**Zoology**

**Biology** is a branch of science that deals with living organisms and their vital processes. Biology encompasses diverse fields, including botany, ecology, evolution, genetics, medicine, microbiology, molecular biology, physiology, and zoology.

**Zoology** or animal biology:  is derived from two Greek words: **Zoon** means (**animal)** and **Logos** means **(to study)**, Zoology is a branch of [biology](https://en.wikipedia.org/wiki/Biology) that studies the animal kingdom, including the [structure](https://en.wikipedia.org/wiki/Anatomy), [embryology](https://en.wikipedia.org/wiki/Embryology), [evolution](https://en.wikipedia.org/wiki/Evolution), [classification](https://en.wikipedia.org/wiki/Biological_classification), [habits](https://en.wikipedia.org/wiki/Ethology), and distribution of all [animals](https://en.wikipedia.org/wiki/Animal), both living and [extinct](https://en.wikipedia.org/wiki/Extinction), and how they interact with their ecosystems.

**Zoologists aim to understand:**

* 1. The origin of animal diversity.
  2. How animals perform basic life processes.
  3. How they are able to inhabit various ecosystems.

**Branches of Zoology**

Zoology is very broad field; therefore, it was divided into branches, which are:

* **Morphology**:- Study of external structures of living organisms.
* **Anatomy:**- Study of the structure of entire organisms and their parts.
* **Physiology**:- Study of the function of organisms and their parts.
* **Cytology**:- Study of structures & functions of the cell.
* **Histology**:- Study of tissues.
* **Genetics**:- Study of transmission of characters from one generation to the next generation.
* **Ecology**:- Study of inter-relationship between living organisms and its environment.
* **Embryology**:- the study of the formation and development of an embryo and fetus.
* **Parasitology:-**  the study of parasites, their hosts, and the relationship between them.

**Zoology as a part of biology**

Animals form a distinct branch on the evolutionary tree of life. It is a large and old branch that originated over 600 million years ago. Animals form part of an even larger limb known as eukaryotes, organisms whose cells contain membrane-enclosed nuclei. This larger limb includes plants, fungi and numerous unicellular forms. Perhaps the most distinctive characteristic of the animals as a group is their means of nutrition, which consists of eating other organisms.

Animals are distinguished also by the absence of characteristics that have evolved in other eukaryotes. **Plants**, for example, use light energy to produce organic compounds (photosynthesis), and they have evolved rigid cell walls that surround their cell membranes; photosynthesis and cell walls are absent from animals. **Fungi** acquire nutrition by absorption of small organic molecules from their environments, and their body plan contains tubular filaments called hyphae; these structures are absent from the animal kingdom.

Some organisms combine properties of animals and plants. For example, **Euglena** is a eukaryotic unicellular organism; it contains the major organelles found in more complex life. This protist is both an autotroph, meaning it can carry out photosynthesis and make its own food like plants, as well as a heteroptoph, meaning it can also capture and ingest its food.

When acting as an autotroph, the Euglena utilizes its chloroplasts (which gives it the green colour) to produce sugars by photosynthesis, when acting as a heterotroph, the Euglena surrounds the particle of food and consumes it by phagocytosis, or in other words, engulfing the food through its cell membrane.

