

Biostratigraphy

1) A rock outcrop at locality A has a fairly extensive sequence of sedimentary rock layers and fossils as well as two volcanic ash layers. Sedimentary rock layers at localities B, C, and D are much less extensive.

The ash layers were dated using the radioactive decay reaction $A \rightarrow B$ which has a half life of 100 million years. B is not an element that is naturally found in volcanic rock when it forms.

Ash layer 2 was dated and found to be 350 million years old.

a) Ash layer 1 was found to contain a ratio 1A to 7B by mole.

What is the age of ash layer 1?

b) Using fossil assemblages, draw a line from a part of each rock sequence in localities B, C, and D to a part of the rock sequence at locality A that is of the same age.

c) Approximately what age are each of the rock sequences in localities B, C, and D.

