

sterility on the whole land. Yet, in spite of these expressions of ill-humour, it was satisfactory to observe that the rashness of private speculators had received a wholesome check; and large sums of money, which for twenty years previously had been annually squandered in trials for coal in rocks below the carboniferous series, were henceforth saved to the public. There can be little doubt that the advantage derived to the resources of the State by the cessation of this annual outlay alone, and the more profitable direction since given to private enterprise, is sufficient to indemnify the country, on mere utilitarian grounds, for the sum so munificently expended by the government on geological investigations. The resemblance of certain Silurian rocks on the banks of the Hudson river to the bituminous shales of the true Coal formation was the chief cause of the deception which misled the mining adventurers of New York. I made an excursion southwards from Albany, with a party of geologists, to Normanskill Creek, where there is a waterfall, to examine these black slates, containing graptolites, trilobites, and other Lower Silurian fossils. By persons ignorant of the order of superposition and of fossil remains, they might easily be mistaken for Coal measures, especially as some small particles of anthracite, perhaps of animal origin, do actually occur in them.

On leaving Albany, I determined so to plan my route to the Falls of Niagara and back again to the Hudson, as to enable me to see by the way the entire succession of mineral groups from the lowest Silurian up to the coal of Pennsylvania. Mr. James Hall, to whose hands the north-west division of the geological survey of New York had been confided, kindly offered himself as my