

ABIOTIC & BIOTIC FACTOR

Each and every living organism has its specific surrounding medium or environment to which it continuously interacts and remains fully adapted. The environment is a collective form embracing all the conditions in which an organism lives, for example - light, temperature, water and other living organisms. In other words, the environment is the sum total of abiotic and biotic conditions influencing the response of the organism (Keddeigh (1974)).

ABIOTIC FACTOR — The abiotic factors are the non-living factors, which can be further sub-divided into physical and chemical abiotic factors.

A. PHYSICAL ABIOTIC FACTORS — These are the following —

(i) **LIGHT** — Light is one of the most important environmental factors influencing the growth, activities and distribution of plants and animals. The radiant energy from the sunlight is the basic requirement for the existence

of life on the earth. The intensity, quality and duration of light have profound influence on plant and animal life.

In case of animals, light has a definite effect on pigmentation, locomotion, vision, reproduction and development.

In case of plants, light is mainly responsible for photosynthesis for the preparation of food.

(ii) **TEMPERATURE** — Temperature is a measure intensity of heat. Heat is most by received in the form of radiant energy from the sun. Therefore, temperature influences the animal life in a variety of ways. The temperature penetrates into the every region of the biosphere and profoundly influences all forms of life by exciting action through increasing and decreasing some of the vital activities of organism such as metabolism, behaviour, reproduction, embryonic development and the death. The interaction of temperature with certain other abiotic environment factors cause into many other climatic changes which

influences the living organism in one way or another.

(iii) **WATER** — Water, essential of life covers about 73% of the earth's surface from ecological point of view. Water acts as a limiting factor for land animals in which the amount of water is subject to great variation. Aquatic animal who have to maintain a proper balance of water to live safely in different strata of water. Hence, any fluctuation in the amount of water, properties of water etc. influences greatly the biotic community of the ecosystem.

(iv) **PRESSURE** — Pressure in aquatic ecosystem is responsible for influencing the stability, ionic dissociation and surface tension. This is the reason that animals living within the deep sea are greatly affected.

On the land the changes in atmospheric pressure influences the activities of animals. For example, low atmospheric pressure affects breathing.

circulation and general metabolism of animals.

In addition to these wind and soil also may influence organisms to some extent.

B. CHEMICAL ABIOTIC FACTORS — Oxygen is the primary source of life. It is a limiting factor because its absence is responsible for either complete elimination or maximum change in the structure of organisms. In addition to this high CO_2 concentration and its variation of pH-value may affect the life. Non-availability of certain micronutrient is also responsible for influencing the activity of animals.

BIOTIC FACTORS — The living element of the environment are referred to as biotic factors. The different animals in different states of relationship with different species. This is called interspecific relationship.

When there is relationship between the members of the same species, it is called intraspecific relationship. The relationship may be beneficial or harmful. The rela-

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In addition to these wind and soil also may influence organisms to some extent.

CHEMICAL ABIOTIC FACTORS —

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