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ARTICLE I.

CONVERSION OF LIGHT INTO HEAT.

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THERE are but few physical facts more definitely settled and accepted, than that of the conversion of motion into heat. So thoroughly is this understood, that, given the volume of matter, and the velocity of movement, the amount of heat evolved from a sudden stopping of the moving mass can be very accurately ascertained.

The great cold which exists in the upper air sufficiently shows that the rays from the sun do not produce any sensible rise in the temperature of the atmosphere, and that it is chiefly when the rays of light approach the surface of the earth that heat becomes developed, first in the objects against which the light strikes, then indirectly in the air by contact with those substances which have been heated by the sun's rays. Air also may be artificially heated. No doubt can enter the mind but that heat is developed by the action of the direct rays, and man and beast alike seek shelter from its effects in the cooler shades.

Light, we all know, is the result of vibrations in a medium infinitesimal in its tenuity, and passes along with great velocity. If these vibrations should be stopped by any material substance, then they must either cease to exist altogether, or manifest some condition of force which could be stated as their equivalent.