GALAPAGOS VIDEO REVIEW

* Evolution in the Galapagos-

This video reviews the famous work Charles Darwin conducted in the Galapagos Islands. Based on his visit, he concluded that living things are shaped by the world around them and are not dependent on an unchanged plan. Even though Darwin only visited four of the islands, he was still able to notice what he called “aborginal creations” or endemic species. As he explored the islands, he started to notice that many animals and plants looked very similar to animals and plants he had seen before, but in different parts of the world. In the beginning of the video it was shown that the characteristics of mocking birds varied slightly from island to island.

The bulk of the video is used to show how the discovery of thirteen species of Darwin’s Finches were so monumental in Darwin’s work. Each specie has a different shaped beak to accommodate their feeding habits and lifestyle. Ground finches are the most common group of species. The large ground finch has a thick, heavy beak to crack open large, tough seeds. In contrast, the small ground finch has a small beak to crack open small seeds. The biggest living proof of evolution and natural selection in the Galapagos Islands is located at Daphne Major Island. When small seeds are plentiful at this island then the next nesting season will result in smaller beaked birds than bigger beaked birds. Whereas if there are mainly big seeds, the next nesting season will result in more birds with big beaks than birds with small beaks. This is a product of natural selection; those who have the most desirable traits for the environment are more likely to reproduce the most. This is very fascinating because this is evolution happening in front of our eyes, rather than evolution happening slowly over centuries.

Without Darwin’s visit to the Galapagos Islands, the way we view species over time may be completely different.

* Galapagos Finch Evolution-

This video is nearly based around the idea of the evolution of finches and how it’s shaped the common accepted ideology of the change of biology over time. There are 13 different types of species of finches present throughout the Galapagos Islands. The islands these finches decided to make their homes at vary greatly in size, shape, plant types. Each species of finch has different physical characteristics that are used as appropriate tools for the type of environment they inhabit. For example, woodpecker finches have a robust, sharp beak so they can most efficiently feed off beetle larvae and termite larvae commonly located in trees.

We know now from DNA evidence that Darwin’s finches were introduced to the islands from one common ancestor. The species share more traits with each other than any other. It is theorized that one ancestor of the finches can be diversified into so many types because of natural selection, the key factor in the process of evolution. Rosemary and Peter Grant observed a situation that produced a direct portrayal of natural selection. In 1977 there was a drought that lasted about 18 months. Subsequently, the only seeds available were woody, spiny fruits found on the cacti. The medium ground finch was one of the species that was affected the most. During this drought, nearly 80% of the medium ground finches died due to their inability to adapt for survival. The Grants found that those who had the longer beaks were the ones that had a higher chance of survival. Post drought, the next generation was found to have an average beak depth four percent larger than the previous generation. In contrast, a few years after an El Nino hit in 1983, there was a scarcity in large seeds, but a surplus in small seeds. That year many more birds with smaller beaks survived, they had a much easier time feeding than birds with bigger beaks. Most of the next generation of finches had smaller beaks.

On a larger scale, finches among the Galapagos Islands have divided into several different species. The separation into different species is based on finches inhabiting different islands and how they adapted over the years to efficiently live off the environment. When the finches separate to different islands for a long enough time, they become so different in their sound and appearance that distinct species are formed and they will not interbreed.

* The Origin of Birds-

The origin of birds goes as far back as the time of dinosaurs. Charles Darwin was the first to propose the theory that all current species originated from a common ancestor. He proposed that we will find fossils of older species with similar traits to those that exist today. The Archaeopteryx was a crucial finding in supporting this theory. Not only did the Archaeopteryx have many defining features that were extremely like those that modern birds have, but based on the key differences between Archaeopteryxes and Pterosaurs we can conclude these reptiles evolved independently from each other, probably from different reptiles. As more research was conducted, scientists narrowed the list of possible ancestors of birds to theropod dinosaurs, reptiles that were active predators and stood on two legs. Soon after the conclusion of the relation between birds and theropods, there were several species of theropods found with a very primitive, fuzzier version of the feathers modern bird. Although there is not a direct progression between theropods and birds, one can see the differing common traits between birds and several species of theropods. Scientists have concluded after the mass extinction of many dinosaurs, a small group of toothless birds survived eventually diversifying into the tens of thousands of species of birds we have today.