

ing and dipping the land in many alternations, were premonitions of the great period of revolution,—so well elucidated, as already observed, by the Professors Rogers,—when the Atlantic border, from Labrador to Alabama, long in preparation, was at last folded up into mountains, and the Silurian, Devonian, and Carboniferous rocks were baked or crystallized. No such event had happened since the revolution closing the Azoic Period. From that time on, all the various beds of succeeding ages up to the top of the Carboniferous had been laid down in horizontal or nearly horizontal layers, over New England as well as in the west,—for the continent from New England westward, we have reason to believe, was then nearly a plain, either above or below the water; there had been no disturbances except some minor uplifts: the deposits, with small exceptions, were a single unbroken record, until this Appalachian revolution.\*

This epoch, although a time of vast disturbances, is more correctly contemplated as an epoch of the slow measured movement of an agency of inconceivable power, pressing forward from the ocean towards the northwest; for the rocks were folded up without the chaotic destruction that sudden violence would have been likely to produce. Its greatest force and its earliest beginning was to the northeast. I have alluded to the disturbance between the Upper and Lower Silurian beds of Gaspé, to the north. Another epoch of disturbance, still more marked, preceded, according to Mr. Logan, the Carboniferous beds in those northeastern regions; and New England, while a witness to the profound character and thoroughness of the Appalachian revolution, attests also to the greater disturbance towards its northern limits. Some of the Carboniferous strata were laid down in Rhode Island as clay and sand and layers of vegetable debris: they came forth from the Appalachian fires as we now have them, the beds contorted, the coal layers a hard siliceous anthracite or even graphite in places, the argillaceous sands and clays crystallized as talcose schist, or perhaps gneiss or syenite.

These very coal-beds, so involved in the crystalline rocks, are part of the proof that the crystallization of New England took place after the Coal Era. Fossils in Maine, Vermont, Canada,

---

\* It is urged by Prof. Hall and others that the carboniferous beds in the west lie unconformably on the beds below. But the disturbance indicated was not one of bold flexures or uplifts.