

in this form of insanity is severe but evanescent; it rarely lasts more than ten days or a fortnight, and is generally attended with hallucination of the different senses, and delusions, as in puerperal mania, of mistaken identity."

"In almost all cases of insanity of lactation which have come under my notice during the last two years, exophthalmia and bruit de diable have been marked symptoms."

In a disease so essentially anæmic a stimulating treatment is absolutely necessary.

*A Lecture on Delirium Tremens: its Symptoms, Pathology, and Treatment.* By GEORGE JOHNSON, M.D. Lond., F.R.C.P., Professor of Medicine in King's College, Physician to King's College.

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THESE are the substance of two interesting and suggestive lectures delivered by Dr. George Johnson, the learned Professor of Medicine in King's College, and published in the *'Lancet.'*

Dr. Johnson commences by pointing out, 1, that the chief and universal characteristics of this disease are a peculiar form of delirium, accompanied with spectral visions, a general unsteadiness and trembling of the voluntary muscles, and obstinate wakefulness. 2. That the causation of the disease is almost invariably due to excessive abuse of alcoholic stimulants, but that in exceptional cases it may be caused by any prolonged depressing emotion.

He then proceeds to give a graphic description of the symptomatology of "the horrors," as this disease has been named by sailors—a class amongst whom, as Dr. Johnson does not fail to point out, it is very common.

Patients suffering from delirium tremens, like those labouring under insanity, have their sensibilities blunted, and appear to have but little consciousness of physical sufferings. "This is an important fact to bear in mind; and it shows the necessity for watchfulness, lest some serious disease escape detection."

Dr. Johnson then dwells strongly on the importance of avoiding as much as possible "any violent exertion on the part of the patient," as it is very apt to induce rapid and great exhaustion, and even sudden death. "This tendency to sudden death from exhaustion is accounted for by the condition of the heart," which is in a state of fatty degeneration, due to the fact that drunkards eat little solid food, but live on a diet abounding in hydrocarbons, and deficient in nitrogenous materials.

"This degeneration of the muscular tissue of the heart is the most constant and the most important structural change discernible after death. The brain and its membranes are usually quite healthy. Sometimes there is an appearance of increased fulness of the bloodvessels, and there may be some serous effusion beneath the arachnoid in the meshes of the pia mater. Occasionally, too, though less frequently, the arachnoid is found more or less opaque and thickened. These, however, are only occasional and accidental appearances; they are not of the essence of the disease, for they are found when there has been no symptom of delirium tremens; and, on the other hand, they are wanting in the great majority of fatal cases of the disease.

"Delirium tremens does not depend on inflammation of the brain and its membranes, as it was long supposed to do. It may, however, be complicated with inflammatory changes; and it is surprising that this inflammatory complication is not more frequent than it is actually found to be. If we consider the vast amount of alcohol consumed by an habitual drunkard; the obvious influence which it has in disturbing the *functions* of the brain; and the great affinity which appears to exist between it and the cerebral tissue, as shown by the fact (which Dr. Percy was the first to discover) that alcohol may be obtained in considerable amount from the brain of a dog that has been poisoned by it: these facts would naturally lead one to anticipate that inflammation of the brain and its membranes would be a frequent result of alcoholic intoxication. The reverse, however, is the case. I remember to have seen only one case in which, after death with symptoms of delirium tremens, there were decided indications of meningitis in an effusion of lymph as well as serum beneath the arachnoid."

It may here be remarked that Dr. Johnson's views on the pathology of delirium tremens are not those held by some other observers. Dr. Aitkin goes so far as to say that "the nervous centres present the greatest amount of morbid change, the morbid appearances within the head extending over ninety-two per cent. of those examined."

It is undoubtedly true that the muscular tissue of the heart does degenerate; but that is only part of the truth, as degeneration of all muscles takes place. Another fact not commented on by Dr. Johnson is the partial retention of most of the substances which ought, the functions of the body being healthy, to be eliminated, but which, owing to the omnipresence of alcohol in every tissue and fluid of the body, are retained: thus fat is retained in the blood, often in large quantities. The hydrogen of the alcohol unites with oxygen, producing water, "which with acetic acid having been produced, carbonic acid and water are formed" (Aitken). Oxygen is thus diverted from its functions, and the excretion of carbonic acid by the lungs, and of urea by the kidneys, are both much retarded; and, as Dr. Aitkin remarks, this retention of the effete matter is still more intensified by the stimulant action of alcohol increasing for a limited time the frequency of functional acts, followed as it is by a corresponding depression.

Dr. Johnson then proceeds, apparently on no other evidence than his *ipse dixit*, to argue that delirium from exhaustion and delirium *è potu* are essentially of the same character. He then relates a case

of delirium from exhaustion from Dr. Abercrombie's work on Diseases of the Brain, and proceeds thus :

"Some pathologists would deny that this was really a case of delirium tremens; they would call it delirium from exhaustion, which it unquestionably was, as the history of the disease and the result of treatment clearly show. But I maintain that delirium tremens is also essentially an instance of delirium from exhaustion, and that the direct action of alcohol is *not* an essential element. What is common to all forms of delirium from exhaustion, and what therefore is essential is this: that there is a mental and bodily element—some grief or disappointment, vexation, anxiety, or terror, acting upon an enfeebled body. The delirium of intoxication is entirely distinct from that form of delirium which we call delirium tremens. The delirium of intoxication is a direct effect of the presence of alcohol in the blood; whereas alcohol is only *indirectly* concerned in the causation of delirium tremens. An habitual excess of alcohol tends to impair the nutrition of the brain and to exhaust the powers of the body by excluding wholesome food and deranging the digestive process, and in this way, rather than by direct toxæmic influence, it acts as a predisposing cause of delirium tremens."

Dr. Johnson would thus seem to infer that for the causation of delirium tremens, "some grief or disappointment, vexation, anxiety, or terror," must supervene on an abuse of alcoholic stimulants; and he presumes that, in his typical sailor, grief for the loss of his money is this exciting cause. Verily Jack is more easily impressed than might have been imagined from his usual dare-devil character.

According to Dr. Johnson, three modes of treatment have been pursued in this disease :

1st. The antiphlogistic, now by general consent abandoned.

2nd. The treatment by opium, which is in very general use.

3rd. Dr. Laycock's eliminative treatment, with abstinence from alcohol and opium.

Reviewing this theory of Dr. Laycock's, Dr. Johnson writes thus :

"Recently, another theory of delirium tremens has been advocated by Dr. Laycock. This theory is, that the presence of alcohol in the blood is the immediate cause of the disease, and therefore that the main object of treatment should be to eliminate the alcohol. Opium and alcohol must, according to his theory, be injurious in the treatment, since opium checks elimination, and the administration of alcohol tends to perpetuate the disease; yet, with curious inconsistency, Dr. Laycock states that a glass of wine with gruel at bedtime is a very useful soporific in the treatment of delirium tremens."

Dr. Laycock, however, in a letter in the 'Lancet' of the following week, declares that Dr. Johnson "is entirely mistaken in attributing this eliminating theory of the pathology and treatment of delirium tremens" to him. Dr. Laycock's views on this disease having, however, been given in the pages of this Journal (July, 1863), they need not here be recapitulated.

Dr. Johnson considers the second mode, viz., the treatment by opium, to be the one most worthy of practice, and he confines himself to it. His remarks on the treatment are shortly as follows:—He advises that the patient shall, if possible, be placed in a padded room, and left to himself: if that be not possible, the services of two attendants should be secured rather than recourse had to the strait-waistcoat, so essential is it that any prolonged struggling, such as might take place in a camisole, should be avoided, patients in this disease being so liable to die of sudden exhaustion.

The following remarks appear to me to be so valuable that I cannot resist transferring them to these pages:

“Whatever else you do or leave undone, never neglect to feed a delirious patient. If he will take food when he first comes under treatment, give it immediately, and let it be repeated as soon as he will take it. If there be, as there often is, a disinclination for food, with nausea and a coated tongue, an emetic of ipecacuanha, followed by a dose of calomel and colocynth, or a saline laxative, will be of use as a preparation for food and for the opiate, which may best be given at bedtime. You may then give from a half to one drachm of tincture of opium, which I believe to be a better soporific in these cases than the salts of morphia; and a smaller dose may be given in three or four hours if necessary. The first object is to procure sleep. But here I wish to impress upon you the necessity of great care and watchfulness. Do not make rash attempts to force on sleep by repeated large doses of opium. These attempts will often fail to procure sleep, and they may kill the patient. It is an undoubted fact, that opium in many of these cases has no soporific effect whatsoever. And not only in cases of delirium tremens is opium uncertain in its operation. When we give opium in ordinary cases of disease as an anodyne or a soporific, we can never be sure that it will cause sleep. In a considerable proportion of cases opium prevents sleep, and makes the patient more wakeful than he would have been without it. Another not uncommon effect of an opiate is to cause nausea and faintness. These two effects of opium should always be borne in mind in the treatment of delirium tremens. Remember that when opium fails to act as a soporific in delirium tremens, it is not inert, and must not be given in repeated large doses as if it were; while it fails to procure sleep, it may be exerting a powerful depressing and paralysing influence upon the heart. The symptoms of opium thus acting on the heart are these:—The patient continues wakeful, excited, and delirious, but grows rapidly weaker; the pulse becomes quick, small, and feeble; the pupils are contracted; the skin is bathed in a profuse sweat; and if the opium be continued in large and frequent doses, the patient rapidly sinks, but remains wakeful and conscious until, perhaps, within a few minutes of the end. The opium in these cases acts as a powerful sedative on the heart, and in proportion as it does this it fails to exercise any soporific influence. If you find that opium is acting thus injuriously, you must immediately discontinue it, and give liberal doses of brandy, or the stimulant to which the patient has been accustomed. Full doses of quinine, too, will be of use as a tonic; and nutriment, either in the liquid or solid form, should be freely given.”

Chloroform vapour, Dr. Johnson thinks, has the immediate effect of quieting the delirium and excitement, but is productive of no permanent benefit.

The use of large doses of digitalis Dr. Johnson condemns *in toto*.