gravity. It follows from this that the amount of heat necessary to raise a pound of water 1 degree Fahrenheit is equal to 772 foot-pounds, which constitutes the mechanical equivalent of heat. We thus have a means of measuring energy, whether mechanical or molecular.

This brings us to a point where it is well to define a little more clearly what is meant by work. Work is divided into different classes—for instance, mechanical work is performed when sensible masses are displaced, as opposed to molecular work, in which case there is a displacement of invisible molecules. When a gun is fired, work is done by the energy of the ball in overcoming the resistance of the air and gravity. A certain amount of the heat generated by the ignition of the powder has been absorbed in propelling the ball forward. In other words, molecular has passed for the time being into mechanical energy. This mechanical energy begins to be transmuted or changed into molecular energy the moment the bullet leaves the muzzle of the gun in its attempt to overcome the opposing resistance of air and gravity; for the bullet becomes heated and the air becomes heated until the bullet finally comes to a state of rest. The heat that the bullet has generated in the air and in itself as well as in the earth when it struck, is an exact measure of that which was absorbed from the heat created by