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ON

Delirium Tremens

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This Thesis is respectfully dedicated, by
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Delirium Tremens

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I have chosen this disease as the subject of my thesis, not with the expectation of advancing any thing new concerning its pathology or treatment, - for I think this impossible in the present state of our science, but from the fact that my facilities have enabled me to investigate more cases of this frightful malady, than of any other disease. The designation of Delirium Tremens originated with Dr Sutton in 1813 previous to which time nothing positive was known concerning this affection, except a few ideas advanced by Dr Pearson, Carter and others near the close of the 17th century. Dr Wood of Philadelphia

says "The stimulating mode of treatment was practiced in that city for upwards of 50 years prior to the publication of Dr. Suttons tracts". He however fails to inform us as to their knowledge of the disease, only saying the stimulating treatment was pursued.

The causes of this disease are both predisposing and exciting. Under the first class we may place as the most common and efficient, the long and excessive use of alcoholic liquors; whether it be to indulge in the habit termed tippling, wherein the individual is never absolutely sober; or to remain for a long time in an absolute state of intoxication. We have also as predisposing to an attack, the excessive use of

any narcotic drug; great mental exertion, low state of the system, loss of blood or any circumstance producing excessive drains upon the animal economy, such as severe disease, hunger, masturbation etc. As regards the predisposition of sex and season; we find the odds largely in favor of the male, notwithstanding a smaller relative quantity of alcohol, will produce the disease in women than in men. We see more cases in summer than in winter, as the quantity consumed is then smaller. We meet with the largest number of cases between the ages of thirty and sixty, no case being recorded under twenty two. As exciting causes we find to be the most common and efficient to be the deprivation of a stimulus

to which the brain has accustomed itself. We however may have the disease to ensue during the progress of a drunken spree; for it is no less dependant upon nervous depression or exhaustion following long continued excitement, than upon disordered nutrition. As exciting causes we may have a severe disease, a violent injury, excessive loss of blood, mental anxiety, bodily fatigue etc.

Delirium-e-potus

or the result of the immediate effect of alcohol upon the brain is characterized by much violence; the patient is regardless of personal danger and will madly rush upon what may prove his ruin; is very talkative; requires much restraint to prevent him injuring himself or others; the head is

hot; countenance flushed; eyes suffused; pulse rapid, strong and full. Convulsions may occur, and stupor coma and death result. At this stage we often have tremors which most usually mark its transition into Delirium-Tremens, or some settled form of insanity.

Delirium Tremens proper as supervening upon the abstraction or diminution of an accustomed stimulus, most generally makes its appearance from the first to the third day succeeding the over-indulgence or cessation. Its approach is generally indicated by certain premonitory symptoms. The patient will complain of great debility, of feeling unwell without being able to explain his ailments.

his spirits are dejected; his temper irritable and obstinate; he manifests great distaste for his ordinary avocations, sleeps unsoundly, and is often aroused by frightful dreams, the absurdity of which it is difficult for him to realize. We now often witness a loathing of food, nausea and occasional vomiting. The bowels are irregular, with loose bilious discharges. Slight tremors often occur at this stage, and the anxiety, loss of sleep, restlessness increase. Up to this time the tongue remains moist, the pulse soft and compressible, sometimes feeble and irregular. The disease with proper treatment may now subside, but most generally the watchfulness and delirium become complete. He chatters incessantly, will suddenly arise

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and seeks for something, in the room; will give orders to persons not present; the same difficulties which beset him in his dreams now torment his waking hours. His attention is readily fixed but soon returns to delirium, his pulse is quickened from exertion but still soft and compressible. Tongue moist and creamy, pupils contracted, but no intolerance of light, a marked difference in the temperature of the body and extremities, - the former about the usual standard the latter cold and covered with a clammy perspiration, sometimes emitting an unpleasant odour; the bowels are costive with occasional discharges of a dark, and offensive material; the urine is generally scanty and high coloured. There is now no end to the hallucinations, terrors and fancies.

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which fill the patients mind. Accompanying this train of symptoms there is one very prominent and rarely absent, - the fear of some impending evil. "The mind, that unintelligible essence, the harmonious workings of which, has stamped upon man the image of his God, becomes filled with terror and despair; the poor wretch fancies every mans hand against him, and from this state of gloom and despondency he occasionally sinks into absolute imbecility mingled with a peculiar shade of melancholy." These symptoms may continue from three to four days, alternating from better to worse. It may however last from ten days to two weeks. At the close of these periods yawning and drowsiness

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come on followed by sleep, indicating a favorable result. The patient at first may arouse from his sleep and resume his delirium, but soon sleeps again, which may continue from six to forty-eight hours, and the patient awake rational. But on the other hand the symptoms may continue to grow worse until death closes the scene. This may occur suddenly even whilst the patient is considered convalescing; or during sleep when there is no grounds for apprehension of such an event; or the patient may continue violently delirious and suddenly cease to live. Most generally however the fatal end approaches more gradually. The hallucinations cease or are unconnected; the coldness gradually extends over the surface; the patient is greatly agitated and with difficulty

restrained to the bed; if "effusio hastatae place the pupils will be dilated and tongue brownish towards the centre". In addition to these symptoms we have preceding the fatal event low muttering delirium, subsultus-tendinum, convulsions etc.

This disease like all others presents various complications. The most ordinary are: the vascular congestions and inflammations peculiar to the season and climate. Thus we have during summer, diarrhoea, and dysentery; in winter Pneumonia, cerebral inflammation, the various acute and chronic affections of the alimentary canal, liver and kidneys. The various forms of mild fevers, the severer forms being said to prevent its development. We may also have as a complication the occurrence of any accidental injury. All these

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complications demand of us a careful and thorough investigation, for by them our treatment must be guided.

The diagnosis is generally attended with but little difficulty. The diseases for which it may be mistaken are encephalitis, the delirium of fever and the various forms of insanity. The mode of invasion of encephalitis is sufficiently distinct to distinguish it from the disease under consideration. Encephalitis is very abrupt in its approach, the patient after at once becoming furiously delirious. In Delirium Tremens the patient complains of general indisposition, disturbed slumbers, loss of appetite etc. a day or so preceding the attack. In Delirium Tremens there is little violence of delirium, the patient is mild and tractable, his pulse soft and compressible, tongue moist and creamy, skin moist

and relaxed, no intolerance of light or sound; Whilst
in encephalitis, there is violent delirium, pulse hard
and resisting, tongue parched and red, skin hot and
dry, great intolerance of light and sound, and
in absence of the fantastic hallucinations,
and muscular tremors so prominent
in Delirium Tremens. Dr B Jones has found
the quantity of the phosphates secreted by the kid-
neys to be below the usual standard in Delirium
Tremens, the reverse being the case in enceph-
alitis. In delirium of fevers there is and absence
of the fantastic hallucinations muscular
tremors and so on, so characteristic of
Delirium Tremens. The approach of
insanity is more gradual in its
approach, and more persistent than Delirium
Tremens. There is also no disturbance of the
general nutritive functions in insanity, whilst
the reverse occurs in Delirium Tremens.

The prognosis of an uncomplicated case of Delirium Tremens is generally favorable. It however must be guided by the number of attacks, various complications, habits, age and strength of the patient. There are present in the course of bad cases certain signs of unfavorable import by which our prognosis must be guided; such as obstinate periplegia, cold surface with clammy sweats, brown dry tongue, excessive tremors, small pulse, incoherence, low muttering delirium, convulsions etc. Absence or declining of these symptoms are indications of a favorable result. It is very rare that a case of pure Delirium Tremens leaves any morbid appearance. Even those cases wherein we see morbid changes should be best to regard them as contingent upon the habits of the patient. There is however sometimes seen a general atrophy of the brain; the convolutions

much shrunken, sulci large, the subarachnoid space filled with a fluid of a jelly like consistence; the substance of ^{the} brain soft and watery, the ventricles much distended with a serous fluid.

The arachnoid is found thickened and sprinkled with white spots. The Pacchionian glands are sometimes enlarged. In those cases occurring as the immediate effect of a debauch the appearances are more manifestly inflammatory; the vessels of the brain, more particularly those of the pia-mater and velum-interspositum are slightly injected. If a case of this latter kind proves fatal before the poison is fully eliminated from the system, the heart and large arteries, the liver spleen and kidneys are ^{found} filled with dark venous blood, in which alcohol has been detected. In these cases the stomach is often much inflamed, presenting its inner coat much injected. In other cases we see dropsy of

the pericardium, softness of the muscular tissue of the heart, the various chronic affections of the thoracic and abdominal viscera. None of these appearances are constant, the disease being met with where they are absent and vice versa.

Even in the present advanced state of medical science nothing has yet been offered sufficiently explanatory of the pathological condition upon which Delirium Tremens depends. From a careful review of the symptoms and a knowledge of the ordinary effects attending the ingestion of alcohol, I shall conclude that these forms of delirium are due to some morbid impression made upon that part of the nervous system, which physiological experiment and clinical observation have determined to be the centre of intellectual actions - namely the superficies of the brain. A preliminary condition to bring about this change must be the presence of some poison circulating

in the blood. That this poison is alcohol, the experiments of Dr Percy leave us no room to doubt; "alcohol having always been detected in the blood of those animals poisoned by it, provided they did not survive its introduction in the stomach sufficiently long for it to be eliminated from the system". Brouardat and Sandras have detected alcohol in the portal circulation of man, dying from immoderate drinking. That this poison in ^{the} blood will more materially affect the vesicular matter of the convolutions of the brain, than any other part of the economy is very obvious, it being in such close proximity to the pia-mater "a network of blood vessels from which innumerable blood vessels dip down and penetrate its substance". Again as producing this morbid impression upon the brain we have the alcohol displaying

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a selective affinity for the grey vesicular matter of the brain, just as atropia seeks the centre of implantation of the optic nerve or strichnine the spinal cord. As proof of the existence of this selective affinity, we have soon after the injection of alcohol, talkativeness, rapidity and variety of thought, exhilaration of spirits, animation of the features etc.: Again De Porey found in the brain of those animals to which alcohol had been administered, "a considerable greater quantity of alcohol than in a relative amount of blood", proving clearly its affinity. The results attending this continued application of a stimulating admixture to the brain is first great excitement producing at times as we will see, the disease the denominated delirium-e-pertus. The second effect, depression from over-stimulation. This Humboldt proved by the immersion in alcohol, of the cranial nerve of a frog.

We found the excitability to be soon lost, if the stim-
 ulus was steadily applied. Hence we account
 for Delirium Tremens occurring without an
 intermission of the usual stimulus. Another
 mode of producing these forms of delirium is
 by means of defective nutrition. Thus we
 have the chemical, vital, and physical properties
 of the blood changed, - producing the coagulation
 of its albumen and impairment of the
 solidifiability of its fibrine; - a state of
 the blood in the highest degree capable of
 preventing healthy nutrition. The theory that
 it now embraces is that the forms of delirium
 mentioned are due principally to an alcoholic poison
 circulating in the blood - having an affinity for the grey vesicular
 matter of the brain, thereby causing depression by over stim-
 ulation, and the same effect by perverting the general
 nutritive operations of the brain, by deterioration of
 the blood through the channels mentioned.

In the treatment of Delirium-tremens, we must endeavour to eliminate the alcohol from the system, without too much depressing the vital powers. The milder cases subside most generally themselves; but if we are called in, we may if there is reason for believing the stomach contains indigestible substances, administer an emetic - the best being one of the vegetable kingdom. If yours this procedure would be contraindicated if there was irritability of the stomach. In such an instance we would administer, ice drinks, small doses of morphia, the effervescing draught, with small doses of potash, soda ammonia etc. Where there is much determination of blood to the head, we may cautiously apply cold or leeches to the temples. The bowels should be kept open by small doses of oil and magnesia.

Delirium Tremens being dependant upon cerebral exhaustion and perverted nutrition, the indications to be fulfilled in the treatment are:- first to support the brain and quiet nervous disturbance by procuring sleep; second to restore the balance of nutrition. For the fulfillment of the first indication no remedy has been found equal to alcoholic drinks.

But here a moral principle interferes; it seems as if nature has brought about this change for the purpose of checking the poor inebriate in his mad career. Besides we have a remedy nearly as good, in some of the opium preparations called in during the premonitory symptoms, we should endeavor to cut short the disease. We may administer small doses of opium and repeat

them often. Probably the best preparation is
ten drops of the tincture with an equivalent
of the solution of Morphine, or Hoffmann's
anodyne with camphor mixture every
hour or two. If there is nausea or
vomiting as is often the case we may
administer the above prescription in a
small quantity of sulphuric ether or
aromatic spirits of ammonia with
water; or we may administer a larger
quantity by the rectum. If the nausea
and vomiting continues, we may allay it
by anodyne frictions over the epigastrium, by
counter irritations or the means spoken
of in delirium-epertu. Moderate purgation
is useful; - best obtained by a turpentine
enema, magnesia etc: these means with
a nutritive diet will often succeed in
checking the delirium. Should these means

fail, and the disease increase, we must proceed to more energetic measures. We may give the tincture of opium in from one to two drachm doses every two or three hours, steadily pursuing this plan until sleep ensues. Upon the occurrence of this every thing should be excluded from the room calculated to disturb the patient, unless it assume the appearance of coma. If the patient is aroused, we may promote sleep by small quantities of warm meguo or yolk of egg beat up in warm water, ginger and brandy.

If the opium fails to have the desired effect and the pupils become much contracted, we must suspend its administration for awhile, or combine it with camphor, or substitute another remedy; for instance a dose of acetate of ammonia alternating

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with opium. We may sometimes obtain happy results from combining with opium small quantities of alcohol, quinine, Comp. Spts, Sulphuric ether etc: The bowels should be kept open by Magnesia, castor oil, Rhubarb or aloes, and when the hepatic secretion is deficient by calomel. In the last stage we must sustain our patient by ammonia, Carb, brandy toddy, milk punch, essence of beef and so on. Where there is coma all sedatives should be stopped and a blister applied to the scalp. We may have to bleed in very robust persons, to obtain respite from convulsions, but we must proceed very cautiously. The patient may be allowed as much liberty as may be consistent with his own or the safety of others. During convalescence, give the most nutritious diet, administer tonics &c,

In the treatment of this affection, there has been, beside those mentioned, a great many remedies recommended; such as the inhalation of chloroform, the cold douche, digitalis, hyoscyamus, tinc. of hops and numerous others all which may prove of much avail and should be used when circumstances demand them. Such is the general plan of treatment which must be modified by any existing complication. If the complication be a severe injury, the quantity of opium must be increased unless the head be injured. If encephalitis we must resort to both general and local bloodletting; being very cautious to only draw blood enough to prevent disorganization. In other complications the indications are so prominent, that I shall not speak of them.