

3. KINGDOM PROTISTA AND FUNGI

KINGDOM PROTISTA

It is a kingdom of unicellular Eukaryotes. It includes unicellular, primarily aquatic Eukaryotes. Many protist organisms are photosynthetic autotrophs & are chief producers of oceans and many fresh water environments.

Eg : Phyto Plankton (Unicellular Algae, Diatoms) Protozoans (Proto - first; zoan - animals). It is the kingdom which, links prokaryotic monera and the complex multicellular kingdoms of plants, fungi, & animals.

Protists reproduce asexually by Mitosis, & sexually by a process involving cell fusion (Syngamy), zygote formation, and meiosis.

Photosynthetic protists - Dinoflagellates, Diatoms; Euglena like Flagellates.

Protozoan Protists - Zoo flagellates, amoeba, sporozoans & ciliates.

Diatoms are the chief producers in the oceans. They have no flagella and float because of lipids in them.

Euglena like flagellates are common in fresh water. They can lead 'animal - like' or 'plant-like' life.

Zoo flagellates resemble cell wall-less Euglena like protists but are not photosynthetic.

Amoebae are predatory protozoans which produce body extensions called pseudopodia, (false foot) to engulf the prey or for locomotion

Sporozoans are parasitic protozoans. Malarial parasite is a well studied sporozoan".

Ciliates, those which possess cilia (locomotory structures)

Eg : Paramecium, Plasmodium (Malaria Parasite)

KINGDOM FUNGI

Fungi are important decomposers in the biosphere, recycling its inorganic resources. They obtain energy by extra cellular digestion (digestion outside cell) and absorption.

Fungi cells grow as elongated filaments called Hyphae. The enmeshed filaments are also called Mycelium. Fungi reproduce asexually by fragmentation of mycelium or by special vegetative cells, called spores or Conidia.

Some lower fungi, (mainly aquatic) reproduce sexually by producing motile gametes which fuse in water. Terrestrial fungi occur as separate mating types. Two haploid hyphae of different mating types fuse during sexual reproduction to eventually form sexual spores.

The spore is typical reproductive unit of a fungus. It may be produced sexually or asexually. Spores produced by aquatic fungi may possess flagella for swimming. They are called zoospores.

Terrestrial fungi, produce light spores which are dispersed by wind. After being lodged in a favourable place, they germinate and the emerging hypha produces a new organism.

FUNGI CLASSIFICATION:

Fungi are classified on the basis of their lifecycle and the way the spores are produced.

Zygomycetes. Eg: Common bread mould Rhizopus.

Ascomycetes - (The Sac Fungi) includes yeast, Edible morels etc.

Yeasts are single celled Ascomycetes which normally reproduce asexually through budding. They can live anaerobically (in the absence of Oxygen) by fermentation.

Yeasts are economically important in the brewing and baking industries. Alcoholic fermentations of sugars (glucose and fructose) by yeast produces ethyl alcohol used industrially and alcoholic beverages such as beer, toddy, and wine. The fermented product may be further distilled to produce whisky, rum etc.

