

Microorganisms: Friend and Foe**Microorganisms**

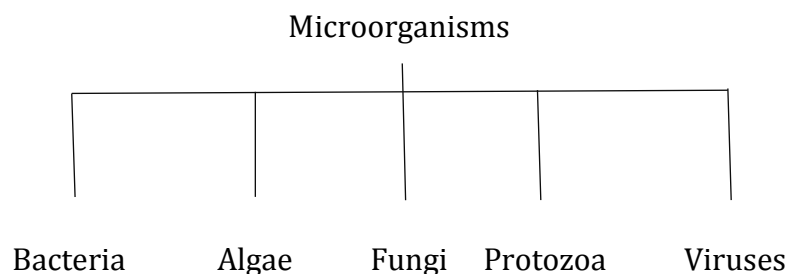
- ❖ **History of Microbiology:** The study of microorganisms is called Microbiology (micro = small, bios = life, logos = study). the microorganisms include bacteria, fungi, viruses, algae and protozoans.

Habitat of Microorganisms:

- The place where the organisms are found is called habitat. Habitat is the address of living organisms. Plants and animals have various habitats.
- Microorganisms are found everywhere i.e., in air, soil, water, hot springs, snow food, sewage, wastes, etc.
- Microorganisms are able to bear the extremes of temperature and other conditions. They are found everywhere from hot springs to snow of polar region. Some microorganism, dependent on other organisms, are called parasites, e.g. Plasmodium (a parasite found in the blood of man and it causes malaria).
- Some microorganisms remain associated with other organisms and both of them are mutually benefitted, are called symbionts. Some microorganisms grow on dead decay matter, are called saprophytes.

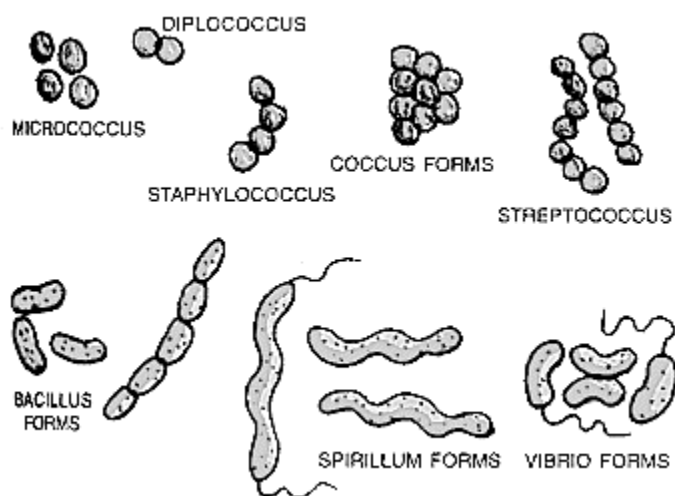
MICROORGANISMS

Microorganisms are present in the air, water, food and even inside our bodies. While a majority of the microbes are harmless, some of them have the capability of causing dangerous diseases.

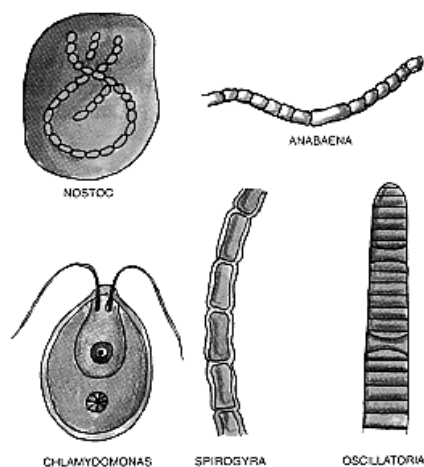


Classification of Microorganism

I. Microbes are mainly classified into five major groups : I. Bacteria : Bacteria (singular: bacterium) are single-celled organisms that vary in shape and size. Some bacteria are round or oval (coccus), others are rod-shaped (bacillus) or spiral. Some bacteria are autotrophic as they contain chlorophyll, but most of them are heterotrophic, showing saprophytic or parasitic mode of nutrition. Bacteria are very small organisms which are visible under the light microscope.

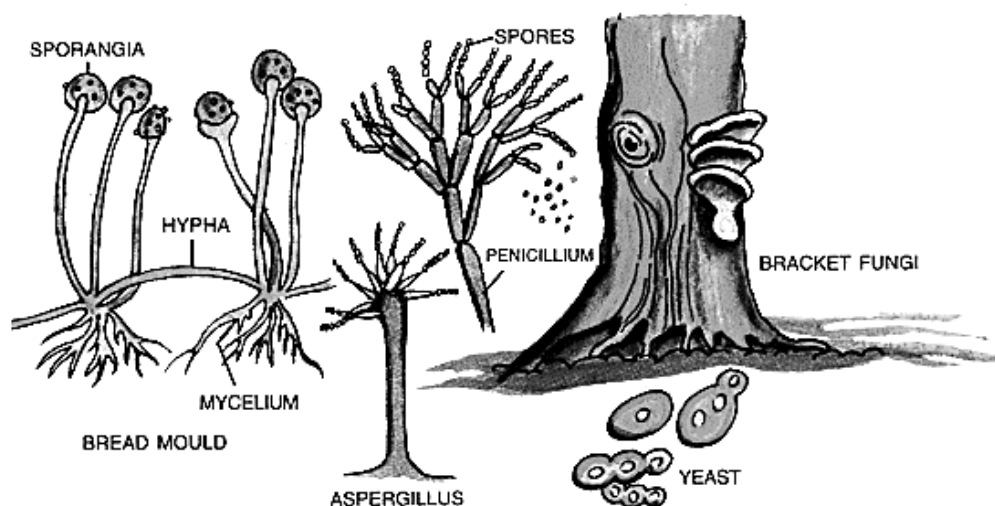


II. Algae : Autotrophic organisms having undifferentiated plant bodies are called algae (singular: alga). Algae occur abundantly, like grass in aquatic habitats and are also called 'grass of water'.



Some forms of algae

III. Fungi : Fungi (singular: fungus) are a group of plant-like organisms exhibiting heterophic (saprophytic or parasitic) nutrition. They are commonly found on bread, leather, cotton, paper, etc. Fungi grow vigorously in damp, warm, dark places, Yeast, moulds and mushrooms are forms of fungi. Yeast, moulds and mushrooms are forms of fungi. Yeast is commonly used for baking bread, cakes, etc. The yeast ferments sugar present in the wheat and converts it to carbon dioxide and alcohol. The gas expands, so that the dough (kneaded atta) rises, giving shape and flavour to the preparation.



Some forms of fungi

IV. Protozoa : Unicellular organisms that exhibit animal-like characteristics are called protozoa (singular: protozoan). The word protozoan literally means 'the first animal'. Most protozoa are heterotrophic.

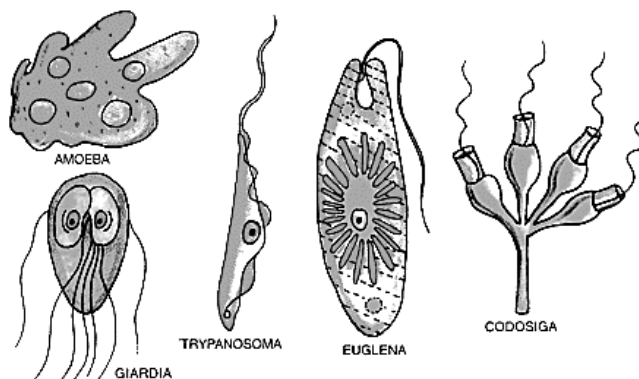


Fig. Some forms of Protozoa

V. Viruses : A virus is a microorganism which exhibits characteristics of living as well as non-living things. Viruses exhibit a variety of shapes, having simple structure. Reproducing only inside a living organism, viruses can cause many diseases.

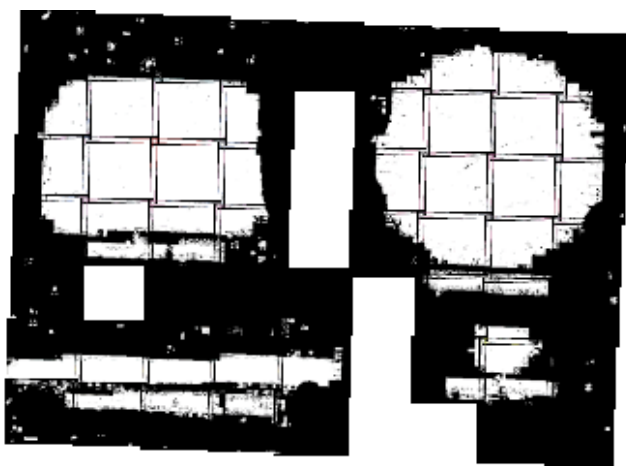


Fig. Some forms of viruses