

by some other cause its rapidity is augmented, if the direction of the river is straight, the middle of the water where the current is rises, and the river forms a convex curve, of a very sensible elevation. This elevation is sometimes very considerable; M. Hupeau, an able engineer of bridges, once measured the river Avieron, and found the middle was three feet higher than near the bank. This, in fact, must happen every time the water has a very great rapidity; the velocity with which it is carried, diminishing the action of its weight in the middle of the current, so that it has not time to sink to a level with that near shore, and therefore remains higher. On the other hand, near the mouths, it often happens that the water which is near the banks is higher than that of the middle, although the current be ever so rapid. This happens wherever the action of the tides is felt in a river, which in great ones often sensibly extends as far as one or two hundred leagues from the sea; it is also a well known fact that the current of a river preserves its motion in the sea to a considerable distance; there is, in this case, therefore, two contrary motions in a river; the middle, which forms the current, precipitates itself towards the sea,