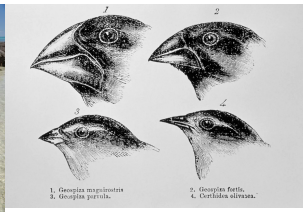

Evolution Essay

Charles Darwin's (and Alfred Wallace's) theory of natural selection encompasses a wide range of topics, some we know much about, and some we are still deciphering to this day. Of note, the ideas of speciation, extinction, adaptation, and the history of life on Earth we know a great deal about. However, ideas on the origins of life and many of the inner workings of DNA are still mostly a mystery to us.

Life most likely originated as small organisms. Bacteria and other single-celled organisms appeared in the waters of Earth around 3.7 billion years ago (BYA). One of the ways we know this is through fossils of stromatolites - colonies of algae and pond scum that collected on rocks and formed a sediment.

On a more general note, the idea of natural selection as developed by Darwin essentially states that as environments change, the members of a species born with traits that suit themselves to their environment are more likely to survive and reproduce than members with traditional or negative traits. For example a turtle with a harder shell is more likely to survive than one with a weaker shell, so turtles will generally tend to harder shells over time. This is different from adaptation, in which members of a species will change their behavior or something about themselves in order to suit a changing environment. An example is as temperatures get colder, penguins may huddle together more to maintain heat.

One large misconception many have about evolution is that it always tends towards progress. They ask why life hasn't perfected itself to form one super-organism. This is because 'progress' in the evolutionary sense is merely the way species will over time become something more suited to their environment. There are no 'perfect' organisms, only ones that survive or thrive in their environment.