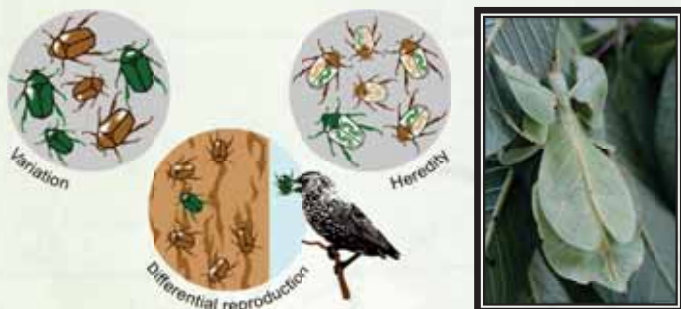


# NATURAL SELECTION: DRIVER OF EVOLUTION

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?



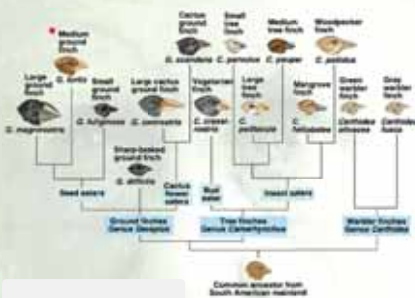
**Natural selection** is a mechanism that **filters** those random variations for propagation which are compatible to the environment. Often a subtle variation such as slightly better camouflage or vision gives considerable survival advantage

## Voyage of Beagle



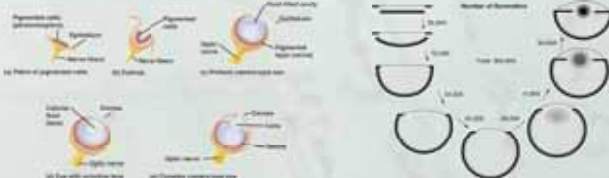
Charles Robert Darwin, travelled nearly half of the world on HMS Beagle as naturalist during 1832-1836. During this voyage he first noticed the full force of **Natural Selection** behind the evolution and diversification of life. The samples he collected, along with his astounding observational power 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

