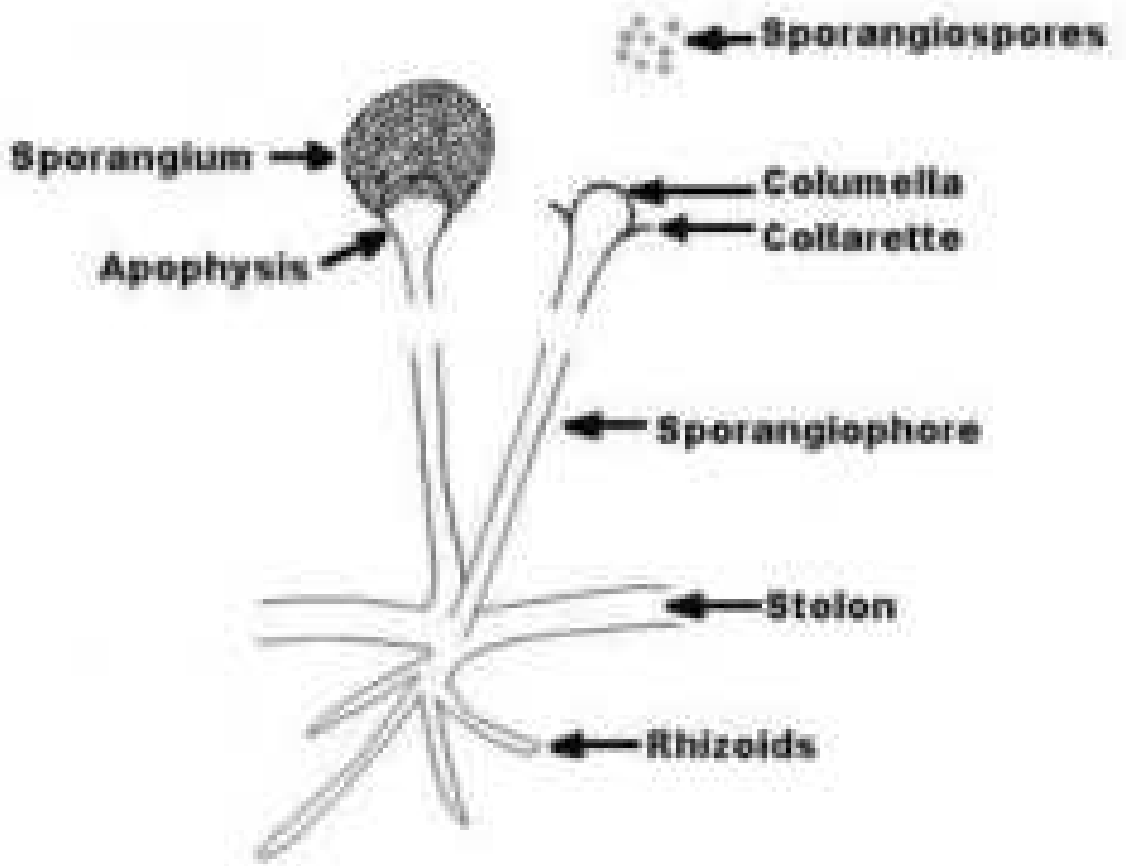




STRUCTURE

- Fungi are dimorphic
- They grow filamentous mold form when growing saprophytically
- Pathogenic fungi have unicellular and yeast like form in their host
- Some fungi in symbiotic association with algae to form lichens and with vascular plants forming mycorrhizae
- Dimorphic fungi can change from the yeast form in animal to the mold in external environment in response to changes in environmental factors(nutrients,Carbondioxide,temperature)_YMshift

Types of hyphae



NUTRITION

- FUNGI LACK PHOTOSYNTHETIC PIGMENTS
- THEY OBTAIN NUTRIENTS FROM PREFORMED ORGANIC MATTER_CHEMOHETEROTROPHIC ORGANISMS
- THEY STORE GLYCOGEN AS ENERGY SOURCE AND GLUCOSE,MALTOSE AS IMMEDIATE ENERGY METABOLISM

SUITABLE CONDITIONS

- MOLDS AND MANY YEASTS ARE AEROBIC,SOME YEASTS ARE FACULTATIVE,CAN GROW BOTH AEROBIC AND ANAEROBIC.
- TEMPERATURE-25c
- ELEMENTS-K,P,Mg,Fe,S,Mn,Cu,…..
- FUNGI CAN WITHSTAND EXTREME ENVIRONMENTAL CONDITIONS.
- THEY CAN GROW IN A MEDIUM CONTAINING HIGH CONCENTRATIONS OF SUGARS AND CAN TOLERATE MORE ACIDIC CONDITIONS(PH-5)