Lesson N°01

Introduction to the Universal History of Biological Sciences

1. Introduction

The first step in developing a history of the biological sciences is to broaden our knowledge of the origins of science and biology.

1.1 Science : derived from the Latin word *scientia*, meaning "**knowledge**", science is a whole set of systematic methods for acquiring knowledge, as well as a way of approaching and understanding the world around us, three types of science can be distinguished [**1**] :

A. The exact sciences, include mathematics and mathematical sciences such as theoretical physics;

B. Physico-chemical and experimental sciences (natural and material sciences, biology, medicine);

C. The human sciences, which concern human beings, their history, behavior, language, social aspects, psychology and politics.

1.2 The history of science: is a discipline that focuses on the gradual transformation of certain speculations and the accumulation of acquired knowledge. The history of science is closely related to the history of societies and civilizations. Initially confused with philosophical investigation in antiquity, then with religious investigation from the Middle Ages to the Age of Enlightenment, the history of science is complex. The history of science and the sciences can be divided into two main themes, each with its own branches [**2**] :

- The history of scientific discoveries on the one hand,
- The history of scientific thinking

1.3 Biology : is composed of two Greek words, "***bios***", meaning "**life**", and "***logos***", meaning "**study**", so biology is the science of life, which is concerned with the study of living things; animals and plants. This definition is simple and clear, but it covers a fascinating and diverse world, including the composition of living organisms, how they function, their evolution and the continuation of this development. All the information, hypotheses and theories presented in your manual are the fruit of the work of innumerable scientists who ask questions, collect data, propose, test and refine hypotheses, and formulate theories [**3**]. The modern meaning of the term "biology" was introduced [**3**] :

- In **1766** by **Michael Christoph Hanou**, in his work entitled "*Philosophiae naturalis sive physicae dogmaticae: Geologia, biologia, phytologia generalis et dendrologia*".
- In **1797** by **Theodor Georg August Roose**
- In **1800** by **Karl Friedrich Burdach**
- In **1802** by **Gottfried Reinhold Treviranus**, in *"Biologie oder Philosophie der lebenden Natur*".
- In **1802**, the French researcher **Jean-Baptiste Lamarck** (Research on the organization of living bodies) gave the following definition :

"Everything that is generally common to plants and animals, like all the faculties that are proper to each of these beings without exception, must constitute the unique and vast object of a particular science that is not yet founded, that does not even have a name, and to which I will give the name of biology."

2. First inventions : Without beaks, claws or sharp pointed fangs to survive in the natural world, prehistoric man invented tools made of stone, wood or bone, which he perfected over hundreds of thousands of years. They also took their time taming fire. They made this discovery around 700,000 years ago [**4**].

3. Key word definitions

Ontogeny : study of the individual development of a species.

Palaeography : knowledge, science of ancient writings.

Phylogeny : history of living species in geological time.

Paleolithic period : the first period of prehistory characterized by the use of stone and hunting.

Neolithic period : the last period of prehistory, corresponding to the polishing and cutting of stone and the beginning of agriculture (5000-2500 AV.J.C).