

impression from Horton Bluff (fig. 2), which at first sight much resembles *P. Scoticus*, from the Primordial of Roxburghshire, though the Carboniferous specimen is larger and more complicated.\* It seems to have been produced by the successive pressure of a pair of flat organs, crenated or toothed at the edges, rather than divided into separate toes. Its horizon is the Lower Carboniferous. It was collected by Prof. Hartt.

The first species of *Protichnites* referred to above may be appropriately named *P. Carbonarius*, and the second *P. Acadicus*. They are, I believe, the first impressions of this kind found in the Carboniferous.

## 2. *Rusichnites*, Dawson.

In a paper published in the *Canadian Naturalist*, 1864, I showed that the singular bilobate markings with transverse striæ named *Rusophycus* by Hall, and found in the Chazy of Canada and the Clinton group of New York, are really casts of burrows connected with footprints consisting of a double series of transverse markings, and that a comparison of them with the trails and burrows of *Limulus* justified the conclusion that they were produced by Trilobites. I proposed for these and for similar impressions of small size found in the Carboniferous, the name given above. The Carboniferous examples I supposed might have been produced by the species of *Phillipsia* found in these beds. A specimen recently obtained from Horton shows this kind of impression passing in places into a kind of *Protichnites*, as if the creature possessed walking feet as well as the lamellate swimming feet which it ordinarily used.

I can scarcely doubt that the *Cruziana semiplicata* of Salter, and *C. similis* of Billings from the Primordial of Newfoundland, must have been produced by crustaceans not dissimilar from those to which *Rusichnites* belongs.

To *Rusichnites* rather than to *Protichnites* ought perhaps to be referred certain transverse linear impressions with a broad central groove from the Lower Carboniferous of Horton, which occur at that place under different modifications, and sometimes seem to change into light scratches or touches of feet employed in swimming, or end abruptly as if the animal had suddenly risen from the bottom.

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\* Siluria, 4th edition, p. 153.