

Biology is the branch of science concerned with the study of life: structure, growth, functioning and evolution of living things. This discipline of science comprises three sub-disciplines that are botany (study of plants), Zoology (study of animals) and Microbiology (study of microorganisms). This vast subject of science involves the usage of myriads of biology terms, which are essential to be comprehended correctly. People involved in the science field encounter innumerable jargons during their study, research or work. Moreover, since science is a part of everybody's life, it is something that is important to all individuals.

## A

**Abdomen:** Abdomen in mammals is the portion of the body which is located below the rib cage, and in arthropods below the thorax. It is the cavity that contains stomach, intestines, etc.

**Abscission:** Abscission is a process of shedding or separating part of an organism from the rest of it. Common examples are that of, plant parts like leaves, fruits, flowers and bark being separated from the plant.

**Accidental:** Accidental refers to the occurrences or existence of all those species that would not be found in a particular region under normal circumstances.

**Acclimation:** Acclimation refers to the morphological and/or physiological changes experienced by various organisms to adapt or accustom themselves to a new climate or environment.

**Active Transport:** The movement of cellular substances like ions or molecules by traveling across the membrane, towards a higher level of concentration while consuming energy.

**Activity Space:** The entire range of climatic and environmental conditions suitable to normal functions, process and activities of a living organism.

**Adaptation:** Adaptation refers to the genetic mechanism of an organism to survive, thrive and reproduce by constantly enhancing itself, by altering its structure or function, in order to become better suited to the changing environment. Read more on adaptations in desert animals.

**Adaptive Radiation:** The evolutionary diversification from an ancestral group of organisms, into a number of new more specialized forms, each suited to live in new habitats. Read more on animal adaptations.

**Aerial Behavior:** Aerial behavior is a type of behavior that deals with communicative or playful behavior. It is most seen in whales and dolphins when they surface above water to either jump, leap, or just flit across.

**After-Shaft:** A small supplementary feather, growing from the underside of the base of the shafts of a body feather. It is found in many birds and essential to keep them warm.

**Aigrette:** A tuft of long and loose feathers used by breeding herons and egrets, during courtship displays.

**Air Sac:** A thin walled air filled structure which is a part of the respiratory system of birds. The air passing through the air sac aids in their breathing and temperature regulation.

**Airfoil:** A structure designed to lift and control the airflow by making use of different levels of air waves. A bird in flight uses the concept of airfoil to control its speed.

**Alligator:** A broad snouted crocodilians of the genus Alligator found in subtropical regions. This reptile is known for its sharp teeth and powerful jaws.

**Allopatric:** Organisms that occur, originate or occupy in separate geographical areas.

**Alpha Diversity:** A measurement of species richness in a natural unit (specified area) consisting of all plants, animals and micro-organisms in a habitat functioning together.

**Altruism:** Instinctive behavior performed towards the welfare of others, sometimes at personal cost.

**Alula:** A set of quill-like feathers located close to the base of the primary feathers that play a part in increasing or decreasing the bird's lift by affecting the airflow of the wings.

**Alveolus:** A small angular cavity, sac or pit in the body.

**Ambulacra:** This term refers to echinoderm's five part radial areas (undersurfaced side) from where the tube feet protrude as well as withdraw.

**Amnion:** The innermost delicate embryonic or fetal membranes of higher vertebrates like mammals, birds and reptiles.

**Amniotic Egg:** Eggs found in a water impermeable amniotic membrane, filled with fluid in the amniotic cavity, that can develop on land without dehydrating themselves.

**Amphibians:** Animals that can survive and live on land as well as in water. Amphibians are vertebrates and cold-blooded.

**Amphisbaenian:** A long reptile (worm-like) with a short tail and ring shaped scales that has well adapted itself to burrowing.

**Amplexus:** Mating position of the frogs and toads, in which the female sheds the eggs into the water and the male fertilizes it. Fertilization takes place outside the female's body.

**Anapsid:** An extinct subclass of reptiles except for the turtles, that have no opening in the temporal region of the skull.

**Anastomosis:** A network of intersecting or connecting blood vessels, nerves, or leaf veins that form a plexus.

**Animalia:** The taxonomic kingdom of animals that includes organisms that are multicellular, eukaryotic (having cells with membrane-bound nuclei) and heterotrophic (require organic compounds for nourishment).

**Annelida:** The taxonomic group of animals that includes coelomate, and elongated and segmented invertebrates such as leeches, earthworms, marine worms, etc.

**Antenna:** A sensory apparatus found on the heads of insects and most arthropods. It is usually in pairs.

**Antler:** One pair of bony, deciduous and branched hornlike structure found on the head of a deer, moose, elk, etc.

**Anus:** An opening at the lower end of the digestive tract through which all solid waste is eliminated from the body.

**Apomorph:** A new specialized trait in an evolving organism which is completely different from its ancestral line.

**Aposematic:** Color construct characteristics in animals (changing color), either as a warning to other animals or as a self defense mechanism.

**Arboreal:** Arboreal refers to animals that have adapted themselves to live and move in the trees.

**Arthropod:** A group of invertebrate animals such as the insects, crustaceans, arachnids, centipedes, etc that are characterized by a exoskeleton and a segmented body with jointed appendages.

**Artificial Selection:** A selection process where the breeder chooses the animals for mating and producing offspring of desired inheritable qualities.

**Aspect Diversity:** It is the measure of the different physical appearances that are found in a group of species living in a common habitat and are hunted by other animals that use visual hunting skill to identify and kill their prey.

**Auriculars:** Auriculars is a set of feathers that are found near a bird's ear openings.

**Autonomic Nervous System:** The part of the vertebrate nervous system that regulates involuntary action of an animal's internal organs like the intestines, heart and glands.

**Autotroph:** An organism capable of acquiring nourishment from its surrounding environment using photosynthesis or chemosynthesis as opposed to ingesting another organism.

**Aves:** A class of vertebrates comprising the entire bird family.

## B

**Balanced Polymorphism:** A situation where more than one allele is maintained in a population, which is the outcome of the heterozygote being superior to both homozygotes.

**Baleen:** Baleen whales are those whales that filter plankton for ingestion, out of large quantities of water. Baleen is the fibrous structure in their mouths, usually referred to as baleen plates, that enable them to feed in this way. They do not have teeth.

**Banding:** The manner in which a metal or plastic band is attached to the legs of birds and other animals. This is done with the purpose of identifying the individual/creature at the time of recapture.

**Barbel:** Often found on fish, a barbel is a slim, whisker-like tactile organ located near the mouth. In some fish, they contain the taste buds, and assist the fish to locate food in murky water.

**Barbicels:** Barbicels are tiny curved structures on barbules, that connect contiguous barbules to form the firm, mesh like structure of the feather vane.

**Barbs:** The barbs are attached to the main shaft of a feather, and make up its vanes.

**Barbules:** Barbules are tiny structures that emerge from the barbs of a bird's feather. They interlock, overlap and knit together, making the feather solid and stiff.

**Basic Plumage:** Among the bird species that molt only once a year, the basic plumage are those feathers they have on them throughout the year. Whereas, among species that molt twice annually, the basic

plumage (in most cases) are the feathers that grow after the first complete molt, and is present at the time of the bird's non-breeding season.

**Batesian Mimicry:** In a situation where a harmless species has evolved to replicate the warning signal given by a harmful species (directed at a common predator), Batesian mimicry occurs.

**Beak:** The protruding part of the mouth of several groups of vertebrates, including some cetaceans. Birds use them not only to eat, but also to groom, kill prey, manipulate objects, in courtship and to feed the young.

**Benthic:** A Benthic zone is the ecological region that encompasses the bottom most level of any body of water, be it a river, lake or ocean. When used in conjunction with a living organism, it refers to bottom-dwelling.

**Beta Diversity:** A term of measurement that gauges the variety of organisms in a region. It is impacted by the turnover of species among habitats.

**Bilateral Symmetry:** This type of symmetry is exhibited by most animals, and just means that if a line were drawn down the middle of the body, both sides would be equal and symmetrical.

**Bill:** Same as Beak.

**Binocular Vision:** An animal with this kind of vision has eyes that are projected forward, due to which the field of view overlap, enabling the creature to judge depth.

**Biodiversity:** A term of measurement, that gauges the diversity of organisms in a habitat or ecosystem. This measurement can be made based on the number of species or genetic variation that exist within an ecosystem or region.

**Biogeography:** It is a term used to define the study of the geographic distribution of organisms throughout a region over a given period of time. It is carried out with the aim of examining where organisms dwell, and at what populations.

**Biome:** A region that is defined based on its climate and geography, which has ecologically similar communities of plants, animals, and soil organisms. The similarity is based on plant structures (such as trees, grasses and shrubs), plant spacing (forest, savanna, woodland), leaf types (such as needle-leaf and broad-leaf), and climate.

**Biota:** They constitute the living components (flora and fauna) of an ecosystem, biome or habitat.

**Blowhole:** A blowhole is an opening on the top of a cetacean's head, from which air is inhaled and exhaled.

**Bipedal:** Bipedalism is a manner of moving on land, where the organism progresses using only its two rear limbs, or legs.

**Birth Rate:** The term is the average number of young produced within a specific period of time. It is calculated per individual, and is usually communicated as a function of age.

**Book Lung:** It is an organ used for respiration, and is part of the body system of arachnids, such as spiders and scorpions. The book lung is located inside the ventral abdominal cavity.

**Bow Riding:** It is an activity carried out by cetaceans (most commonly dolphins), in which they swim or drift along the crests of waves in the ocean.

**Breeding System:** A breeding system includes all the different breeding behavior (polygyny, outcrossing, or selective mating) of a population, and the methods in which the members of the population adapt to them.

**Brilles:** The German word for 'glasses', it is a transparent, immovable layer of scale/skin that covers the eyes of some creatures, such as snakes and lizards, and provides protection.

**Bristles:** Bristles are long, stiff strands of hair or feathers. In birds, they are situated near the mouth or eyes. Their function may be to assist the bird in eating and give protection to the eyes.

**Brood Parasite:** A brood parasite is an organism (usually a bird) which manipulates another individual of the same or different species to raise its offspring. A method usually adopted to do this is to lay eggs in another birds nest.

**Brood Parasitism:** The method adopted by one organism to make another individual of the same or different species to raise its offspring. In birds, this is done by laying ones eggs in another birds nest.

**Brood Patch:** Located on the lower abdomen of birds, it develops by the shedding of feathers in this area, and the consequent thickening of the skin, after which it becomes densely populated with blood vessels. The brood patch is used to incubate the eggs and keep the young warm.

**Brood Reduction:** When a clutch of eggs hatch sequentially, if there is inadequate food, brood reduction takes place. This happens when the weakest chick or chicks, being deprived of food either fail to survive out of starvation, or are devoured by their stronger siblings.

**Brooding:** The practice of birds, where the parent birds continue to provide warmth to their young, during the time when they are unable to maintain their own body temperatures.

## C

**Caching:** Storing of food for later use, when food is not available or is short in supply.

**Caiman:** A tropical American crocodylian amphibian, found in Central and South America.

**Calamus:** It is the hollow base of a feather shaft, which attaches the feather to the skin.

**Calcereous:** Calcium contained parts such as shells, bones and exoskeletons, which protects an animal.

**Call Matching:** This is a behavioral trait, often displayed by members of the finch family. This refers to the male and female of a pair duplicating each others flight call, vocally.

**Camouflage:** A feature common to invertebrates, which helps them blend with their surroundings using its skin colors or patterns.

**Canine Tooth:** A single point tooth that is shaped and used for piercing and holding on to food. It is located near the front of the jaw, and is prominently seen in carnivores.

**Carapace:** A hard shell which shields the dorsal side of an animal's body. It is used more specifically to refer to the upper side of a tortoise or turtle's shell.

**Carnasial Tooth:** A premolar tooth, which is used to efficiently tear and slice meat of prey. This tooth is seen only in the carnivores.

**Carnivore:** A mammal belonging to the order Carnivora, that sustains by eating the flesh of other animals.

**Carrying Capacity:** It is the maximum population of a particular species, which can be supported for an indefinite period of time in a particular environment.

**Caruncle:** A fleshy outgrowth, without feathers, seen on the neck and face of a bird. It is also referred to as fowl's comb and usually seen in the turkey family.

**Casque:** A formation on the head resembling a helmet, that is located on the head of a lizard.

**Caste:** A group of species, which shares similar features, form or behavior and belong to the same social group.

**Central Nervous System:** A part of the nervous system, made up of inter-neurons, which exercises control over the nervous system.

**Centrifugal Tail Molt:** The process of shedding and replacing of feathers of a bird's tail, that starts with the replacing of the innermost pair of feathers first and then moves from the center outward.

**Cephalization:** It is a tendency within animals, with localization of neural control and sensory organs located at an end of the body, usually near the head.

**Cere:** A raised and membranous covering, that is located at the base of the upper mandible in a bird.

**Cetaceans:** Mainly marine mammals belonging to the Cetacea species. Toothed whales and toothless filter feeding whales are among those that belong to this category.

**Character Displacement:** Adaptations of different sets of characteristics in two similar species, brought about by overlapping territories, resulting in competition.

**Cladistics:** It is the study of evolutionary history of a group of organisms, especially as shown in a family tree.

**Clappeing:** Slapping of the upper and lower parts of bills together, as a non vocal form of communication, seen especially in birds like storks.

**Climax:** The steady, end stage in the ecological evolution of a plant or animal species.

**Climograph:** Annual cycle of temperature and rainfall for a particular geographical area depicted in a graphical format.

**Cloacal Spur:** A claw in boas and pythons, which is an extremity of the pelvic girdle. It is used by the male snake, while courting.

**Clutch:** Eggs or young of a species produced in single a breeding attempt by a female.

**Cnidaria:** A name given to the invertebrate phylum Coelenterata, the emphasis is given to the stinging characteristic of the phylum, which makes up its basic structure comprising nettles, which are generally toxic in nature.

**Coelenterates:** An invertebrate belonging to Coelenterata phylum characterized by a single interval cavity used for digestion, excretion and for other survival activities and which has tentacles on the oral end. Hydras, jellyfish, corals and sea anemones belong to this group.

**Colt:** Male horse less than four years of age. For interesting facts about horses, [click here](#).

**Competition:** When two or more individuals compete for the same set of available and limited resources, affecting both the parties negatively.

**Conditioning:** A learning method either using a stimulus - response, or a reward - punishment method, in which associations are made.

**Constriction:** This is a method used by non-venomous snakes to tightly grip and suffocate their prey, by coiling around the prey.

**Contour Feathers:** The feathers which form the topmost layer of a bird's feathers, including the wings and tail, which gives the bird its characteristic look.

**Convergent Evolution:** Similar structural appearance in organisms, which have different lines of descent.

**Corallium:** The skeleton of a zoophyte, which can be calcareous or in the formation of horns. For example, the set of parallel vertical grooves which are present on the sides of salamanders and newts.

**Countershading:** The development of dark colors on the areas exposed to the sun and light colors on the undercarriage

**Creche:** Flock of birds, not necessarily belonging to the same species that flock together for protection.

**Critical Habitat:** A habitat which is critical for the survival and conservation of a species, designated by a rule published in the Federal Register.

**Crocodile:** Reptile belonging to the order crocodylia, which inhabits tropical regions. Note: Crocodiles differ from alligators.

**Crop:** Expandable pouch found in the esophagus of some birds.

**Cryptic:** They are characteristics that help in concealing an animal.

**Consumer:** An organism, often an animal, which feeds on plants or other animals.

## D

**Dabble:** Bird behavior pertaining to foraging for food with their beaks or bills from shallow water.

**Death Rate:** The average number of newborns or young ones dying within a specified period of time.

**Definitive Plumage:** The plumage of a bird attained after the shedding of all previous feathers that do not change significantly in color or pattern, as long as the bird lives.

**Delayed Plumage Maturation:** A common phenomenon seen in male birds where the definitive plumage is delayed due to a number of factors.

**Delist:** The act of removing an animal species from the list of endangered, threatened and vulnerable wildlife list.

**Delphinidae:** A group of marine mammals that belong to the family Delphinidae and the Order Cetacea, like dolphins and their relatives.

**Deme:** A local breeding that interbreeds organisms of the same species or individuals.

**Detritivore:** Organisms that feed on dead, decomposed or organic waste.

**Detritus:** Organic matter that is either freshly dead or partially decomposed.

**Developmental Response:** The development of morphological and physiological qualities of an organism in response to prolonged or changing environmental conditions.

**Diapause:** A period of inactive hormonal development as a response to unfavorable environmental conditions. This is a temporary phase.

**Diffuse Coevolution:** Evolution of a species depending upon the evolution of some other species, which itself may be evolving depending on some other factors. Coevolution is basically, the evolution of groups depending on each other together, in order to survive.

**Diffuse Competition:** The weak interactions between species that are ecologically and distantly related.

**Dimorphism:** The occurrence or existence of two forms within the same species bearing distinct structure, features, coloration, etc.

**Diving Reflex:** A developed reflexive response to diving, found in most aquatic mammals and birds that are characterized by complex physiological changes and adaptations.

## E

**Evolution:** At the most basic level, evolution is change that takes place over time. In reference to lifeforms, evolution is the genetic changes observed amongst the population of organisms from generation to generation. Read more on theory of evolution.

**Ecological Isolation:** It refers to the situation where closely related (sometimes virtually indistinguishable) species live in the same territory, but slight differences in their niche causes them to reproduce in isolation of the others.

**Ecological Release:** It refers to the progression in which a species expands its living habitat as well as the resources it utilizes into areas that have a lower density of species in terms of diversity.

**Ecomorphology:** It is the study of the relation between an individual's ecological role and its form and structural adaptations.

**Ecosystem Approach:** This is a method of resource management that acknowledges that the different components of an ecosystem (structure, function, and species composition) are interlinked, and this factor must be taken into consideration while restoring and protecting the ecosystem's natural balance.

**Ectoparasite:** An organism, such as a tick, that latches itself to the surface of its host, in order to survive.

**Ectothermy:** Refers to an organism's ability to maintain its body temperature by availing heat from the environment, either by absorbing radiation or through conduction.

**Effective Population Size:** The average size of a population expressed in terms of individuals assumed to contribute genes equally to the next generation; generally smaller than the actual size of the population, depending on the variation in the reproductive success among individuals.

**Egestion:** Removal of undigested food material.



**Egg Dumping:** When a bird lays its eggs in the nest of another, with the purpose of making the host bird to hatch and raise its young.

**Elliptical:** The shape of an egg which is widest in the middle and rounded at both ends.

**Embryo:** An animal or plant that is in its first stage of development and is usually still contained within the seed, egg, or uterus.

**Endangered Species:** The entire population of organisms (plant or animal) that face extinction due to a steady reduction of their numbers. This may be the outcome of environmental changes, loss of habitat or predation.

**Endoparasite:** This type of organism or parasite (such as tapeworm) exists and feeds inside the bloodstream or tissue of its host.

**Endothermic:** The ability of an organism to constantly maintain its body temperature, usually keeping itself warm, irrespective of the external conditions.

**Endothermy:** The ability of an organism to maintain its body temperature, by generating heat metabolically.

**Estivation:** Similar to hibernation, it is a period of inactivity that the animal goes into, during a dry hot season.

**Eyeshine:** The phenomenon when light is shone into the eye of certain animals and birds, the pupil seems to glow. This effect is created by the layer of tissue called tapetum lucidum that lies immediately behind the retina.

## F

**Facial Shield:** Some birds, such as the Eurasian coot, have a hard plate on their forehead called a facial shield, which serve as a display ornament.

**Fallout:** Refers to those birds that need to land while migrating, in areas they would not normally inhabit, due to harsh weather.

**Family:** It is a term of classification of living things, in which this group falls below an order. It is further divided into one or more genera. The ranks start with life, followed by domain, kingdom, phylum, class, order, family, genus and species.

**Fang:** Fangs are long, pointed teeth located in the front of the mouth. In mammals, these fangs are called canine teeth and are used for tearing flesh. In snakes, they are used to inject venom into the victim.

**Fauna:** All the animal life that exists in a particular area during a specific period of time.

**Feces:** Indigestible waste products expelled from an organisms digestive tract. Usually referred to as stool.

**Fecundity:** In a general sense, it refers to an organisms ability to reproduce. In biology, it refers to a females potential capacity to reproduce, based on the number of gametes (eggs), seed set or asexual propagules.

**Femur:** In vertebrates having four limbs the femur is the upper bone of the hind limb. In insects, it is the third segment in the leg.

**Feral:** It is a term used to refer to an animal that has been domesticated, but has escaped and returned to being wild, while still living in its current environment. Cats, Goats and pigs are examples of such animals.

**Fetus:** A fetus is a developing organism, which has moved beyond the embryonic stage, but is yet to be born.

**Filly:** A female horse that is four years or younger in age.

**Filter Feeder:** Organisms that feed by sieving water for food particles, with the help of special filtering structures in their mouths. Clams, sponges, krill and baleen whales use this method.

**Fitness:** The measure of an individual's genetic contribution to the next generation's gene pool.

**Fledge:** It is that stage in a young bird's life, when the feathers and wing muscles are developed and the bird is capable of flight. Alternately, it is also used to describe the act of raising chicks to a fully grown state by the parents.

**Fledgling:** Is a young bird that has recently fledged, but is still being fed and cared for by the parents.

**Flight Feathers:** Describes the stiff, large feathers of the tail and wings of a bird that are essential for flight.

**Foal:** A male or female horse that is up to six months old.

**Food Chain:** The food chain is the transfer of life-giving energy from one organism to another, which is compatible to receive the same form of energy that was passed on, when the organism perished. Read more on the desert food chain.

**Food Web:** A food web comprises a set of interconnected food chains which exist within an ecosystem.

**Founder Effect:** In terms of describing the genetic outcome of a new population being established by a very small number of individuals, from a larger population. The founder effect refers to the loss of genetic variation.

**Frugivorous:** Fruit-eating. A frugivore is any organism whose preferred food type is fruits.

**Functional Response:** The relationship between prey and predator, or deviation in the rate of exploitation of prey by an individual predator due to change in prey density.

## G

**Gamma Diversity:** This term refers to the measure of biodiversity, which means the total species richness within an area.

**Gaping:** The open width of space, created by forcefully opening the jaws or mandibles of a vertebrate.

**Gelding:** A male horse that has been spayed.

**Generalist:** Any organism that can survive in wide-ranging habitat.

**Gharial:** An Asian crocodile with a very narrow jaw.

**Gill:** The respiratory organ of any aquatic animal. Its basic function is to help the animal breathe the oxygen dissolved in water.

**Gill Arches:** Cartilaginous arches located on each side of the pharynx to provide support to the gills of aquatic as well amphibian animals.

**Gill Slits:** A narrow external opening connected with the pharynx, to allow passage of water, which helps in cleaning the gills.

**Gizzard:** A chamber found in the lower stomach of animals that facilitates food grinding.

**Gonads:** The testes or ovaries (sex glands) found in the animal reproductive organ.

**Gorget:** A small patch on the throat of an organism which is distinguished by its color, texture and thickness quality.

**Guano:** Large deposits of substances composed chiefly of the feces of birds or bats.

**Gular Fluttering:** A cooling mechanism adopted by birds, in which they flap their flap membranes rapidly in the throat to increase evaporation.

**Gular Pouch:** A bare sac or pouch that can be expanded to accommodate a large prey, or for the show off during courtship display.

## H

**Habitat Compression:** When local population is forced or restricted within a set boundary, to accommodate more species.

**Habitat Expansion:** Increase in the habitat (overall area) distribution of the species.

**Habitat Patch:** A location that encompasses a distinct habitat type.

**Habitat Selection:** Habitats chosen over other habitats to suit climatic and environmental conditions.

**Hacking:** Part of the wildlife conservation rehabilitation program, where the animals or birds released in the wild for the first time, are periodically provided with food until they become independent.

**Hatchling:** A young one that has just been hatched from an egg.

**Heat Sensitive Pit:** An organ located on each side of the head, below a line from the eye to the nostril of some snakes, especially the vipers. It helps the snake detect their prey.

**Herbaceous:** Stems and branches that are soft, and not hard and woody.

**Herbivore:** Plant eating organisms.

**Hermaphroditic:** Organism that have, as well as are capable of reproducing using both male and female reproductive organs.

**Hibernation:** To withdraw in a state of seclusion in a dormant condition. Most animals like the bear, prefer the winters to go in hibernation.

**Histology:** The study of tissues of organisms. It includes its structure, arrangement, functions, make up, etc.

**Holotype:** A single specimen used as standard type to name, describe and illustrate, and represent a set of species and subspecies.

**Home Range:** The habitat that an animal normally lives and uses for daily activities.

**Homeostasis:** The process of maintaining internal stability of the physiological system of animals, in course of varying external conditions.

**Homeothermy:** The capacity to maintain the condition of being warm-blooded under all climatic situations.

**Humus:** Fine organic substance, composed of partial or full decomposed animal or plant matter, and found in soil.

**Hyoid Apparatus:** A veterinary anatomy term for the upper throat bones of the tongue and connective tissues.

**Hypostracum:** The shell located below all other shell layers in some mollusks.

## I

**Ichthyology:** A branch of zoology dedicated to the systematic study of fishes.

**Imago:** Sexually mature adult stage in the life of certain insects.

**Immature:** A young animal or bird, capable of feeding itself, but has yet not reached the stage of sexual maturity.

**Imprinting:** It is a process of phase sensitive learning, where the young animals follow the first moving thing they see.

**Incubation Patch:** The featherless patch developed on the abdomen of certain brooding birds, that becomes thick due to high levels of vascularity. This patch comes under direct contact with the eggs during incubation period.

**Insectivore:** An organism that feeds chiefly on insects.

**Interstitial Skin:** The skin found between the scales of a snake.

**Introduced Species:** Organism that would not normally occur but have been introduced in the habitat.

**Invertebrate:** Pertaining to organisms without a backbone.

**Isolating Mechanism:** Prevention of breeding between species due to behavior, morphology, genetics or a geographical barrier.

## J

**Juvenal:** Refers to the first covering of feathers on a bird, after it loses its down (undersurface) feathers.

**Juvenile:** This term refers to a young bird in the stage when it has fledged, or young ones of the animals that have not yet reached its adult form, size and sexual maturity.

## K

**Keratin:** A hard insoluble protein substance found in hair, nails of mammals, scales of reptiles and bird feathers. This substance is responsible for the structure of hair, nails, scales, etc.

**Kleptoparasitism:** A parasitic characteristic of opportunistically stealing food and/or nests from other organisms.

## L

**Labial:** Labial refers to the lips.

**Lanceolate:** An elongated shape that is slender and tapers towards the apex or base.

**Larva:** A premature form of animal or insect awaiting transformation to reach adulthood.

**Last Common Ancestor:** This term refers to the most recent known and shared common ancestor between two species, as well as individuals.

**Lateral:** Refers to the side location or view.

**Lek:** The courtship display for mating of certain animals, where males gather around the females for being selected for copulation.

**Life Cycle:** Phases of life that animals go through starting from birth, to sexual maturity, till death.

**Lift:** The airfoil (see airfoil) that controls the movement of the birds when in flight, as well as the force with which the birds fly is termed as lift.

**Live Bearing:** Animals that bear live young ones, rather than laying eggs

**Loafing Platform:** A nest like structure built by few birds that can float on water. These birds keep their young ones in them to keep them out of water and afloat.

**Lores:** The space between the eye and the bill of a bird, or the eyes and tip of the mouth of any animal.

**Lung:** An internal sac like chamber that forms the respiratory organ in animals.

## M

**Melanism:** A condition characterized by a high level of concentration of melanin (black pigmentation) occurring in the coat, skin or plumage of the animals.

**Mendelian Trait:** Transmission of hereditary traits from parent organisms to their offspring, the trait mainly emphasizes on a single locus.

**Mammalia:** Mammalia is a group of animals known as the vertebrates (have backbones) and belong to the Class Mammalia.

**Mandible:** The lower jaw of a vertebrate animal, or the upper or lower part of the beak (bill) in birds.

**Mantle:** Single or paired set of feathers located on the mid-back of a bird, or an outgrowth that lines the inner surface of the valves of the shell.

**Mare:** Mare is a female horse that has attained the age of more than four years.

**Maxilla:** A paired appendage usually located behind the mandibles of arthropods.

**Medusa:** The sexual stage in the life cycle of a coelenterate, such as a jellyfish or a hydra, in which it is free-swimming.

**Meiosis:** It is the process of nuclear division in a cell, in which the total number of chromosomes is reduced to half. Meiosis results in the formation of gametes in animals and spores in other organisms. Before the process begins the DNA in the original cell are replicated during a phase called S-phase and this is similar to that in mitosis. Once the replication is completed, two cell divisions separate the replicated chromosomes into four haploid gametes or spores.

**Metamorphosis:** It is the process of marked change in the appearance and habits of some animals, as part of their normal development. Metamorphosis of a caterpillar into a butterfly is one such example.

**Migration:** The annual movement pattern of animals and birds between their breeding grounds and hibernating sites.

**Migratory Overshooting:** The phenomenon of traveling beyond the normal distance in migratory birds as well as animals, while being on correct migration travel route.

**Mirror-Image Orientation:** During migration, birds tend to reverse the orientation of their migratory route in opposite (mirror like image) directions.

**Mobbing:** An aggressive stand taken by some birds to ward off an intruder or predator from the area.

**Molt Migration:** Molt migration involves movement of birds from their breeding ground to a temporary location where they shed their feathers, plumage, skin, etc.

**Molt:** Molt is a process where birds and animals shed their hair, plumage, feathers, skin, horns, etc, to facilitate the growth of new ones.

**Morphology:** The study of form and structure of organisms.

**Mouthparts:** An appendage found close to the mouth of some animals, birds and insects, which they use for all eating functions.

**Muscle:** Tissues that facilitate movement in animals.

**Mysticetes:** Whales of the suborder Mysticeti, like Right whales, finback, gray whale, humpback whales, orquals, etc.

## N

**Naricorns:** The raised, tough, horny nostrils found atop the bird bill.

**Nectivorous:** Animals, birds or insects that rely on nectar as a source of food.

**Nematocyst:** This refers to tiny hairlike structures in coelenterates which is used by them to eject stingers.

**Neonate:** The phenomenon of producing live young ones instead of laying eggs.

**Nephridium:** A tube like excretory organ of many invertebrates such as mollusks and earthworms.

**Nest Parasitism:** The process of laying eggs in nest of other or own species. (Not making one)

**Nidicolous:** The time spent in the nest after its hatched.

**Nidifugous:** The phenomenon of leaving the nest within a few days of hatching.

## O

**Obligate:** Is an adjective that means "necessary" when used in biology. Also, exhibited by all members of a species without exception.

**Odontocetes:** Used while referring to any whale of the suborder Odontoceti, such as killer whales, dolphins and sperm whales. They are characterized by a single blowhole, an asymmetrical skull and rows of teeth. They feed primarily on squid, fish and crustaceans.

**Oscines:** Members of the suborder Oscines, of the order Passeriformes. They comprise songbirds that have highly developed vocal organs.

**Osteichthyes:** Are a taxonomic group of fish that includes the lobe-finned fish (Sarcopterygii) and ray-finned fish (Actinopterygii). They are also referred to as bony fish.

**Ostracum:** The calcified portion of an invertebrate's shell. While the organism is living, the ostracum is covered by layers of protein forming a periostracum.

## P

**Partial Molt:** Partial molt is a process where some of the bird's feather get replaced.

**Passerine:** Pertaining to the order Passeriformes (type of a bird).

**Patagium:** A thin membrane that extends between the body and the limb to form wings. It is basically the extensible fold of skin found in certain insects, reptiles and birds.

**Peep:** A generic name for several sandpiper species.

**Pelagic:** Organism that live and thrive in open oceans or seas rather than waters adjacent to land.

**Pellet:** A mass of regurgitate indigestible matter like fur, feathers and bones of certain predatory birds like the hawk, owl, etc.

**Pentaradial Symmetry:** The balanced distribution of duplicate body parts or shapes (sensory and feeding structures) in a five fold circular pattern, i.e body parts arranged in fives or multiples of 5, in a symmetry in organisms.

**Periostracum:** The external, outermost covering of the shell of some mollusks. It helps to protect the slender slimy inner portions as well as provide the shell with color.

**Pineal Eye:** A developed third eye in certain cold-blooded vertebrates which helps to regulate body temperature and register light intensity.

**Plankton:** Microscopic organisms like algae and protozoa that drift on the oceans' currents.

**Plastron:** The ventral surface of the shell of a tortoise or a turtle.

**Predator:** Organism that feed off or prey on other organisms for survival.

**Preen Gland:** It refers to the gland found on the back, at the base of the tail in most birds. This gland secretes oil that the birds use for preening which is part of its feather care activities.

**Proboscis:** An elongated mouth organ which is an important feeding appendage in organisms.

**Pulmonate:** Land Snails and other air breathers belonging to Pulmonata Subclass and Sorbeconcha Clade.

## R

**Radiation:** Evolution of multiple species from a single ancestry, but these species have morphological differences, however, they coexist in the same habitat or spread to different habitats or they have a change of ecological role.

**Radula:** A rough and raspy tongue normally seen in mollusks, used to grate food.

**Range:** A particular geographical area in which particular species of organisms are found.

**Rare:** A species of an organism found in very small numbers and hence, visible with lot a of effort only for a short duration.

**Rattle:** Shed skin, which is often seen on tail of a rattlesnake, used to make a rattling sound in order to deter predators.

**Rectrices:** The stiff and main feather of a bird that is used to navigate, when the bird is in flight.

**Remiges:** Flight feather of a bird used to control direction during flying, their function is similar to that of the rectrices to a certain extent.

**Reptilia:** Reptiles or vertebrates, who possess a dry scaly skin and reproduce amniotic eggs. Snakes, lizards and alligators belong to this category.

**Resident:** A non-migratory species of birds, which stays in a given geographical area throughout its life.

**Reticulated:** Species whose veins or nerves are like threads of a net, arranged in a network.

**Reverse Migration:** Phenomenon wherein the migrating organism migrates in the opposite direction, normal to other migrating species.

**Rictal Bristles:** A stiff bristle like feather, which grows at the base of a bird's bill.

**River Dolphins:** A species of dolphins, which dwell in major rivers like the Amazon in Brazil, Yangste in China and the Ganges in India.

**Rostral Scale:** Is a scale present on the tip of the upper jaw of a snout, usually seen in snakes.

**Rostrum:** An anatomical structure, present in a species in the form of a snout, which projects out from the head of the animal.

**Rounded:** Smallest size elliptical, spherical egg.

## S



**Salamander:** Any tailed amphibian that has soft, scaleless skin with a long body and tail and short limbs.

**Saw-Scaling:** Action of a snake curving its body in concentric curves and rasping its keeled scales together to make a sawing sound as a warning.

**Scale:** A thin plate that forms the covering of certain animals. This covering can either be hard or soft depending upon the morphology of the organism.

**Scape:** A tiny stem like first segment in an insect's antennae, as the shaft of a feather.

**Scrape Nest:** Unlike normal nest, a shallow depression is made by some ground birds as a nest. This nest has no soft lining.

**Scute:** A large well-defined dermal bony plate or horny plate found on many reptiles.

**Secondary:** It refers to the set of flight feathers on the second segment of a bird's wing.

**Sedentary:** Organism that are nonmigratory in nature, which means they move about little or not at all from their habitats.

**Semi-Precocial:** This term refers to hatchlings that are capable of leaving the nest but are dependent on their parents for their feed.

**Semiplumes:** Semiplumes are a type of feathers that are found under the contour feather on a bird's body. They are responsible for providing insulation as well as some flexibility to the bird.

**Shaft:** The main stiff stem or midrib of a bird's feather.

**Shell:** A hard outer covering of an organism made up of carapace and plastron.

**Shorebirds:** Birds that prefer the coastal area as their habitat.

**Songbird:** A generic name given to the members of the order Passeriformes.

**Spy Hopping:** A vertical rise out of the water or tall grasses performed by certain cetaceans or land mammals respectively.

**Stallion:** A male horse which is more than four years old.

**Stoop:** To swoop down while in flight for catching a prey.

**Strandings:** Aquatic mammals that get stranded on the beaches or shores.

**Stary:** An individual animal that has been left alone or has parted ways with others of its flock during movement or migration.

**Subelliptical:** An egg that is elongated and tapered towards its rounded ends.

**Supplemental Plumage:** A third set of feathers found in birds that have three different plumages in their annual cycle of molts. See molts.

## T

**Tentacle:** The slender, elongated, flexible, appendages found in animals, located near their mouth.

**Taiga:** Coniferous evergreen forests found in the south of the tundra and north temperate region, characterized by harsh winters.

**Tail Slapping:** The forceful slapping of tails on the surface of water by dolphins.

**Tarsus:** The bone, which contributes in making the ankle joint, located between the tibia, fibula and metatarsus in mammals.

**Taxon:** A word used to group or name species of living organisms.

**Taxonomic Classification:** The hierarchical system used for grouping and naming species of living organisms.

**Taxonomy:** A practice used to classify animals with evolutionary relationships, as basis of this classification.

**Territory:** The area of belonging, which is guarded by animals against intruders, especially belonging to the same species.

**Thorax:** The part of the body in mammals situated between the neck and the abdomen, just above the diaphragm. In case of insects the part situated between the head and the abdomen, excluding the legs and wings.

**Threatened Species:** A species which has the possibility of becoming endangered in the near future.

**Torsion:** The asymmetrical positioning of the body achieved, due to twisting and repositioning, during development.

**Trachea:** The pipe serving as the principal passage for movement of air to and from the lungs, in humans and other vertebrates. It extends from the larynx to the bronchus.

**Triangulation:** The method used by animals to find out the distance between themselves and their prey using two or more fixed points. This technique is used especially by owls and harriers.

**Tribe:** A category in the classification of organisms between a genus, which contains one or more genera.

**Tubenoses:** Vernacular name for members belonging to Procellariiformes species.

**Tuberculate:** An organism or part of an organism which is covered in fleshy and raised protuberances, also called tubercles.

**Turtle:** A reptile belonging to the Testudines species, which include both terrestrial and aquatic animals. The trunk of these species is enclosed in a shell.

**Tympanic Membrane:** It is the membrane which picks up vibrations through a medium and transports them to the inner part of the ear. It is also called the 'eardrum'.

**Type Specimen:** An organism which is used to represent a particular taxon. It becomes the standard for the original name and to describe the species.

## U

**Urohydrolysis:** A cooling mechanism practiced by some birds, in which they release feces or urine onto the scaly portions of their legs.

**Uropygial Gland:** See Preen Gland.

## V

**Vagrant:** An individual organism found outside the region that is known for that particular species.

**Vane:** This term refers to that portion of the feather which is made of flat parallel rows of barbs and is attached to the center stiff part of the feather.

**Ventral Scale:** Scales found on the underside of the snake's body.

**Ventral:** Refers to the stomach or belly.

**Vestigial:** The part of an animal that does not develop during evolution, and is underdeveloped and serves no important function.

**Viscers:** The organs located in the cavities of the organism body.

**Vocal Sac:** The flexible membrane of the skin found in male frogs and toads that inflates and acts as amplifier for their mating calls.

## W

**Warning Coloration:** Distinctive bold color patterns found on certain organisms, that works as a warning to predators.

**Watch List:** A cooperative project of the National Audubon Society and Partners in Flight that keeps track of declining species that are not yet threatened or endangered.

**Water Vascular System:** A system of fluid filled tubes and ducts, that connect with the tube feet of most marine invertebrates. They help in functions of respiration, feeding, etc.

**Wattle:** A soft fleshy brightly colored appendage that hangs down from the throat or chin of certain birds.

**Weaning:** The period where the mother ceases to feed the young ones. This only refers to mammals.

**Weanling:** A male or female horse that is between the ages of six months to one year.

**Wing-Bar:** A line of color, usually contrasting across the middle, tip, or base of a bird's wing, which has been made by the wing coverts.

**Wing-Flicking:** Rapid movement made by the bird's wings when it is not in flight and is at rest.

## X

**Xenophobic Alliance:** A union of individual chimpanzees in a group, which challenges intruders who threaten their territory and boundaries.

**Xeric:** A habitat which has an extremely dry environment. It also refers to animals who have adapted themselves to such an environment.

**Xerophyte:** A plant which has adapted itself to a dry environment and is able to conserve water.

**Xylophagous:** Organisms that feed entirely or primarily on wood.

## Y

**Yearling:** This term is used to describe both a male and female horse between the age of one and two years.

**Yolk:** Food that is stored in an egg.

## Z

**Zooid:** An organism which is capable of existing separately. A number of zooid together function like a single animal, example coral.

**Zooplankton:** A collection of various species of plankton.

**Zooxanthellae:** Unicellular, yellow-brown in color algae, which live in the gastrodermis of corals.

**Zygodactyly:** This is the arrangement of toes formed in birds, in which the outer front toe faces the back, resulting in two toes facing forward and two backward.