

ways announces a sudden rise of the water. The motion and weight of the upper water communicates this motion to them; for in certain respects we must consider a river as a pillar of water contained in a tube, and the whole channel as a very long canal where every motion must be communicated from one end to the other. Now, independent of the motion of the upper waters, their weight alone might cause the rapidity of the river to increase, and perhaps move it at bottom; for it is known, that by putting many boats at one time into the water, at that instant we increase the rapidity of the under part of the river, as well as retard that of the upper.

The rapidity of running waters does not exactly, nor even nearly, follow the proportion of the declivity of their channels. One river whose inclination is uniform and double that of another, ought, according to appearance, to flow only as rapid again, but in fact it flows much faster. Its rapidity, instead of being doubled, is sometimes triple, quadruple, &c. This rapidity depends much more on the quantity of water and the weight of the upper waters than on the declivity. When we are desirous to hollow the bed of a river, we need not equally distribute