

have borne upon their bosoms numerous icebergs, broken off from vast glaciers; and which, both from their former action in separating portions of rock of all sizes, and from the accompaniments of their disruption, must have involved large masses of rocky materials. These materials are of all sizes, from small pebbles and moderate bowlders to blocks of thousands of cubic feet in dimensions and hundreds of tons in weight. As the icebergs melted away, after the retiring floods had left them, these stones were deposited. Some of the masses received additional periods of long-continued water-wearing, and are now exhibited to us in the graduating forms of blocks separate or in continuous heaps, smaller bowlders and pebbles, gravel and sand. It must be borne in mind that the reducing of angular fragments into rounded and smooth forms, especially of the extremely hard rocks which have furnished

“If it be true that continents and vast chains of mountains were elevated at different periods, and by paroxysmal efforts, it is impossible but that deluges of tremendous violence and universal* extent, should have been the consequence. Accordingly, we find traces of such deluges in the vast beds of conglomerates that exist in the sedimentary deposits; and also in the frequent extinctions and renewals of animal and vegetable life, which appear to have taken place on the globe. For such deluges must have been fatal to organized existence; at least to a great extent.—Our rocks [those of Massachusetts] show the occurrence of several very powerful deluges in early times.—The new red sandstone affords evidences of numerous deluges during its deposition; in the many alternations of coarse and fine materials of which it is composed. Two periods, during its production, appear to have been particularly distinguished for powerful diluvial action. In the first, those conglomerated beds, made up chiefly of the ruins of granite, and associated with the lower beds of sandstone, were accumulated. In the second, that very coarse conglomerate, chiefly composed of various schists, and connected with the higher shales and sandstones, was brought into its present situation. The osseous conglomerate connected with the plastic clay, indicates diluvial action perhaps, though not of the most violent kind, during the deposition of this formation.” *Ib.* p. 520.

* He probably means *very wide*: for a strict universality is not required by the reasoning, nor quite consistent with what follows.