

millipedes, and perhaps insects. The air-breathing vertebrates are not intended to consume the exuberant vegetable growth, but to check the increase of its animal enemies. Plant life would thus seem to have had in every way the advantage. The millipedes probably fed only on roots and decaying substances, the snails on the more juicy and succulent plants growing in the shadow of the woods, and the great predominance of the family of cockroaches among carboniferous insects points to similar conclusions as to that class. While, moreover, the vegetation of the coal swamps was most abundant, it was not, on the whole, of a character to lead us to suppose that it supported many animals. Our knowledge of the flora of the coal swamps is sufficiently complete to exclude from them any abundance of the higher phænogamous plants. We know little, it is true, of the flora of the uplands of the period; but when we speak of the coal-formation land, it is to the flats only that we refer. The foliage of the plants on these flats with the exception of that of the ferns, was harsh and meagre, and there seem to have been no grasses or other nutritious herbaceous plants. These are wants of themselves likely to exclude many of the higher forms of herbivorous life. On the other hand, there was a profusion of large nut-like seeds, which in a modern forest would probably have afforded subsistence to squirrels and similar animals. The pith and thick soft bark of many of the trees must at certain seasons have contained much nutritive matter, while there was certainly sufficient material for all those insects whose larvæ feed on living and dead timber, as well as for the creatures that in turn prey on them. It is remarkable that there seem to have been no vertebrate animals fitted to avail themselves of these vast stores of food. The question: "What may have fed on all this vegetation?" was never absent from my mind in all my explorations of the Nova Scotia coal sections; but no trace of any creature other than those already mentioned has ever rewarded my search. In