repeatedly seen icebergs and icefloes sailing along laden with such materials.

The above explanation of the phenomena of drift supposes the land on which the travelled materials are found to have been the bottom of a sea where they were deposited. But it does not, even granting the conditions, account for some of the facts observed;—that the drift and the boulders are deposited in "traînées" or streaks, which, in direction, diverge from the parent rock;—and that the boulders are of smaller and smaller size, as they are found more remote from that centre. These phenomena rather suggest the notion of currents of water as the cause of the distribution of the materials into their present situations. And though the supposition that the whole area occupied by drift and boulders was a sea-bottom when they were scattered over it much reduces the amount of violence which it is necessary to assume in order to distribute the loose masses, yet still the work appears to be beyond the possible effect of ordinary marine currents, or any movements which would be occasioned by a slow and gradual rising of the centre of distribution.

It has been suggested that a *sudden* rise of the centre of distribution would cause a motion in the surrounding ocean sufficient to produce such an effect: and in confirmation of this reference has been made to Mr. Scott Russell's investigations with respect to waves, already referred to. (Book VIII.) The wave in this case would be the *wave of translation*, in which the motion of the water is as great at the bottom as at the top; and it has hence been asserted that by paroxysmal elevations of 100 or 200 feet, a current of 25 or 30 miles an hour might be accounted for. But I think it has not been sufficiently noted that at each point this "current" is transient: it lasts only while the wave is passing over the point, and therefore it would only either carry a single mass the whole way with its own velocity, or move through a short distance a series of masses over which it successively passed. It does not appear, therefore, that we have here a complete account of the transport of a collection of materials, in which each part is transferred through great distances:—except, indeed, we were to suppose a numerous succession of paroxysmal elevations. Such a *battery* might, by successive shocks, transmitting their force through the water, diffuse the fragments of the central mass over any area, however wide.

The fact that the erratic blocks are found to rest on the lower drift, is well explained by supposing the latter to have been spread on the