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Editorial

A Note on Zoology

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Definition of zoology

Zoology is one of the branches of biology, and it specializes in studying the characteristics of animals, their behavior, structure, and their life in general, at the individual and group levels this includes studying the relationship of animals with each other and their interaction with the environmental elements surrounding them whether living or non-living.

What is the goal of zoology?

The study of zoology focuses on all types of animals both large and small. Where zoology investigates its biology the how and why of its environment in addition to ways to maintain their lives along side humans.

Focus the study of zoology on all types of animals whether large or small zoology investigates their biology the how and why behind their environments as well as ways to maintain their lives alongside humans. By studying zoology you gain an understanding of the natural world and how we can help conserve it. It also provides an opportunity to consider ways to address global challenges such as climate change and food security and try to find solutions to help animals and humans alike.

But why is this important?

Zoology studies the impact of environmental factors on different animals and their habitats and develops an appreciation not only for nature but also for the importance of animals and their environments in supporting nature as we know it by learning about animals at the micro level we become better prepared to consider the broader picture By doing so it is possible to identify threats both man-made and natural which occur in a variety of forms and challenge it The more we learn about the factors impacts and treatments the better we will become at protecting animals in the face of changing landscapes

History of zoology

For prehistoric humans, animals were only a source of food and danger with cultural development over time humans began to tame animals which prompted them to monitor their lives and behaviors so that they could benefit from their products in the best ways from here zoology arose which has undergone many developments over time.

Branches of zoology

- **Morphology:** It is the science that studies the external appearance of animals
- **Anatomy:** It is the science that studies the internal structure of animals
- **Taxonomy:** It is the science that studies the division of animals into groups they share common characteristics
- **Cytology:** It is the science that studies the animal cell, its properties and structure and its functions.
- **Histology:** It is the science that studies various animal tissues and their structure its characteristics and function.
- **Physiology:** is the science that studies the functions of animal organs and systems.

- **Embryology:** It is the science that studies embryonic growth, its stages, and development until the emergence of the fetus from the egg or from the uterus.
- **Ecology:** It is the science that studies the environment and various environmental factors and their relationship with living organisms.
- **Invertebrates:** It is the science that studies invertebrate animals and their characteristics its installation and classification
- **Protozoology:** It is the science that studies unilateral elementary organisms the cell.
- **Helminthology:** It is the science that studies worms from all aspects
- Comparative anatomy: It is the science that studies structure the internal structure of vertebrates, a comparative study
- **Entomology:** It is the science that studies insects, their characteristics and structure its functions and classification
- **Parasitology:** It is the science that studies parasites, their characteristics and composition and its classification
- **Microbiology:** It is the science that studies microscopic organisms
- Unicellular in all respects
- **Pollution:** It is the science that studies the contamination of environmental environments with various pollutants and means of controlling it
- **Genetics:** It is the science that studies the transmission of genetic factors from parents to others the son
- **Epidemiology:** It is the science that studies transmissible diseases and their causes its symptoms, prevention and treatment

Manifestations of life

Every living being has certain features that indicate it and distinguish it from inanimate objects, including:

- **Movement and transportation:** Living organisms in general and animals in particular have the ability to Movement whether local or translational, and the animal is capable of both types of movement, and this movement both types are necessary for the continuity of animal functions and activities.
- **Nutrition:** It is one of the important characteristics of a living organism and the animal feeds depending on unlike other creatures, it depends on plants and other animals and cannot make its own food

By itself, nutrition in animals is of the Holozoic type, meaning dependence on others, and it may be in a way Predation or parasitism. Predation

- **Sensation:** The animal has a developed nervous system to which a group of Sensory organs are located especially in the skin, and through them an animal can sense Environmental factors and stimuli: It senses changes in temperature, light, and physical factors Chemical, environmental, and the presence of other animals and enemies, through which it can search for food and a place Security
- **Respiration:** The animal breathes by taking in oxygen and excreting carbon dioxide through specialized respiratory organs such as the lungs and bronchi in higher animals or through Skin, gills, etc., in less advanced animals. Respiration is a source of oxidation of substances Food and the release of energy, kinetic and thermal, necessary for animal life.

Growth - growth and reproduction: Growth is the increase in weight and size of an organism without growth, the animal cannot complete its life cycle and reach maturity and form stages and reproductive stages, such as eggs and gametes, which ensure the survival and continuity of the animal.

Reproduction is the increase in the number of individuals and occurs through cell divisions in the reproductive organs Ovary and testicle. Growth comes from cell division and there are two types of.

Cell division is two 1-Normal divisions - 2 Meiosis

Normal division is also of two types:

- Direct (non-filamentous) division: This is a direct and rapid division that occurs in bacteria and algae - Blue green is a natural division in these organisms that are prokaryotic (non-eukaryotic).

Where there is a direct reduction of nuclear material and cytoplasm.

Mitosis: It occurs in eukaryotic organisms. Eukaryotes occur in five stages:

- Interphase stage
- Prophase s.
- metaphase s
- Anaphase s.
- telophase s.

Secretion

The animal secretes various substances such as mucus and sweat and fatty, enzymes and hormones through special glands, which are of two types: secretory glands External (such as mucous, sweat, sebaceous, and enzymes) and internal secretory glands or glands endocrine g. Such as the thyroid gland and others, which secrete hormones.

They are all involved in animal functions.

Excretion

Excretion is the expulsion of harmful wastes out of the animal's body.

Animals have specialized excretory organs, as worms have flame cells and higher animals it has advanced systems such as the urinary system in humans and mammals. Skin is involved in invertebrates by excreting waste in addition to the excretory system.

Symmetry

It is one of the characteristics of animals and means symmetry in the distribution of organs it is of two types

- Radial symmetry in it more than one axis can pass through the animal and divide it into.
- Similar parts, as in many invertebrates, and usually occurs in less advanced and developed animals in the sponge.

Lateral symmetry

In it one segment can pass through and divide the animal into two parts Similar, as in humans, mammals, and other vertebrate and invertebrate organisms. And symmetry occurs.

Laterality is common in more evolved organisms. There are objects that have no symmetry that is they are devoid of symmetry

- **Asymmetry:** It has a variable shape as in amoeba.
- **General Zoology:** It is the science that studies the structure of the animal body its functions and animal groups.

Different types, their characteristics and classification.

This science includes another group of sub-specialized life sciences. The animal's body is made up from a group of cells, tissues, organs and systems.

- **Animal cell:** It is the structural and functional unit in the animal body, and it varies.

Cells in shape, size, structure and function

- **Tissue:** It is a group of cells that come together to perform one or more functions.
- **Organ:** It is a group of tissues that come together to perform one or more functions.
- **System:** It is a group of organs that come together to perform one or more functions Ultimately, animal science can teach you how to make a difference from writing articles to working in laboratories and even field work.