

There can be no doubt that the demands of the earlier geologists for an unlimited duration of past time, for the accomplishment of geological history, were extravagant and unnecessary. But it may be questioned how far the recent limitation of time proposed from physical considerations are really founded on well-established facts. The argument from the geological record in favor of a much longer period than physicists are disposed to concede is so strong that one is inclined to believe that these writers have overstated their case. The evidence from the nature of the sedimentary rocks, and from the succession of organic remains in these rocks, appears to me to demand an amount of time not far short of the hundred millions of years originally granted by Lord Kelvin.<sup>75</sup>

## PART II.—AN ACCOUNT OF THE COMPOSITION OF THE EARTH'S CRUST—MINERALS AND ROCKS

The earth's crust is composed of mineral matter in various aggregates included under the general term Rock. A rock may be defined as a mass of matter composed of one or more simple minerals, having usually a variable chemical composition, with no necessarily symmetrical external form, and ranging in cohesion from mere loose debris up to the most compact stone. Granite, lava, sandstone, limestone, gravel, sand, mud, soil, marl and peat, are all recognized in a geological sense as rocks. The study of rocks is known as Lithology, Petrography or Petrology.

It will be most convenient to treat—1st, of the general chemical constitution of the crust; 2d, of the minerals of

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<sup>75</sup> I have touched on this question in my Presidential Address to the British Association 1892. But see a paper by Mr. Clarence King, *Amer. Journ. Sci.* xlv. (1893).