

TEMPERANCE TEACHING IN PUBLIC SCHOOLS.

BY ARCHIBALD CUTHBERTSON, B.A., NEW YORK.

THERE appears to be, in human beings, a natural desire for what are called "stimulants." It may be useful, at the beginning of our consideration on this subject, to look carefully at the word stimulant, and if possible understand its meaning. A stimulant, according to the meaning attached to it by the ancients, was a whip, a sharpened or pointed stick or piece of metal used for causing either men or animals to act more quickly, especially when wearied, that is, to put forth bodily effort by a means other than the will. The word stimulant, as used in modern times amongst English-speaking people relates to something which, when applied to any part of, or put into a living organism will be followed by an increase of effort by the nervous system, either locally or generally. This increased effort may be indicated by either a pleasant or painful feeling. Referring back to the ancient stimulant externally applied, every one can understand that nothing is added to the organism by the stimulant so applied, it causes only a further draught on the strength of an already wearied organism. We expect to see in our examination of the application of a modern stimulant that the effects are precisely the same as those produced by a whip when applied to a horse. There is a power by which living organisms continue to live, move and retain their physical being. This power or force cannot be seen, but like all other force must be considered from its results. If a human body weighs 150 lbs., the mechanical power required to move such a body will need to be a pound more than 150,

perhaps a little more, perhaps a little less, but however much or little still more than 150 lbs. Now, if there is within a body power enough to move such, that power may be considered mechanically. Our task, accordingly, is to look at three conditions relating to this power in human bodies. First, What is it? Second, How is it applied? Third, How is it maintained? First, What is the power which operates the human body from within itself? This is some stimulus applied by the nervous system or some irritation of the nerve cells. All that vivisection has ever made known relating to nerve power is contraction of muscular tissue consequent upon nerve irritation, but whether this irritation is confined to movement of nerve cell, or is evidence of the transmission of stimulus from the nerve centres to the muscles, has not been demonstrated.

Phenomena appear to show that the nerves are merely transmitting mediums for stimulus supplied by the nerve centres, specially the brain. This has been very suggestively shown by the fact that large brained people are more durable — bodily — than others with similar sized bodies but smaller brains. Again, if the nerve connecting any muscle with a nerve centre is cut between such muscle and nerve centre the muscle cannot be operated by the organism. It may quiver, but the power is soon exhausted. This fact appears to suggest that the influence which contracts a muscle is supplied from the nerve centres. The power then which operates the various parts of the body is a something supplied by the nervous system. As much more appears