

The tree of life

Why study the tree of life?

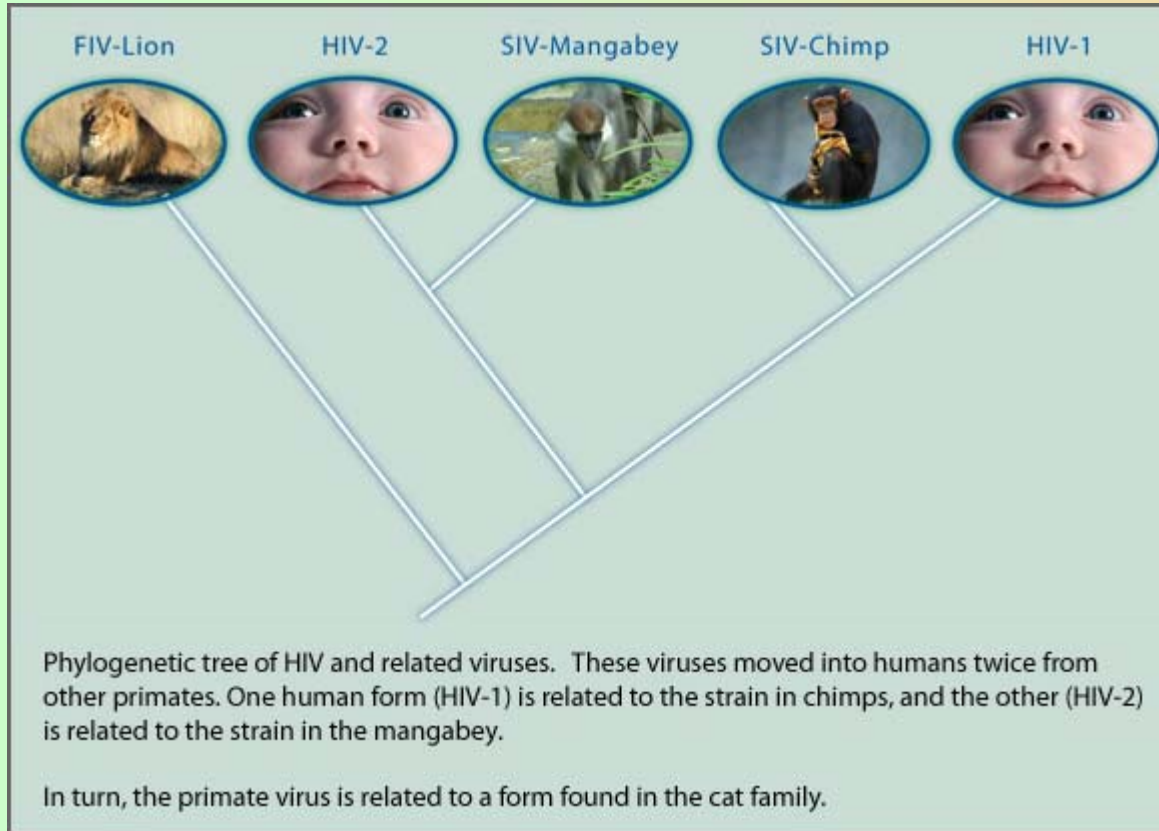
Phylogenetic trees have become central

- to understanding the process of evolution, and therefore
- to the interpretation of all biological information



A computer enhanced image of the Human Immunodeficiency Virus (HIV or AIDS virus)

The tree of life



HIV

In the case of HIV (the virus responsible for AIDS), phylogenetic studies have revealed multiple sources of the disease in nonhuman primates and have also helped trace its transmission through human populations.

The tree of life



Teosinte is an ancestor to corn.

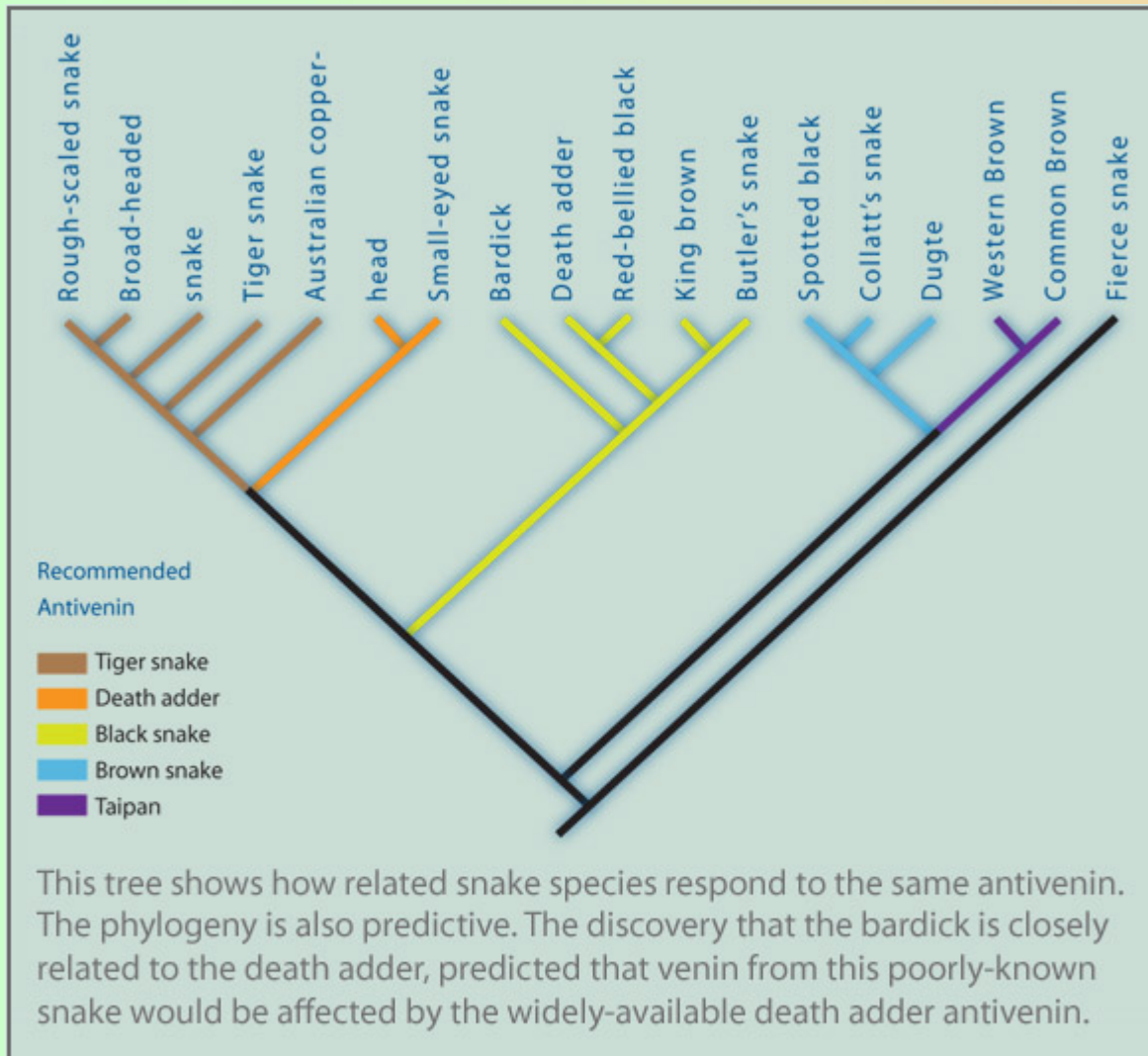
Photo courtesy of Iowa State University Extension

Agriculture

Knowledge of phylogenetic relationships also plays a key role in genetic improvements (engineering resistance to drought and pathogens).

For example, the discovery that the Mexican grass teosinte is the wild ancestor of cultivated maize has led to an understanding of the genes that could enhance desirable key attributes of the cultivated plant.

The tree of life



Treating Snake Bites

In Australia, which has more poisonous snakes than any other continent, phylogenetic analysis is used to help identify antivenins.