"Mammoth Vein," at Wilkesbarre, Pennsylvania, is twenty-nine feet thick. Add to the time occupied in the accumulation of the coal the time which elapsed during the inundations, when shales, sandstones, and limestones accumulated to an average of fifty times the thickness of the coal, and we shall have at least double the above interval, or two hundred and eighty-eight thousand years, for the time required to build up a series of coal-measures three thousand feet thick. This is about the thickness of the Pennsylvania measures, while those of Nova Scotia are five times as thick.

It is not forgotten that allowance must be made for the extraordinary luxuriance of Carboniferous vegetation, and I offset this consideration by the fact that large quantities of carbon, taken by it from the atmosphere, must have been returned again by the partial decay and destruction of the tissues, thus rendering them so difficult to detect in the substance of the coal. Other calculations, based upon the assumption that the coal-measures were accumulated at the mouths of rivers, result in the determination of a length of peroid equally enormous. But the whole history of our world since the commencement of animal existence is divided into over thirty periods, each corresponding to that of the coal, and that portion of its history anterior to the creation of animals was at least equally protracted!

The vegetation of this period was comparatively low in rank. It was almost exclusively a flowerless vegetation. But the sombre aspect of the prairie and forest comported well with the absence of admiring intelligences, and the low grade and character of the few beings which basked in the sun or bathed in the waters of the Carboniferous Age. The leading forms of vegetation were allied to *rushes*, *ferns*, and *club-mosses* (see Fig. 65). Many of these grew to colossal dimensions. Some of the rushes—*Cala-*