

certain quantity of force already existing in the organism, either the accumulated stores of this must be immense, or they must be simultaneously repaired by that which can create force, or the vitality must, after a very short time, become completely exhausted, and the patient, whether cured of his fever or not, must be "improved off the face of the earth." This, however, is actually what does happen, as can be shewn by the increased mortality rate under the use of alcoholic stimulants; and, even in Dr. Anstie's own work, he admits this, at page 129, where he says: "So well known is this effect (that of reducing undue frequency of the pulse) that a certain degree of frequency of the pulse is taken very commonly as the best indication for the necessity of administering stimulants, at the same time that he admits (1865), with Dr. Stokes, the importance of testing the strength of the heart's action by the audibility of its sounds through the stethoscope." Although he thinks, nevertheless, on the whole, the mere frequency of its action is the safest guide. He cautions against a too free use of the spirit, stating its object to be to administer small quantities at short intervals. "For, he says to narcotise a fever patient, is a most serious and dangerous step; and the well-meant zeal of those who have desired to procure sleep, has often induced coma, from which the patient has only recovered to collapse and quickly sink." Thus admitting, in the plainest terms, the prostrating and dangerous effects of alcohol in this disease, except in the smallest doses. He is still more explicit in 1868, three years later, when he lays down as the law (in an article in the *Lancet*, January 25th) that alcohol cannot be scientifically administered until the urine of the patient has been analyzed, and the sphygmograph, (not the stethoscope as before the sphygmograph was invented) or pulse writer has been applied for the course of many hours; otherwise, mischief, not benefit, will result. He says: "Even the slight and trivial symptom of flushing in the face is a sign of the first degree of the poisonous action, namely, a vaso-motor paralysis, and shows that, at least, we have touched the border line at which the beneficial action of the alcohol ceases, and its poisonous effects begin."

Now, I think it is pretty clear from the admissions of Dr. Anstie himself, (the greatest advocate of alcohol as a medicine in the present day,) that, in fever, at least, "it does not elevate but reduces bodily temperature, when given in even the largest non-intoxicating doses, except in cases where the temperature is already below the normal standard, 98°; and hence I argue that its advocates should never

order it without having first ascertained the temperature of the body by the *clinical thermometer*. Dr. Anstie also admits an important fact, in recommending the use of the *sphygmograph* as a test of the degree of tonicity present in the muscular walls of the heart and coats of the blood vessels—which is a direct test of the degree of muscular tone in the whole system. Now, if these precautions were resorted to, we should soon have the question definitely settled as to whether alcohol does improve the muscular tone of the system under disease, or not. Sir Benjamin Brodie, F.R.S., in his "Physiological inquiries" thus speaks of alcohol as a means of procuring rest in the irritability of fever. He says: "Alcohol removes the uneasy feeling and the inability of exertion which the want of sleep occasions. But the relief is only temporary. Stimulants do not create nervous power, they merely enable you, as it were, to use up that which is left, and then they leave you more in need of rest than before."

The valuable aid of the thermometer, as an index of animal heat, and the sphygmograph as an index of muscular tone or debility, during the administration of alcohol is well illustrated series of experiments published in the *Chicago Medical Journal* of 1867, one was with Bourbon whiskey, the other with sherry wine. Results as follows:

		Temp. in mouth.	Pulse.
Before whiskey drank at 10.30 p.m.		98½	83 per min.
After 4 oz. " "	11 " "	97½	85 " "
" " " "	11.30 " "	97½	89 " "
" " " "	12.30 a.m.	97½	85 " "

"The sphygmograph shows that while the number of beats increased from 83 to 89 per minute during the first hour, the force of the heart pulsations was weakened, whence a congestion of the venous radicals, (which Dr. Anstie warns against as the first indication of its injurious action) would ensue."

Dr. King Chambers writes: "Physiologists have always taught, as confirmed by all experiment, that large doses of alcohol immediately, and small doses after a time, depress the nervous centres; the primary action is anæsthetic—a diminution of vitality in the nervous system."

The use of the sphygmograph does not express the whole truth, although it does much, for we must have to do, in prescribing alcohol, with the quality as well as the quantity, and the precise indications intended to be met by its administration. On this point Dr. Aitken speaks strongly, showing the extreme variance in the strength of alcoholics generally prescribed, and protests against "the blindly empirical and routine mode in which alcoholic beverages are generally prescribed in absolute ignorance of their constitution and genuineness." (P. 242, *Practice Med.*, vol. II.) (Concluded in the next No.)