

I had stopped at Richmond on my way south, for the sake of exploring geologically some coal mines, distant about thirteen miles from the city to the westward. Some of the largest and most productive of these, situated in Chesterfield County, belong to an English company, and one of them was under the management of Mr. A. F. Gifford, formerly an officer in the British army, and married to a Virginian lady. At their agreeable residence, near the Blackheath mines, we were received most kindly and hospitably. On our road from Richmond, we passed many fields which had been left fallow for years, after having been exhausted by a crop of tobacco. The whole country was covered with snow, and, in the pine forests, the tall trunks of the trees had a white coating on their windward side, as if one half had been painted. I persevered, nevertheless, in my examination of the mines, for my underground work was not impeded by the weather, and I saw so much that was new, and of high scientific interest in this coal-field, that I returned the following spring to complete my survey.

There are two regions in the state of Virginia (a country about equal in area to the whole of England proper), in which productive coal-measures occur. In one of these which may be called the western coal-field, the strata belong to the ancient carboniferous group, characterized by fossil plants of the same genera, and, to a great extent, the same species, as those found in the ancient coal-measures of Europe. The other one, wholly disconnected in its geographical and geological relations, is found to the east of the Appalachian Mountains, in the middle of that granitic region, sometimes called the Atlantic Slope.* In consequence of the isolated position of these eastern coal-beds, the lowest of which rest immediately on the fundamental granite, while the uppermost are not covered by any overlying fossiliferous formations, we have scarcely any means of determining their relative age, except by the characters of their included organic remains. The study of these, induced Professor W. B. Rogers, in his memoir, published in 1842,† to declare his opinion that

* See geological map of the U. S. in my "Travels in North America," vol. i. and ii. p. 92.

† Trans. of American Geologists, p. 298.