

PhyloCode: A New System of Nomenclature

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Subcommittee**

A new code for naming organisms by explicit reference to phylogeny (ancestry and descent),¹ rather than on the basis of the Linnaean hierarchy of taxonomic categories (species, genus, family, and so on), has been proposed and is now under review.

Proponents of the PhyloCode, a formal set of nomenclature rules, posit that because species and clades (a term defined by the PhyloCode as “group[s] of species comprising a common ancestor and all of its descendants”¹) are the constituents of the “tree of life”, they should have explicit, unambiguous names that do not change with time. The current nomenclatural systems based on Linnaean hierarchy (such as the *International Code of Botanical Nomenclature*² and the *International Code of Zoological Nomenclature*³) do not boast such immutability; a clade or species name may be changed on the basis of considerations of rank or genus assignment even if the clade or the species itself has not changed.

The PhyloCode is based on ideas presented in the literature since the late 1980s and, more formally, on the outcome of a workshop held at Harvard University in August 1998. The draft proposal covers only the naming of clades. Rules governing species names will be added later. As a temporary measure, Linnaean binomial nomenclature is used in the draft PhyloCode where species names are needed.

The form that species names should take in the PhyloCode is controversial. A 1999 article in the journal *Systematic Biology*⁴ presents 13 possibilities for naming species phylogenetically and compares these methods with each other and with the Linnaean system.

The PhyloCode has been designed so that it can be used concurrently with the existing nomenclatural codes, although

the scientific community might ultimately decide that the PhyloCode should become the sole code governing the names of taxa. At present the intent is to provide an alternative system, not a replacement.

One fundamental characteristic that distinguishes the PhyloCode from the conventional hierarchic nomenclatural systems is its ranklessness. The PhyloCode will cover the naming of clades and species, but in this system these terms refer not to ranks, but to different kinds of biologic entities. As the preface to the PhyloCode states, “both [clades and species] are products of evolution that are discovered, rather than created, by systematists, and both have an objective existence regardless of whether they are named”.¹

The starting date for the new code, which has not yet been decided, will coincide with the publication of a companion volume providing definitions of widely used clade names.

The advisory group coordinating work on the PhyloCode is seeking comments and ideas concerning this proposal from as many people as possible. If you are interested in this subject, you are encouraged to review the current draft of the PhyloCode and to make your views known by communicating directly with the PhyloCode advisory committee or by joining the PhyloCode discussion group. 

References

1. Cantino PD, de Queiroz K. PhyloCode: a phylogenetic code of biological nomenclature [draft document]. www.ohiou.edu/phylocode/printable.html (11 December 2001).
2. 16th International Botanical Congress. International code of botanical nomenclature (St Louis code). *Regnum vegetabile* 138. Greuter W, chairman. Königstein (Germany): Koeltz Scientific Books; 2000.
3. International Commission on Zoological Nomenclature. International code of zoological nomenclature. Fourth ed. London: International Trust for Zoological Nomenclature; 1999.

Principles of the PhyloCode

Reference—The primary purpose of taxon names is to provide a means of referring to taxa, as opposed to indicating their characters, relationships, or membership.

Clarity—Taxon names should be unambiguous in their designation of particular taxa. Nomenclatural clarity is achieved through explicit definitions.

Uniqueness—To promote clarity, each taxon should have only one accepted name, and each accepted name should refer to only one taxon.

Stability—The names of taxa should not change over time. As a corollary, it must be possible to name newly discovered taxa without changing the names of previously discovered taxa.

Phylogenetic context—The PhyloCode is concerned with the naming of taxa and the application of taxon names within a phylogenetic context.

The PhyloCode permits freedom of taxonomic opinion with regard to hypotheses about relationships; it only concerns how names are to be applied within the context of a given phylogenetic hypothesis.

Source: PhyloCode. Division 1. Principles. www.ohiou.edu/phylocode/principles.html (11 December 2001)
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4. Cantino PD, Bryant HN, de Queiroz K, Donoghue MJ, Eriksson T, Hillis DM, Lee MSY. Species names in phylogenetic nomenclature. *Syst Biol* 1999;48:790-807.

Note: The information in this article is based on material available at the PhyloCode Web site: www.ohiou.edu/phylocode/.