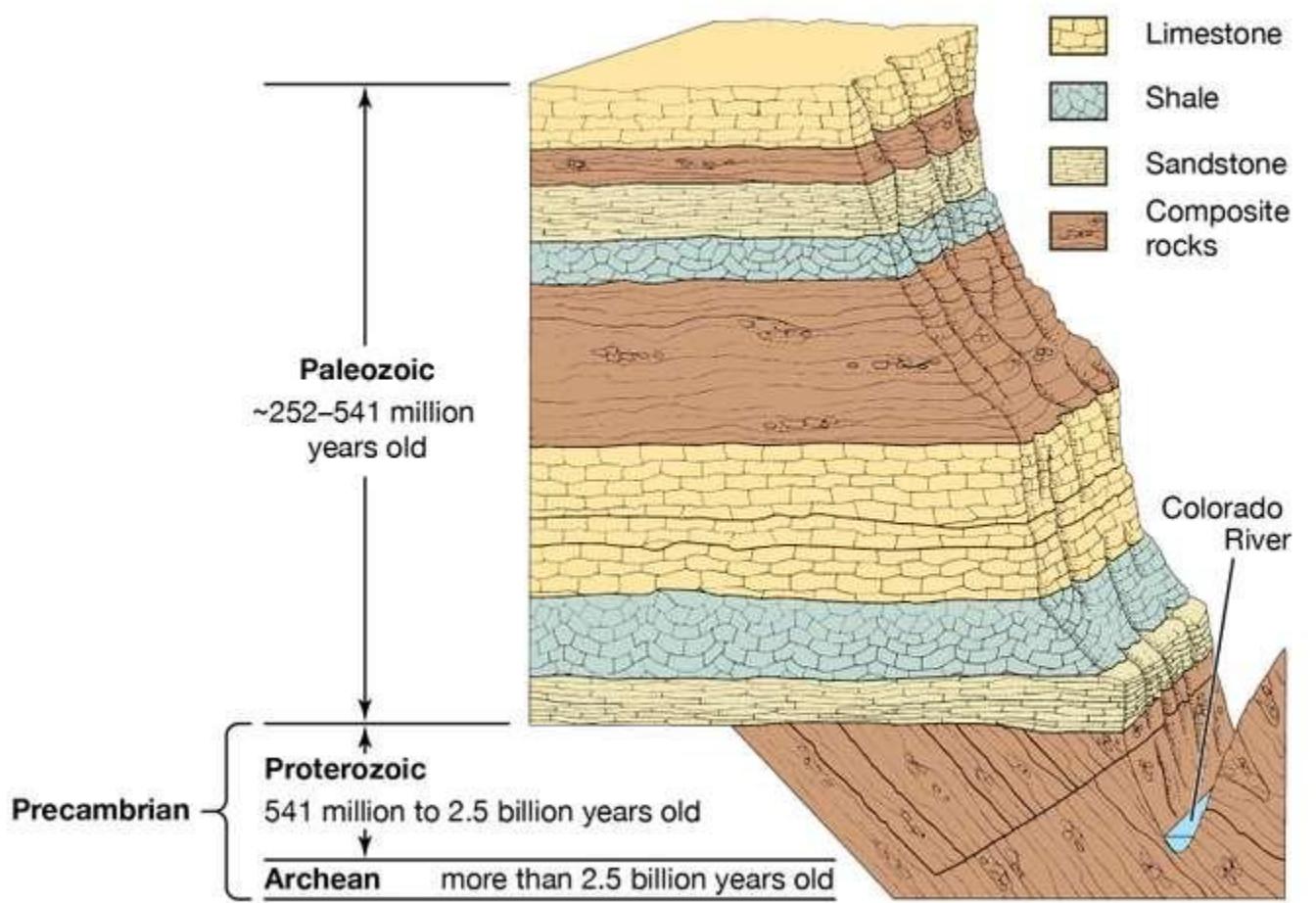


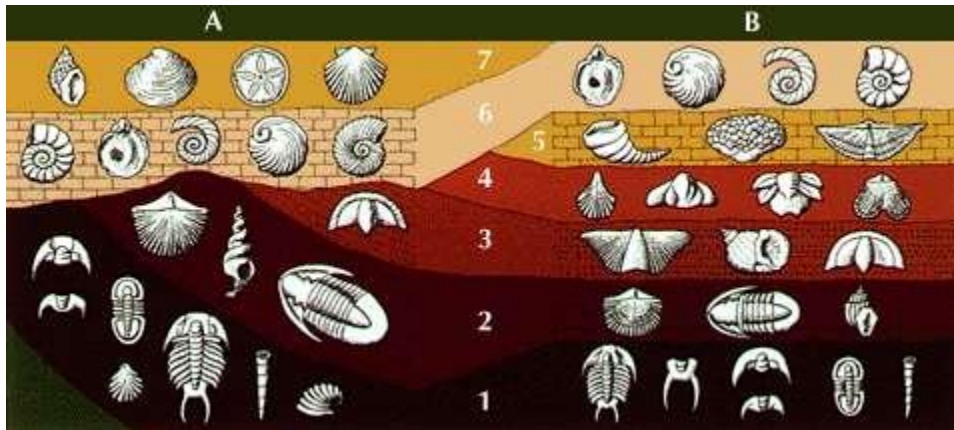
Concept of Geochronology (*Study Materials of 2nd SEM, Paper - ANTACOR03T*)

It is the science of determining the age of rocks, fossils, and sediments using signatures inherent in the rocks themselves. Absolute **geochronology** can be accomplished through radioactive isotopes, whereas relative **geochronology** is provided by tools such as palaeomagnetism and stable isotope ratios.

Geochronology, field of scientific investigation concerned with determining the age and history of Earth's rocks and rock assemblages. Such time determinations are made and the record of past geologic events is deciphered by studying the distribution and succession of rock strata, as well as the character of the fossil organisms preserved within the strata.



Grand Canyon wall cutaway diagram showing the ages of the rock layers. *Encyclopædia Britannica, Inc.*



fossil-containing strata Fossils help geologists establish the ages of layers of rock. In this diagram, sections A and B represent rock layers 200 miles (320 km) apart. Their ages can be established by comparing the fossils in each layer. *Encyclopedia Britannica,*

Geochronology is the science of determining the age of rock formations and their associated geological events. Geochronology is important in the geosciences because it allows the quantification of the changes that occur across the landscape such as depositional timing, paleogeography, basin development, sediment provenance, and much more. There are many different dating methods that can be used to determine the age of rocks, fossils, and sediments, and the advancement of modern technology is allowing faster determination of more accurate age measurements. The ages can be determined either absolutely using radioactive isotopes or relatively using dating methods such as index fossils, global stable isotopic trends, and paleomagnetism.

Geochronology, biostratigraphy, and chronostratigraphy are all closely related disciplines and are commonly applied towards the same problems. Biostratigraphy is only concerned with assigning a sedimentary sequence to a particular geological period based on the fossil assemblages present within the rock. Chronostratigraphy is similar to biostratigraphy, but it attempts to assign an absolute age for a particular fossil assemblage. Geochronological units are referred to as periods of time when chronostratigraphic units are only referred to in their geological context.