

no increase, or that the sea is not full, we inquire, what becomes of the waters so discharged, and where do they come from? The answer is very simple, "They come from their sources." But how are their sources supplied? for unless the waters which the fountains send forth be returned, they must fail and be dry. Now here the beautiful provision of nature is seen. The springs by which the rivers are fed, are supplied by the rains, and these rains are formed of vapours taken up from the sea "that it be not full," evaporated by heat, and carried up to the mountains by means of the atmosphere. The mechanical power produced by the sun and atmosphere in lifting water from the sea and earth, in transporting it from one place to another, for the purpose of letting it down again in the proper place, is inconceivably great. We admire the machinery of artificial water works which produces only feeble and limited results in comparison with that which is incessantly and silently carrying on its operations around us. The water power that the Falls of Niagara would afford, would present a splendid result if estimated by figures; yet what is the "horse-power" of Niagara, falling only a few feet, in comparison with the power that is required to lift up as high as the clouds, carry thousands of miles all the water that is discharged into the sea, not only all the waters of this river, but of all the other streams of the globe. It has been computed that the force required for producing and lifting the vapour to the height it is carried from each acre of the earth's surface, is equal to the power of thirty horses, and for the whole area of the earth, it is eight hundred greater than all the water-power in Europe.

Some idea may be formed of the work performed by the atmosphere in order to supply the rivers that run into the sea, and prevent the sea from passing its appointed bounds. The water is evaporated in the largest proportion from the torrid zone; and supposing it were all taken from that portion of the earth's surface, there would be a belt encircling the earth three thousand miles in breadth, from which the atmosphere annually takes up a layer sixteen feet in depth. And to lift up as high as the clouds, carry thousands of miles, and let down again in the right place and at the proper time, all the water that would fill a lake twenty-five thousand miles long, three thousand broad, and sixteen feet deep, is the yearly work performed by this invisible machinery. What a powerful engine is the atmosphere, and how nicely adjusted must be all the cogs, and wheels, and springs, and *compensations* of this exquisite piece of machinery, which never wears out, nor breaks down, nor fails to do its work at the right time, and in the right way."*

The currents of the atmosphere by which the transportation of water