

motor dilatation, as borne out by the increased action of the sweat glands, the increase of temperature, which is almost always associated with dilatation of the capillaries, and finally by the flushed appearance of the skin.

Sonnenburg says the temperature rapidly rises shortly after the application of heat, and considers this rise of temperature consecutive to the overheating of the blood. It is incontestible that when the cutaneous surface of man and beast is subjected in totality or in a greater part to the action of an intense heat, the entire blood distributed to the periphery not only becomes hotter, but is considerably altered, and the overheated blood which flows back to the central structures must of necessity be followed by an elevation of the central temperature; but there is in animals a considerable difference, which can be easily appreciated when one takes into consideration the size of the subject. We have frequently observed that in those cases in which the superficial fat was well developed there was less immediate relief experienced from pain; and the elevation of the central temperature is less demonstrable than in those subjects whose muscular and fatty layers are particularly thin.

Sonnenburg states that if a burning substance be brought in contact with the cutaneous surface there is primarily an attempt at self-defense on the part of the organism by an immediate vasoconstriction which prevents the blood from flowing through the burned area, and thereby causing internal congestions. In our series of cases we have noticed on the contrary a vasomotor dilatation with its consequent hyperemia and fall of blood-pressure, the rapidity of which depends upon the intensity of, and the duration of the application of the heat, results which are clearly due to a paralytic exhaustion of the vascular tonicity. The red blood-corpuscle can scarcely pass through the vessel, while on the contrary the venous dilatation is so great that they occupy one-third more space than in their normal state. Milne-Edwards in his work on comparative anatomy has also studied this phenomena: the action of cold produces a contraction of the arterioles and intense heat produces the same effect, while a moderate heat dilates the vessels. Salviola confirmed these results by actually measuring the diameter of the vessels before and after the application of heat.

We have noticed from a series of microscopical examinations made of the blood by Dr. Geo. A. Muehlick an excess of accumulation of red blood corpuscles resulting from the action of the high temperature.

During the past nine months we have treated something over 300 cases at St. Agnes Hospital, with a grand total of