

eight grains, sometimes causes heaviness of the head, flashes of light before the eyes, ringing in the ears, loss of sleep, great restlessness, and delirium.

"Large doses depress the respiration and pulse and lower the blood-pressure.

"In man, the pulse, after somewhat large doses, becomes very frequent, irregular and intermittent. This effect, Dr. Brunton says, occurs in some persons after a single cup of coffee, but is prevented in such cases by adding a little brandy to the coffee.

"As a causative factor in nervous disorders we can say that its role is that of a stimulant or depressant, varying with the amount, strength and time at which it is taken, and the condition and susceptibility of the subject. Such disorders of the nervous system are insomnia and restlessness, fulness and heaviness of the head. Disorders of special sense, as flashes of light before the eyes and ringing in the ears, frequency, irregularity and intermittence of the heart's action, and muscular tremor.

"The physiological effects of tea have been given much study, and it is very difficult to formulate them in such a way as to make them applicable to all cases, as these effects differ greatly in different individuals in accordance with different circumstances, such as age, temperament, climate and conditions of health.

"Dr. Rolleston, I think, puts it well when he says: 'Tea and coffee are nervine stimulants without narcotism. It would seem that in their case the work of the nervous matter is increased directly, not let loose by narcotism of controlling centres. This stimulation, as is usual in such cases, is followed by exhaustion according to degree of previous stimulation.'

"It seems probable that the aromatic oils, which are obviously very different in tea and coffee, are concerned in the disturbance.

"In my examination of the litera-

ture of the subject, the observations of Dr. William J. Morton, of New York, and Dr. Edward Smith, of London, seem to me to throw considerable light upon the matter of our inquiry, and I shall therefore quote largely from the deductions drawn from their experiments.

"1. With tea, as with any potent drug, there is a proper and improper dose.

"2. In moderation, tea is a mental and bodily stimulant of a most agreeable nature, followed by no habitual reaction. It produces contentment of mind, allays hunger and bodily weariness, and increases the incentive and the capacity for bodily work.

"3. Taken immoderately, it leads to a very serious group of symptoms, such as headache, vertigo, heat and flushings of the body, ringing in the ears, mental dulness and confusion, tremulousness, 'nervousness,' sleeplessness, apprehension of evil, exhaustion of mind and body, with disinclination to mental and physical exertion, increased and irregular action of the heart, and increased respiration. In short, as Dr. Morton says, 'in immoderate doses tea has a most injurious effect upon the nervous system.'

"We will now endeavor to classify the physiological effects of tea as to its action upon the different organs and functions of the human body.

"*On the Mind.*—Tea quickens the intellect both in thought and imagination, and takes away the tendency to sleep. Tea taken twice through the night, according to the experiments of Dr. Edward Smith, prevented any desire for sleep.

"*On Muscular Activity.*—Its effects are an increase and a greater readiness for and ease on making exertion and a greater sense of exhaustion following.

"*On Respiration.*—It has the effect of a respiratory stimulant; the depth of inspiration was greater, an increased volume of air was inspired at each inspiration, varying from three to 10.6