

How Plants Are Named

Part 1

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The changing of plant names has accelerated rapidly in recent years. Understanding how plants are named can help explain why. Plant classification began with folk names, also called common names. By the 16th century, Europeans had begun to classify plants and animals by giving them a unique Latin description. In 1735, the publication of the *Systema Naturae* written by Carl Linnaeus marked a milestone in naming plants in a hierarchy. In this and subsequent works, he popularized the use of only two Latin words (binomial nomenclature) to describe them. These two names are the genus and species that are still in use today. Scientists assessed all of the known characteristics (of leaves, flowers, fruits etc.) of a plant, then grouped like with like according to their overall similarities and differences. The branch of science that primarily deals with naming and classifying nomenclature, and classification of organisms in a hierarchy is called taxonomy.



photo: Uppsala University in Uppsala, Sweden

Portrait of Carl Linnaeus

The publication of *The Origin of Species* by Charles Darwin in 1859 introduced the idea that living things evolve over the course of time through natural selection. Darwin convinced scientists that all living organisms were part of a single 'family tree' of life (a phylogeny). Taxonomists began not only to group like with like, but also to classify organisms in a way that reflects their evolutionary relationships, in other words using a phylogenetic classification.

In the 1950s, Willi Hennig pioneered a type of phylogenetic classification plants (and animals) called cladistics. According to cladistics, the higher the proportion of characteristics that two organisms share, the more recently they diverged from a common ancestor. These relationships are frequently represented graphically as a cladogram.

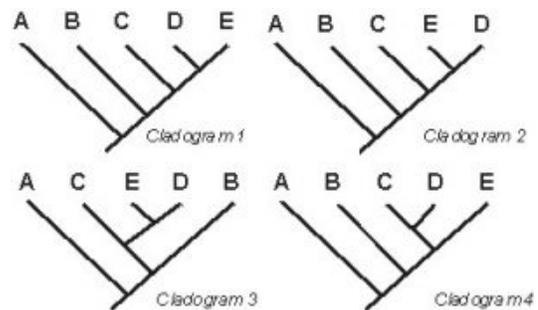


diagram: University of Maryland

Examples of Cladograms

There are several main reasons why taxonomists from time to time need, or choose, to change the name of a plant. A plant named by one botanist could have been already named by another. The naming of plants is covered by a set of rules — the International Code of Botanical Nomenclature (ICBN — which sets out how to correctly name plants and how to resolve cases where two or more names have been used for one species. In this case, the Code states that the plant will be given the earlier name.

Plant names can change based on new knowledge. Starting in the 20th century, scientists gained new information about plant deoxyribonucleic acid (DNA), and new ways to analyze their findings especially by using computers. Part two will explore these extraordinary new tests and their impact on how we now name plants.

References

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