

as to the existence of unknown creatures, and thus may be as important to us as the footprints of Friday to Robinson Crusoe. As I have been taking Canadian examples, I may borrow one here from Mr. Matthew, of St. John, New Brunswick.

He remarks in one of his papers the manner in which the Trilobites of the early Cambrian are protected with defensive spines, and asks against what enemies they were intended to guard. That there were enemies is further proved by the occurrence of Coprolites or masses of excrement, oval or cylindrical in form, and containing fragments of shells of Trilobites, of Pteropods (Hyolithes) and of Lingula. There must therefore have been marine animals of considerable size, which preyed on Trilobites. Dr. Hunt and myself have recorded similar facts from the Upper-Cambrian and Cambro-Silurian of the Province of Quebec. No remains, however, are known of animals which could have produced such coprolites, except, indeed, some of the larger worms of the period, and they seem scarcely large enough. In these circumstances Mr. Matthew falls back on certain curious marks or scratches with which large surfaces of these old rocks are covered, and which he names Ctenichnites or "Comb tracks." These markings seem to indicate the rapid motion of some animal touching the bottom with fins or other organs; and as we know no fishes in these old rocks, the question recurs, What could it have been? From the form and character of the markings Mr. Matthew infers (1) That these animals lived in "schools," or were social in their habits; (2) That they had a rapid, direct, darting motion; (3) That they had three or four (at least) flexible arms; (4) That these arms were furnished with hooks or spines; (5) That the creatures swam with an easy motion, so that sometimes the arms of one side touched the bottom, sometimes those of the other. These indications point to animals allied to the modern squids or cuttlefishes, and as these animals may have had no hard parts capable of pre-