

remarkable circumstance, which seems a direct result of the same physical conditions of our planet as those ever-recurring subsidences, is the vast horizontal extent and persistency of these platforms. The Appalachian Coal formation in the United States has been traced by Professor Henry Rogers over an area considerably more extensive than that of all Great Britain ; and yet there are some of its beds that seem continuous throughout. The great Pittsburg coal-seam of this field,—a seam wonderfully uniform in its thickness, of from eight to twelve feet,—must have once covered a surface of ninety thousand square miles. And this characteristic of persistency, united to great extent, in the various platforms of the Coal Measures, and of ever-recurring subsidence and depression, which accumulated one surface platform over another for hundreds and thousands of feet, belong, I am compelled to hold, to a condition of things no longer witnessed on the face of the globe. The earth has still its morasses, its deltas, its dismal swamps ; it has still, too, its sudden subsidences of surface, by which tracts of forest have been laid under water ; but morasses and deltas cover only very limited tracts, and sudden subsidences are at once very exceptional and merely local occurrences. Subsidence during the Carboniferous ages, though interrupted by occasional periods of rest, and occasional paroxysms of upheaval, seems, on the contrary, to have been one of the fixed and calculable processes of nature ; and, from apparently the same cause, persistent swamps, and accumulations of vegetable matter, that equalled continents in their extent, formed one of the common and ordinary features of the time.

My subject is one on which great diversity of opinion may and does prevail. But while entertaining a thorough respect for the judgment and the high scientific acquirements of geologists who hold that the earth existed at this early period in the same physical conditions as it does now, I must persist in believing that these conditions were in one important