

sumption, shows us that little dependence is to be placed upon such an argument as this, to prove the rock in question, to be new red sandstone. But the Ichthyolites occurring in it, present a much stronger case. They belong to the genus *Palaeothrissum*, and are found in bituminous shale, or what used to be called bituminous marlite; and the specimens, both of the fish and the rock, so exactly resemble those from the new red sandstone of Mansfeld, in Germany, that an able European geologist, to whom specimens were sent, could not distinguish them. This genus, also occurs at Autun in France, and at one or two places in Great Britain, in the new red sandstone, and in that alone. How can it be doubted, especially when the other evidence to the same point is considered, that it is the same rock in Massachusetts, in which they are found? It ought to be stated, that one of the localities of ornithichnites, occurs only a mile distant from the most abundant locality of ichthyolites in Sunderland, and almost on the same continuous layers of rock.

These statements, it seems to me, decide, beyond all reasonable doubt, the geological situation of the ornithichnites that have been described. But if any are not satisfied, it ought still farther to be stated, that no geologist, who has examined the sandstone of this valley, has ever suggested that it is more recent than the new red sandstone. For the most part, they have placed it lower in the series; regarding it either as the coal formation, or the old red sandstone. So that all would agree that these ornithichnites are at least, as low down as the new red sandstone. If they are lower, their situation is still more surprising.

Since the deposition of this sandstone, no geological change seems to have taken place in this valley, except the deposition of a thin and apparently very recent tertiary, or quaternary formation, composed of horizontal layers of clay and sand; and afterwards those diluvial and alluvial agencies succeeded, which have been in operation in every part of the globe.

Having now given such a statement, as I am able, of the facts in this case, and shown, if I mistake not, the geological position of the ornithichnites, I trust, I may be indulged in a few theoretical considerations.

The circumstances under which these tracks were made, furnish a topic of enquiry that will suggest itself to every mind; and it seems to me that the true theory on the subject, can hardly be mistaken by any intelligent man, even although not acquainted with the princi-