Miller

Delavina's Remains
By E. H. Sharwood

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Delirium Tremens.

Delirium Tremens is the usual name given to a disease unhappily but too commonly met with in our large towns, hospitals, armies and navy.

In the Eighteenth Annual Report, London 1857, the Registrar-General says, "To the 206 deaths ascribed by the informants to intemperance, 536 deaths by Delirium Tremens should be added, making 822 by alcoholism besides many other deaths by secondary diseases."

The nomenclature has frequently been objected to by various authors. Some prefer the term Delirium cum Tremore or Tremefaciens, as the Delirium itself does not tremble but the patient, others that of Delirium from, but this is open to the same objection as Delirium Tremens for the Delirium is not fierce, but, says Dr. Watson, it matters not what we call a disease so that
The name conveys no erroneous theory as to its nature or treatment.

Divisions.— It has been divided by Dr. Copeland as follows,

1. Delirium with Tremor and excited Vascular Action in the membranes of the Brain.

Definition: "With great terror and irritability of temper and violence upon being opposed, a frequent, full or hard pulse, countenance often wild, or flushed, and the head hot."

This form has been described by Sir G. Ballingal and others as not occurring in the habitual drunkard but in the persons who occasionally indulge in alcoholic stimulants for several days together as sailors on shore, soldiers on furlough.

This however does not appear to be a true form of Delirium Tremens, but more a species of sub-acute Arachnitis. This division is not recognized by many, and has been described by Dr. Reid as a form of mania and styled by Darwin the "Delirium Criosum." Dr. Stokes of Dublin describes a form where he asserts that gastric irritation is the primary affection the Brain being secondarily implicated, but I should suppose gastric irritation to be always more or less present in...
Delirium Tremens. Dr. Copeland second form is as follows.

II. Delirium with Tremor from exhausted Nervous power (the True Delirium Tremens of modern writers or Delirium Herossum of Dupuytren.)

Definition "With a morbid recurrence of the patients ideas to his avocations, a frequent weak, or small pulse, a cool, humid or perspiring surface and loaded but moist tongue."

This appears to me to be the true form of Delirium Tremens and caused by Alcoholism.

Causes.

It is stated by a great many writers on this subject that the abuse of alcoholic liquors is the predisposing, and the abstraction of or abstinence from the accustomed stimulus, the exciting cause of Delirium Tremens.

Dr. Watson says that in the majority of instances you will find that the patient has been an habitual drunkard and from some cause or other this habitual stimulus has been taken away, he also says that it comes on in men who are perpetually fuddled even although they have not intermitted their usual indulgence in drink. Dr. Wood says that the suspension of the stimulus is the essential cause of the disease. Dr. Blake remarks
"It is purely idiopathic, arising invariably from the
same cause, namely the sudden cessation from
or a material diminution of intemperate habits."
Dr. Bopelard, and many others make very similar
statements. Although undoubtedly Delirium
Tremens is caused by a repeated and habitual
indulgence in alcoholic stimulants. I think the
assertion that the withdrawal of the accustomed
stimulus is the predisposing cause of the disease
is not borne out by recent investigations on this
subject. Out of twenty-two cases which were
admitted into the Infirmary in the summer
of 1859 under the care of Professor Laycock, not
even in one case could the Delirium be attributed
to a withdrawal of the liquor. In Carlisle prison
the annual number of commitments during the
last fifteen years has amounted to about six
hundred and three fourths of these cases seem to
have depended on the consequences of drunkenness.
Yet the surgeon Mr. Page says he has never seen
any ill result from the abstraction of stimulants
from habitual drunkards who had been drinking
improperly up to the time of their commitment.
Dr. Scott says that the number of civil and
criminal cases in the Dumfries gaol during
The last fifteen years has amounted to 5,539, and it was supposed that about two thirds of these were committed for crimes resulting from intemperance; yet out of that large number only five cases of Delirium Tremens are on record and all of these with only one exception were admitted when labouring under the affection. Statistics from the Edinburgh and Glasgow gaols give very similar results. Other causes are enumerated as giving rise to Delirium Tremens, namely, opium, tobacco, mental excitement &c. Dr. Watton mentions an instance of a medical man who was on the verge of Delirium Tremens caused by the mental anxiety resulting from some business transactions. Dr. Chapman says he has seen the disease with all its essential features result from the excessive use of tobacco. Mr. Lalby also mentions three cases brought on by tobacco smoking alone. Dr. Copeland asserts that it may be occasioned by the free indulgence in the drugged beverages prepared in Eastern Countries, particularly in the East Indies, and also by the excessive use of opium. Dr. Baxter also says that he has known Delirium Tremens to have been produced by the long continued and free use of opium.
Dr. B. H. Coates states that he has seen well characterized cases in which the disease resulted from the intermission of the use of opium. I am of opinion that the Delirium which results from the above mentioned causes although it may be a Delirium cum Tremore evidently cannot be identical with or of the same nature as Delirium Tremens. This disease I believe being solely caused by the excessive and habitual use of alcoholic stimulants, which are its predisposing as well as exciting cause.

**Symptoms**

As I do not consider the first division of Dr. Copeland's a true form of Delirium Tremens I shall not attempt to describe it. Delirium Tremens has been divided by Dr. Blake and other authors into three stages of which the following are the chief symptoms. The first stage is marked by a peculiar diminution of pulse, by coldness and clamminess of the hands and feet and a general diminution of the animal temperature. There is also nausea and sometimes vomiting, want of appetite and even aversion to food, profuse perspirations and frightful dreams. The tongue is furred and tremulous, when the patient is
asked to show his tongue, he does so with a peculiar kind of jerk. There is unsteady tremulous movements of the hands, depression of spirits, great anxiety about his affairs, he is restless and watchful, and generally has short broken slumbers. This stage usually lasts from one to two days. When the second stage is ushered in, with a great increase of restlessness, wildness of the countenance, a haggard anxious manner, great excitability of temper and acceleration of pulse, which varies from 100 to 120. There is heat of the surface but the hands and feet remain cold and clammy. The tongue is sometimes tolerably clean but more commonly coated with a moist whitish or creamy film and has a flabby appearance. The bowels are usually constipated but if relaxed the evacuations are bilious and offensive. The urine is scanty, high coloured and frequently if not always albuminous. The pupils are contracted but the eyes are not intolerant of light. The patient is delirious, suffering from various mental illusions and delusions. In general, the delirium is melancholy and has reference to his usual occupations and habits or to some difficulty in
his domestic affairs. He sometimes sees flames
or hears voices talking to him; or as soon as
he shuts his eyes he sees people crawling under
the bed clothes. In short he sees objects and
sights in situations in which they are not
and which have no real existence, or betray
the most dreadful alarms at hideous objects
which he imagines are threatening him with
immediate destruction. Restless and sleepless
he moves his trembling hands horizontally
over the bed clothes as if seeking something.
In general he is harmless and easily controlled
but in some instances he is violent, mischievous
and requires to be restrained. This stage
usually lasts from three or four days to a week
when the third stage supervenes. This is
the case prove favourable commences by the
patient falling into a profound sleep from
which he awakes quite coherent although
languid and weak. Dr. Ware and many
others say that the natural tendency of the
disease (if uncomplicated) is to terminate
in a spontaneous and salutary sleep. In
unfavourable cases there is increased irritability
and complete depression of the vital powers.
The patient makes violent struggles which are attended by copious perspirations. As the malady advances the energies sink, there is coldness and clamminess of the extremities which spread upwards over the body. The pulse becomes more frequent, small, weak and thready sometimes it cannot be counted. The tremor increases and invades the whole frame, there is constant trembling more resembling that occasioned by severe cold than the subcutaneous tenderness of typhus or nervous rigors of some other affections. The perspirations become more and more cold, and exhale a peculiar smell. The countenance commonly becomes pale and anxious, pupils very contracted, tongue loaded and furry brownish at the centre and moist and occasionally red at the point and edges. The delirium increases in violence, and continues so until shortly before death. When a calm takes place, usually death ensues from prolonged coma or convulsions.

**Diagnosis**

Delirium Tremens may be mistaken for St. John's first division namely, The Delirium Tremens, for Encephalitis, the Delirium of
Fever and for Mania. It may be distinguished from the Delirium Tremens by the following circumstances. In this form as Dr. Peele says there is dry heat of skin, particularly of the scalp, sometimes considerable muscular tremors, flushed countenance, a sullen determined or fierce aspect, red, ferrety eyes, dry tongue, strong quick pulse, and loss of appetite for everything but liquor. In Encephalitis there is greater violence of delirium, more febrile disturbance, there is the tendency to convulsions and coma, and a great intolerance of light. There is also the absence of the moist skin and muscular trembling and the imaginary terrors will help to distinguish this disease. Moreover Dr. Price Jones says that in acute inflammation of the Brain the phosphates in the urins are increased whereas in Delirium Tremens there is a diminution of the phosphates while the proportion of the sulphates and of the urea is greatly increased. The Delirium of fever is more incoherent but it is without the tremors and imaginary fears. There is greater muscular prostration, a different expression of countenance.
and there is also great heat and dryness of skin.

Delirium Tremens is to be distinguished from maniacal insanity by the greater frequency and softness of the pulse, by the copious, cold, and peculiar perspirations and the tremulousness.

Besides this mania is a chronic not an acute malady. It has been remarked by Dr. Macpherson, that the disease most resembling Delirium Tremens is the Delirium & Quinsy and so closely do their symptoms run, that there was a difference of opinion among the medical officers of the General Hospital, Calcutta, whether certain cases were delirium & quinsy or delirium tremens, but in one fatal case, the deafness and amaurosis were distinctly pathognomonic of the former. In addition to the above, the history of the case will always greatly aid us in the diagnosis.

**Prognosis**

If complicated with Pneumonia, Bronchitis, Fever, Croupelos or Injuries it is frequently fatal if uncomplicated the first attack in a constitution not much impaired generally terminates favourably very few die of the earlier attacks but each successive one becomes more and more dangerous.
Pathology.

The true nature of this disease is still obscure, the opinions of various authors being much divided on the subject. Post-mortem appearances do not afford us any satisfactory information as to the origin of the disease or the morbid conditions on which it is dependent, only showing in which the fatal termination arrived. In the true Delirium Tremens the membranes of the Brain evince but little change. The chief lesion consisting of a slight spacyity of the arachnoid especially at the base of the Brain and its vicinity. The Pia Mater is somewhat injected and a slight effusion of serum is occasionally found in the Ventricles of the Brain. These appearances however are by no means constant. The Stomach usually presents appearances of chronic Gastritis and the Liver is more or less diseased but these conditions are not necessarily connected with Delirium Tremens. The heart has been found soft, pale and flabby, and Mr. Solly states that the cortical substance of the Brain is invariably found pale and bloody. The following are the opinions of some of the principal writers on this subject as to the nature of the disease:

It was formerly considered by many physicians
as a modification or variety of meningitis, for instance, Dr. Abercrombie considered it a dangerous form of meningitis which shows only increased vascularity. Dr. Bright includes it amongst his cases of Arachnitis. Dr. Delphi-Guldberg and several others view it as a febrile affection. Scipio Pinel speaks of it as a "first degree of paralytic cerebritis." Dr. Croft of the Middlesex Hospital thinks it is caused by hepatic derangement and that the blood is poisoned by the altered and vitiated bilary secretions. Dr. Walsom speaks of it as due to nervous irritation and says that nervous exhaustion goes along with and augments the nervous irritability. Dr. Mood believes it to be a disease of the cerebral functions immediately dependant upon the diminution of the degree of excitation necessary for the support of the Brain in its ordinary actions and that the Brain is in a state of debility and depression. Dr. Barclay also comes to the conclusion that the disease is one of depressed and not exalted vitality; he adduces as proofs of its non-inflammatory character, the softness of the pulse, the muscular tremor, and the copious perspirations and he...
further states that we are warranted by these observations in asuming. Firstly, that the disease is one of exhaustion in which whatever be the change which has actually passed in the nervous system, the practitioner is to guard against the approach of death by letting or coma. Secondly, that it is not a direct form of poisoning in which a few hours will serve to eliminate the poison by some secretory organ or other, after which the patient will be in perfect health, as happens in opium poisoning or in intoxication, but that some obscure structural change has been wrought and whether alcohol be present in the blood or not, there must have been some additional cause which has produced the delirium and this generally of a deprefing kind. Thirdly, that so far as the nervous system is concerned the condition is such as we might expect to be generated by deprefing causes and its characters and mode of treatment ought therefore to correspond rather to those forms of insanity which depend on similar conditions than those which are characterized by acute mania. Dr. Craige terms the disease "Meningitis Phantasmophoria"
of "Mephitic Brain Fever" and his description of its pathology is the following, "In the early and incipient stage of Mephitic Brain fever, the symptoms depend on irritation of the brain that is to say the meningeal veins are loaded with an unusual quantity of venous and the arteries with imperfectly aerated arterial blood, both charged with opsonious particles, and as this circulates slowly, it irritates the brain and disorders the central functions, first of sensation and perception, secondly of memory, thirdly, of fancy, fourthly, of judgement. The cerebral irritation thus induced is the great cause of the sleepless and restless, as well as of the fantastic delirium and hallucinations. In this stage of the disease which is the Eretismus cerebri abdominalis of Toppel, the Delirium Ereticum of Hufeland and the Encéphalopathie of Leveille, the symptoms may subside spontaneously or under the use of appropriate remedies, by the poison's blood being eliminated in the manner of excretions during sleep. If however the irritative action does not thus subside, if the vessels be not unloaded, and the circulation re-established, it is liable to become fixed in the form of
inflammatory congestion, and to give rise to effusion of serum and other morbid products. This seems to be the Encephalitis of Franke and Hildebrand, and the Hirn-Entzündung of Andreas. Even without effusion of serum the fatal termination may take place; but this result is much more frequent in consequence of effusion, sub-arachnoid, cerebral, and intra-ventricular. The disease therefore though merely irritative in the early stage, from unhealthy blood sent to and retained within the central vessels becomes at least congestive and perhaps even inflammatory. On the other hand, Dr. Copeland believes that inflammatory irritation although sometimes attendant on this affection is not necessarily connected with it, and certainly is not the pathological state which produces it, and that when present it is not the only condition which is requisite to the development of its pathognomonic characters, exhaustion or deprievion of both the nervous and sensorial powers being equally necessary to its superevision. Leveille maintained that the disease consisted in the excitement of the vital powers of the brain excited by alcoholic molecules, absorbed from
the surface of the stomach and the bowels and carried into the current of the circulation. Dr. Peddie considers the disease quite specific and peculiar. He says it is something more than simple nervous irritation or nervous irritability. It is essentially a form of nervous poisoning which in every instance whatever be the state of the constitution or however combined or associated with other diseases is distinguished by a very remarkable uniformity of phenomena. In every instance of Delirium Tremens the stimulus or alcoholic principle, a powerful narcotic, acid agent, in whatever way atomically or chemically changed after its introduction into the system, acts slowly on the nervous pulp through the medium of the circulation, poisons its substance and sets up at least what may be called an alcoholic erythrusm or as he terms it an "alcoholism". This, he further states, no doubt produces a certain amount and kind of debility in the cerebral functions, but combined with over action of the circulation through the membranes of the brain constituting a decided form of irritation, the tenacity of which if not allayed by judicious treatment is to
inflammatory action and serious encephalitic mischief. It appears to me that the reason why there has been so much difference of opinion amongst physicians on this subject is owing to the fact that the toxicological effect of alcohol upon the system had not been sufficiently investigated and I think that in order to arrive at a right conclusion with respect to the nature of this disease, it is first necessary to understand the physiological action of Alcohol and secondly the mode in which it acts as a poison. The theory of Liebig supported by the experiments of Bouchardat and Sandras, as to the changes that alcohol undergoes in the blood has usually been accepted as the correct one. Liebig maintains that Alcohol when taken into the stomach is rapidly absorbed into the blood and it then passes through various oxidizing stages until at length it becomes changed into Carbonic Acid and Water and it is principally in this form that it is exhaled from the lungs. The changes that Alcohol is said to go through in the blood is first into an Aldehyde, then into Acetic Acid and lastly into Carbonic Acid and Water.
According to this theory, Alcohol is regarded as an aliment — one of the Kathe, now azotised aliments — and therefore entering the processes of respiration and carbonification. I suppose, that it was on this theory that the late Dr. Todd so strongly insisted upon the administration of Alcohol in the treatment of some diseases. The recent experiments of M. M. Lallemand, Davy and Perrier have tended to disprove this doctrine of Liebig's. They have ascertained, by numerous careful experiments, that in whatever form Alcohol is taken into the stomach, it is found in the blood, tissues and nervous substance as Alcohol and that it is eliminated by the lungs, skin, and kidneys as Alcohol only. All the tests for Aldehyde and Acetic Acid failed to detect these substances in any of the parts where Alcohol had been freely found, but when these substances were given by themselves their presence was easily ascertained by the appropriate tests. They further state that it is only in the stomach that alcohol undergoes any modification for there a small fraction of it is converted into Acetic Acid.
The action of the gastric juice and mucus, which acts then as a ferment, this action is altogether local and special to the stomach and ceases the moment the alcohol enters the venous radicles. They also found that alcohol exerts a remarkable action on the blood, causing that fluid to present numerous globules of fat-like cholesterine visible to the naked eye and swimming on the surface. This condition had also been observed by Dr. Hufu and Dr. Adams. Le Canu is said to have found as much as seven per cent of fat in the blood. Alcohol has been found most especially to accumulate in the brain for which it would seem to have a special attraction or as it has been termed an elective affinity. Dr. Cooke affirms that alcoholic fluid has been detected in the ventricles of the brain, by its smell, taste, and inflammability. Dr. Ogston mentions a case in which about four ounces of a fluid having all the properties of alcohol was found in the ventricles of the brain. Dr. Percy's experiments also prove that alcohol has a peculiar favour for
cerebral matter. The researches of M. M. Lallemand, Duruy, and Perrin show that alcohol is rapidly absorbed by the venous radicles and that its principal action is directed upon the different organs of the body which it irritates and eventually inflames. Especially has it been proved to be present in greater proportion in the nervous tissue than elsewhere, which it more particularly excites. It disturbs its functions, it perplexes and ultimately destroys the intellectual faculties and even the emotional faculties, it disturbs the function of the sensory nerves both common and special, as shown by the subjective tactile phenomena, strange perversions of taste, double visions and other disorders of the optic nerves, tinnitus aurium and other disorders of the auditory nerves. It equally destroys the function of the motor nerves as shown in irregularity and absence of co-ordinate action of the movements. From these effects upon the cerebro-spinal system it is more than probable that it disturbs and impairs the functions of the organic nervous system as evidenced by the defective nutrition and secretion.
I think, therefore from the foregoing statements that we are justified in coming to the following conclusions. Firstly, that Alcohol has no claim to be regarded as an aliment. Secondly, that it is a cumulative poison and lastly, that Delirium Tremens is probably owing to this cumulative poison acting as a local irritant upon the Brain.

Treatment.

Since the commencement of the present century it has been the custom to treat this disease with opium and stimulants; in fact opium has been looked upon almost in the light of a specific by many medical men both in this country and in America. This practice was either introduced or brought into notice by Dr. Fulton who attributed the discovery to accident, and the reaction in favour of antiphlogistic treatment is ascribed by Dr. Barclay to the indiscriminate manner in which the drug has been subsequently administered as compared to the caution used by its earlier advocates. When we read of doses like those quoted by Dr. Copeland it may well be termed an indiscriminate manner, for example Dr. S. Brown gives from a drachm to half an
ounce or even more of laudanum for a dose! Dr. S. Jackson prescribes from ten to fifteen or even twenty grains of solid opium every two hours; and states that four ounces of good laudanum having been given in twelve hours partly by mistake, a sound sleep of twenty-four hours duration ensued, and perfect recovery was the result! In the above cases I should be inclined to think that the quality of the opium must have been different to that usually employed in this country. The reason adduced by those in favour of the employment of opium is as follows: They say that the effect of opium is to stimulate the brain and to raise it up to "par", as it is termed by Dr. Roepel, to regulate the circulation through it, and thus to relieve the irritability from exhaustion and then subsequently to command sleep, and then during this sleep it (the brain) has time to rally and recover tone. The opium is combined with the patient's usual stimulants, but in diminished quantities, because the system is habituated to the use of stimulants. The following are the opinions of some of the principal supporters of this mode.
of treatment. Dr. Watson says opium must be given in full doses and it must be fearlessly repeated if its desired effects do not follow, he also recommends the opiate to be given in a glass of gin or porter. Dr. Boopland considers opium as necessary to the cure of this disease. Medicines as bark and analogous are to the cure of ague and he further adds that the propriety of having recourse to moderate quantities of the stimulants to which the patient has habituated himself in the depressed periods of the disease and especially in those cases which present the most marked signs of exhausted nervous and vital powers has been insisted on by Dr. Blake, Dr. Ryan and others. Dr. Elliston says, the remedy for this disease is opium and we must allow draughts of anything else that has become a bad habit. Dr. Comack treats the disease with drachm doses of laudanum which may be alternated every two, three or four hours with a couple of grains of the watery extract of opium until the patient sleeps. This he combines with mulled ale or wine brandy punch. Dr. W. Phillips states that if a man has been accustomed to drink largely of malt liquors, a drachm of
Landauin will not much more beneficially if
taken in a pint or pot of beer than if taken alone.
a similar remark may be applied to other spirits
and liquors. Dr. Wood, Dr. Dickson and several other
American physicians strongly advocate this
mode of treatment. The above plan of treating
Delirium Tremens by opium and stimulants
has been much disapproved of many writers
of the present day, and even some of the
advocates in favour of its use, admit of its
injurious effects. For instance, Dr. Graves who
writes the disease with opium, remarks that
if the drug be given in the beginning it will
increase the congestion and bring on sub-arachroid
effusion. Mr. Phillips whose opinions have been
before quoted says, "Every case of Delirium
Tremens is not to be cured with opium and we
should not have nearly 250 deaths from this
cause alone." The arguments against the use
of opium are chiefly, that in order to obtain
any of the supposed good effects of opium it
must be given in large doses, because in
moderate doses opium is exciting and prevents
of sleep and consequently weakens the digestive,
and in large doses it is acknowledged to
occasion engorgement of the vessels of the encephalon and especially of the veins. and consequently the larger the dose the greater will be the amount of consecutive compression of the brain; this overloading of the vessels causes the cerebral functions to be oppressed and at length overwhelmed and sub-arachnoidal effusion is the result. Secondly it is said that the voluntary sleep occurs just as soon if not earlier without the use of opium and when sleep does occur, which it naturally does at the end of the second or third day, the subsequent condition of the patient is much more safe and sound, by doing nothing at all than by the use of opium.

In support of these views Dr. Dave says, as far from being beneficial there is ground to believe that the effect of opium given during the paroxysm is to increase the violence of the delirium to produce a tendency to convulsions to prevent the termination by a natural and voluntary sleep, to throw the patient into a state of coma from which he does not awakes. He further states in his memoir on Delirium Tremens in the cases which I have formerly treated with opium and which have at last terminated well
a salutary sleep has not taken place till the close of the third day, let the quantity of opium be what it would. I have indeed seen sleep induced by opium at an earlier period, but it was premature, it passed into a state of coma, and the patient died. I am satisfied, therefore that in cases of delirium tremens, the patient so far as the paroxysm alone is concerned, should be left to the resources of his own system particularly that no attempt should be made to force sleep by any of the remedies which are usually supposed to have that tendency, more particularly that this should not be attempted by the use of opium. Dr. Wright of Baltimore and Dr. Moseley of Bombay have made observations which corroborate those of Dr. Ward. With respect to the administration of stimulants, this treatment has been opposed by many British and American writers. The above mentioned Dr. Wright, after an extensive experience declares that "on the whole I am sincerely convinced that the administration of spirits or drinks is not generally necessary, nor beneficial in its tendency, either as a preventive or remedial means." Dr. Carter and many others
have made remarks of a precisely similar nature. Professor Laycock observes that if a patient be alcoholized at the moment when he is suffering from Delirium Tremens it seems hardly rational to propose that more alcohol should be given to him every two or three hours. D'Herpin expresses himself very strongly on this mode of treatment. "May, what are the grounds of common sense upon which patients labouring under melancholy brain fever are made to swallow half a bottle of spirits in twenty four hours, sometimes with a quantity of ale and wine at the same time, while they are firmly bound down in a straight waistcoat and the feet secured by the ankles to the bed. What member of the human race, it may be asked, if treated in that manner would not be driven mad, or worked into a state of fury or in which violent muscular action would be exceeded by the exhaustion of death?" In reviewing the opinions of those in favour of and those in opposition to the above mode of treatment I am inclined with Dr. Reade that the combination of stimulants with opiates is a most hazardous practice in the treatment of Delirium Tremens; for while the former
increases the determination of blood to the head, the latter is apt to occasion engorgement there, and thus, doubtless they are the joint cause of many sudden deaths, and of many incurable palsies of body and mind — indeed of the great proportion of those casualties which take place, and for which the disease and not the treatment is blamed. The following are some of the methods by which this disease has been treated. Dr. Clapp of Philadelphia has used the emetic plan, because he noticed that the spontaneous evacuation of vomiting, during the disease, relieved the delirium. He gave two grains of tartar emetic every fifteen minutes till it operated, and found it necessary to give from eight to sixteen grains before the effect was obtained. This treatment has been attended sometimes with fatal results, and has not generally been adopted. Dr. Reddie treats the disease with small doses of antimony. He gives from one quarter to one half a grain of tartar emetic every two hours, sometimes as shorter intervals, according to the degree of excitation and irritability. The action of the antimony, he says, appears to be chiefly
sedative. Its direct influence is in reducing the vascular excitement of the brain, soothing the nervous system, and diminishing muscular power. By these means it gently diminishes excited action, induces weariness of muscle, general nervous exhaustion, and mental languor. It thus removes all hindrances to the occurrence of the salutary sleep. It prepares the way for it, not by forcing, but by favouring it, and when the individual, exhausted, seeks his couch, and finds repose, that goes on, not as a drugged sleep, but as purely, natural and profound repose, from which he awakes with restored reason and muscular control.

Mr. Jones of Jersey has recommended a plan of treatment by large doses of Digitalis. It is stated that there is a remarkable tolerance of Digitalis in this disease, and does not by any means produce the amount of depression which it is known to do in small and frequently repeated doses when used in the treatment of other complaints. The Tincture of Digitalis is given in doses of half an ounce at a time, and it is said to very soon dispel the hallucinations, render the pulse slower and fuller without
lowering its rapidity to a dangerous degree and to presently induce sleep. If the first dose fail then within four hours another dose of half an ounce should be given and should this not succeed another dose of two draughts may be administered but hitherto one dose has in general sufficed. Dr. Perceval of St. Thomas' Hospital, Dr. Williams and others have published cases in which this mode of treatment is advocated. Some French physicians have preferred the use of Digitálie, the active principle of Digitalis as being capable of producing all the good effects of Digitalis and being much more certain in its action. The following is the manner in which I should treat this disease.

In the preliminary stage to clear out the bowels and endeavour to correct the vitiated secretions of the liver by mild doses of blue pills; to give tone to the stomach by dilute nitric acid and some bitter infusion and to give easily digested food little and often, should there be much gastric irritation to apply a sinapisme to the epigastrum and to give small doses of an effervescing salvia combined with some diuretic in order that the kidneys may
assist in the elimination of morbid products.

When the delirium has set in, I am inclined to
think in milder cases the salutary sleep would
supercede as soon without the use of any special
drug for inducing that state; but in cases
were the delirium is very violent I should
give quarter of a grain doses of tartar emetic
every three or four hours as circumstances
demand, and use occasional cold douches
to the head or evaporating lotions. One of the
great objects is to endeavour to get the patient
to take some food such as beef tea, malted
broth, chicken soup &c. The use of straight-
ward coats, and any restraint of a like nature
are on no account to be employed but he should
be confined in a large and airy apartment
with abundance of light because the brain is
apt to receive erroneous impressions from the
appearance of surrounding objects if there be any
uncertainties. He should be carefully watched
by suitable attendants to see that he does himself
no injury, and to control him by mildness
combined with firmness, if he should attempt any
rash act. He should be allowed to walk about
in the room to search for objects he imagines cause
their injury or alarm, and should he become very violent rather than use any mechanical restraint, the number of his attendants should be increased in order that he may be fully aware of his helplessness.

In conclusion the following is a brief summary of what I have endeavoured to show in the foregoing pages. Firstly, that Delirium Tremens is a form of Alcoholic poisoning. Secondly, that its predisposing as well as exciting cause is an habitual abuse of Alcoholic stimulants. Thirdly, that the natural tendency of the disease, if uncombined, is to terminate in a spurious sleep, and lastly, that the mode of treatment by opiates and stimulants is totally opposed to the correct views as to the pathology of this disease.

Edward Julian Sharood