

thanks to the remoteness of all fuel save anthracite and wood.

Next day, I went with Mr. Redfield, well known by his meteorological writings, across the Passaic river to Newark in New Jersey, where we examined quarries of the New Red Sandstone, and saw the surfaces of the strata ripple-marked, and with impressions of rain-drops. They also exhibit casts on their under sides of cracks, which have been formed by the shrinking of the layers of clay when drying. These appearances, together with imbedded fragments of carbonized fossil wood, such as may have been drifted on a beach, bespeak the littoral character of the formation on which, in many places in Connecticut and Massachusetts, the fossil footsteps of birds, to which I shall afterwards allude, have been found imprinted.

*Aug. 16.*—Sailed in the splendid new steam-ship the *Troy*, in company with about 500 passengers, from New York to Albany, 145 miles, at the rate of about 16 miles an hour. When I was informed that “seventeen of these vessels went to a mile,” it seemed incredible, but I found that in fact the deck measured 300 feet in length. To give a sufficient supply of oxygen to the anthracite, the machinery is made to work two bellows, which blow a strong current of air into the furnace. The Hudson is an arm of the sea or estuary, about twelve fathoms deep, above New York, and its waters are inhabited by a curious mixture of marine and fresh-water plants and mollusca. At first on our left, or on the western bank, we had a lofty precipice of columnar basalt from 400 to 600 feet in height, called the Palisades, extremely picturesque. This basalt rests on sandstone, which is of the same age as