

Creation Forest

Disparity vs Diversity

Disparity describes how different two or more kinds of animals are. Dogs and clams are highly disparate; in other words, they differ greatly from one another. In contrast, dogs, foxes and wolves are all similar, so modern canids exhibit relatively low disparity.

Diversity is measured by counting species. There are about 35 living species of canids and many extinct species. Thus the dog family is quite diverse, although their disparity is relatively low.

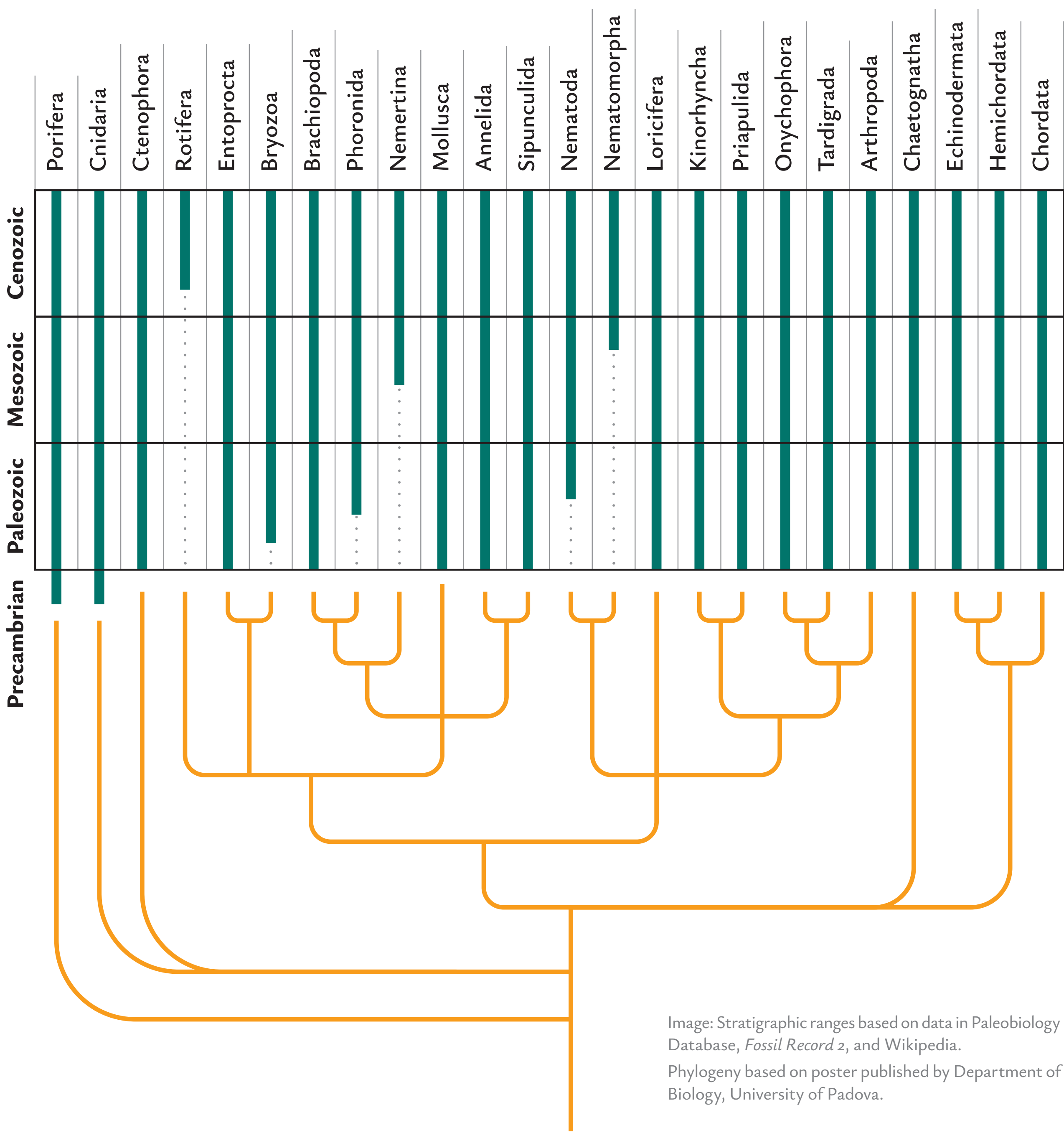
In the fossil record, phylum-level disparity appears abruptly. It does not evolve gradually as diversity increases. This points to the separate origins of the different phyla.

The overall pattern can be represented as a creation forest in which each tree has a separate origin, with branching due to minor diversification and habitat specialization.

The pattern of disparity before diversity is also seen in many subdivisions of the phyla, called classes and orders. Orders are composed of families, so the “trees” in the creation forest may often be at the level of taxonomic family.

A minority of groups have a reverse pattern, where maximum disparity is preceded by high diversity. This is seen among some land-dwelling groups, such as some terrestrial vertebrates and vascular plants, and some invertebrates.

Fossil Record of Invertebrate Phyla



The green lines in the diagram above show the stratigraphic range of each animal phylum, from its first appearance in the fossil record to its last. This is what the data show: disparity from the first appearances.

The gold lines illustrate hypothetical evolutionary relationships among the phyla. These lines are often shown in textbook, but they do not correspond to fossil evidence; they represent theoretical inferences.