

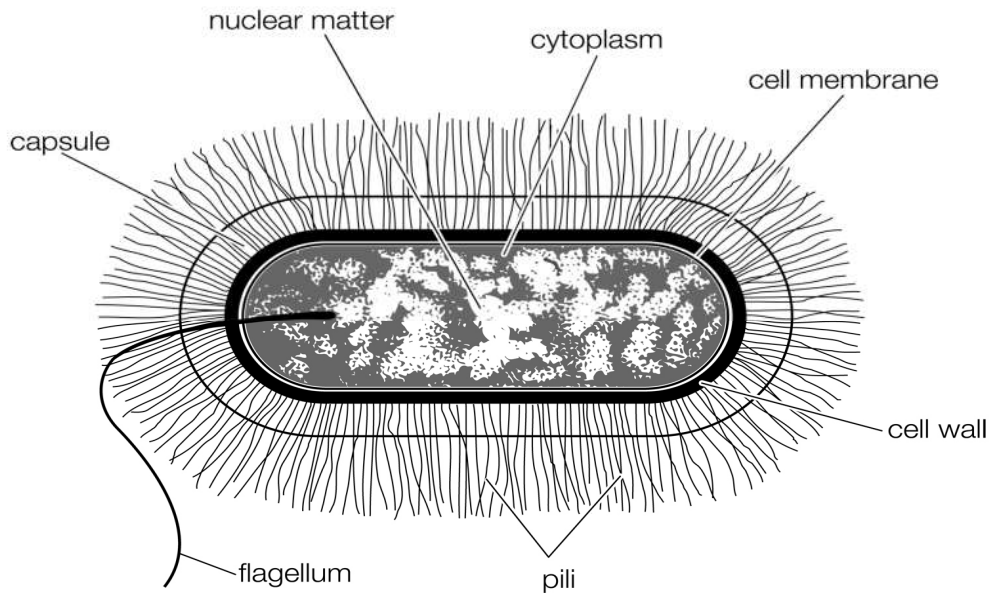
KINGDOM MONERA

The kingdom is made up of organisms mainly bacteria and blue green algae

The bacteria has the following characteristics

1. They are unicellular (single celled) organisms
2. They are very simple in size, structure and are most abundant and widely distributed organisms.
3. They possess no true nucleus. Their genetic material is not enclosed by the nuclear membrane.
4. Have varied methods of feeding i.e. photosynthesis and chemosynthesis
5. They reproduce asexually either by fission or spore formation or sexually by simple conjugation.

Drawing of a bacterium



Simple classification of Bacteria

Bacteria can be grouped in major groups according to their shapes. These include

1. Cocci
 2. Bacilli
 3. Spirilla
1. Cocci are spherically shaped and include the following

- A) Cocci
 - B) Diplococcic
 - C) Streptococci. Occur as several cells organized in a chain. E.g. Streptococci pyogenes which causes a sore throat
 - D) Staphylococci. These occur in a cluster or group
2. Bacilli. These are rod- shaped bacteria.
They include the following
Bacillus. This is single rod shaped bacterium existing as a single cell, e.g. E. colli
Diplobacilli. These are two rod shaped bacterium
Streptobacilli. These are rod shaped bacterium existing in a chain
Flagellated bacilli. These have flagella around their body
3. Spirilla. These are spiral shaped bacteria. E.g. Treponema palladium which causes syphilis, Vibrio cholera

Economic importance of Bacteria

1. Bacteria that lives in soils helps in decomposing organic matter adding humus to soil
2. Some bacteria helps in the fixation of atmospheric nitrogen into soil improving on its fertility e.g. Rhizobium bacteria living in root nodules
3. Bacteria living in the rumen of ruminants helps in the digestion of food containing cellulose
4. Some bacteria is used in the industries to make yoghurt, cheese
5. They are important in treatment of sewage
6. Many bacteria cause diseases to man and his livestock

VIRUSES

Viruses are very small non living particles that have some characteristics of life. They do not fit in the classification of living things because they are not cells.

Why viruses are considered living

1. They reproduce only in a living cell
2. They have a genetic material composed of DNA or RNA
3. They cause diseases to other living organisms.

Why viruses are considered non living

1. Viruses cannot reproduce on their own outside a living cell
2. They crystallize when removed from a natural medium
3. They are not made up of cells

KINGDOM PROTOCTISTA (PROTISTA)

Examples of protists are: amoeba, euglena, paramecium, chlamydomonas etc.

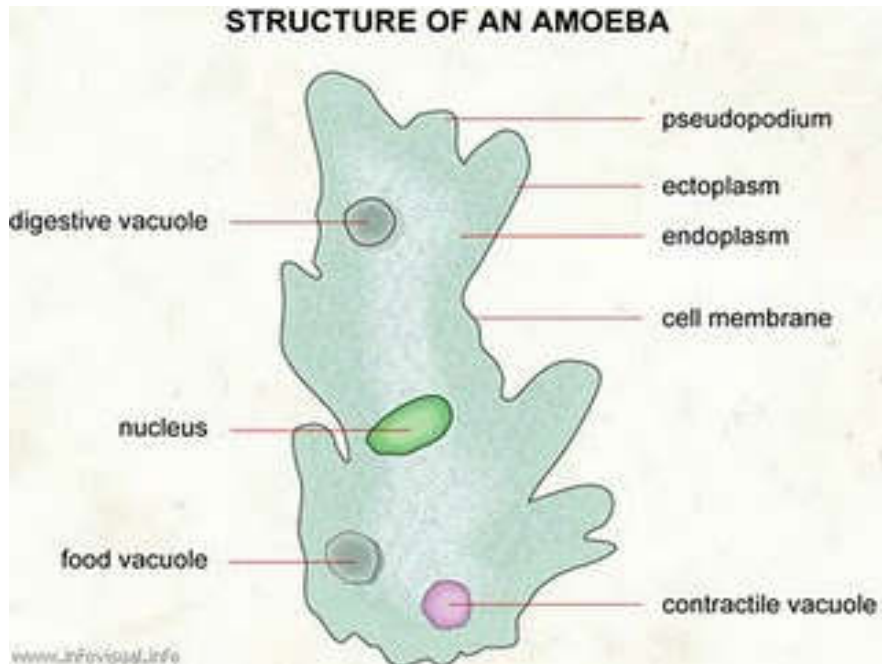
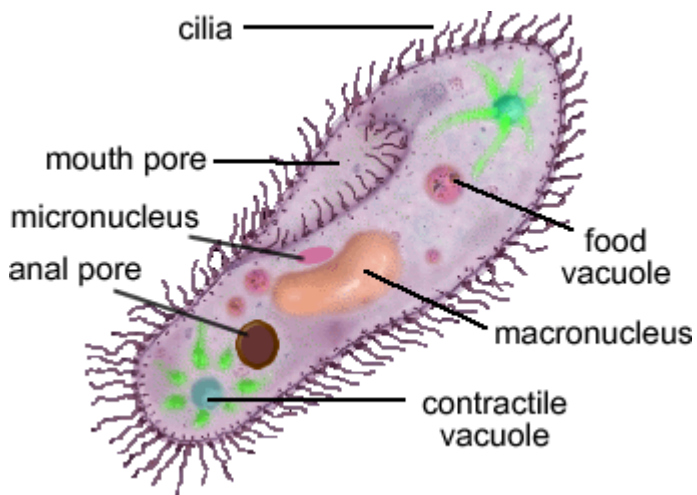


Diagram of an amoeba



Main features of protists

1. They are unicellular organisms i.e. made of one cell.
2. Have a true nucleus with nuclear membrane organelles.
3. Have double membrane organelles.
4. Some members locomote freely using a pseudopodia, cilia or flagella.

5. Have varied forms of nutrition e.g. a chlamydomonas makes its own food by photosynthesis and amoeba doesn't.
6. They live mostly in water or watery environment.

THE MAIN PHYLUM OF KINGDOM PROTISTA IS PROTOZOA

It has several classes but some of the most important classes include

1. Rhizopoda	2. Ciliata or ciliopora	3. Mastigopora
E.g. Amoeba -Are free living organism	E.g. paramecium -posses cilia all over The body for locomotion	E.g. Trypanosomes -Having a slender, long Undulating body
move by means of a pseudopium	-Have two nuclei name ely micro and mega nuclei	-Have a tapening end at the Anterior part
-Have a prominent food and Contractile vacuole	-Have branched Contractile vacuole	-Have flagella for locomotion
-Are mainly parasitic	Posses an oral groove	

KINGDOM FUNGI

Living things classified under this kingdom are called fungi (singular .fungus)

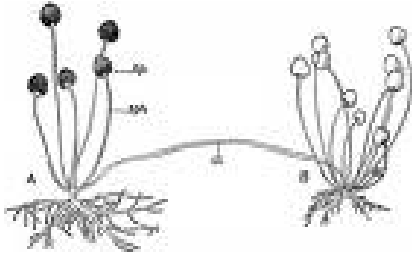
Examples of fungi

- Common bread mould (Rhizopus)
- Mucor grows o soil & braed
- yeast
- puff balls
- penicillin
- mildews
- mushrooms
- Toadstools etc.

CHARACTERISTICS OF FUNGI

1. They are multicellular organisms
2. They have cells surrounded by rigid ,protective cell made up of chitin and not cellulose
3. Their cells have a true nucleus.
4. Their body is usually organized into thread like structure called Hyphae (singular Hyphae)
NB: Amass of hyphae is called mycelium
5. They lack chlorophyll hence can't make their own food
6. They obtain nutrients from dead organic materials though some members are parasites i.e. they are mainly saprotrophic organisms
7. They produce vast quantities of tiny reproductive units called spores

Diagram of a common bread mould (Rhizopus)



Economic importance of fungi to man

1. A source of food to man e.g. some mushrooms
2. They act as decomposers of dead plants and animals therefore help in recycling
3. Some fungi are used in the manufacture of antibiotics such as penicillium which help in controlling bacteria
4. Yeast is used in the brewing industries to ferment carbohydrates to produce alcoholic drinks such as beer, and wines
5. In the baking industry the yeast is used to produce carbon dioxide which raises the dough hence making it appear bigger.
6. Some fungi cause diseases to man, his livestock and crops. E.g. fungus which cause athletes foot, ringworm in man, tomato blight in man.

KINGDOM ANIMALIA

Characteristics of kingdom Animalia

1. They locomote i.e. they have the ability to move from one place to another.
2. They reproduce both asexually and sexually.
3. They don't have chlorophyll so they don't make their own food.
4. They show quick response to stimuli.
5. They have cells without cell walls but contain a true nucleus.
6. They are multi-cellular.

Kingdom Animalia

Contains a large number of different phylum

These include;

1. Phylum Chordata (includes classes, mammalian, birds, reptilia, amphibia, fish)
2. Phylum Porifera (sponges)
3. Phylum Arthropoda (classes insecta, arachnida, crustacea, and miriapoda)
4. Phylum Coelentrata. Example include; Hydra.
5. Phylum Platyhelminthe. Examples include; Flat worms.
6. Phylum Nematoda. Examples include; Round worms.
7. Phylum Annelida .Examples include; Earth worms.
8. Phylum Mollusca. Examples includes; Snails, Oysters.
9. Phylum Echinodermata. Example include; Starfish.

Phylum Porifera.Example; Sponges

Characteristics

- Their bodies are pierced with tiny holes called pores.
- They live in marine water (water not fresh).
- They have a hollow central cavity.
- They either live singly or colonies.
- They do not have a nervous co-ordination.

Phylum Coelentrata

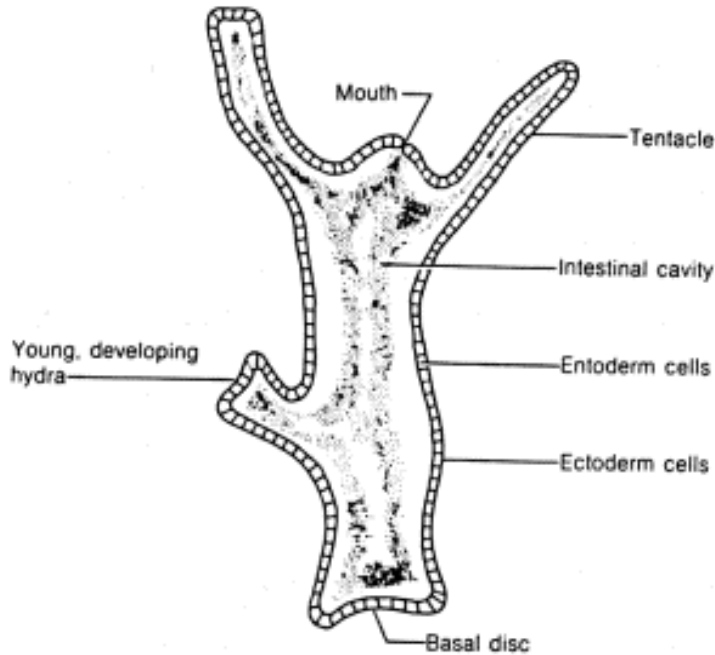
Examples include; jellyfish, hydra, sea anemones, Portuguese man of war.

Characteristics.

- They are multi-cellular.
- Their bodies are only two cells thick.

- Coelentrata have a sac like intestine with only one opening.
- The body of coelenterates contains specialized cells.
- They have sense cells ,stinging cells, glandular cells, absorptive and nerve cells but are not grouped together to form tissues.

A section through hydra



Examples of specialized cells found in hydra.

- Nerve cells.
- Gland cells.
- Absorptive cells.
- Sense cells.
- Stinging cells.
- Interstitial cells.