considerable distance, the slighter indentations first disappearing, and finally those that were deepest; so that, after the mud had been consolidated into stone, several successive layers might be split off, each one containing an Ornithichnite. In the highest layer the track would be smallest, and its more delicate extremities would be wanting. Each successive layer beneath, would exhibit it more and more perfect, until the precise layer was reached, on which the bird originally trod. A few layers beneath this, might exhibit the track imperfectly, but it would soon be lost. Now, by looking back to my description of the actual manner in which the Ornithichnites occur, it will be seen that the facts correspond to these deductions of theory.

The results above stated, however, would be very much modified by circumstances. The more quietly the deposition took place, after the track had been impressed upon the mud, the longer time would it require, and the greater the number of superimposed layers, before it would be effaced. But if a sudden and more tumultuous rise of waters, either from a land flood, or a violent storm acting on the ocean, should bring a coarser coat of materials over the track, somewhat violently, it might be filled up and effaced at once, as the specimens show was sometimes the case. Or should the matter deposited in the track, assume a concretionary form, so as in fact to become a real petrified foot, the depression in the superimposed layers would almost immediately disappear, as I find to have been the case frequently with *O. giganteus* and *O. tuberosus*.

There is one fact respecting these foot marks, which deserves to be mentioned, and which is not so easy to explain. Where successive layers of the rock are bent downwards by the impression, the curves are sometimes not placed perpendicularly above one another, but they are considerably oblique; so that when the track is visible on both sides of the specimen, on one side it appears thrown forward, or backward, or laterally, an inch or two. I have noticed as great a difference as this, where the rock is not more than an inch thick.

I can conceive of only two modes in which such an effect could be produced. It could result, as it seems to me, in no way, from a slide of the animal's foot in the mud. But suppose the impression made in mud, which was so very yielding that a slight action upon it would cause the upper portion of it, almost suspended by the water, to be carried somewhat forward, in the direction in which the disturbing force impelled it. Suppose now, either winds or floods should produce a gentle current, where a track had been made in such mud; might not the impression be gradually slid a little from its original