anticipate all the results. Elasticity is extensively employed in the machinery of the animal body; and to show how finely it must be apportioned, we shall take the illustration of a bridge built with iron instead of stone, and having a certain swing and elasticity. It lately happened that a bridge of this kind fell, in very curious circumstances,—by the marching of a body of soldiers over it. Now the bridge was calculated to sustain a greater weight than this body of men: and had they walked tumultuously over it, it would have withstood the pressure. But the soldiers marching to time, accumulated a motion, aided by the elasticity of the material, which broke it down. This leads us to form a conception of the necessity of the fine adjustment of the solid material in the animal fabric; not merely to enable it to sustain the incumbent weight, or to resist transverse or oblique impulses, but to withstand the frequent, and regularly repeated forces to which it may be subject in the various actions of the body. It gives interest to this fact, that there is hardly a bone which has not a constitution of its own, adjusted to its place and use: the heel bone, the shin bone, the vertebræ, and the bones of the head, all differ in mechanical construction.

Let us compare the machinery of some complicated engine with the mechanical properties in an animal body, that we may comprehend