

points where no opinion has been expressed, I shall endeavor to treat the subject and the views of others in all fairness, and shall be satisfied if those who differ from me shall acknowledge that I have honestly sought the truth.

In the first place, we should have a clear apprehension of the intent or aim of Geological Science. It has been often said, that Geology is a *history*, the records of which are written in the rocks: and such is its highest department. But is this clearly appreciated? If so, why do we find text-books, even the one highest in authority in the English language, written back end foremost,—like a History of England commencing with the reign of Victoria. In history, the phases of every age are deeply rooted in the preceding, and intimately dependent on the whole past. There is a literal unfolding of events as time moves on, and this is eminently true of Geology.

Geology is not simply the science of rocks, for rocks are but incidents in the earth's history, and may or may not have been the same in distant places. It has its more exalted end,—even the study of the progress of life from its earliest dawn to the appearance of man; and instead of saying that fossils are of use to determine rocks, we should rather say that the rocks are of use for the display of the succession of fossils. Both statements are correct; but the latter is the fundamental truth in the science.

From the progress of life, geological time derives its division into Ages, as has been so beautifully exhibited by Agassiz. The successive phases in the progress of life are the great steps in the earth's history. What if in one country the rocks make a consecutive series without any marked interruption between two of these great ages, while there is a break or convenient starting point in another; does this alter the actuality of the ages? It is only like a book without chapters in one case, and with arbitrary sections in another. Again, what if the events characteristic of an age—that is, in Geology, the races of plants or animals—appear to some extent in the preceding and following ages, so that they thus blend with one another? It is but an illustration of the principle just stated, that *time is one*. Ages have their progressive development, flowing partly out of earlier time, and casting their lights and shadows into the far future. We distinguish the ages by the culmination of their grand characteristics, as we would mark a wave by its crest.