

need remark, that the facts we have stated warrant no such inference : we have seen that the minutest living atom possesses a structure as wonderful as our own ; and that some of the fossil animals which first appear in the strata, belong to families with a highly developed organization. Nor does the vegetation of the earliest periods lend any support to such a hypothesis ; fungi, lichens, hepaticæ, or mosses, as I have before remarked, do not form the flora of the carboniferous strata, but coniferæ, and the most perfectly organized of the cryptogamic class.

43. GEOLOGICAL EFFECTS OF MECHANICAL AND CHEMICAL ACTION.—The physical changes that have taken place in the earth's surface, are in perfect harmony with the modifications observable in animated nature ; for the laws of mechanical and chemical action are indissolubly connected with those which govern vital phenomena ; and we have incontrovertible evidence, that throughout the vast periods over which geological speculations extend, the same causes have operated, the same effects followed. Thus, heat and cold, drought and moisture, and other atmospheric influences, have dissolved the loftiest peaks—rivulets and torrents have eroded the sides of the mountain-chains—streams and rivers have worn away the plains, and carried the spoils of the land into the bed of the ocean—the waves of the sea have wasted its shores, and destroyed the cliffs and rocks which opposed their