our imperative duty to exercise as much caution with them, in the way of isolation and treatment, as if we were sure they were cases of that dread disease. It is best to err on the safe side.

ON THE NECESSITY FOR A MODIFICATION OF CERTAIN PHYSIOLOGICAL DOCTRINES REGARDING THE INTERRELATIONS OF NERVE AND MUSCLE.

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THE EPILEPTIC PAROXYSM.

With the experiments on the cervical sympathetic and splanchnic nerves before us, how can we say that the anæmia, or rather ischæmia, of the brain, which ushers in the epileptic seizure, is due to "excessive action of the spinal centres," compelling the spasm or contraction of the arterial muscles on which this ischæmia depends? Have we not had proof that the arterioles contract best when their vaso-motor nerves are cut, or are paralyzed, or dead; and if so, are we not bound to hold that not excess but failure of nerve power is the proximate cause of the epileptic paroxysm? And is not the question of such excess or failure of nerve force a most practical one in determining the treatment?

How far in our comparative failure to cure this terrible disease due to our approaching it under the ægis of an erroneous theory—that nerve force here needed to be depressed rather than exalted? It is well for mankind that in this, as in some other instances, our practice has sometimes been directly at variance with the theory of the day. Thus we find Dr. Anstie assuring us that "our anti-spasmodics are stimulants"; and that "alcohol is one of the best remedies possible in the convulsions of teething in children" (*a*).

NO "MORBID" NERVE FORCE.

Spasms and convulsions frequently take place in the very act of dying, and under circumstances in which nerve force ought to be regarded as at a low ebb; as, for example, in uræmic blood poisoning. It is customary in some quarters to attribute these or other spasms to "a morbid irritability" or "a morbid nerve force"; as if the central nervous ganglia were capable of producing two kinds of nerve force, one normal and the other "morbid," and the spurious variety of attaining extraordinary power just in proportion to the complete failure of nerve force proper. A little reflection, I think, will show that this is untenable. Nerve force may be increased or diminished: its condition may be one of excess or of failure, but that it may present a duplicate of itself, and its *alter ego* produce effects, for which nerve force proper is inadequate, and yet is responsible, is surely yielding too much to the exigency of an erroneous theory.

Medical literature presents numerous examples of this appeal to a "morbid nerve action," and it is rather surprising to find such a writer as the late Dr. Anstie referring to "the explosive disturbances of nerve force which give rise to the convulsions of tetanus" as "something quite different in kind" from healthy nerve action (*b*). Now, if a nerve centre be thrown into action otherwise than by the exercise of its normal activity, then it is no longer the nerve centre which is acting, but a power extraneous to itself; a modern Archæus for which scientific medicine ought to have no place. And if tetanus be really due to an explosive activity of the nervous centres which are discharging nerve force with unwonted activity, surely to administer stimulants in such a case ought to be injurious, if not fatal! And yet we find that Dr. W. A. Hammond, of New York, has produced statistics in which "stimulants" stand at the very head of the list of curative agents in tetanus (*c*). Here again the theory of the day is surely out of joint with the clinical facts.

CHLOROFORM AND RELAXATION OF ANÆSTHESIA.

I have been asked how the rigidity, at first, and subsequently the relaxation, of the muscles during anæsthesia are to be accounted for in this theory. The answer is easy. The rigidity is due to the partial paralysis of motor nerve influence, setting the contractile power of the muscle free to act. This occurs at a comparatively early stage of the process. The relaxation which attends complete anæsthesia is due to the loss of contractile power

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(*a*) Stim. and Narcot., pp. 123, 129.

(*b*) Neural., p. 8.

(*c*) Dis. Nerv. Syst., 4th Ed. p. 541.