part of the history of the earth and of the system to which it belongs, nor does it enter at all into the more recondite problems involved; still it forms, I believe, some necessary preparation at least to the comprehension of these. If we are to go farther back, we must accept the guidance of physicists rather than of geologists, and I must say that in this physical cosmology both geologists and general readers are likely to find themselves perplexed with the vagaries in which the most sober mathematicians may indulge. We are told that the original condition of the solar system was that of a vaporous and nebulous cloud intensely heated and whirling rapidly round, that it probably came into this condition by the impact of two dark solid bodies striking each other so violently, that they became intensely heated and resolved into the smallest possible fragments. Lord Kelvin attributes this impact to their being attracted together by gravitative force. Croll[1] argues that in addition to gravitation these bodies must have had a proper motion of great velocity, which Lord Kelvin thinks "enormously" improbable, as it would require the solid bodies to be shot against each other with a marvellously true aim, and this not in the case of the sun only, but of all the stars. It is rather more improbable than it would be to affirm that in the artillery practice of two opposing armies, cannon balls have thousands of times struck and shattered each other midway between the hostile batteries. The question, we are told, is one of great moment to geologists, since on the one hypothesis the duration of our system has amounted to only about twenty millions of years; on the other, it may have lasted ten times that number.[2] In any case it seems a strange way of making systems of worlds, that they should result from the chance collision of multitudes of solid bodies

[1] "Stellar Evolution."

[2] Other facts favour the shorter time (Clarence King, *Am. Jl. of Science*, vol. xlv., 3rd series).