interest to a thousand observations respecting rivers and floods, mountains and morasses, which otherwise appear without aim or meaning; and thus this department of science cannot fail to be constantly augmented by contributions from every side. At the same time it is clear, that these contributions, voluminous as they must become, must, from time to time, be resolved into laws of greater and greater generality; and that thus alone the progress of this, as of all other sciences, can be furthered.

I need not attempt any detailed enumeration of the modes of aqueous action which are here to be considered. Some are destructive, as when the rivers erode the channels in which they flow; or when the waves, by their perpetual assault, shatter the shores, and carry the ruins of them into the abyss of the ocean. Some operations of the water, on the other hand, add to the land; as when *deltas* are formed at the mouths of rivers or when calcareous springs form deposits of *travertin*. Even when bound in icy fetters, water is by no means deprived of its active power; the *glacier* carries into the valley masses of its native mountain, and often, becoming ice-bergs, float with a lading of such materials far into the seas of the temperate zone. It is indisputable that vast beds of worn down fragments of the existing land are now forming into strata at the bottom of the ocean; and that many other effects are constantly produced by existing aqueous causes, which resemble some, at least, of the facts which geology has to explain.

[2nd Ed.] [The effects of glaciers above mentioned are obvious; but the mechanism of these bodies,—the mechanical cause of their motions,—was an unsolved problem till within a very few years. That they slide as rigid masses;—that they advance by the expansion of their mass;—that they advance as a collection of rigid fragments; were doctrines which were held by eminent physicists; though a very slight attention to the subject shows these opinions to be untenable. In Professor James Forbes's theory on the subject (published in his *Travels through the Alps*, 1843,) we find a solution of the problem, so simple, and yet so exact, as to produce the most entire conviction. In this theory, the ice of a glacier is, on a great scale, supposed to be a plastic or viscous mass, though small portions of it are sensibly rigid. It advances down the slope of the valley in which it lies as a plastic mass would do, accommodating itself to the varying shape and size of its bed, and showing by its crevasses its mixed character between fluid and rigid. It shows this character still more curiously by a *ribboned struc-*