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FEVER AND ANTIPYRETICS.\*

BY JAMES THORBURN, M.D.

In obedience to your request, Mr. President, I have endeavored to collect some of the most important facts with regard to fever and antipyretics, their uses and abuses. In order, however, to arrive at an intelligent understanding of the uses of these remedies we must have correct ideas of fever. I need not tell you that on this subject much diversity of opinion exists among medical men of equal renown. Different theories have been promulgated as to what it is and as to its influence on the animal economy; all of them containing a certain degree of truth and having their followers. One theory is that fever is due to the presence of microbes in the blood. They being foreign, a contest is set up to get rid of them, and fever is the result. The temperature necessary to destroy these microbes would be destructive to life; although the *B. anthracis* and *B. tuberculosis* can be destroyed by a temperature of 109. There are two schools: the followers of one believing that high temperature is dangerous and should be counteracted, the other that it is salutary and should not be interfered with. It is, however, of comparatively recent date that the most eminent investigators on this subject have decided that fever is a disturbance or derangement of the heat-producing and heat-losing apparatus, through the agency of the nervous

system; that it is not disease *per se* acting independently of the nerves. In health there is a balance (thermotaxic) maintained between heat production and heat dissipation. Heat is chiefly got rid of by radiation, evaporation, conduction and respiration, about 80% being taken away through the skin, and about 20% through the lungs. The vaso-motor system controls the blood supply of the skin, having its vaso-constrictor or motor, vaso-dilator or inhibitory nerves. On these grounds, Traube founded his Retention theory. He maintained that during fever little heat was discharged from the body and that the contraction of the arterioles prevented it. The experiments of Leyden and Senator have proved that large quantities of heat are dissipated from the skin during fever. This opinion is confirmed by Wood and his assistants, and it was also found that this increased discharge is not confined to one period of the disease but exists throughout its whole course. The arterioles are not always contracted; at one time during the same fever the face may be flushed and at another it may be blanched, showing that the nervous system which controls fever is greatly disturbed and is not constant. Thus, Traube's theory that there is diminished discharge of heat from the surface of the body throughout the course of fever is overthrown.

We also know that heat production varies from many causes. A man in health by eating excessively will have elevation of temperature.

Sometimes, when heat production is highest the fever is lowest and *vice versa*.

\*Read at the meeting of the Ontario Medical Association.