The Age of Mt Etna

By the 1820s William Smith and Georges Cuvier had established the succession of rocks and fossils. In 1828 Charles Lyell attempted to find out the age of the earth by working out the age of Mt Etna.
Do the following calculations to find out how old Mt Etna is.

On average there are 5 lava flows every 100 years.

The average size of each flow is 10km by 1km by 2m.

The average volume of each flow is therefore
$$Km^3$$

The volume of lava emitted each century is
$$km^3$$

The volume of lava emitted each 1000 years is
$$Km^3$$

The volume of Etna is 1962 km^3

How old is the volcano?

However Lyell found that the rocks underlying Mt Etna were known to contain some of the most recent fossils. What could he deduce about the age of the earth?