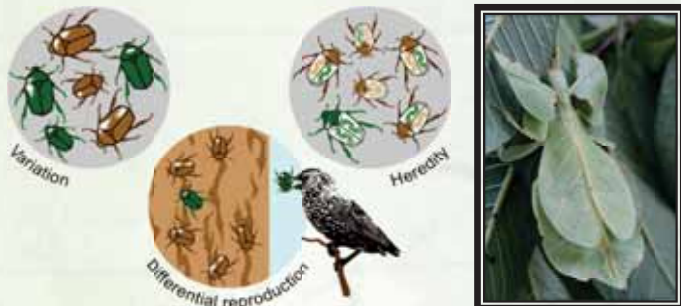


NATURAL SELECTION: DRIVER OF EVOLUTION

Random variations are the soul of Evolution, however, a **Non Random Natural Selection** provides the license for propagation to selected random variations

What is Natural Selection?



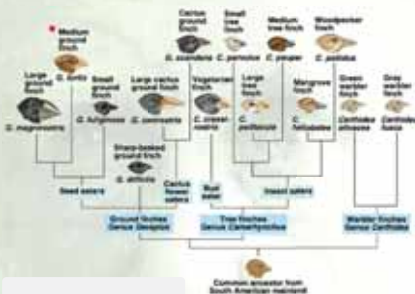
Natural selection is a mechanism that **filters** those random variations for propagation which are compatible to the environment. Often a subtle variation such as slightly better camouflage or vision gives considerable survival advantage

Voyage of Beagle



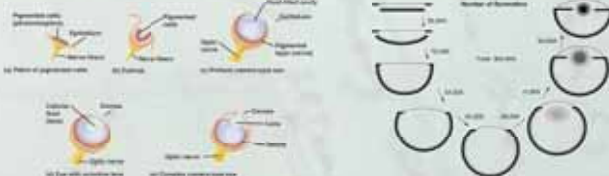
Charles Robert Darwin, travelled nearly half of the world on HMS Beagle as naturalist during 1832-1836. During this voyage he first noticed the full force of **Natural Selection** behind the evolution and diversification of life. The samples he collected, along with his astounding observational power and patient thinking, allowed him to develop a full case of evolution "**On The Origin Of Species By Means of Natural Selection**"

Darwin's Finches



Darwin collected several **finches from Galapagos** islands. Despite geographical proximity different finches **varied in the shape of their beaks**. Darwin concluded that all these finches evolved from **common ancestor** but then naturally selected for shape of beak according to **nature of the food** available

Evolution of Vertebrate Eye



Evolution of **vertebrate eye** is a classical example of evolution by natural selection. Through computer simulations, Richard Dawkins estimated that it requires nearly **364,000 generations** to transform flat sheet of light sensitive cells to vertebrate eye with all its complexity and each advance stage brings **selective advantage** over its predecessor

Artificial Selection: Application of Natural Selection



Using principles of natural selection, humans have transformed the **wild mustard** (about **4000 years** ago) into several other **vegetables** and domesticated **wolf** into different breeds of **dogs** (about **15,000 to 33,000 years** ago). This demonstrates the practical applicability of the principle of natural selection

