Evolution, Divergent Encyclopedia Article

Evolution, Divergent

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Evolution, Divergent

Divergent evolution is also known as divergence. This is the opposite of convergent evolution.

Starting from a point at which there is one basic form of organism, then when different selective pressures are placed on that one organism type, that one form can produce a wide variety of new types. If only one structure on the organism is considered, these changes can either add to the original function of the structure or they can change it completely. Divergent evolution is one of the first steps in speciation, the production of a new species. Divergence can be seen when looking at any group of related organisms; the differences are produced from the different selective pressures under which the life forms live. Any genus of plants or animals can show divergent evolution, for example, the diversity of floral types in the orchids. The greater the number of differences present, the greater the divergence. Scientists speculate that the greater the divergence, the greater the length of time since the organisms in question shared a common ancestor.

Divergent evolution can occur quite easily in nature. If a freely interbreeding population on an island is separated by the appearance of a barrier to breeding, such as the presence of a new river, then, over time, the organisms may start to diverge and show differences. If the opposite ends of the island have different pressures acting upon them this pressure will produce divergent evolution. When the organisms were capable of freely interbreeding the differences caused by the different ends of the island would be averaged out over the whole population and not be discernible.