

after the surface had assumed essentially its present shape, it was subjected for a long time to a powerful agency whereby the rough and salient parts were worn down and rounded, the rocks in place smoothed and furrowed, valleys scooped out, huge blocks of stone transported far from the parent bed, piled up, and thick accumulations of bowlders, sand, and gravel, strewn promiscuously over the surface. At the commencement of this process, the ocean, probably loaded with ice, stood above a large part of the present continents. It soon began to subside, or the land to rise, and a more quiet action succeeded. The joint action of the ocean and the glaciers on the land ground down into sand, clay, and loam, the coarser drift, and sorted it in the form of beaches, terraces, and alluvial deposits. All this while, both the land and the water seem to have been, for the most part, destitute of inhabitants. But these were the very processes needed for man and his contemporary races, who were to appear during the latter part of the pleistocene period. In other words, the soils were thus got ready for nourishing the vegetation necessary to sustain the new creation, which would convert these desolate and deserted sea-beds into regions of fertility and happiness to teeming millions.

Now, just consider what must have been the effect of these mighty aqueous and glacial agencies upon the earth's surface. Over the level regions they strewed the finer materials; and where the rocks had been thrown up into ridges and displaced by numerous fissures, or subsequently worn into bluffs and precipices by the ocean, it needed just such an agency to smooth down those irregularities, to fill up those gulfs, to give to the hills and valleys a graceful outline, and to cover all the surface with those comminuted materials that would need only cultivation to make them a fertile soil. Some rocks do, indeed, decompose and form soils; but this process would be too slow, unless in moist and warm regions, where it is easier to find a footing for plants than in climes more uncougenial to their growth. We cannot then hesitate to regard this tremendous agency of ice and water in northern and high southern regions as decidedly beneficial in its influence. It must, indeed, have spread terrible destruction over those regions. But it seems that a time was chosen for its operation when the globe was almost destitute of organic life, and not long