

## **Delirium tremens : its diagnosis, causes, and treatment.**

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### **Publication/Creation**

London : W. Pearson & H. Jackson, 1839.

### **Persistent URL**

<https://wellcomecollection.org/works/ktzrnxm5>

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# DELIRIUM TREMENS;

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ITS

DIAGNOSIS, CAUSES, AND TREATMENT.

BY JULIUS WOLFF, M.D.,

*Member of the Royal College of Surgeons, of London, Author of  
a "Treatise on the Diseases on the Chest," &c.*

LONDON:

W. PEARSON, 36, BISHOPSGATE-ST. WITHIN;

AND

H. JACKSON, 32, KING-STREET, BOROUGH.

1839.

LONDON:

J. WERTHEIMER AND CO., PRINTERS,  
FINSBURY CIRCUS.

BY JULIUS WOLFE, M.D.

LONDON:

W. PEARSON, 26, BISHOPSGATE-ST. WITHIN.

H. JACKSON, 22, KING STREET, BURGESS.

1880.



TO

BRANSBY BLAKE COOPER, ESQ.,

SURGEON TO GUY'S HOSPITAL,

LECTURER ON ANATOMY AND PHYSIOLOGY, &c.

MY DEAR SIR,

As a miniature token of gratitude and respect, a slight acknowledgment of your innumerable favors and unvarying kindness, permit me to dedicate to you the following treatise.

After receiving the oral precepts of Tiedmann, Blumenbach and Langenbeck, I am proud to evince my high sense of obligation to yourself, for the advantage I have derived from your invaluable, interesting and most instructive Lectures; and I rejoice that the celebrity of the Medical Schools of England has attracted me to her shores, and that fortune has placed me with one who so much contributes to sustain their



reputation; from whose extensive knowledge I have so largely profited, and to whose undeviating kindness, I am so deeply indebted.

That you may continue to diffuse knowledge amongst the Profession, and enjoy good health and prosperity, is the sincerest wish of

Yours

Dear Sir,

Very faithfully,

J. WOLFE

## PREFACE.

---

*onners*  
THE vice of drunkards, the scourge of our race, which is limited to no country, to which neither rivers nor mountain-chains, nor the ocean itself, forms a barrier, but which is disseminated, more or less, throughout the known world, teems with such wide-spreading evils, and is productive of such direful consequences, that its annals would afford one of the most frightful pictures that could be portrayed to erring man.

Delirium Tremens, the subject of the following pages, is but one of these evils; it is, however, the most important one that falls under the physician's care, and one of the few which it is in his power to alleviate. The author, having had his attention particularly directed towards this disorder, was surprised at the paucity of information he was able to obtain from the few medical writers who had made this subject their study; nor, although his researches have been extensive, has he been able to find one complete and comprehensive treatise



thereon. This, considering the importance of the disease, and the frequency of its occurrence, has surprised him; and, although he cannot hope that this treatise will entirely fill the hiatus, he trusts that it will be regarded by the profession as in some measure supplying the deficiency, being the fruit of considerable research and experience, both here and on the continent, and of habits of the closest observation.

The author trusts he shall not be deemed presumptuous, in offering to the public a treatise in what, to him, is a *foreign* language; but, although a native of Germany, he has been several years in this country, and, from the uniform kindness and encouragement he has ever experienced, gratitude no less than inclination impels him, in this trifling contribution to medical science, to use the vernacular of those to whom he is so much indebted for professional experience and advancement, and amongst whom his professional and literary avocations now place him. It is hoped, therefore, that the reader will extend his indulgence for any trifling inaccuracies that may be detected.



## DELIRIUM TREMENS.

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DELIRIUM TREMENS, or POTATORUM, is a disease produced by excessive indulgence in spirituous liquors: hence it only attacks persons of intemperate habits: its earliest symptom is a trembling of the limbs, particularly of the upper extremities, accompanied by a peculiar kind of delirium—restlessness and sleeplessness.

The ancients were acquainted with this disease, but by them it was classed under the designation of Phrenitis. Samuel Barton Pearson<sup>1</sup> observed it in 1801, and called it brain fever, produced by ebriety. Thomas Trotter, of Newcastle-on-Tyne, made use of the same appellation;<sup>2</sup> and also I. Armstrong, of Sunderland:<sup>3</sup> Peter Rayer,<sup>4</sup> of Paris, proposed the name of "Vinomania." Abel L. Peirson, of New England, states, that the inhabitants of North America term it the

<sup>1</sup> Edinb. Med. & Surg. Jour., 1813, Vol. ix., p. 326.

<sup>2</sup> Essay on Drunkenness, p. 179, ed. 4. London, 1810.

<sup>3</sup> Edinb. Med. & Surg. Jour., 1813, Vol. ix., p. 58.

<sup>4</sup> Mém. sur le Delirium Tremens. Paris, 1819.



Rum Fever, from its being produced by spiritus sacchari, or rum.<sup>1</sup> I. M. Staughton<sup>2</sup> has preferred denominating it, a madness produced by excessive drinking, or habitual inebriety. Joseph Frank,<sup>3</sup> and Carl Speranza,<sup>4</sup> of Parma, considered it an inflammation of the brain, productive of trembling (encephalitis tremefaciens). Blake designated it "Delirium ebriositatis;" which term, however, he afterwards abandoned, as not free from objection, and proposed to call it "Erethismus ebriositatis."<sup>5</sup> Thomas Sutton, physician to the Kent Dispensary, first termed it "*Delirium Tremens*;" and to him the merit is due of having first separated it from phrenitis, and proposed a more correct treatment.

As regards the different appellations, that of Pearson, or *Febris cerebialis*, might be a suitable name, if it were more generally known: it should, however, be remembered, that, in most cases of Delirium Tremens, there is no fever. The name of *Vinomania* must be considered inapplicable, as this signifies rather a desire or passion for wine, which is not present in the disease. Staughton's appellation would be more appropriate, were it not

<sup>1</sup> New Eng. Jour. of Med., Vol. ix., p. 60.

<sup>2</sup> The Philadelphia Journ. of Med. & Phys. Science, Vol. iii. No. 2.

<sup>3</sup> Prax. Med. Univ. Prac., Vol. i., part ii., p. 239.

<sup>4</sup> Anno Clinico Medico, 1823-24, p. 12.

<sup>5</sup> Essay on Del. Tremens, p. 3.



too limited. The designation of Joseph Frank and Carl Speranza would be particularly suitable, if the inflammation of the brain, as they allege, were present: this, however, as will be shown hereafter, is not the case. The most familiar name is undoubtedly *Delirium Tremens*, or, what is still preferable, "*Delirium cum Tremore*;" and it is the most applicable, as it indicates the proper form and peculiar symptoms (*viz.* madness and trembling) which characterise the disease. This opinion, in preference to *Delirium Tremens*, is also entertained by Salomon,<sup>1</sup> who says, "*Ex omnibus his appellationibus seligimus vulgatissimam et satis idoneam delirii tremoris, cum peculiarem designet formam propriaque symptomata.*"<sup>2</sup>

This designation, then, of *Delirium Tremens*, as being that most commonly received, and, under all

<sup>1</sup> Specimen Inaugurale Medicum de Delirio Tremente, p. 4. Halis, 1827.

<sup>2</sup> Salomon's treatise on *Delirium Tremens* appears to have excited the attention of a German surgeon named Wiese, who, apparently without any allusion to the original, published a translation of it under the title of "*Das Delirium Tremens. Eine Abhandlung Bearbeitet von F. L. A. Wiese. Quedlingburg und Leipzig, 1835.*" In searching for the different works on this subject, I observed this pretended treatise of Wiese, and, from its great similarity to that of Dr. Salomon, I was led to compare them; when, after a careful and minute examination, I found, to my great surprise, that the former was a literal translation (with the exception of several errors committed by the translator) of Dr. Salomon's work, published under Mr. Wiese's name.



circumstances, the most appropriate, I shall adopt in the following pages, and will now proceed to treat of the disorder itself.

### *Course of the Disease.*

Some physicians have divided the course of this disease into different stages. Such divisions, however, are very unsatisfactory; there being no definite line of separation between them: besides, the disease often appears in so diverse a manner, that the distinction between one stage and another would be very arbitrary. Töpken,<sup>1</sup> for instance, divides it into *five*, Blake<sup>2</sup> into *three* stages. If, however, it should be thought necessary to divide this disease into stages, I would propose the two following:—

#### *1.—Precursory Symptoms of the Disease.*

Persons who indulge too freely in spirituous liquors, and who are frequently intoxicated, generally, after some considerable time, complain of want of appetite; sometimes passing the entire day without eating anything, and even

<sup>1</sup> Ueber die Natur, und den Sitz des Delirium Tremens. In Hufeland's Journal, Vol. lxxxvi., st. iv., p. 59.

<sup>2</sup> Delirium Ebriositatis. In the Edinb. Med. & Surg. Jour. No. 78, October, 1823.



making their accustomed and favourite drink, ardent spirits, in smaller quantities, or, as frequently happens, regarding it with the greatest aversion. The digestion is then impaired, and the patient is annoyed by repeated regurgitation of the contents of the stomach, causing a taste and smell of the most nauseous description. Kriebel<sup>1</sup> mentions an unpleasant taste in the mouth as a precursory symptom. The secretions of the mouth are generally clammy, slimy, and bitter; and the tongue becomes furred, and of a white, or whitish yellow colour. Pain in the stomach is sometimes experienced,<sup>2</sup> and, in most cases, I have observed that the patient complains of a painful pressure in the epigastric region, as if compressed by a belt, frequently to such a degree as to render deep inspiration difficult. This feeling of constriction extends more particularly to the region of the liver; indeed a diseased liver has been found not uncommonly to precede the disorder; of which Oliver Bidwell<sup>3</sup> makes particular mention.

It is a fact known by too many, that those who keep themselves sober, after inebriation, have a feeling of languor, sickness, &c., on the following

<sup>1</sup> Hufeland's Jour., Vol. lviii., No. 4, p. 27.

<sup>2</sup> Carl Jac. Perry. Lond. Med. and Phys. Jour., 1814, vol. xxxi., p. 41. I. L. Töpken, in Hufeland's Jour., Vol. iv. p. 6, p. 60.

<sup>3</sup> Lond. Med. Reposit., 1815, Vol. iv., p. 363.



morning. It is the same with these patients; they suffer from nausea, inflated stomach, frequent heart-burn, and inclination to vomit: and sometimes vomiting takes place, although the stomach may be almost empty, and the patient quite sober. If at this time animal food be taken, it is invariably rejected by the stomach; and persons who have been accustomed to resort to spirits as a sovereign specific against every ailment, now regard them with dislike. The patient soon experiences a general debility of the frame and feebleness in all the limbs—he becomes restless, melancholy, and perturbed in mind, and every effort to restore him to cheerfulness is in vain. He is likewise tormented by a constant sleeplessness, so that even a few minutes rest are denied him; and no sooner does he close his eyes in his endeavour to obtain repose, than he is tortured by the most frightful dreams: and, what may be thought remarkable, the less spirits he takes, the more do these harassing dreams oppress him, spirits having the effect of producing a sound sleep, which, however, should perhaps be rather termed a stupor. We now also find that a feeling of anguish is experienced in the region of the stomach, attended by a constant fear, which is manifested by wild looks, and a peculiar appearance of the eyes. Many physicians observe, also, that the face becomes pale or livid, as in persons who suffer from dys-



oepsia, or affection of the liver. In several cases, particularly where the patient was robust, I have observed an inflated face, similar to that in anasarca. This observation applies principally to those who have suffered from a previous attack of Delirium Tremens. Dizziness and confusedness in the head, are almost always present. The stools, according to Jacobson,<sup>1</sup> are generally as usual; but in numerous observations of my own, I have frequently found them hard and scanty, and diarrhoea is seldom present. The pulse is not very irregular, but sometimes full and hard. Fr. Aug. Berndt<sup>2</sup> says, it is normal; Armstrong, that it is feeble and soft; Andrew Blake<sup>3</sup> found it slower than in the natural state of the body.

But even when all the above-mentioned symptoms are present, we cannot with certainty conclude that an attack of Delirium Tremens is actually impending: nor if even a trembling of the hands be superadded, can we with confidence prognosticate the appearance of this disease; as these symptoms are frequently experienced by intemperate persons in a greater or less degree, and sometimes for a considerable time, without being followed by Delirium Tremens. Hence we cannot

<sup>1</sup> Jacobson, in Rust's Magazine, Vol. xvi., p. 103.

<sup>2</sup> Hufeland's Journal, Vol. lv., No. 5., p. 86.

<sup>3</sup> Lond. Med. and Phys. Jour., 1823, Vol. l., p. 355. Edinb. Med. & Surg. Jour., 1823, Vol. xix., p. 497.



fix, with any precision, the period of the continuance of this stage: but in those cases where it is succeeded by the Delirium Tremens, the disorder commonly develops itself within from four to eight days, and very rarely exceeds a fortnight.

But sometimes the Delirium Tremens appears suddenly, and without any of these premonitory symptoms; in which case it is often preceded by an epileptic fit, which, either at the commencement or termination, is accompanied by a vomiting of bile, mucus, or blood.

## 2.—*Appearance of the Disease.*

After the above symptoms have continued for some days, the perturbation of mind increases. The patient now rambles in his conversation from one subject to another, until at last the dulness and confusion of his head, with the increased trembling of his hands, pass into delirium.

The disease itself generally makes its appearance in the night. The patient now begins to rage, and this, it is quite evident, is the effect of troubling dreams. These paroxysms of rage being thus distinguished as proceeding from rapid and terrifying dreams, it has but *seldom* been observed, that cheerfulness attended the raving; so, at least, assert most of the writers on Delirium Tremens; nay, many even declare “they *never* met with



cheerfulness during the rage." This assertion, however, of the infrequency of the occurrence of cheerfulness during the rage, my own experience enables me to deny; as I have frequently seen the patient so humorous during the paroxysms, and his incoherent ejaculations were of so jocular character, that neither his friends around him, nor myself, could refrain from laughter.

Numerous cases of a similar description I witnessed in Holland, under the care of an eminent surgeon in the army, Dr. Henninger. I myself, also, had several under my own immediate care; and have observed a vast number under the treatment of other medical men in hospitals, &c. Lind<sup>1</sup> also mentions cases where the madness was humorous and mirthful. The patient then appears to forget the disease entirely, and becomes fearful of losing his property; and this thought torments him incessantly. Sometimes he shuns his relatives and acquaintances, and seeks solitude; sometimes he is anxious to see them around him, and begs of them not to leave him. They no sooner comply with his request, than he begins to scold, and insult them—heaps reproaches upon them of every description, accuses them of conspiring against him, &c. The patients mostly complain of not seeing at home; and of being prevented, by bad

<sup>1</sup> *L. c.*, p. 46.



people, from conducting their domestic concerns. But more frequently they think themselves chained and locked up in a dungeon, and that their friends lie in wait for them. In addition, they have constant trembling of the limbs, particularly the upper extremities; and this to such a degree, that they have no control over their hands, and can neither grasp nor hold any thing with them.

It is very important to take into consideration the images which the diseased imagination pictures. These consist principally of animals, as cats and dogs, and more particularly mice and rats. Sometimes the patients fancy they perceive insects or worms, by which they are constantly tormented; they also frequently imagine they hear the chirping of sparrows, the squeaking of mice, the bubbling or noise of rushing waters.<sup>1</sup> They display feelings of hatred and hostility towards almost every thing, hearing and seeing them with the greatest dislike, and are consequently in such an incessant state of irritation, that they cannot rest a minute. Sometimes they jump out of the bed to look for cats, mice, rats and birds about the room; at others they endeavour to burst their imaginary fetters, and to escape from prison: and if any attempt is made to restrain them in these paroxysms, they become exceedingly violent

<sup>1</sup> Behr, Hufel. Journ. Vol. lviii. No. 4. p. 11, 12.



towards the person interposing, even though it be a father or any other near relative.

Although these visionary images apparently render the patients very irritable and fearful, they still, in their more sensible moments, frequently appear to remember something pleasing, as they will then laugh; and the countenance assumes a smiling and cheerful aspect. These intervals of consciousness, however, continue but for a very short time, perhaps only a few moments, when the patients again relapse into their former hallucinations.

Sometimes the delirium is removed by conversation; but on this being discontinued, the attack is quickly renewed. A most remarkable peculiarity, however, of this disorder is, that the patients cannot bear to be told the truth,<sup>1</sup> and if any one

<sup>1</sup> Having been just perusing, in a German periodical, an article on homæopathy, the applicability of this observation to those who are possessed with *fixed notions* respecting it was struck me most forcibly.

This violent disease has been for some time endemic in Germany, and the homæopaths, or insane persons afflicted with it, are as equally averse to hear the truth as these patients: for if it have been attempted to point out to them how absurd, unsupported, and false are their principles, and how untrue their assertions, they immediately fall into a fit of raving, which might very properly be called *Homæopathomania*. I some time since happened to have a conversation with an English Homæopathomaniac, although not aware at its commencement that he belonged to Hahnemann's School; but having incidentally remarked, that I thought the homæopaths a set of quacks, the paroxysm came on most violently, that I was almost tempted to prescribe him the ten



inconsiderately endeavours to force conviction upon them they instantly fall into the most violent paroxysms, thinking all their friends enemies, throwing themselves restlessly about, starting up, making convulsive motions with their limbs, and screaming: they also utter melancholy moans and lamentations, greatly alarming their friends who may be present. The paroxysms are generally more violent towards evening, commonly decreasing as the morning advances.

The face, though previously pale, as soon as the delirium appears, becomes very red, the features are distorted; and the eyes sparkle and are running with tears, but not reddened; they have however a fixed and dull look, and there is either dilatation<sup>1</sup> or contraction of the pupil.<sup>2</sup> Photophobia, or the shunning of light, no writer has observed.<sup>3</sup> The veins intumescence. The pulse is weak and very quick, sometimes beyond 100 in a minute; it is often quite normal, and occasionally spasmodically irritated. The increased heat which sometimes appears has led several medical men to believe

millionth part of a grain of *aconitum napellus*. So true it is, that people afflicted with certain diseases or errors do not like to be told of them; thus the hypochondriac will not be called hypochondriac, the fool will not be called a fool, and the homœopathist will not be called a quack.

<sup>1</sup> Bidwell, *l. c.* p. 365; Töpken, *l. c.* p. 61.

<sup>2</sup> Blake, *l. c.* p. 500.

<sup>3</sup> Jones in *Lond. Med. and Phys. Journ.* 1825, vol. liv. p. 95; T. G. Lind, *de Delireo Tremente*, p. 52. Havn. 1822.



that there is fever.<sup>1</sup> The usual symptoms of fever however, as the quick pulse and the violent thirst, are not always observed. Armstrong and Eichelberg<sup>2</sup> notice the presence of thirst. I have observed this myself in a few cases, where the thirst was excessive; it appeared, however, at a late period of the disease, and I attributed it to the constant restlessness and talkativeness; for it is by no means a symptom of the disease, as patients usually neither eat nor drink. Most writers have observed that there is no thirst. The tongue is in general quickly furred, and the bowels are obstinately constipated. The urine is often natural, sometimes pale, but seldom cloudy. Profuse, cool and discoloured perspiration has been observed by almost all writers, but that emitting a fetid offensive odour has only been noticed by Eichelberg. These perspirations return after the slightest exercise or emotion of mind. They appear also to be connected with anxiousness, and have never any salutary effect.

The paroxysms sometimes reappear, particularly when they terminate with a gentle sleep. Blake and Töpken observe that this sleep, which is generally produced by artificial means, is sometimes found to occur without any adventitious aid of

<sup>1</sup> Perry, *l. c.* p. 41. Lind. *l. c.* p. 47. Andreae, *l. c.* 79.

<sup>2</sup> Hufel. Journ. Vol. liii. No. 3; p. 135.



nature. On awaking, the patient commonly feels better, and the pulse is slower; but his wild appearance and his hasty or reluctant answers plainly indicate that the disease is not yet eradicated.

This principal stage of the disorder generally continues for several days, varying from six to eight or fourteen and upwards, with occasionally intervals of a more favourable character; sometimes, however, it terminates within twenty-four hours.

### *Decline of the Disease.*

These symptoms having thus continued for a longer or shorter period and attained their acme, the patient usually falls into a deep, placid sleep, from which he awakes refreshed and in possession of perfect consciousness. He frequently remembers distinctly what has occurred during the delirium, and is even vexed at having believed in things which had no existence. Sometimes it recurs to the patient only as an obscure dream; and frequently he has no recollection whatever of any thing which took place during its continuance.

There generally remains a dull sensation in the the head, with heaviness, a trembling of the hands, and sometimes a bitter and slimy taste in the mouth, together with an unpleasant sensation in the region of the stomach, feebleness, &c. These, however,



gradually disappear, and the patient's former state of health returns.

The pulse recovers its normal condition during the sleep, when also the perspiration ceases. Sometimes diarrhœa is found to follow the sleep of the patient, particularly if gastric affections were present. It is seldom that obstinate costiveness continues for any considerable time. The sleep and diarrhœa might therefore be considered as the critical juncture, if the disease invariably ceased after it: but this, however, is not the case; for sometimes the patient falls back into his former condition, even after a sleep of several hours duration.

In Delirium Tremens indeed there is a great tendency to relapse. One of my patients, upwards of 60 years of age, and who was accustomed to take large quantities of ardent spirits, I attended seven times in the course of thirteen months, the duration of the attacks varying from about one to two months. He died of ascites. Eichelberg<sup>1</sup> mentions the case of an individual who was attacked six times in the course of a twelvemonth.

Delirium Tremens but seldom occurs in its pure form; and although it may be accompanied by a great variety of diseases, yet its most frequent complication is the gastric affection, or dyspepsia. It is certainly in most cases unaccompanied by

<sup>1</sup> Hufeland's Journal, Sept. 1821, p. 134.

<sup>2</sup> Ibid.



fever; yet this is sometimes found associated with it, and is then either of the inflammatory or, more frequently, of the typhous character.

In young and robust patients, the fever, when it occurs, is generally of the inflammatory type, causing the dry and hot skin, the full and hard pulse, and the excessive thirst; but in old emaciated drunkards it has mostly the typhous character, and is accompanied by the usual symptoms of that form.

*Difference between Delirium Tremens and allied Diseases.*

We must be extremely careful not to mistake this disease for those that have a greater or less resemblance to it, as such an error would, in most cases, be highly injurious, from the improper treatment which might be pursued. To prevent this an accurate knowledge of its diagnoses is indispensable. If, however, we take into consideration the causes producing the disorder, the appearance at the commencement of the disease itself, as also the peculiar delirium, the trembling of the hands &c., a mistake by any experienced practitioner need scarcely be apprehended. But cases are often met with of such extreme complication, that the nicest discrimination is necessary; an interesting case of this description is given by Ebers

<sup>1</sup> Casper's Wochenschrift, Jahrg 1838. No. 5. p. 102.



1. Inflammation of the membranes of the brain may sometimes be mistaken for Delirium Tremens. The former, however, commonly commences, particularly when the attack is severe, with violent and incessant headache, the faculties become disordered, and the eyes so extremely sensitive as to be quite unable to endure the light: the pupil is contracted, and the patient constantly perceives little sparks and the appearance of flames before his eyes. The face is generally red, and the head sometimes hot; violent fever, with a quick, hard irregular pulse, accompanies these symptoms from their commencement. There is also delirium, convulsions, and *subsultus tendinum*. The skin is very dry, red, and warm, the thirst excessive, and the urine of a red colour; the respiration is difficult and quick. These symptoms are not seen in Delirium Tremens.

That form of inflammation of the brain which is produced by external violence applied to the head, as a blow, fall &c., bears a still greater resemblance to Delirium Tremens. However, this is generally preceded by more or less distinct pain at the injured place, there is fierceness and redness of the eyes, a stronger and harder pulse, sneezing, inability to endure the light, together with delirium and numbness and trembling of the hands. If, however, we take the causes into consideration,



we obtain much of the requisite assistance for distinguishing them. The favourable result too, which attends the venesection and the application of cold fomentations in inflammation of the brain, affords another important means of discrimination.

2. We often see, in persons addicted to intoxication, a state of madness with tremor of the limbs, which might readily be mistaken for Delirium Tremens. This condition, however, is but of brief duration, and commonly terminates with a gentle sleep, when the former state of health quickly returns.

The question here arises, "What difference is there between this Delirio and the real Delirium Tremens?"

Salomon<sup>1</sup> thinks, there is the same difference here as between simple drunkenness (*ebrietas*), and a constant longing or passion for drink (*ebriositas*); and as *ebrietas* is but too frequently the forerunner of *ebriositas*, "so," says he, "may the former delirium of the inebriated person pass over sooner or later into the proper Delirium, and it is not impossible, even terminate fatally. With this opinion my own fully concurs, as well as with that of Kriebel,<sup>2</sup> who says that "Delirium Tremens is a fixed and habitual drunkenness of the senses."

<sup>1</sup> Specimen Inaugurale Medicum, &c. p. 18.

<sup>2</sup> Hufel. Jour. vol. lviii. No. 4. p. 25.



On the melancholy consequences of ebriositas, Thomas Trotter,<sup>1</sup> and C. V. Bruel—Cramer,<sup>2</sup> have given very copious details.

3. In several cases, related by ancient authors, it is very doubtful, whether they do really belong to Delirium Tremens; at all events, it is evident that they are quite different from the disease which now bears that appellation.

Armstrong, to whom I have before referred, and who was a most accurate observer, enumerates, under the class of Delirium Tremens, two cases of the patients of Hippocrates, one named Philistes Thasius, the other Chaerio of Demaenetus.<sup>3</sup> Both had certainly a disorder produced by drinking, the former with furor, the latter with insania and trembling of the head and lower lip. In the case of Philistes however, the symptoms of inflammation of the liver, viz. tension of the right hypochondriac region, bilious and copper-coloured vomiting, &c., are not very obscure. In the case of Chaerio, who suffered from similar affections of a copious collection of bile and a frequent return of shivering, a febris ardens may have existed, which was very prevalent in Greece. However Hippocrates has observed a severe case of delirium with shivers produced by the copious use of

<sup>1</sup> Essay on Drunkenness. Ed. 4. London, 1810.

<sup>2</sup> Ueber die Trunkenheit. Berlin, 1819.

<sup>3</sup> Hippocrat. Epidem. lib. iii. aegr. 4, 5.



liquor.<sup>1</sup> Lind, amongst cases of Delirium Tremens, cites that of J. Pet. Albrecht, who had a malignant fever, accompanied by severe delirium and unquenchable thirst. The patient was a drunkard, and his cure was effected by spirits of wine. But this case has no similarity with Delirium Tremens. The same author also gives another case, related by J. Georg Gröbel, produced by the excessive use of *spiritus juniperi*, in which delirium was cured by venesection.<sup>2</sup> But this likewise cannot belong to Delirium Tremens, the trembling of the hands not being mentioned, and the treatment being quite unsuited for that disorder. T. Caspar Grimm,<sup>3</sup> describes a case of humorous and jocular delirium in a drunkard, which was cured by venesection. This case bears a great resemblance to Delirium Tremens, and might with propriety be so classed, had trembling of the hands been one of the symptoms mentioned.

Lind gives, as Delirium Tremens, the case cited from Morgagni, of a youth who had been attacked by a slow fever without any apparent cause, in which an uninterrupted delirium of eight days supervened. But this cannot be considered a case of Delirium Tremens. After death a gelatine

<sup>1</sup> Aphorism. 7. 7.

<sup>2</sup> Ibid. Dec. 3. Ann. 4. Obs. 97.

<sup>3</sup> Ibid. Dec. 3. Ann. 9. Obs. 13.



was found covering the membranes of the brain, and a serous exudation at its base.<sup>1</sup> The following case from Morgagni would more properly be so classed. A sewer-cleaner being at his employment in the night, was greatly alarmed by the uncied appearance of a vision; his whole frame trembled excessively, and he died soon after with convulsions. This man was a drunkard. The post-mortem examination shewed thin blood in the dura mater and a watery fluid in the ventricles.<sup>2</sup> Morgagni attributes the fatal termination in this case to the fright or shock which the patient had sustained. But considering the mephitic gas of a sewer, and the doubt whether liquor might not have been previously freely taken, there is much room to question which was the cause of his death.

The effects of the mephitic gases in sewers are admirably described by T. Nat. Halleo.<sup>3</sup>

The disease which Fried. Casimir<sup>4</sup> cured in a soldier by the use of moschus, was a phrenitic fever, accompanied by strong irritation and trembling of the limbs, and critical perspirations. The use of this disease cannot be looked for in days of spirituous liquors, nor does its treatment resemble

<sup>1</sup> Morgagni de Sedib. et Camp. Morbor. Ep. 7. No. 2.

<sup>2</sup> Ibid. Ep. 62. No. 5.

<sup>3</sup> Recherches sur la Nature, et les Effets du Méphitisme des fosses d'Aisance. Paris, 1785.

<sup>4</sup> Abhandl. der Bayersek. Ackad. d. Wissenschaft. Vol. ii. 3320.



that of Delirium Tremens; and consequently the case should not be classed as such.

Lind quotes cases from Max. Stoll, as evidence. He also details several other cases,<sup>1</sup> but they are of phrenitis, produced by the heat of the sun and fire, or by the too copious indulgence in wine, for the *post mortem* examinations showed distinct traces of inflammation of the brain; hence they ought not to be classed with Delirium Tremens.

Lind also cites several cases from Bang, which, however, but few are really Delirium Tremens; still strong delirium, with tremor of the hands, following epilepsy, and leaving a serous fluid in the ventricles of the brain, although the immediate cause may be unknown, certainly very nearly approximates to Delirium Tremens.<sup>2</sup> And this may be said of the case quoted by the same writer in which a person, addicted to great indulgence in ardent spirits, was attacked by a disorder which was attended with repeated vomiting, constant delirium and tremor of the limbs, and was cured by the application of leeches to the temple, venesection, and a tonic.<sup>3</sup>

A. H. Clifton<sup>4</sup> attended a woman, who was

<sup>1</sup> Rat. Med. P. iii., p. 226 seq.

<sup>2</sup> Bang Diar. Nosocom. Hav., Vol. ii., p. 21.

<sup>3</sup> Ibid., p. 48.

<sup>4</sup> Lond. Med. Reposit., 1816, Vol. v., p. 108.



troubled with vomiting, delirium, and cholic, the same as in *Delirium Tremens*: large doses of opium were here administered, and with success: but no trembling is mentioned; and our ignorance of the producing causes leaves us in uncertainty.

Günther<sup>1</sup> thinks he has observed this disease in boys. But this doubtless was phrenitis, which followed after scarlatina, and was treated with calomel and opium, and not *Delirium Tremens*.

Tendering<sup>2</sup> has recited a very complicated, but doubtful, case of aberration of mind, accompanied by an insatiable passion for drink, which produced melancholy, and ultimately madness, with trembling of the limbs. Töpken<sup>3</sup> has correctly observed, that in intumescence of the spleen, and in affections of the heart, similar phenomena appear in *Delirium Tremens*, so that the supervening cause, and the absence of organic affections, alone can throw light upon the subject.

The statement of T. M. Staughton, respecting inflammation of the stomach producing this disease, and being curable by means of emetics,<sup>4</sup> remains dubious.

<sup>1</sup> Salz. Med. Zeitung, 1820, iii., pp. 349, 350.

<sup>2</sup> Nasses Zeitschrift für Phychische Aergte, 1821, i., p. 100.

<sup>3</sup> Hufeland's Journal, Vol. lv., No. 6., p. 65.

<sup>4</sup> The Philadelphia Journ. of the Med. and Phys. Science, Vol. iii., No. 2.



### *Post-mortem Examinations.*

Of *post-mortem* examinations, we possess but few well-authenticated reports, and have therefore full reason to regret, with some, that examinations after death have not more frequently taken place; or with others, that the appearances were not thought worth recording.

Serous exudation between the membranes, or in the ventricles of the brain, as also in the cavity of the medulla spinalis, was most frequently found. Degenerations of the viscera of the abdomen were also sometimes met with, and also of the liver. But these appearances afford no explanation of the nature of *Delirium Tremens*; for the same appearances are also frequently found in other disorders. Degenerations of the liver are certainly often met with in drunkards; also degenerations of other abdominal viscera. These might therefore properly be considered as the *cause of death*, but certainly not as the *cause of Delirium Tremens*; nor can the exudation of a serous fluid between the membranes, or in the ventricles of the brain be considered as the cause of the disease. It may certainly produce, particularly when in excess, a soporific, epileptic, or apoplectic state; but not *Delirium Tremens*. We must, therefore, consider the exudation as a product of the disease; for it



origin may be well explained by the congestion of the brain consequent on the madness. No traces of a true inflammation have ever been found.<sup>1</sup>

T. W. Webster<sup>2</sup> found the brain normal, but the liver hard, and the viscera contracted and thickened.

Lind<sup>3</sup> made thirteen post-mortem examinations, and found, with two exceptions, that the substance of the brain remained unaltered, but that its vessels were copiously filled with venous blood. The arachnoid and pia mater were frequently reddened; and the latter sometimes a little more thickened than in its normal condition. In three cases the arachnoid was thicker and harder, and separated from the pia mater by a serous extravasation, not found in the healthy state. In all the remaining cases an increase of serous fluid was found in the ventricles of the brain, &c.<sup>4</sup>

Ebers<sup>5</sup> invariably found aqueous exudations between the membranes of the brain, and frequently also in its ventricles, and in the spinal marrow, more rarely in the abdomen, and accompanied in some cases by Hydrops pericardii.

Jos. Frank, *l. c.* 233. Blake in *Edinb. Med. and Surg. Journ.* 1823, Vol. xix., p. 501—505. Andreæ in *Hufel. Journ.*, l. viii., No. 4, p. 55.

*New Eng. Journ. of Med.*, Vol. ix., p. 216.

*L. c.* p. 56. 58.

Romberg's *Leichenöffnung* in Nasse's *Zeitschrift für psychische Aerzte* 1822. Ites. Vierteljahrheft.

*L. c.* p. 103—105.



He often found formations of tubercles in the lungs, and also, suppuration, and still more frequently destruction of the liver, which was covered with steatomatous nodi, or even dried up. In two post-mortem examinations by Dr. Salomon in my presence, where the patients had been afflicted with Delirium Tremens, there were no abnormal appearances observed, excepting an uncommon thickness of the bones of the skull. One had died from aneurisma aortæ, the other had strangled himself in prison.

*On the Nature of Delirium Tremens.*

Although the nature of this disease is involved in obscurity, yet the symptoms, treatment, and post-mortem examinations confirm us in the belief that the opinion of our ancestors, "*that it is an inflammation of the membranes of the brain, as also the view of Lind, that it is an inflammation of serous nature, resembling Hydrocephalus acutus,*" are erroneous.

Berndt,<sup>2</sup> and others, are of opinion, that it consists in an indirect weakness of the nervous and vascular systems, produced by over-irritation. Blake<sup>3</sup> thinks it is an indirect general debility suc-

<sup>1</sup> Salomon, *l. c.* p. 30.

<sup>2</sup> Hufel. Journ. 1822. Vol. lv. p. 86.

<sup>3</sup> Edinb. Med. and Surg. Journ. No. 77. Oct. 1823.



ceeded by a morbid increase of action of the brain and nervous system, which is attended with Delirium. Jos. Klapp<sup>1</sup> seeks the seat of this disease in the organs of digestion; and compares it very improperly to a vertigo soothing the drunkard, but differing from Delirium, in the mental faculties being less impaired than in that disorder, in which judgment is wholly absent. Töpken<sup>2</sup> attributes this disease to an irritation of the ganglionic system, which is transmitted to the brain and thus produces delirium, hence he calls it “*Erethismus cerebri abdominalis*.” Hufeland<sup>3</sup> thinks it a weakness similar to that produced by the too frequent effusion of semen. Others have compared this delirium to that which is produced by hunger.<sup>4</sup> There is, generally speaking, some truth in both these opinions, as they are equally cases of direct weakness. But we must not forget, that, after long fasting, the former activity of the stomach is soon restored by the application of its accustomed stimuli. The effect of indulgence in the passion for ardent spirits is this:—the weakening by overstimulus the digestive powers of the stomach; in

<sup>1</sup> London, Med. and Phys. Jour. 1819. Vol. xli. p. 176.  
 Ad. Golden: vom Delirium Tremens. Berlin, 1825.

<sup>2</sup> *L. c.*

<sup>3</sup> Journ. Vol. lviii. No. 4. p. 5.

<sup>4</sup> Armstrong in Edin. Med. and Phys. Journ. 1813. Vol. xx. p. 151.



consequence of which an increased sensibility in the organs of sense and in the brain takes place, hence the constant sleeplessness and trembling of the limbs. And almost all writers agree, that Delirium Tremens is nothing but a morbid irritability of the brain and the nerves, with weakness of the stomach.

My own opinion is that Delirium Tremens is the effect of an increased morbid excitation, or a state of constant irritability, of the brain, united with a feebleness produced by the weakness of the organs of digestion. It is certain that, with this irritability, congestion is generally associated, which I will readily admit may terminate in inflammation; but I think I have satisfactorily shown, that inflammation is *not always* present.

#### *On the Causes of Delirium Tremens.*

The disease is produced by the immoderate use of ardent spirits, particularly of brandy, rum, gin, &c.\* but it has never been observed in the most copious wine-drinkers; and before the use of spirituous liquors became so general, we find no

\* Whether porter or ale alone can produce this disorder is, I think, judging from all the enquiries and observations I have been able to make, extremely doubtful. Dr. Babington, the eminent Physician at Guy's Hospital, has attended several brewers suffering from Delirium Tremens, produced, he imagines, by excessive indulgence in beer. But is it not very probable that they drank spirits not less freely than beer?



mention made of this disorder. Cases are of frequent occurrence in England, and particularly on the coast of Kent, on account of the great quantities of rum and other spirits that are smuggled there, and consequently of easy access. For the same reason, it is very commonly met with in North America, and the West Indies. It is also of daily occurrence in Bremen, Copenhagen, Danzig, &c. The statement of Albers,<sup>1</sup> that it never occurs in France is erroneous, as I myself, through the kindness of Dr. Trenel, witnessed one case there, and that gentleman assured me he had met with several others previously. It is true, however, that in that country it is rare. Heineken has attributed its origin to the bad quality of the oriental rum.

Excessive indulgence in spirituous liquors is more particularly injurious in two ways.

First, it destroys the powers of the stomach, thereby impairing digestion, and encroaches upon the secretion of the bile.

Second, it increases the receptivity of the whole body; but more especially that of the brain and nerves. Both these effects are so distinct and clear, that no doubt can be entertained of their existence. It is different with wine, that is, with the better sort; and the more it is mitigated with

<sup>1</sup> Salz. Med. Zeitung, 1821. I. 416.

<sup>2</sup> Hufel. Journ. Vol. liv. No. 4. p. 46.



saccharine and tartaric acid (particularly when new), the less injurious are its effects; hence the rare occurrence of this disease in fertile wine countries.

Delirium Tremens occurs most frequently in the male sex; but women also are sometimes attacked, and, when afflicted with this disease, they do not lose their general character, for they are unmanageable. The disease in them soon shews itself in paroxysms of violence; and convulsions and epilepsy often ensue.

This disorder most frequently occurs among the lower classes: and this, indeed, from their general habits of intemperance we should expect. Many of these persons are in an almost constant state of intoxication, and take but little substantial food, and then generally cold, as cheese, bread, potatoes, cold meat, &c.; mild beer they detest. The description of persons can often take an enormous quantity of spirits without becoming intoxicated. Generally in the morning, as long as they are sober, they are very low spirited and wretched, and complain of all kinds of ailments, and the trembling of the hands is so excessive as to render them almost incapable of holding any thing. But they do not permit the day to advance far, before they again have recourse to their accustomed stimulus: and thus, under the vain hope or pretence of dissipating their cares, again resort



that alone has caused them. I knew a gardener, forty-six years of age, who could not go to his work until he had taken his usual quantity of brandy. He told me himself, that immediately after getting out of bed, he always drank a large glass of brandy, and a quarter of an hour after three cups of coffee, with the same quantity of brandy in each. He died in a most deplorable condition of induration of the cardia. A publican, sixty-two years of age, whom I have occasionally attended, trembles to that degree in the morning, that he cannot even wash himself until he has had a glass of brandy. I remember a wealthy individual in the country, thirty-four years of age, who had always a bottle of brandy by his bed-side, which he very freely resorted each time he awoke, and if he missed doing so he passed the remainder of the night in an oppressed and distressing state.

Ebers mentions the case of a porter, forty-one years of age, who drank from seven to eight quarts of brandy daily; he ate nothing but bread and old cheese, and whenever his stomach was overloaded he took Oleum lini and beer. This course of life he continued for years without any perceptible injury to his health. But at last total abstinence from brandy became necessary, and afterwards he had complete an aversion to it, that he thought something nauseous had been put into the liquor to



make him disgusted with it. He suffered from induration of the liver and ascites, emaciated rapidly, became dark-yellow like a mummy, and ultimately died of exhaustion.

Delirium Tremens, however, does not occur in all drunkards; but it appears that some previous stimulus is required to produce it, as, for instance, wrath, chagrin, fright, drastic purgatives, cold, erysipelas, inflammation of the lungs, &c. I have seen it appear after the suppression of scabies. That the sudden cessation of the use of a long accustomed stimulus may produce this disease is true, as I have several times witnessed; but to lay this down as a general cause, as Blake in his excellent Essay does, is contrary to all experience. Lind relates cases where it appeared when drunkards took more than their usual quantity; but I do not imagine that this alone was the cause.

I think the most frequent cause of Delirium Tremens in drunkards is their being prevented from sleeping themselves sober, or being suddenly awakened from their sleep, or when circumstances prevent them from taking rest after their intoxication. The latter point, I think, may be applicable to many of Blake's patients, who, it would seem, were all soldiers. A soldier, after drinking during the day, may be sent at night to a post where he is exposed to the severity of the weather, and has the fear of the lash if he neglects his duty. The



well known stimulus of the lash keeps him awake; every atom of his nervous power becomes thus exhausted, the utmost sensibility taking its place, and the poor fellow's misery is prepared. The fact that blacksmiths, bakers, watchmen, &c., are most subject to this disease, is conformable to the above opinion, they being most liable to be disturbed in the night; and the cases of accidents in which this disorder occurs, are also favourable to this opinion, for the pain which the patient suffers prevents him from sleeping, and after a few sleepless nights the disease breaks forth.

Lebers, also, thinks that those persons are most exposed to it, who are not only votaries of Bacchus, but also sacrifice at the shrine of Venus, and who forsake the destructive haunts of the former, but resort to the no less pernicious temples of the latter.

I do not think that there is a certain predisposition to this disease; it spares no constitution, and appears most frequently after the twenty-fifth year: rarely in senility. But the supposition maintained by Günthar, "that Delirium Tremens is the same form of disease as the inflammation of the brain so often occurring after scarlatina," is doubt-  
erroneous.



*Prognosis.*

The prognosis is in general according to the age and constitution of the patient, as also according to the nature of its complications. As already stated, the disease occurs but seldom pure in its nervous and erethic form, and can seldom be considered as appearing at once, but as being produced by causes long previously in operation. Hence, in these cases, we must be guarded in our prognostications of the result.

But when the Delirium Tremens appears in its pure form, when the patient is healthy, young and free from organic affections, and has not suffered from this disease before, we then may with tolerable certainty predict a favourable issue, particularly when the paroxysm terminates with a calm natural sleep and the pulse becomes normal: but a person once afflicted with Delirium Tremens is never secure from relapses. The disease often leaves behind it some chronic affection, as feebleness of the thighs; various affections of the vision, as double sight, squinting, &c.; loss of memory, weakness of mind, disturbance of the organs of digestion, pressure in the hypochondria, want of appetite, costiveness, &c., and in many cases violent perspirations. In a patient whom I attended



thirty-four years of age, who had had three attacks, accompanied with violent paroxysms of madness, in the course of two years, the Delirium Tremens was succeeded by epilepsy; and by this he was attacked within short intervals, four different times: he had previously never suffered from that disorder. Strong exhortations prompted him to a different mode of living, and neither of the diseases reappeared within the course of two years and a half, when I ceased seeing him.

Delirium Tremens is most commonly complicated with indigestion, and if this has but recently appeared, the prognosis is not unfavourable, as it may generally be soon relieved, after which the delirium usually decreases, and frequently ceases entirely. But if the indigestion be of long standing, and has to any considerable degree increased, the prognosis is much less favourable.

If the Delirium Tremens be complicated with fever, the prognosis is according to the character of the fever, and the case is a critical one, if also attended with inflammation of any important organ, as the brain, the lungs or liver; but a simple linient fever, when the concurring circumstances are favourable, is generally without danger. A complication with nervous putrid fevers is always extremely dangerous.

The prognosis is particularly bad when organic affections are present, and more particularly so in



a weakened constitution. In drunkards, affections of the liver are frequently found, of which hydrops is often the consequence.

A frequent pulse, if scarcely sensible, constant sleeplessness, convulsions of the limbs, tendinum saltus and picking at the bed-clothes (crocidismus s. carphologia<sup>1</sup>) denote approaching death. Continual murmuring, stertorous respiration, confusion, or cessation of almost all the senses, also indicate the speedy dissolution of the patient, which is generally preceded by stupor, or a convulsive or apoplectic fit.

A writer in the Salz. Med. Zeitung (1826, II. p. 300), observes, that convulsions are the principal signs of death.

### *Of the Treatment of Delirium Tremens.*

The judicious treatment of this disease is often attended with considerable difficulty, and the practitioner must be mainly guided by its complications. We can lay down no certain indications, which would be uniformly applicable to all cases, but we can frequently avert the disorder by proper treatment of the precursory symptoms.

<sup>1</sup> G. R. Böhmer, resp. Wagner dissert. de crocidismo et carphologia signo in morbis acutis plerumque litali Witemb. 1757.



Our endeavours in general should be directed,

1. To prevent the appearance of the delirium.
2. To cure it after its appearance.
3. To guard against relapses.

1. *Treatment of the Precursory Symptoms.*

According to circumstances we order here Potio Riverii<sup>1</sup>, Tartarus emeticus in refracta dosi, Kali tartaricum, Ammonium muriaticum, Kali aceticum, Decoct. rad. gramin., Decoct. taraxici, bardanæ, saponariæ, extract. graminis, saponariæ, taraxici, bardanæ, etc., combined with neutral salts. In tympanitic distension of, and pressure in, the epigastric region, I have seen advantageous results from a mixture of tinctura rhei aquosa<sup>2</sup> with aqua menth. pip. and Extract. graminis or bardanæ, or saponariæ; and if at the same time there is diarrhœa, particularly with a furred tongue, the application of this remedy is still more efficacious. My formula is as follows:—

<sup>1</sup> Potio Riverii consists of Natr. carbon. j dr., aq. destill. . . oz., one or two tablespoonsful taken at a time, with half the quantity of lemon juice. For aq. dest. aromatic water may be substituted.

<sup>2</sup> On an ounce and a half of rhubarb and 3 drachms of purified potash pour 12 ounces of common boiling water, and leave for 12 hours; then strain, and add two ounces of aq. cinnamon vinos. s. spirituosus; the latter being prepared of the simple cinnamon-water, to which one-fourth of rectified spirits of wine, and 1-32 of sugar, are added.



R.—Tinct. rhei, aquos. 2 oz.

Aq. menth. pip. 4 oz.

Extr. graminis  $\frac{1}{2}$  oz.

M. S. Cochl. ij. 3 hor.

When great oppression is experienced, as also severe headache, frequent regurgitation of the contents of the stomach, nausea, and tendency to vomit, an emetic of tartarus stibiatus, if no counter indications forbid it, is generally found to give relief; and if there be no appearances to require a repetition of the emetic, the above mixture should be administered to procure an easy evacuation.

If there be an affection of any important organ, this must be regarded with the consideration it requires, and treated according to the principles of therapeutics applicable to the particular affection. The greatest attention should be paid to the <sup>condition</sup> position of the liver, and it ought to be examined in every *the* patient; for it has been often found in a chronic inflammatory state, or partly indurated, although the patient himself has declared that he has never experienced the least pain or unpleasant sensation, which could at all lead to such a suspicion. This affection of the liver may be supposed to exist when the above remedies do not remove the various symptoms; when the pressure in the epigastrium and hypochondrium dextrum continue; when the bowels are constipated, the tongue foul, and there is want of appetite; when the white of



the eye assumes a dull or yellow hue, and when frequent sickness and regurgitation are experienced. In these cases there is little or no doubt of an affection of the liver, which exercises an injurious influence on the functions of the stomach.

Local depletion, by leeches and cupping, the administration of calomel or neutral salts, with saponaceous extracts, the embrocation of unguent. Hydr. and tepid baths, may here be resorted to with advantage; at the same time a suitable regimen must not be disregarded.

When these symptoms are subdued, and no gastric affection is present, the organs of digestion should be strengthened by bitter extracts, dissolved in aromatic waters; the bowels should be kept gently relaxed by aperients of salts, or pills of extract. aloës. aquos. from 1 to 2 gr. pr. dosi, and a nourishing and easily digestible diet should be adhered to.

But, assuming that this treatment of the symptoms we have termed *precursory*, has been attended with success, and that we have thus averted the threatened attack of Delirium Tremens, we must not imagine that there is no longer ground for apprehension; for the slightest return to the intemperate habits by which the symptoms had been induced may lead to their renewal, and entail consequences of the most serious description.

It is, however, melancholy to reflect how fre-



quently a passion for the intoxicating draught conquers the dictates of reason, and hurries the votary headlong to his tomb. For, too often is this habit of intemperance so inveterate, that no sooner does the patient feel relieved than he returns to his baneful indulgence, and this, too, not with any regard to measure or moderation, but with all his wonted excess. He is aware that this excess has placed his life in peril; yet such is the power of the passion, or the weakness of his reason, that he again succumbs to the evil influence, though conscious that the inevitable consequence must ultimately be a miserable end.

## 2. *Treatment of Delirium Tremens properly so called.*

Various remedies have been proposed for the cure of this disease. Some practitioners recommend valeriana, serpentaria, camphor, moschus, digitalis, &c., with depletion, purgatives, cold fomentations, and shower and warm baths; by others opium, and even in large doses, is considered the most efficacious remedy, and its administration declared to have been eminently successful.<sup>1</sup> Those who, following Lind's example, rejected the opium

<sup>1</sup> Pearson, Sutton, Armstrong, Heineken, Perry, Channing, Albers and Töpken.



or used it only in small quantities and applied other remedies, were much less successful.

English practitioners first administered the tincture of opium, commonly 25 drops within five or six hours. Armstrong gave 450 drops within four days; Heineken, 50 drops every hour. Clifton gave a woman of forty years of age, 250 drops of laudanum within thirty hours. Salomon prescribed for a middle-aged woman, 360 drops of Tt. opii. within three days. At the administration of the least of the doses (50 drops) I was present; and the patient then fell into a sleep, which was, however, repeatedly interrupted by deliria during the whole time of its continuance, a period of four hours. Armstrong discontinued using this fluid form of the opium, because it appeared to stupify the faculties too much, causing lethargy, and even apoplexy. Bidwell, who gave a female patient 308 drops Tt. opii. and 12 gr. pure opium within thirty-one hours, preferred the opium in the form of powder, and Jacobson, Perry, Kriebel, and others, followed his example.

In a country like England where druggists and chemists are under no control, where they make their preparations according to convenience and profit, and where we cannot place full reliance on their purity, I would recommend that drugs should, as much as possible, be used in their original state; it is then more in our power to



regulate the quantity administered. This is also the case with regard to opium, the dose of which we can thus with greater certainty diminish or increase at pleasure, and combine if necessary with other remedies suitable for the purpose. Channing gave calomel and opium—Blake opium, calomel, and ipecacuanha—Kriebel alternately opium with valeriana and angelica. These compounds with opium appear to be well adapted for the intended purpose,—that of counteracting the injurious effects of the opium. To relax the bowels, calomel is administered; and, according to Albers, the frequent use of vinegar will produce this effect.

Purgatives have, in general, proved useless. Horn<sup>1</sup> asserts, however, that he has been successful in their application, as also, in venesection and cold fomentations on the head. It must, however, be borne in mind, that, in the case he refers to, inflammation was apprehended.

Peirson and Webster.<sup>2</sup> American physicians, used the tincture of digitalis with a beneficial result; and were not less successful in the administration of emetics, which caused a salutary sleep. Klapp gives every six, eight, or ten hours, according to the severity of the disease, an emetic; and assures us that, after twenty-four hours, the

<sup>1</sup> Archiv. 1817, Vol. ii. p. 157.

<sup>2</sup> New Eng. Journ. of Med. Vol. ix. p. 216—221.



patient's reason returns. This was first recommended by Eberle.<sup>1</sup>

The effects of ammonium carbonicum, recommended by W. Welson,<sup>2</sup> are doubtful.

Göden recommends the extract. chelidonii majoris, 3 ounces in twenty-four hours; but I cannot think that this subdues the Delirium Tremens. It may however remove any stagnation in the vena portarum, and in that case would be an excellent remedy in some complications of this disease.

The Hamburgh physicians<sup>3</sup> have recommended blisters; but these, according to Salomon's experience, are productive of more injury than benefit.

Cold fomentations on the head, or shower-baths, will frequently give relief, particularly when a determination of blood to the head is present, or when inflammation is apprehended (Armstrong). Tepid baths are in general useful; they allay the too great sensibility, compose the nerves and induce sleep, with perhaps a critical perspiration.

From the above different modes of treating this disease, it may readily be imagined, that it is im-

<sup>1</sup> J. Eberle, Treat. of Mater. Med. and Therapeutics, vol. i. Philadelp. 1822.

Klapp in Lond. Med. and Phys. Journ. 1819, Vol. p. 179. Webster in New Eng. Journ. of Med. Vol ix. 2218.

<sup>2</sup> Horn's Archiv. 1822. Jul. Aug. p. 54.

<sup>3</sup> Gerson and Julius Magazin der ausland. Literatur. vol. ii. p. 220.



possible to lay down one uniform rule as applicable for the cure of every case. Our treatment must depend on the condition of the patient, his constitution, the extent and severity of the disease, and its complications when present. The patient's strength ought to be particularly regarded.

If the delirium occurs in its pure form, and the patient has a clear tongue, the taste normal, no distension of the epigastric region, and the bowels regular, opium may be given in the form of powder; it must be administered in large doses and after long intervals, for example 4, 6, and 8 grs. morning and night. The opium may also be well combined with arcanum duplicatum. When the delirium is severe, cold fomentations upon the head, or a shower-bath, may be resorted to with advantage. Much cold water should be drunk; this having a salutary effect on the skin and the abdominal viscera. The bowels should be kept relaxed, and, if necessary, by emollient injections, although Sutton has observed that no injurious consequences arise from constipated bowels.

The opium should be continued for two or three days after the delirium is subdued, but in small doses.

If the patient has a strong craving for spirituous liquors, a very limited quantity may be allowed to him, unless circumstances prohibit the indulgence.



Depletion should, if possible, be avoided, it being not unfrequently attended with injury, and often increasing the delirium, and prolonging the duration of the disease. It is particularly injurious in advanced age, when the face is pale and the pulse weak. In young patients, however, when there is great determination of blood to the head, when the pulse is frequent and hard, and the bowels constipated, depletion may guardedly be had recourse to, and afterwards opium, which should be administered in considerable quantity.

In case of gastric impurities, these should be removed by an emetic, and afterwards large doses of opium should be given. It may be laid down as a general rule, that all complications should be removed, if possible, before we apply opium. In the case of inflammation, depletion, cooling applications, calomel, blisters, &c. should be applied. If we cannot entirely subdue the inflammatory symptoms, we must endeavour so far to reduce them, that opium may be given without any injurious effects. After the fever is diminished, or immediately after venesection, calomel combined with opium, may be used with great advantage. If copious exudation have taken place, this is certainly a dangerous complication; however, the application of digitalis, calomel, &c. combined, or alternately with opium, is here very serviceable. Nervous and putrid fevers require their appro-



priate remedies, as valeriana, arnica, angelica, serpentaria, camphor, naphtha, vesicatoria, &c. Other less serious complications require proper consideration; and also any affection which may remain after the removal of the Delirium Tremens. To describe all their varieties here would be superfluous; they must be left to the judgment and discretion of the physician: so also must the regimen of the patient, which should always be regulated according to his condition. Too stimulating a diet should be avoided, as it exhausts the patient's strength; and too abundant a one is equally injurious. English practitioners, as Pearson, Armstrong, Sutton give meat-broths, strong beer, and wine; and if these are too heavy for the stomach, barley-water with lemon-juice, &c.

The proper management of the patient is of the utmost importance. He must at all times be humoured; and his errors must not be contradicted. His dress should be easy and comfortable; and tight, narrow clothes avoided. No restriction, as a strait waistcoat, &c. should be used, as ill effects commonly result.

If an after-treatment be required, it must be arranged according to the prevailing circumstances.

During convalescence, bitter extracts, an easily digestible and nourishing diet, and exercise in the



een air should be enjoined, and the bowels kept lax.

### 3. *Prevention of Relapses.*

To prevent relapses has been generally found extremely difficult; for the baneful habit of intemperance which first gave rise to the disorder is generally so deep-seated, that the patient but too soon returns to his former habits, and which, when continued, must infallibly lead to the recurrence of the disease. Fortunate is the physician who possesses sufficient influence with his patient to induce him to abandon his pernicious propensity, no less pleasing than injurious; for too frequently is he compelled to be content with what he can only consider a mere temporary cure, as he well knows, from the patient's perverseness, that a relapse will inevitably ensue.

If, then, the patient would secure himself from renewed attacks of Delirium Tremens he must relinquish those habits of intemperance to which they are attributable. To accomplish this it requires but resolution; and if the patient would reflect that, on the one hand await him happiness and health, on the other, disease, and perhaps a miserable end, he surely would not hesitate to choose the former course, and with firmness adhere to it.



For this purpose it is necessary that he totally abstain from spirituous liquors; this may at first appear difficult, but it is certainly not impossible. It must not, however, be done suddenly; for the long-accustomed stimulus being withdrawn, and food substituted, the stomach, having had its powers impaired by the injurious effects of the spirits, cannot immediately recover its health and tone; the digestive faculties are consequently disordered, a hectic state ensues, and possibly death. Hence the patient must not alter his habits suddenly, but by degrees; and as he withdraws from the use of ardent spirits, he should gradually accustom himself to substantial and nourishing food.

If, notwithstanding what has been stated, the patient either cannot or will not entirely abstain from spirituous liquors, we can only say that the more moderately he uses them, the less will be the danger of a return of the Delirium Tremens. In this case, he should only take spirits in small quantities, and never early in the day, or to excess, and should accustom himself to a nourishing and regular diet.

In my own experience, I have met with cases of both kinds, where a rigid adherence to the above directions has averted any renewed attack of Delirium Tremens. I have attended patients for this disorder, who were in the habit of drinking much



brandy, and were frequently intoxicated, but who gradually and entirely discontinued the practice without the least injury. I have attended others, who either could not, or would not, entirely abstain from spirituous liquors, but who took them in smaller quantities, at the same time observing a regular diet, and they have had no relapse, and are well.

(Of the cure of the desire for ardent spirits, by means of sulphuric acid, which has been recommended by Von Brühl Cramer, and Hufeland,

Germany, successful trials are reported by Brinkle, in the North American Med. and Chirurg. Journal.

A young man, thirty-three years of age, was in the habit of drinking four pints of brandy, gin, whiskey, or rum, in a day. Brinkle directed that a drachm of sulphuric acid should be put into a pint of brandy, which was used within twenty-four hours. The same was repeated a second time. The patient afterwards felt such an aversion to spirituous liquors, that he was entirely cured of the pernicious practice. In the case of another man, forty years of age, who was an inveterate drunkard, the same was applied with equal success. Here the same quantity of sulphuric acid was put into a pint of whiskey, and given in four doses, in four successive hours.

A third patient, whose intemperance had brought



him to a state of marasmus, was also cured by a drachm of sulphuric acid in a pint of gin.

These statements I think of the utmost importance, and well deserving the serious attention of practitioners; as the introduction of any remedy which shall have the effect of diminishing the destructive vice of drunkenness must be considered a boon to mankind.

THE END.