



Glossary



Abiogenesis – The emergence of life forms from non-living chemical systems. In contrast with spontaneous generation, abiogenesis is not a process that biologists think continues in a particular environment, such as a planet or moon, once a living system has emerged.

Acidogenesis – Conversion of simple organic materials into acetate, H_2 and CO_2 by acidogenic bacteria.

Algal bloom – Presence of large amounts of nutrients in waste water causing excessive growth of planktonic algae.

Allergy - A hypersensitivity reaction that can involve various deleterious effects.

Anthropogenic causes– Problems created by human

Anthropology – The study of differences and similarities, both biological and cultural, in human populations. Anthropology is concerned with typical biological and cultural characteristics of human populations in all periods and in all parts of the world.

Antisense DNA– It is the non coding strand complementary to the coding strand in double stranded DNA. The antisense strand serves as a template for mRNA synthesis.

Apoptosis– Is a form of programmed cell death that occurs in multicellular organisms.

Attenuated – Reduced in virulence.

Autoradiography – It is the use of X-ray or photographic film to detect radioactive materials.

Bacteriophages– Viruses which infect bacterial cells.

Biogeography - The scientific study of the geographic distribution of organisms.

Canopy – The canopy is the above ground portion of a plant community or crop, formed by the collection of individual plant crowns.

Carcinogens– Substances causing cancer.

Cardiac arrhythmia– Any variation from the normal rhythm in the heartbeat.

Carrier – An individual heterozygous for a recessive gene that is not expressed.

Catastrophic– Something or substance that involves or causes a sudden terrible disaster.

Chemical Oxygen Demand - A measure of the oxygen required to oxidize soluble and particulate organic matter in water.

Cirrhosis– Scarring of the liver that impairs its functioning.

Co-dominance – In a heterozygote, the dominant and recessive allele is capable of phenotypic expression.

Coacervates – Are the microscopic spontaneously formed spherical aggregates of lipid molecules that are held together by electrostatic forces and that may have been precursor of cells. They are the cluster of molecular aggregates in colloidal form which are bounded by a membrane and grows by absorbing molecules from the environment. Oparin believed that life developed from coacervates.

Cytolysis - Destruction of cells.

Cursorial – A cursorial organism is one that is adapted specifically to run. Cursorial organisms are typically adapted to long-distance running at high speeds, rather than animals with high acceleration over short distances; thus, a cheetah is considered cursorial, while a leopard is not.

Denaturing – Denaturing means separation or splitting of the double helix into single stands by breaking hydrogen bonds between the two strands.

Dendritic cells - Professional antigen presenting cells that have long membrane processes.

Diapedesis - The movement of blood cells (leucocytes) out of the circulatory system and towards the site of tissue damage or infection accompanying inflammation.

Dinosaurs - a term coined by Sir Richard Owen for giant extinct reptiles. Group of animals that



have bird-like and lizard-like facial appearance (Mesozoic).

Distribution – The occurrence of different organisms in a given area and the way they are distributed in their space, specific time and utilization of their resources.

DO – Dissolved Oxygen is the amount of gaseous oxygen (O_2) dissolved in the water.

Ecotourism - Travel undertaken to witness sites or regions of unique natural ecological quality the provision of services to facilitate such travel.

El Nino– Unusual warming of surface waters in the eastern tropical Pacific Ocean.

Emphysema– A serious medical condition that occurs when the lungs become larger and do not work properly, causing difficulty in breathing.

Endemism-The phenomenon in which the organisms are exclusively restricted to a given area.

Endometriosis – An abnormal condition in which endometrial tissue that normally lines the uterus grows outside .

Eohippus – Ancestor of modern horse.

Euchromatin – Euchromatin is a tightly packed form of chromatin that is enriched in genes, and is often under active transcription.

Eutrophication - Excessive richness of nutrients in a lake or other water bodies frequently due to run of fertilizers from the land causing dense growth of plant life.

Fibroids – Fibroids are abnormal growths formed on the outside, inside or in the walls of the uterus.

Foetus – Developmental stage extending from the ninth week of development to birth.

Fossorial – Fossorial (from Latin fossor, meaning "digger") is an animal adapted to digging which lives primarily, but not solely, underground. Some examples are badgers, naked mole-rats, clams, and mole salamanders.

Galaxy – A specific arrangement of stars.

Gene bank-A facility established for the ex-situ Conservation of individuals, seeds, tissues or reproductive cells .

Gene pool – The total gene content of a whole species.

Genetic drift – An alteration in the gene frequency.

Geology – The study of origin and structure of Earth.

Glaciers– A large mass of ice that moves slowly.

Haemophilia – A medical condition in which the ability of the blood to clot is severely reduced, causing the patient to bleed severely from even a slight injury.

Haemozoin -Toxic malarial pigment that causes malaria fever.

Hallucination -The sensation of seeing, hearing or sensing something that does not exist.

Heterochromatin – Heterochromatin is a tightly packed form of DNA or condensed DNA.

Homeostasis– It is the state of steady internal conditions maintained by living things.

Immune reaction – The production of antibodies in response to antigens.

Interferon - An antiviral protein produced from virally infected fibroblasts and leucocytes induces antiviral state in uninfected cells.

Intersex – An individual showing a combination of male and female characters.

Intra-Uterine Insemination (IUI)-Processed sperm sample is infused into the uterus, by passing the vagina.

Intracytoplasmic sperm injection (ICSI)- injection of a sperm directly into the ovum.

Intra uterine transfer (IUT)-Transfer of embryo with more than 8 celled blastomeres into the uterus.

In vitro fertilization (IVF)- Fertilization outside the body in the laboratory.

In vivo fertilization -Fusion of gametes within the female.



Inflammation - e.g., Vaginitis- inflammation in the vagina, urethritis- inflammation in the urethra, endocervicitis- inflammation inside the cervix, epididymitis - inflammation in the epididymis, prostatitis - inflammation in the prostate gland.

Keystone species-A species whose loss from an ecosystem would cause a greater than average change in other species population or ecosystem process.

Locus – The particular point on the chromosome at which the gene for a given trait occurs.

Macrophage - A large, leucocyte derived from a monocyte that functions in phagocytosis.

MALT - Mucosal Associated Lymphoid Tissue collective terms for secondary lymphoid organs located along various mucous membrane surfaces including Peyer's patches, tonsils, appendix.

Mast cell - A bone marrow derived cell.

Menarche – Starting of the first menstrual period.

Merozoite - A trophozoite of Plasmodium found in RBC or liver cells.

Methanogenesis – Conversion of acetate, H₂ and CO₂ into methane by methane producing bacteria.

Molecular biology – The branch of biology which attempts to interpret biological events in terms of the physico chemical properties of molecules in a cell.

Molecular Pharming – Production of active pharmaceutical substances in genetically modified organisms.

Mould – An impression of a complete organism or a part of it in the rock that surrounds it.

Multiple Sclerosis– It is a demyelinating disease in which the insulating covers of nerve cells in the brain and spinal cord are damaged.

Mutation – Sudden and inheritable changes.

Narcotic - A powerful drug that produces, relaxed, dreamy state, derived from Opium plant.

Nascent RNA – Nascent RNA is an immediately formed RNA. In this RNA no post transcriptional modification had occurred.

NBOD – Nitrogenous BOD.

Nk cells - Natural Killer cells that kill infected and tumor cells.

Nondisjunction – Nondisjunction is the failure of homologous chromosomes or sister chromatids to separate properly during cell division.

NPK fertilizers– Fertilizers with Nitrogen (N), Phosphorus (P) and Potassium (K).

Nucleosome – A morphologically repeating unit of DNA containing 190 base pairs of DNA folded together with eight histone molecules.

Null cell - A small population of peripheral blood lymphocytes that lack the membrane markers characteristic of B and T cells. Natural killer cells are included in this group.

Ontogeny – Life history of an individual.

Oocyte – The encysted zygote of Plasmodium

Operon – A cluster of genes whose expression is controlled by a single operator.

Panspermia – Units of life in the forms of spores.

Permafrost – Any ground that remains completely frozen (32°F (0°C) or colder) for at least two years straight. These permanently frozen grounds are most common in regions with high mountains and in Earth's higher latitudes near the North and South Poles.

Phenotypic plasticity -The ability of one genotype to produce more than one phenotype when exposed to different environments.

Phylogeny – Record of ancestral history.

Planetesimals – Planetesimals are the fundamental building blocks of the planets as well as the ancestors of asteroids and comets.

Polypeptide chain– It consists of smaller subunits or amino acids that are linked together. They are the building blocks of proteins.

Postpartum – Period of life following childbirth.



Precursor– A substance from which another is formed, especially by metabolic reaction.

Primer – A short oligonucleotide that hybridizes the template strand and gives a 3' – OH end for the initiation of nucleic acid synthesis.

Probe – The probe is a single stranded DNA molecule that is 'complementary' to the gene of interest in a sample under study.

Pseudopodia – Blunt temporary protoplasmic projections found in Amoeba or in some amoeba-like cells.

Psychoactive drug- A chemical substance that acts on brain and affects the mind and behaviour of user.

Puberty – Period of reproductive maturity.

Pyrolysis– Decomposition brought about by high temperatures.

Recombinant– A cell or organism whose genetic complement results from recombination.

Redia – Larva in the life cycle of most trematodes.

Rheoreceptors – They are receptors in fish and some amphibians that respond to water currents.

Saltation – Single step large mutation.

Satellite DNA – Short highly repeated eukaryotic DNA sequences, usually clustered in heterochromatin and generally not transcribed.

Saltatorial – Saltatorial is an animal adapted to leaping. They have large, muscular hindlimbs and sometimes, reduced forelimbs. A few example for jumpers in the animal kingdom include fleas, froghoppers, grasshoppers, and frogs.

Schizogony- The process of multiple fission, in which one organism divides to produce many daughter cells.

Schizont – The trophozoite of Plasmodium grows in size to form the schizont.

Selection – Choosing the better adapted alleles from the mixed population.

Sewage - Domestic waste water containing various solid and liquid waste materials including human excreta.

Single cell protein (SCP) – A protein derived from a culture of single celled organisms used especially as a food supplement.

SOD– Sediment Oxygen Demand is the rate at which dissolved oxygen is removed from the water column during the decomposition of organic matter in streambed or lakebed sediments.

Solubilisation – Dissolving the feed stock in water to make a slurry for anaerobic digestion.

Speciation – Formation of new species from the pre-existing ones.

Structural gene – A gene coding for the structure of a protein.

Taq DNA polymerase– A thermostable DNA polymerase obtained from thermophilic bacterium *Thermus aquaticus*. It helps in the synthesis of DNA.

Transgene– The target gene responsible for the development of transgenic organism.

Trophozoite stage– In *Plasmodium* life cycle, cryptomerozoites in the RBC become round and it modifies into a young trophozoite.

Umbilical cord – Structure bearing arteries and veins connecting the placenta and the foetus.

Variations – Dissimilarity between the members of the same species.

Vitrification– Transformation of a substance into a glass.

Volatility– A liquid or substance is one that will quickly change into a gas.

Withdrawal symptoms - The reactions experienced by an addict after he/she stops using drugs.

Woolly mammoth – A hairy relative of modern elephant that lived in cold climates.

Zoogeography – Study of details with the geographical distribution of animals.

Zygote intra fallopian transfer-(ZIFT)
Transfer of zygote or embryo with 8 or less than 8 celled blastomeres into the fallopian tube.

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