The retention may be great and the escape little, and *vice versa*. Hence we cannot always form a correct opinion from the temperature. The processes of production and waste are not always the same. If heat production were constant and no escape possible, death would ensue. Heat is the product of tissue changes and is chiefly generated in the muscles, secreting glands, and hollow viscera. The process of oxidation in the muscles is greater than in any other organ. It is however increased by exercise. The quantity of carbonic acid evolved is eight times greater than when quiet. The muscles constitute four-fifths of the body heat in health and are the chief furnaces in fever and in health. There is a regulating centre which keeps up the equilibrium in health. Just as we have a special sense for speech, imitation, mastication, etc., so we have a respiratory centre, a vaso-motor centre, and a thermic centre, which is situated high up in the cord and possesses heat exciting and heat inhibitory functions.

They also possess a distinct set of nerves which are distributed to the skin, etc., with a central and peripheral portion. They are distinct from nerves of sensation, which have the power of conveying to the brain impressions of heat and cold. For instance, apply a piece of cold metal to any part of the body and a sensation of cold is at once perceived. If again, the same metal be warmed, the sensation of touch is perceived but no longer the sensation of cold; thus showing that there are two distinct impressions, the one made by the nerves of sensation giving evidence that the body has been touched, and the other by the thermal nerves showing that the metal is cold or warm.

A section of the pons at the junction of the medulla oblongata causes the temperature of the animal to rise. Injuries or diseases of the nerve centres and their membranes especially high up in the cord give rise to increased temperature. Sir Benjamin Brodie pointed this fact out, and since his time many other cases have been recorded where the temperature of the patient had risen to 110 or 111, and Mr. Teale relates one case where it reached the unprecedented height of 122. In other cases there is a fall of temperature. It is impossible to explain the great alteration of temperature from injury to the vital cord. This rise of temperature is closely connected with the seat of injury; for similar injuries in other parts of the cord produce no such effect. Heat dissipation is controlled by the vaso-motor nerves so that paralysis of that system is followed by the loss of heat and finally death from cold. If this paralysis be complete the heat dissipation is so rapid that finally the vital functions cannot be carried on. In ordinary health, a person enters a cold room, and in consequence of the contraction of the arterioles, heat is retained in the body, but if there is vaso-motor paralysis, the outer vessels will not contract and the body's temperature equalizes, the interior being the same as the surface and this condition remains until death ensues. Heat production fluctuates in the same way as heat loss. Wood confirms this statement in his experiments on dogs and rabbits; hence we cannot always judge of the condition of our patient from the temperature. In disorder of body heat, we recognize the essential condition of fever. Can drugs be heat dissipators, lowering temperature in health or in fever? Any drugs which cause vaso-motor paralysis will cause a fall of temperature. Have we any drugs that can control heat production through the inhibitory nerve apparatus? This is an important question and not easily answered. I think we may safely conclude that there is a thermal centre situated high in the cord, controlling and regulating the temperature of the body; that it is endowed with heat producing and heat inhibitory powers, that it has an anatomical and physiological connection with other centres, that it has a distinct or separate set of nerves, and that they are distributed over all parts of the body, especially the skin.

Having thus taken a brief survey of fever, a few words as to antipyretics and their action.

Those medicines which have specific action, as quinine in malaria, salicylic acid in rheumatism, allay fever not directly, but through their action on the germ proper of the disease.

Now, as a type of the other antipyretics, we may take antipyrin, which has provoked a great deal of discussion within the last few years. Its physiological action very closely resembles that of thallin, antifebrin and phenacetin, and it has been proved by experiment to be not merely a refrigerant, but a true antipyretic, inasmuch as it not only makes the dissipation of heat