glomerate are found occupying an area more than 150 miles in length from north to south, and about 5 to 10 miles in breadth, the beds dipping to the eastward at angles varying from 5 to 50 degrees. The extreme inclination of 50 degrees is rare, and only observed in the neighborhood of masses of trap which have been intruded into the red sandstone while it was forming, or before the newer parts of the deposit had been completed. Having examined this series of rocks in many places, I feel satisfied that they were formed in shallow water, and for the most part near the shore, and that some of the beds were from time to time raised above the level of the water, and laid dry, while a newer series, composed of similar sediment, was forming. The red flags of thin-bedded sandstone are often ripple-marked, and exhibit on their under sides casts of cracks formed in the underlying red and green shales. These last must have shrunk by drying before the sand was spread over them. On some shales of the finest texture impressions of rain-drops may be seen, and casts of them in the incumbent argillaceous sandstones. Having observed similar markings produced by showers, of which the precise date was known, on the recent red mud of the Bay of Fundy, and casts in relief of the same, on layers of dried mud thrown down by subsequent tides,* I feel no doubt in regard to the origin of some of the ancient Connecticut impressions. I have also seen on the mud-flats of the Bay of Fundy the footmarks of birds (*Tringa minuta*), which daily run along the borders of that estuary at low water, and which I have described in my Travels.† Similar layers of red mud, now hardened and compressed into shale, are laid open on the banks of the Connecticut, and retain faithfully the impressions and casts of the feet of numerous birds and reptiles which walked over them at the time when they were deposited, probably in the Triassic Period.

According to Prof. Hitchcock, the footprints of no less than thirty-two species of bipeds, and twelve of quadrupeds, have been already detected in these rocks. Thirty of these are believed to be those of birds, four of lizards, two of chelonians, and six of batrachians. The tracks have been found in more than twenty places, scattered through an extent of nearly 80 miles from north to south, and they are repeated through a succession of beds attaining at some points a thickness of more than 1000 feet, which may have been thousands of years in forming.‡

As considerable skepticism is naturally entertained in regard to the nature of the evidence derived from footprints, it may be well to enumerate some facts respecting them on which the faith of the geologist may rest. When I visited the United States in 1842, more than 2000 impressions had been observed by Professor Hitchcock,§ in the district alluded to, and all of them were indented on the upper surface of the layers while the corresponding casts, standing out in relief, were always

* Principles of Geol. 9th ed. p. 203.
† Travels in North America, vol. ii. p. 168.
‡ Hitchcock, Mem. of Amer. Acad. New Ser. vol. iii. p. 129.
§ See also Mem. Amer. Ac. vol. iii. 1848.