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15. Ecades or Ecophenes

Ecades of a species are group of individuals which have similar genetic constitution but appear different due to different environmental conditions, *i.e.*, in ecades variations are not genetically fixed but are environmentally induced.

✪ If different ecades of a species are grown in similar environmental conditions **they will be similar.**

16. Ecotypes or Physiological races or Ecological races

Ecotypes are the group of individuals which have **different genetic constitution** but on the basis of their

inbreeding behaviour, they are placed under same species, *i.e.*, variations in ecotypes are genetically fixed and not environmentally induced, *e.g.*, in *Euphorbia hirta* there are two ecotypes, namely erect type and prostrate type.

- If two ecotypes of a species are grown together in same environmental conditions, they will **remain different.**

17. Ecosystem

The term ecosystem was given by **A.G. Tansley** 1935. The system formed by interactions between community and environment is called ecosystem. Living organisms interact with environment (physical) in such a way that there is flow of energy forming clear trophic levels and material cycles in the system.

- The term **biogeocoenosis** or **geobiocoenosis** is used for ecosystem, coined by **Dokuchaev.**

18. Cybernetics

Science of control of ecosystem is called **cybernetics.** (French *Kybernetes*-pilot or **governor).**

19. Homeostasis

(*Homo*—same + *Stasis*—condition). Equilibrium state of ecosystem is called homeostasis.

20. Standing state or Standing quality

Amount of inorganic substances present at any time in environment of ecosystem is called standing state.

21. Standing crop

Amount of living material present at any time in environment of ecosystem is called standing crop.

22. Biomass

Standing crop in terms of weight is called biomass.

23. Ecosphere or Biosphere

The whole earth considered as a huge ecosystem is called ecosphere or biosphere.

24. Productivity

Rate of production or organic matter accumulation per unit time in living components of ecosystem is called productivity.

25. Primary productivity

Productivity **at producers level** is known as primary productivity. It is of two types:

(a) Gross Primary Productivity (GPP): Primary productivity including that amount which is utilized in respiration and other metabolic activities.

(b) Net Primary Productivity (NPP): Primary productivity in excess to that which is utilised in respiration and other metabolic activities.

26. Secondary productivity

Productivity **at consumers level** is called secondary productivity.

27. Biogeochemical cycles or Material cycles

More or less circular pathways through which different chemical elements present in biosphere move from organism to environment and *vice-versa,* are called biogeochemical cycles, *e.g.*, carbon cycle, nitrogen cycle, sulphur cycle, etc.

28. Remote sensing

Obtaining or getting knowledge of any aspect of ecosystem by means of far away recording instruments is called remote sensing, *e.g.*, by aerial photography, radar, UV and infrared detectors, etc.

29. Biological clocks

The plant species possess certain physiological mechanisms by means of which they indicate particular seasons of the year and thus constitute biological clocks.

30. Ecological indicators or Biological indicators

Living organisms act as index or measure of prevailing environmental conditions and thus they constitute biological indicators.

31. Savannah

Type of grasslands in which trees and shrubs are present at wide intervals are called savannahs. All Indian tropical grasslands are example of savannahs (but not true savannahs).

32. Cosmopolitan

The organisms which are world wide in distribution or are present everywhere are called cosmopolitan.

33. Endemic

The organisms which are restricted to particular area are called endemic.

34. Allopatric species

The species which are present in different geographical regions, separated by spatial barriers are called allopatric species.

35. Sympatric species

The species which are present in same region but not necessary to have same ecological niche are called sympatric species.

36. Ecological succession

The term ecological succession was first given by **Hult** 1885. Communities keep on changing, *i.e.*, never stable and this definite sequence of communities in the same place over a period of time is called ecological succession or succession. In succession first community is pioneer or first seral stage and the last community is called climax community or last seral stage.

All the seral stages constitute a sere and name of the sere depends upon the substrate where succession begins, *e.g.*, **xerosere,** *i.e.*, succession beginning in dry condition and **hydrosere,** *i.e.*, succession beginning in water.

✪ In all types of seres, climax community is always **mesophytic.**

37. Pollution

Undesirable change in physical, chemical and biological properties of air, water and soil which directly or indirectly affect organisms is called pollution.

38. Plume

Visible smoke coming out of chimneys is called plume.

39. Flu gas

The gaseous mixture coming out of chimneys is called flu gas.

40. Atmosphere

The gaseous cover over the earth surface is called atmosphere.