

Ernst Haeckel's Tree of Life (1879)

The term *biology* is derived from the Greek word β ioç, *bios*, "life" and the suffix - λ oyía, -*logia*, "study of."^{[4][5]} The Latin-language form of the term first appeared in 1736 when Swedish scientist Carl Linnaeus (Carl von Linné) used *biologi* in his *Bibliotheca botanica*. It was used again in 1766 in a work entitled *Philosophiae naturalis sive physicae: tomus III, continens geologian, biologian, phytologian generalis*, by Michael Christoph Hanov, a disciple of Christian Wolff. The first German use, *Biologie*, was in a 1771 translation of Linnaeus' work. In 1797, Theodor Georg August Roose used the term in the preface of a book, *Grundzüge der Lehre van der Lebenskraft*. Karl Friedrich

Burdach used the term in 1800 in a more restricted sense of the study of human beings from a morphological, physiological and psychological perspective (*Propädeutik zum Studien der gesammten Heilkunst*). The term came into its modern usage with the six-volume treatise *Biologie, oder Philosophie der lebenden Natur*(1802–22) by Gottfried Reinhold Treviranus, who announced:^[6]

The objects of our research will be the different forms and manifestations of life, the conditions and laws under which these phenomena occur, and the causes through which they have been effected. The science that concerns itself with these objects we will indicate by the name biology [Biologie] or the doctrine of life [Lebenslehre].

Although modern biology is a relatively recent development, sciences related to and included within it have been studied since ancient times. Natural philosophy was studied as early as the ancient civilizations of Mesopotamia, Egypt, the Indian subcontinent, and China. However, the origins of modern biology and its approach to the study of nature are most often traced back to ancient Greece.^{[7][8]} While the formal study of medicine dates back to Hippocrates (ca. 460– 370 BC), it was Aristotle(384–322 BC) who contributed most extensively to the development of biology. Especially important are his *History of Animals*and other works where he showed naturalist leanings, and later more empirical works that focused on biological causation and the diversity of life. Aristotle's successor at the Lyceum, Theophrastus, wrote a series of books on botany that survived as the most important contribution of antiquity to the plant sciences, even into the Middle Ages.^[9]

Scholars of the medieval Islamic world who wrote on biology included al-Jahiz (781-169), Al-Dīnawarī (828–896), who wrote on botany,^[10] and Rhazes (865–925) who yrote on anatomy and physiology. Medicine was especially well studied by Islamic scholars working in Greek philosopher traditions, while natural history drew how work on Aristotelian thought, especially in upholding a fixed hierarchy of life

Biology began to quickly develop on three with Anton vary see wenhoek's dramatic improvement of the microscope. Was then that schok rs discovered spermar 2 de bacteria, infusoria and the diversity of microscopic life. Investigations by lon Syz mine dam led to new interest of entomology and helped to develop the basic teamiques of microscopic dissection and staining.^[11]

Advances in microscopy also had a profound impact on biological thinking. In the early 19th century, a number of biologists pointed to the central importance of the cell. Then, in 1838, Schleiden and Schwann began promoting the now universal ideas that (1) the basic unit of organisms is the cell and (2) that individual cells have all the characteristics of life, although they opposed the idea that (3) all cells come from the division of other cells. Thanks to the work of Robert Remak and Rudolf Virchow, however, by the 1860s most biologists accepted all three tenets of what came to be known as cell theory.^{[12][13]}

Meanwhile, taxonomy and classification became the focus of natural historians. Carl Linnaeus published a basic taxonomy for the natural world in 1735 (variations of which have been in use ever since), and in the 1750s introduced scientific names for all his species.^[14] Georges-Louis Leclerc, Comte de Buffon, treated species as artificial categories and living forms as malleable—even suggesting the possibility of common descent. Though he was opposed to evolution, Buffon is a key figure in the history of evolutionary thought; his work influenced the evolutionary theories of both Lamarck and Darwin.^[15]

Serious evolutionary thinking originated with the works of Jean-Baptiste Lamarck, who was the first to present a coherent theory of evolution.^[16] He posited that evolution was the result of environmental stress on properties of animals, meaning that the more frequently and rigorously an organ was used, the more complex and efficient it would become, thus adapting the animal to its environment. Lamarck believed that these acquired traits could then be passed on to the animal's offspring, who would further develop and perfect them.^[17] However, it was the British naturalist Charles Darwin, combining the biogeographical approach of Humboldt, the