

Chapter 18 Classification **Enrichment**

Classification by Aristotle and Theophrastus

Long before Carolus Linnaeus made advances in taxonomy, Aristotle and his student Theophrastus undertook the task of classifying plant and animal life. Aristotle was born in 384 BC and Theophrastus, in 327 BC. Aristotle is well known as a thinker and philosopher. He was also a pioneer in the study of zoology, and his conclusions on the subject were accepted until the nineteenth century.

Aristotle traveled extensively to study and to expand his thinking. To learn more about biology, he journeyed to the island of Lesbos. There he joined forces with Theophrastus, a native of the island. They returned to Athens to undertake a pioneering study of plants and animals.

Aristotle’s method of classifying animals and plants was philosophical. He assumed that all natural organisms had natural ends, or goals, and that the structure and development of an organism could be understood only when the organism’s goals were understood. Although this was his guiding principle, Aristotle also made careful observations and wrote detailed descriptions of the structures of organisms.

None of Aristotle’s writings on the topic we now call botany have survived. It is believed, however, that he wrote at least two extensive studies of plants. Some of the writings of Theophrastus have been preserved. These writings allow us to see for ourselves the extensive work in plant science that was accomplished in ancient Greece. In his *Calendar of Flora*, Theophrastus describes the morphology (structures), natural history, and therapeutic uses of plants. He called the external parts of plants *organs*, and the internal parts *tissues*. Because Theophrastus had no overall classification system for plants from which to work, he described over 500 plants in great detail. Until the time of Aristotle and Theophrastus, no scientific terminology existed for structures of plants or animals. Because they had no specific terminology, Theophrastus and Aristotle had to write lengthy descriptions of structures using words that they spoke every day. By giving scientific meaning to these common words, they began the development of scientific nomenclature and became pioneers in the field of modern plant classification and systematic botany.

Evaluation *On the lines provided, answer the following questions.*

1. Why did Theophrastus use common words to describe plant structures? Would it have been useful for him to develop new scientific terms?

2. Modern biology is not based on Aristotle’s assumption that organisms have goals. Do you think his work is still useful to today’s scientists? Explain.

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