The story of evolution necessarily begins with a voyage; that of Charles Darwin on HMS Beagle and it is a voyage of another kind too...one of observation and understanding. The book under review takes its readers on board the HMS Beagle alongside Charles Darwin from the first page itself. The description is almost straight out of tourist literature in its beauty...a far cry from dry textbooks and therefore, is sure to grip the reader’s attention and imagination, both.

Darwin’s book on the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life, was first published on 24 November 1859. There has perhaps never been another book the appearance of which was marked with more furore; echoes of it can still be heard from time to time.

The first edition sold out on the first day! Many took it to be a direct assault on religious beliefs. Others found it difficult to come to terms with the idea that human lineage could be traced back to roots that were not at par with the top-of-the heap status humans took for granted. The debates that followed are legendary; some have been described in the book.

Darwin did not have access to many fossils. He had assumed an unbroken chain of evolving organisms and that fossilized evidence of this progressive change ought to be found some time or the other. In time Palaeontology emerged as a developing science and fossils played an important role in understanding how life-forms emerged on Earth. For example, the earliest fossils discovered appear in rocks that are 2.8-3.5 billion years old...microorganisms such as blue-green algae.

Interestingly, a recent report (http://www.techinsider.io/oldest-fossils-ever-discovered-2015-10) claims that microorganisms were around at least 4.1 billion years ago. If confirmed, the discovery could push back the existence of life on Earth by 300 million years. Fossil records are still incomplete but with every fossil that is found, the mysteries of evolution move that much closer to being understood.

A legacy of this and other books published by Darwin was that two unconnected and largely misleading phrases entered common parlance. These can still be heard bandied about with great nonchalance by many people. ‘Man has descended from monkeys’, is one. ‘Survival of the fittest’ is another.

Evolution as a concept came to be gradually accepted although even today, hardcore creationists still refuse to accept it. Evolution has to be understood as happening against a backdrop of time so colossal that the lay person (used to thinking in terms of a lifetime) may have trouble understanding. The book under review meticulously explains the geologic time scales with evidence from every period being discussed clearly. The examples discussed are sometimes evolutionary ‘dead ends’ which underlines the fact that evolution is not necessarily a linear process nor does it have a preferred direction.
BOOK REVIEW

In the 1970s, Theodosius Dobzhansky wrote an essay, Nothing in Biology Makes Sense Except in the Light of Evolution. At around the same time, Peter and Rosemary Grant began their studies on Darwin’s finches in the Galapagos Islands. From around 1973 to 2002 they observed and documented changes that can only be described as “evolution in action.” Their research papers presented the records of the changes in body and beak size over just a few generations in response to changes in the food supply; all triggered by natural selection.

The book under review seeks to explain the concepts of natural selection in a lucid and interesting manner. It explains that evolution is a two-step process. First there is genetic variation. Secondly, there is selection. It traces the evolution of different animal species including the iconic dinosaurs, the wild rhinos and tapirs as also the domesticated horses. It details human evolution too, touching upon the different types of fossilized humanoids discovered...for example, Neanderthal Man, Java Man, Taung child, Mrs Ples, and of course, Lucy! In many places the actual statements of the anthropologists have been given as a quote. This directly transports the readers to the site and makes for a deep emotive connect: the hallmark of all good communication.

The author’s style of writing is simple but never patronising. The language is crisp and the stories are interspersed to make reading this book not just an educational exercise but an entertaining one too.

The production value of this book is excellent. The font is highly readable and the editing is impeccable. It is a joy to review a book such as this; a feeling that most readers are likely to share.

However, in light of a 2014 report that claims that more than 4 in 10 Americans continue to believe that humans were created in their present form 10,000 years ago (http://www.gallup.com/poll/170822/believe-creationist-view-human-origins.aspx) it is befitting perhaps to end this review with a reminder from Theodosius Dobzhansky who wrote: “Creation is not an event that happened in 4004 BC; it is a process that began some 10 billion years ago and is still under way.”

Reviewed by Dr. Sukanya Datta, Senior Principal Scientist, CSIR-Central Glass & Ceramic Research Institute, 196, Raja S.C. Mullick Road (Room 228 A), Kolkata–700032

The best way to learn about the sky is to look at it. Rather than trying to teach the finer nuances about the sky and the mysteries it cradles through reams of text, children should be made to observe the sky and learn about its mysteries through simple activities. Rather than observation-based learning we have today completely moved on to rote learning.

With this philosophy in mind the author goes about laying down some very simple demonstration activities that can help children learn about many phenomena related to the sky and the solar system. The author is former Director of the Birla Industrial & Technological Museum in Kolkata and also conducted the popular innovative science quiz on Doordarshan from 1983 to 1988.

With his experience of having conducted several workshops for children throughout the country, Mr Samar Bagchi has come out with simple activities that will help children understand various phenomena in the sky such as day & night, daily and yearly movement of stars, north and southwards movement of the Sun, movement of the Moon, eclipses, etc.

A very well illustrated, well produced and very handy book for the young.