

cubic inches, and it caused an evolution of carbon greater than that which it supplied, from which it follows that it must powerfully promote those vital changes of food which ultimately produce the carbonic acid evolved.

"The rate of pulsation followed that of respiration, but in less degree, being either not increased or slightly decreased.

"*On the Digestion.*—There is no ground for believing that it promotes digestion.

"*On Salivary Digestion.*—Tea, according to Roberts, has an intensely inhibitory effect, due to the large quantity of tannin contained in the tea leaf. Coffee and cocoa have only a slight effect on salivary digestion. He says the only way to mitigate the effect of tea on salivary digestion is not to sip the beverage with the meal, but to eat first and drink afterward.

"In some instances, especially when used immoderately and for a considerable time, it produces delay of gastric digestion, which has been ascribed to the effect of tannin by some authorities, while others are not certain as to what constituent of tea and coffee is the active agent in producing dyspepsia.

"*On the Skin.*—Tea tends to induce perspiration and thereby to cool the body.

"*On Mucous Membranes.*—Tea has the effect of increasing secretion, so that there is no dry skin or mouth after tea.

"On the kidneys tea acts sometimes as a diuretic, due partly to its stimulant action on the heart and the rise of blood pressure, and partly to its stimulant action on the cells of the urinary tubules. Bartels, in his article on 'Parenchymatous Nephritis,' in vol. xv., 'Ziemssen's Cyclopædia,' says in his remarks on *treatment*: 'I forbid the use of tea and coffee, which are supposed, and certainly not without reason, to exert an irritating action on the kidneys.' As to its effects upon the urinary excretion, the following facts are given by

Dr. W. J. Morton as to the results of experiments made on himself covering seven days:

"1. A decided increase in the sulphuric and phosphoric acids and a moderate increase in the uric acid, while the chlorid of sodium remained about stationary.

"2. A steady daily decline in the amount of urine excreted; this amounted to an average daily decline of about two fluid ounces, or to a total decline for the week of thirteen fluid ounces.

"3. A large daily decline in the amount of urea excreted; this amounted to an average daily decline of twenty-four grains, or to a total decline of one hundred and sixty-eight grains. The most marked decline was that on the first day of ninety-five grains, when he suffered for twelve hours from the extreme toxic effects of tea.

"These results would seem to point to nerve depression and a decrease of normal metabolism.

"*As a Cardiac Stimulant.*—Schroetter, in vol. vi., 'Ziemssen's Cyclopædia,' says: 'For the acute dilatation of the heart which occurs in the course of inflammatory diseases, our object will be simply to maintain the energy of the heart's contraction only through a short period of time, and for this purpose stimulants will be of great assistance, and among these I consider tea of special value.'

"The perceptible effects of full doses of tea are, according to Dr. Edward Smith:

"1. A sense of wakefulness.

"2. Clearness of mind and activity of thought and imagination.

"3. Increased disposition to muscular exertion.

"4. Reaction with sense of exhaustion following preceding efforts and in proportion to them.

"To sum up, then, tea in moderate doses is a stimulant to the nervous system, and in excess a depressant to the functional action of the nerve-cells of the cerebrum, medulla, spinal and