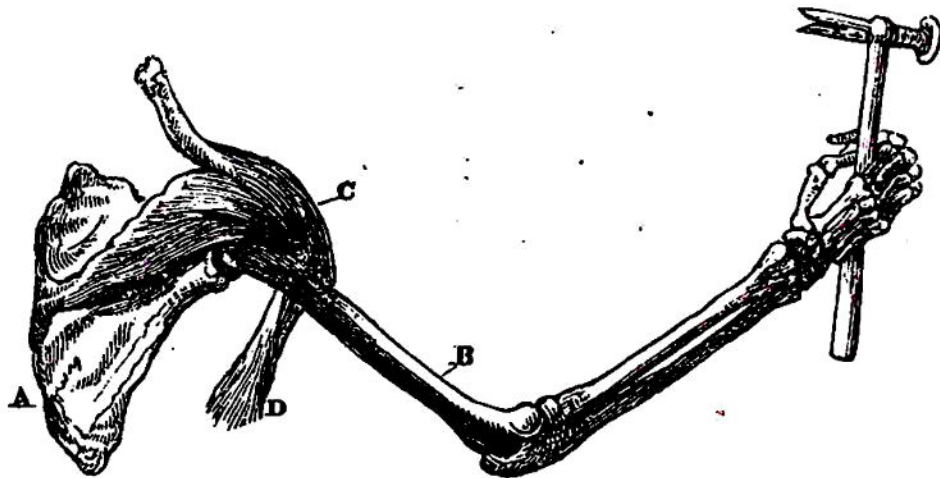


blow, the whole power is bestowed on the acceleration of its motion ; and so on, by the third and fourth blows, until the body moves with a velocity, equal to that of the body from which the impulse is originally given. The slight blow given to a boy's hoop is sufficient to keep it running ; and just so the fly-wheel of a machine is kept in rapid action by a succession of impulses, each of which would hardly put it in motion. If we attempt to stop the wheel, it will give a blow in which a hundred lesser impulses are combined and multiplied.

There is, in the machinery of the animal body, in a lesser degree, the same interchange of velocity and force. When a man strikes with a hammer, the muscle near the shoulder,*



* A. The scapula, or shoulder blade ; B. the humerus, or arm-bone ; C. the deltoid muscle of the shoulder, arising from the shoulder-blade and clavicle, and inserted into the arm-bone ; D. a muscle which draws the arm down, as in striking with a sword or hammer.