

Polyphylogeny Encyclopedia Article

Polyphylogeny

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Contents

Polyphylogeny Encyclopedia Article.....	1
Contents.....	2
Polyphylogeny.....	3



Polyphylogeny

Polyphylogeny is a term used in the science of systematics. It describes a group of species that are classified in the same taxon, but do not share a single ancestor. Systematics is the study of biological diversity looked at through an evolutionary perspective. It was an outgrowth of taxonomy and has slowly become more sophisticated since the time Charles Darwin posed the evolutionary theory. Scientists who pursue this subject attempt to group organisms based on probable evolutionary relationships. They create genealogy diagrams, called phylogenetic trees, that graphically show these relationships. A polyphylogenetic group would contain species that seem related, but have different evolutionary ancestors. These species are grouped using a variety of characteristics such as fossil records, comparative anatomy and DNA and protein analysis. While most phylogenetic trees contain polyphylogenetic groups, the ideal in systematics is for each group to have a common ancestor or be monophylogenetic. Unfortunately, a large amount of conflicting data is often collected. For example, two unrelated organisms may be grouped together because they independently evolved similar traits. Incidents of this type of convergent evolution create errors in phylogenetic trees. However, as more data is collected about various species, scientists hope to achieve the goal of a unified phylogenetic tree.