

crustaceans, by whose feet the indentations are commonly supposed to have been made, were "wholly distinct from the crustacean forms of later geological periods or of the present day." Even apart from sori, the air-bladders in many algæ, as I have often proved, are capable of making very distinct impressions on moist sand.

If the impressions be fucoidal, the otherwise remarkable character of these lateral pit-marks, in differing in number and grouping in different impressions, becomes easily explained without the necessity of having recourse to imaginary specific distinctions. In the impressions in which they do not appear, it may be inferred that the fucoid had already scattered its spores, or that the development of the latter had not taken place, when the frond was cast upon the ripple-marked shore of the old Potsdam sea.

The supposed fucoidal origin of these impressions would not, I confess however, have been thus advanced, were it not for their association or connection in at least one locality—the vicinity of Perth, in Eastern Ontario—with impressions of an analogous character to which an animal origin can scarcely be attributed on any rational grounds. These are the impressions known as *Climactichnites*. It is probable that the supposed animal origin of these latter impressions would never have been conceived, but for their general relations to the *Protichnites* impressions. The two, it was seen, must evidently have had an analogous origin; but in view of the peculiar character of the *Climactichnites* impressions, the aid of some unknown mollusk was called in to explain their formation, although by some observers they have been looked upon as the trails of Trilobites. They may be described, generally, as being in the form of a band of several feet in length, although clearly fragmentary, with a width of from five to six inches. In their general dimensions they agree, therefore, very closely with the *Protichnites* impressions. But they differ from the latter in being traversed transversely by a series of narrow parallel ridges, about an inch and three-quarters apart, and by having a kind of beaded edge or border—the impression, as remarked by Sir William Logan, thus somewhat resembling a rope-ladder, whence the name *Climactichnites*. In some examples there is also a central groove or ridge running roughly parallel with the length of the impression.

The points here to which attention should be chiefly directed are, first, the presence of these numerous transverse ridges; secondly, their constancy, and the uniform clearness of their outline, throughout