

the outside would have answered all the purposes of binder's boards and bandage of Scultetus.

CASE IV. *Fracture of the Leg.* This was a patient in the Mobile Hospital under the charge of Dr. Redwood, through whose politeness I was allowed to apply the double inclined plane. All the circumstances connected with this case (with the exception of the fracture being a few inches higher up) resemble so closely case third, that I deem it unnecessary to give a detailed account of it. He was rendered much more comfortable by the double inclined plane and was speedily cured.

Mobile, June, 1838.

ART. IV. *On the Diagnosis of Delirium Tremens.* By SAMUEL JACKSON, M. D. of Philadelphia, late of Northumberland.

THE principal object of the present paper is, to enforce the necessity of distinguishing Delirium Tremens, from mere temulent excitement and the mania thereby often produced. On this subject the present writer can speak with much experience, having been situated for twenty-five years among a great number of *deliri trementes* who afforded him, as their only physician, an abundant practice. Distilleries were numerous for many years, and all classes drank largely of spirits, no one being considered as hospitable, who did not set forth his strong drink to all persons, even to the young.

By the terms mania a potu and delirium tremens, we have always understood that irregular sleepless excitement, which often obtains on the sudden abstraction or diminution of accustomed alcoholic or opiate draughts; and this has been the understanding of every physician with whom we have conversed, from the beginning of our studies twenty-nine years since. If this definition be correct, the disease can in no case be the "immediate consequence of the use of liquor" as an eminent writer expresses it, No. XVII. p. 167 of this Journal, but it must be in all cases the immediate consequence of the want of liquor.

The direct effect of the poison, then, is one disease, and the indirect effect or delirium tremens is another; yet some physicians who entertain correct opinions as to the cure of these two diseases, still treat of them under the same name, consider them as one, and then vituperate their brethren for attempting to cure them both, as they suppose, by the same methods. There is herein such a display of twofold error, as ought to be carefully and quickly corrected. They are not the same disease, nor do the somnifero-stimulant physicians treat them by the same or even by similar methods. When this

point shall be clearly settled in the minds of all, and surely it is high time to settle it, we shall all enen to an adequate understanding of the various conflicting opinions which have been advanced. We shall see clearly, how one physician cures his *supposed* cases by simple incarceration without medicine—how another sometimes cures by emetics—a third by bleeding and other antiphlogistics—a fourth by Epsom salts followed by wormwood tea—a fifth by the cold bath and calomel—a sixth, seventh, and eighth, by other and various means; but one thing of more importance than all this we shall see, that these methods are successful only in mild cases which cure themselves, or in that temulent excitement which is “the immediate consequence of the excessive use of liquor,” and that there is but one uniformly successful method of treating genuine delirium tremens in its *deadly grades*, which is the forcing of sleep by opium or spirits. We shall see that when the disease is fully begun in a patient favorable to the full development of a *bad case*, that he must be overwhelmed by one or the other of these remedies, or suffered to die.

We have hinted above, that it is high time to ascertain what is delirium tremens, for in relation to this subject we do believe there is no little misunderstanding. Even in Mason Good’s great work, the last edition, not great by its usefulness, but by its intended comprehensiveness, the disease is treated of under the head of *vapours*, as a variety of *hypochondriasis*, its most prominent pathognomonic, wakefulness, not even named; and a late writer of great eminence represents it as an accidental concomitant of local diseases, which being removed, the delirium will subside. “Restoration to health,” he says, “took place speedily and completely after sleep had taken place.”—See the last Number of this Journal, p. 520.—Dr. Gregory ton, in his systematic treatise on the Practice of Medicine, places this disease between phrenitis and hydrocephalus and even supposes, that it is sometimes produced by the poison of lead and by emotions of the mind.

We further infer, that there has been much misunderstanding of the subject, from the cures that have been so often performed by the most insignificant means, and often by those means which very many physicians consider as hurtful. Dr. Ware (see last Number of this Journal, p. 520) speaks of curing two patients by blood-letting only; and Dr. Potter, in his notes to Armstrong, carries bleeding to the amount of one hundred ounces in three or four days, as a necessary and salutary remedy; he has even drawn forty ounces at once without regretting what he calls a “sanguinary measure.”

Upon a par with this, is Dr. Armstrong’s “sanguinary measure” in typhus fever, when he speaks of drawing blood to the amount of sixty ounces in two days from his pupil Mr. Cavel, and fifty ounces from himself in the same space of time. We venture to assert, that when patients are saved by such effusions of blood, there is neither typhus, nor delirium tremens, present.

Authors, moreover, speak of cases wherein there is pain in the head, furious blood-shot eyes, contracted pupils, stupor, convulsions, much fever, angry passions,* with various symptoms of phrenitis; all these are at variance with the symptoms of delirium tremens, as recorded by the somnifero-stimulant practitioners. In drunkenness, and in the maniacal inflammatory excitement which sometimes follows it, we see these symptoms, particularly the most terrific convulsions, alternated by an almost unconquerable stupor.

Authors, too, use language that is applicable only to the inflammatory state, caused by the direct operation of spirits; but the prevailing error, we conceive, is the confounding this disease in name, and consequently in treatment, with that mania which is often the immediate consequence of ardent spirits. Thus Dr. Stokes (see Vol. XIII. p. 536 of this Journal) asserts, "that it is generally treated in a very empirical way," because, as may be learned from his paper, there are plainly two species of the disease—one produced by the sudden abstraction of stimulus, and another by plain direct intoxication. "I divide," he says, "all forms of the disease into two classes, *one*, in which the delirium is the result of an immense debauch, *another*, in which the patient has been in the habit of using ardent spirits in quantities, and has suddenly given up their use. In the former, the disease appears to be the result of excess, in the latter, of the want of the customary stimulus." He thus considers these two diseases as one.†

Upon the same principles, an eminent physician of our own country has published a dissertation, reviewed in Vol. IX. p. 164, of this Journal, wherein says the reviewer, "he combats the opinion that delirium tremens is in most cases immediately occasioned by ardent spirits; and states that in a large proportion of cases, this had nothing to do with it. This agrees with our own experience, as we have seen numerous cases in which the disease appeared in the midst of the most excessive indulgence, as well as under the other circumstances to which he alludes." And in the last Number p. 519, after a lapse of seven years, there are some observations by the same author, not only in confirmation of this opinion, but, intended to show that so far as the

* We never saw anger in any case of delirium tremens; we did see one patient standing on his defence in a threatening attitude, but it was only for a short time, while under the narcotism of eighteen or more grains of opium, which was then putting him into a salutary sleep.

† Our esteemed correspondent seems, to us, not to have fully comprehended the meaning of Dr. Stokes. The main purport of his admirable Lecture on Delirium Tremens (see Vol. XIII. p. 536 of this Journal) is to point out the difference between mania from excess of alcoholic stimulation, and that from its sudden abstraction, and the entirely opposite treatment which they require. The Lecturer divides the two forms of the disease into two distinct classes. It is true he retains the term delirium tremens for both classes, and it may be better to appropriate it exclusively to that form which results from a deficiency of stimulus, but this is a mere difference about terms, and of very minor importance.—EDITOR.]

morbus ipse is concerned, it ought to be left entirely to the operations of nature; that the danger is not from the delirium and wakefulness, which will wear themselves safely away, but from concomitant local diseases, of which these are the merest accident.

Now the great utility of all these papers consists in showing most conclusively, that even eminent physicians do not yet know that *mania à potu continuo* is not the same disease as *mania à potu intermisso*; and that hence they accuse their brethren of attempting to cure "in a very empirical way," because they suppose them to give stimulants and opiates in both these forms of disease, without even a thought of discrimination.

But of this charge we shall certainly plead not guilty. The advocates of the somnifero-stimulant treatment have never recommended the opiate and alcoholic practice in the direct consequences of intoxication, a disease which they consider as the very antipodes of delirium tremens. The two maladies are not of one genus, nay they do not belong to the same order, not even to the same class, one being we conceive a pyrexia and the other a neurosis. We are ashamed to write in the manner of the nosologists, but it seems necessary and very expressive on the present occasion.

It is certain that a majority of the best writers do rigidly confine the terms delirium tremens and *mania à potu*, to that sleepless maniacal state which is very often the consequence of the sudden abstraction or diminution of stimulus in those who have been long in habits of intemperance. Thus far we can go with certainty and no human being can go further without losing himself in a maze of hypothesis. A disciple of Rush would say that the sudden abstraction of stimulus caused a sudden accumulation of excitability; but why this should afford morbid excitement rather than healthy, or in what that morbid excitement might consist, he would very justly consider as beyond the reach of human attainments. Therefore, giving himself no concern about unattainable essences, he would wisely content himself with considering, whether the disease might be inflammatory or nervous; this would be enough for him, sufficient to ascertain and establish the general indications of cure.

So far gone in error are some authors when they accuse their brethren of treating this disease empirically, that, to make out their case, they jumble together under the same name two diseases, which are in their very nature, as well as in their indications of cure, as far removed from each other as nosology, or even nature herself could place them. There is not one advocate of the exclusive somniferous treatment who does not cheerfully acknowledge the entire propriety of Dr. Stokes's diagnosis, as well as the appropriateness of his *general* indications of cure, but his assumption that we give stimulants whether the disease arise from *potu intermisso*, or from *potu continuo*, must be rejected.

The advocates of the somniferous treatment consider that the remote and exciting causes of *delirium à potu continuo* are a unit, that is, the continued

operation of ardent spirits, or of the inflammatory state of the system induced thereby; while in *delirium à potu intermisso*, the remote cause is the abstraction of stimulus, the predisposing is the morbid excitability produced thereby, the exciting causes some accidental irritants, no matter what. As to the proximate causes, one is a pyrexia, the other a neurosis, as already mentioned; of these we only know that one tends to inflammation, and that the other does not, that one is cured by antiphlogistic sedatives, and the other by excessive stimulation or by the sedation of narcotics in alarming doses.

Dr. Stokes, after recounting the sad mortality attending what he calls "the empirical treatment," says, "it is an important law of the animal economy that similar symptoms may arise from very different causes;" this, to a certain degree, is true, so far as human penetration can go, but it happens that the collective symptoms of temulent excitement and those of delirium tremens are not similar; the symptoms of that state of the system which requires debilitation and of that state which requires stimulants, are not identical. Perhaps they are not always as different as might be expected, perhaps they cannot always be distinguished by those who have not had some experience, nor can you say that enteritis can always be distinguished from a spasmodic colic, or a hystericalgia from an inflammation of the uterine region; yet we must insist that every person who has seen a dozen cases of delirium tremens *à potu intermisso*, and half that number of persons mad with the direct effects of intoxication, can as easily and certainly attain to the diagnosis as he can in nine-tenths of the diseases of the human body. Yet we have been deceived in this matter ourselves, which we published in No. XIV of this Journal; so have others been deceived, as may clearly be seen in their writings; but still the collective symptoms are not identical, and the history of the case, if it can be attained, will accord with this fact.

One reason that intoxication is frequently confounded with delirium tremens, it may be presumed, is this—an intemperate man merely diminishes his accustomed potations and then is attacked, as we have often seen, with delirium tremens. We had one standing patient, who, through a strange perverseness, would not be made to understand this reasoning. When he was told that his disease had been brought on by brandy, he would sometimes deny the fact and triumphantly exclaim that he had used none for many days; at another time he would say that he had not interrupted his stimulus for a single day; that, on the contrary, he had been taking it very regularly, but more moderately, just enough, as Frederic II said of his eel pies, "just enough to keep soul and body together." Here then his supposed opinions were completely refuted. He could not believe that a quart a day was necessary to keep up a healthy excitement, and that to keep soul and body together, required a more cautious diminution.

The disease being brought on by a mere reduction of the accustomed quantity, the friends generally take care that the patient is furnished with what, to the best of their judgment, is a suitable stimulus; for it must be observed that

the unlearned in medicine who are accustomed to drunkenness, know very well the general indications both of preventing and curing delirium tremens. Thus the sick man is continually supported in his disease, and the medicine not being sufficient to overcome the morbid excitability, the morbid excitement goes on increasing. We have met with many such cases, and particularly where patients had diminished their doses on account of some slight indisposition. Here the abstraction of stimulus often conspires with a diarrhoea, a catharsis, a blood letting, or some other debilitation, and the patient becomes sleepless, before even his physician has yet taken the alarm. A patient, too, is often in the incipient stage of this disease, before any one suspects it; he now begins to take his usual glasses, but they are not now sufficient, and the disease goes on. This we have often seen, and have as often found, that small doses of laudanum, fifty to one hundred drops, frequently repeated, were so manifestly useless, that we are not surprised to find the medicine condemned by those who have not the courage to increase the dose. The disease having once begun in a patient accustomed to afford a bad case, very large doses are required at once, small doses merely support life, or "keep soul and body together," but not in a healthy state; and if they are not supplanted by large doses, the disease continually increases, and the whole system of treatment is condemned. No remedy for such a state of things has yet been discovered but the highest doses of laudanum or spirits, or of both, which the system can bear; this position accords with experience, for we find from general testimony, that there is no abatement of the delirium till the brain is overwhelmed with a forced sleep. Without this, the patient must die, and must, of course, add another instance, however unjustly, to the number of cases fatally treated with opium, or, as Dr. Stokes says, "in a very empirical way." Numbers of cases, in confirmation of this opinion, now crowd on my recollection and are plainly seen in the lengthened mirror of twenty-nine years, which is bright before me. Not one of my own patients ever died of opium or through the want of it. Of more than *two hundred cases*, we have lost but four, and these were patients laboring under chronic diseases and organic lesions. But we do not say this boastfully, for the method of treatment is not our own; and, moreover, we can look back upon many patients who barely escaped, and who might have been cured "more quickly, safely, and pleasantly."

Dr. Stokes supposes a case of genuine delirium tremens *à potu deficienti*, and says "we derive very great advantage from the use of stimulus, we cure our patients principally by the use of opium, brandy and wine; but on the other hand I must confess I have never seen a case of excessive stimulation benefitted by such a plan of treatment; nay more, I have seen many patients, (*that is in excessive stimulation*,) who have been treated in this way, die with symptoms of inflammation of the brain or stomach and have found the diagnosis verified by dissection." Most unquestionably such patients so treated must die; but the Doctor should not have said that the

diagnosis was verified on dissection, for truly there was no diagnosis made in the case.

The men were supposed to be laboring under delirium tremens requiring stimulus which was administered, when in truth they were intoxicated or laboring under the direct effects of intoxication, and the proper debilitation would have carried off the whole disease and verified the diagnosis in a manner more comfortable to all parties concerned. Dr. Stokes's paper is concluded thus:—"The rule I have laid down for myself is this; when the disease proceeds from a deficiency of stimulus, give wine, brandy, opium, &c.; but when the stimulation has been excessive apply leeches to the epigastrium and head, and if the disease still continue, then you may have recourse to the opiate treatment." Through every paragraph he carries out his doctrine. "If the disease continue"—this we are bold to say is not what he ought to have written; though in truth it is precisely consistent with his, as we suppose, erroneous views. He ought to have said—when the first effects of this excessive stimulation are removed and delirium tremens sets in "you may have recourse to the opiate treatment."

The great utility of Dr. Stokes's paper is, that it teaches correct practice under an erroneous nomenclature and this leads us to presume that others who do not explain themselves so fully and do not practise so discriminately, are teaching what they do not themselves understand. Hence it is that we hear of so many deaths imputed to delirium tremens; for it is a fact very honestly confessed by the advocates of a *various* treatment, that they are not near as successful as those who profess to be exclusively somniferous and to believe that the disease is exclusively nervous.

There is an old maxim—*optimum est alieni frui insania*—which may be softened into this, that it is a most desirable thing to profit by the errors of others; but the masters of moral wisdom might have extended the aphorism so as to include our own errors also. The Doctor's practice has been corrected by the blunders of others, but his nomenclature and diagnosis he ought to have corrected himself.

But many physicians write about the presence of fever, of inflammation, of turgescence of the brain in genuine delirium tremens, often requiring the lancet, or cups to the nucha, or leeches to the head, and sometimes all the antiphlogistics. We have seen a great number of these tremblers and yet we cannot believe that we ever saw one such case. Within the last eight years we have bled and cupped a few patients when there was the semblance of inflammation, but no benefit resulted; we purged, puked, poured cold water on the head in enormous quantities; all was utterly vain, though the state of the system *prima facie* called loudly for this treatment; opium was at last our safety. But mark the sequel;—to these same patients, when again attacked and with all their feverish symptoms, we gave large doses of opium from the first, and thus made "a quick, a safe, and pleasant cure." So that if ever there was a disgraceful ontology in the

whole world of medicine it was here; the disease would appear to be an *ens reale*, as the metaphysicians would say, wherever it is found, and to be expelled the system or exorcised by the divine narcotic.

That great preceptor Dr. Rush was continually exhorting us to attend to the state of the system. So little had the subject been studied before his time, that it appeared to him necessary to preach, like Socrates, the same lesson continually; the consequence was that many of his numerous pupils seemed to consider the whole therapeutic science as consisting in the "*adpositio et ablatio*" of Hippocrates. But it is very possible to attend too much to the state of the system and too little to that of the disease, for it often happens that a local affection is to be cured only through the medium of the whole system, wherein it is sometimes necessary to raise this above and sometimes to sink it below its healthy action in order to remove the isolated disease. Thus in delirium tremens *à potu deficiente*, we may safely disregard the occasional inordinate force, fulness, and corded state of the pulse, for all this will gradually vanish under the judicious use of opium, particularly if ipecacuanha or tartar emetic be given therewith in as large doses as the stomach will bear without depression and without vomiting. Can any man discredit this, who remembers the enormous doses of laudanum and brandy that were given with triumphant success in the typhus petechialis of the Eastern states about twenty-five and thirty years since? Whenever in this fever they used debilitating antiphlogistics, the patient died, and a most vehement encephalitis with effusion and suppuration was found in the brain; yet the only successful method of cure consisted in giving large doses of opium, brandy, camphor, and other fiery stimulants.

We are sorry for the credit and consistency of medicine that these patients were not cured more scientifically; but nature is a wayward dame, she cannot be always turned out of doors, as Dr. Rush used to direct in dangerous diseases. Moreover we know so little of the nature of life and of the operation of medicine thereon, that it is difficult to generalise and compare with safety where experiments have not pointed out and sanctioned the result as well as the premises. Morbid anatomy, as confessed even by Dr. Ware, has thrown no light on the material causes of this unique disease; whatever has been discovered after death might always be attributed to some anterior or to some concomitant disease or to those congestions which take place in the last hours of life after all hope of a cure had been entirely abandoned.

It is maintained, No. XVII, p. 165, of this Journal, that "artificial sleep is not so necessary as has been supposed, that even in many of those cases where it is said to have been beneficially induced, it did not actually take place sooner than it would (have done) in the natural course of the disease." "That so far as the paroxysm is concerned, the patient 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 usually supposed to have that tendency."

The reviewer concludes, by recommending this paper to the advocates of "the stimulant school, as showing that equal advantages may be obtained without the use of narcotics." And in the last Number, p. 522, it is suggested, that "opium if not absolutely injurious to these patients, is at least useless; and that our success in this disease, will be sufficiently satisfactory without it."

Now as to a "paroxysm," we must say that no such thing is known in genuine delirium tremens. The disease is one continual strain, to use a musical term, from beginning to end, sometimes *piano* and sometimes *forte*, but there is no paroxysm; and as to the disease curing itself, or sleep creeping on spontaneously, or without stimulants, there never was such a thing *unless in mild cases*, when nature has already performed the cure. To leave a patient in all delirium tremens, to nature, is the expectant method in the ultimate degree, which will soon cure a bad case for the last time.

Dr. Ware proposes to prepare a certain class of his patients for nature's cure, by bleeding, purging, puking, cupping, blistering; but as for those cases that are the immediate consequences of liquor "no medicines can be required beyond a dose of salts and an infusion of valerian, wormwood, or hops." Now this phrase "the immediate consequences of liquor," shows plainly, that he considers with Dr. Stokes, that delirium tremens is sometimes the direct effect of intoxication, which may be frequently cured no doubt, by the means proposed, but as to the real delirium tremens, it happens that we have seen not a few cases, in which puking and purging had been used by the family, sometimes by the family physician, and *expectation* too, through several days, until the whole circle of friends were in despair and consternation, while the patient slept none, and was continually getting worse—such patients we have often put to sleep in a few hours, and have thus cured the delirium at once; that is, we have broken it to such a degree that a continuation of the opium in reduced doses, has quickly restored the patient to perfect health.

The advocates of expectation may call this violence,—unnatural, artificial sleep, &c.; but which is most violent or most unnatural—to throw the patient at once under the influence of "kind nature's sweet restorer?" or to let him, by way of expectation, run about the house shouting that armed men are preparing to put him to death; that the house is falling upon him, &c.; horrors upon horrors accumulating around him; till the disease wears itself away? Many days this must certainly require, for we have seen it tried for a week, without any other advantage than to show the utter inefficiency of the method.

But, what dreadful thing is this "artificial sleep?" What is called sleep, is the same thing to all human eyes, by whatever means induced. If we are not mistaken, all sleep is artificial and forced; wakefulness is the natural state of the system and the most desirable; no one yields himself to sleep, but because exhausted nature requires it. We saw a woman drop asleep in half an hour after a long and severe labour, and she did

not awake for twenty hours; we saw that it was an easy healthy sleep, and we ordered that she should not be awaked. We have known people sleep twelve and more hours incessantly, after great fatigue and watching, but this was not unnatural, at least it was not morbid, but precisely what nature required after long watching and labour; so also if a madman sleep twenty-four hours, under a dose of opium, and then awake a sound man, his wandering intellect restored, his affections all centered on their proper objects, is this sleep unnatural, morbid, something worse than madness itself?

Expectation in medicine is a good and necessary thing; but where this eods and perturbation begins, every man has a right to determine for himself. This word does not afford a just or appropriate name for a sect or party; a physician who is eminently expectant in one disease is often a paragon of perturbation in another.

Between willing a thing and permitting it, there is no great difference. That physician then must be most *perturbing*, and must have a mind delighting above all things in uproar and confusion, who, instead of putting his deliri trementes to sleep, orders that they shall roo about the house in their terrific insanity, till they fall down dead or commit suicide, an instance of both which we have known. Such a physician must be the very Napoleon of perturbation; and though patient, expectant, placid to the last degree, he cannot be considered as a physician in the best sense of the word, he does not cure "quickly, safely, and pleasantly."

"Unnatural sleep!" But Dr. Rush prescribed six drops of laudanum to an adult patient under circumstances which led this most perspicacious man to consider these few drops as a sufficient dose; a medical student who heard this prescription in amazement ran to the house next morning to inquire how miss had rested and was further amazed to hear that she had slept soundly the whole night. What kind of sleep was this, was it unnatural? The lady from some cause had slept as her physician desired; but suppose she had slept precisely as much under the influence of 300 drops, would the sleep therefore have been a whit the more unnatural? That sleep only is unnatural or morbid which is forced upon the patient when it is not needed and from which he rises unrefreshed; such sleep as an indolent man obtains on a feather bed after a full dinner from which he rises towards evening half apoplectic, with inflamed eyes, headache, and general languor. Did any physician ever see the *deliro-tremens* awake in this miserable state after a sound sleep from opium? Does he require like Frederiek a dash of cold water in his face to brighten his intellects? But what think you of that sleep by whatever means obtained, which almost wholly restores the unhappy patient who has been running through the house and over the roof of the house for a whole week without a moments' sleep or sanity, seeing sprites, devils, serpents, armed men, all ready to destroy him and at last attempting to destroy himself—what kind of sleep is it, that suddenly cures all this? Oh, if procured by bleeding, blistering, purging, puking—

by thus removing accidental irritants that stand in no relation whatever to the delirium and wakefulness—it must be natural and salutary; but if you have given twenty grains of opium, it must be unnatural and lethiferous. The patient however is restored body and mind without one symptom of injury and this seems to be the one thing needful. Let the incredulous look into Dr. B. H. Coates's essay on this subject and be convinced.

But it is answered that the disease is often unquestionably cured by various means, often without opium and sometimes by very small doses. We do not dispute this fact. The *mildest* cases of every disease are certainly cured by various methods; but for the severer forms of delirium tremens we contend there is no remedy now generally known but sleep procured by opium or spirits. In such cases the patient has been growing worse and worse for several days; he never closes his eyes for sleep; he runs about the house and out of the house day and night in the greatest terror, he sees some imaginary terrific objects and his wild but timid eyes are continually fixed upon them; he trembles from head to foot and tries to direct the attention of his friends to the frightful objects around him; his pulse is weak, frequent, salient, his skin covered with a clammy perspiration; his eyes are wild and denote great alarm such as you might readily conceive in a boy watching for ghosts, never red and furious as some authors relate; there is no pain in any part of the body; there is no fever; if acute inflammatory action did exist it is now suspended.

This is the picture of a case that will not cure itself, the patient is not, as Cowper says, "a troubled sea that rocks itself to rest;" on the contrary, he will certainly go on from bad to worse till his strength is exhausted. But we contend that all these, the worst cases, are curable by opium or spirits, or both conjoined, could we possibly apportion the dose to the exigency of the case in hand. To attain to the requisite discrimination herein, it must be confessed, will ever be a difficult and dangerous task; so perilous, that some physicians will lose their patients through timidity, while it is possible, that others, in their benevolent zeal, may run into the opposite extreme. The soporiferous practice is a most uncomfortable one to the anxious physician, and blessed be the man who shall discover some safer and pleasanter remedy. We have sometimes retired to rest, or rather to bed, after prescribing large doses of opium, but the image of the patient in his last steror has been as terrific to us as falling houses and twining serpents to the patient himself. Such extreme cases, however, have not often happened, and we have now the comfort of presuming that we have saved some lives at this great expense of our rest and danger of our peace.

Such cases as the above, which we presume to be dangerous, we have witnessed far more than one hundred times, but not in as many persons. In our former sphere of practice, there were about one dozen standing patients, each of whom was the subject of a bad attack for many years. Opium, in doses of five grains was of no service, unless we had been called very

early in the disease, which seldom happened. It is in such cases that opium loses all its credit, unless given in large doses, from ten to twenty grains.

These very patients, as well as I could ascertain, were never cured without my assistance, though some of them had friends who knew the nature of the madness, had learned much from experience, and were ever ready to administer opium or spirits to oppose the coming disease. We had acquired such skill in some of these standing patients, that we could prescribe twenty grains of powdered opium or an equivalent portion of sulphate of morphia, at a dose, and direct that half this quantity should be given in four hours, if the patient did not become sleepy. In this way, we have almost uniformly put the patient into a salutary sleep, and a smaller dose, given the moment he awaked, has almost completed the cure.

Thus it was, that, when Dr. Rodrigue went from this city into the midst of my practice, ten years ago, and saw the doses given and the certain cures they effected, he expressed himself as utterly astonished. But we do not pretend to superior skill; what we have thus done well, a great portion of educated physicians would have done better; we utterly renounce every feeling of arrogance in this humble imitation of abler men.

Now from the picture we have given above, with the pulse weak and frequent, the constitution broken by intemperance, the previous debility greatly increased by the abstraction of an accustomed stimulus, by days and nights of watching, by vomiting and purging, by abstraction from food, by a cold sweat, by incessant agitation, what is to be done by bleeding, purging, puking, cupping, blistering, by simple inebriation, hop tea, calomel, and cold bath, or by a choice of these things, however variously and skilfully combined? Will it be answered, that these means are to be employed to remove all concomitant impediments to health, when the delirium and wakefulness will wear themselves safely away.

Could the authors who reason in this way, and those who acknowledge a real disease, but advocate a *various* treatment, could they pretend to the general success which the somniferous practitioners arrogate to themselves, we should drop our pen at once; but the fact is, they do not, and hence our party are fairly left on the vantage ground.

If our opposers acknowledge, which we think they are bound to do, that the practice of the somnifero-stimulators is successful in their own hands, they cannot object to it unless on the principle of its temerity; and this, as we all know, has been a fruitful theme of argument, and not unfrequently of declamation. Some physicians appear to be greatly alarmed at the idea of giving more than from one to five grains of opium at a dose, and they condemn the larger doses, as likely to throw the patient into his final sleep. But if they never tried the experiment, they have no right to declaim on the subject. Medicine is a science founded in facts, not in theoretical prejudices. If, on the contrary, they have tried it, without killing the patient, this is enough for our present purpose; if they have unfortunately put the patient into his last

sleep, let them come boldly forth with their cases, which may prove a useful beacon to others. It was long ago observed by one of the Fathers in Medicine, that unsuccessful cases and errors, fairly related, would prove eminently useful; yet no one in the opiate treatment, as far as we know, has acknowledged a fatal dose, except in a solitary case, related in the last Number of this Journal, p. 520.

But if they have not the courage to try the experiment, let them look abroad into the world of philosophical medicine, and they will find stranger things, than twenty grain doses of opium in delirium tremens. Collateral facts and reasonings are of immense importance, when direct experiments are wanting; nor can they be too much multiplied if judiciously used, and made subject to the test of experiment. Can physicians, then, not call to mind, that when the cerebral and nervous systems are fully pre-occupied by some powerful excitement, no medicine whatever, not even external violence, produces its wonted impression. Hence, the tremendous doses of opium in tetanus and spasmodic colic, the flagons of wine in the old fashioned way of treating typhus fever, the insensibility of the body to cold, when preoccupied by fear; and hence also, the smiles of the American savage, in more than crucial torments, and the joyful face of the Christian martyr, burning at the stake.

Now, if ever the brain and nerves were fully preoccupied, and prepared to resist the operation of medicine, it is in delirium tremens; hence the enormous doses of opium that pass for nothing in this disease. In mania too, from many other causes, the system often resists the operation of medicine, particularly that of narcotics, nor must it be forgotten that most of these unfortunate *deliri trementes*, have been long accustomed to ardent spirits, which hebetate the system with respect to opium; nay, many of them have gone through the opiate ordeal already in their various attacks of delirium tremens.

Do not the advocates for the treatment by emetics, find that it is generally necessary to give from ten to twenty grains of tartarised antimony, to produce full emesis, and is not this from ten to twenty times the quantity usually necessary in other diseases? Yet our doses of opium, so much decried against, do not rise in the same alarming ratio. Further examples are not necessary, or they might be adduced. It requires consummate skill, and a comprehensive philosophic mind, to proportion the doses of medicine, to the state of the system, which varies in various diseases; in truth there is nothing in which the physician can so clearly, and triumphantly demonstrate his superior skill.

Dr. Copland, in his *Dictionary*, Article *Delirium Tremens*, speaks of our recommending in our former paper, No. XIV, of this Journal, from ten to twenty grain doses of opium every two hours. This is rather an inadvertency; for though we did recommend such doses, yet we did not say, nor did we mean to imply "every two hours," for we have certainly never gone thus far in the poisonous adventure. The Doctor states too, that we speak of four

ounces of laudanum having "been given partly by mistake, in twelve hours, which induced a sound sleep of twenty-four hours, and perfect recovery." That the patient did recover, and that he did sleep twenty-four hours, are facts as witnessed by Dr. Rodrigue, his physician, but I take some blame to myself for having related this case, as there was no satisfactory proof that the nurse did not deceive us. Yet we must contend that such a thing is possible under various circumstances unfavorable to the operation of narcotics; as, for instance, in persons who have been accustomed to the threefold narcotism of opium, spirits and tobacco.

The numerical system, which has been so usefully applied in establishing the relationship between symptoms and their causes, does not appear to us as applicable to the estimation of a therapeutic method. It is not the number of cases that is to be considered but rather the gravity of the disease, and the inevitable tendencies thereof which are ascertained by that "learned experience," as Bacon calls it, which is the result of impressions made from day to day through a series of years, by circumstances innumerable, the most instructive of which may certainly be committed to paper. For though the aged practitioner can hardly transmit more than an infinitesimal portion of his skill to the next generation, which is the principal cause of the tardy progress of medical science, yet there is a certain *anima medica* which is almost insensibly imbibed from the perusal of our old fashioned books; a certain community of spirit which obtains when we read the lively history of minute facts, as nature presents them.

All this appears to us to be totally cut off and lost by the numerical system of writing. Take 100 cases of pneumonitis and bleed them according to Louis's method, not till the third or fourth day, yet they may all be recovered if now skilfully bled and treated; then take an equal number in the same disease and bleed them from the first day, but unskilfully, and they may all perish. Neither time nor quantity nor both, is every thing; the constitution of the patient and the *effects* produced by bleeding and by the coadjuvancy of various minor remedies, are principally important.

An excellent writer in a late paper, (see the last Number of this Journal p. 550.) gives his readers eight series of patients, each having been treated on different principles and by different means. He does not describe any of these cases, so that to appreciate his statement, we are obliged to consider them all as equivalently ill, only so far as some of them had local diseases, neither caused by nor causing the delirium, nor yet having any necessary connection therewith, for such is his own opinion. This accords with the *numerical method*, and like that method in other particulars, it affords us no satisfaction. We should not require a particular description of every case; but simply the state of the pulse, the strength of the patient, the force of the delirium, the length of time the patient had been sleepless, how far his constitution was gone with intemperance—for from this short group of symptoms, the experienced practitioner can clearly see the tendency of this disease, whether it be to life or death.

In the eighth series, there are twenty-nine patients, in which "the mode of treatment may be properly denominated *expectant*." Of these one died of encephalitis and twenty-eight recovered without any treatment considered as directed to the disease itself. The fourth series consisted of two patients, both were bled largely and both recovered without any other remedy.

Now of the above thirty cases all cured by such simple means, the somniferous physicians, in the present state of their knowledge, must consider, some as plain intoxication or its inflammatory effects, and some as mild cases of delirium tremens which nature alone is capable of curing. Some were bled, some leeches, some puked, others were blistered on the nucha, and "all were more or less subjected to the operation of cathartics." Nothing then was done in these thirty cases but what was calculated to relieve the system of local embarrassments, for some medicines of the nervine class which were added, were considered by the prescriber himself as of no avail. Since then the symptoms in those thirty cases are not described, since they were cured by such simple means, or rather as the author would imply, cured of the mere delirium by no other means than unassisted nature, may we not fairly conclude that the disease was mild and without any tendency from the first to run into extremes? Moreover, patients being included in the author's definition who labour under the direct effects of intoxication, a portion of the thirty no doubt belonged to this class.

All which will appear the more certain when it is considered, that in his second series, seven cases were treated with small doses of opium, "not exceeding two or three grains in twenty-four hours," and that of these seven, two died without having slept. We ought to have been informed with what symptoms these two patients passed out of life; for dying sleepless, the reader must fancy that more opium might have been laudably tried.

In the first series are eight cases, "treated with large doses of opium with the intention of terminating the paroxysm by sleep." Of these eight, four proved fatal, having taken from twenty-four to seventy-two grains of opium in twenty-four hours. Three of these patients died without having slept, and here again, we are unfortunately left to divine the mode of their exit; and, attached as we are to the somniferous treatment, we cannot but fancy that more opium might have been tried, at least upon the principle of "doubtful remedies rather than none." But one of these four patients "died after sleep had been procured, never awaking, but expiring in a state of coma." Seventy-two grains of opium in twenty-four hours, is certainly a large quantity; but we are not informed whether this patient took the twenty-four or the seventy-two grains. Dr. T. Hewson, of this city, gave precisely this quantity in the same time, "with the most gratifying success." (Dr. B. H. Coates's Essay.) We ought to have been informed precisely how much the dead man had taken, in what time, and whether he took it on an empty stomach, whether he had been accustomed to this or any other variety of

narcotism; for this being the first case recorded in which the narcotic proved fatal, it would be highly interesting, were it detailed with all its circumstances. Is it of more importance, according to the numerical system, to know merely that the patient took opium, than to know whether he took the twenty-four or the seventy-two grains?

But it is high time to end this paper, which, however, we cannot do without sincerely deprecating all imputation of hypercriticism. It is the fate of the noblest minds in medicine to be transported by a benevolent zeal and hope in a new doctrine; such, we fancy, is the comfortable fate of this eminent physician in his application of the numerical system to the study of delirium tremens. We have expressed our opinions with unlimited frankness, because we believe they are founded in truth and nature, as they certainly are in authority and in a long continued, painful experience. We are well aware, that they are not logically arranged, nor yet illustrated or expressed to the satisfaction of the reader; they are desultory, and such they were intended to be, as ratiocination embraces much that is familiar, which, in the present case, would occupy too much time and space.

SUMMARY:—1. That delirium tremens is the consequence of a sudden abstraction or diminution of strong drink or opium in many persons who have long used either of these poisons intemperately.

2. That necrotomy has never discovered any lesions to which it could possibly be attributed; that it is purely nervous as far as human knowledge extends. As a stringed instrument is thrown out of tune by the atonic state of the atmosphere, so is the cerebral system in this disease, by the debilitating abstraction of stimulus.

3. That in all its grades it is curable by opium, or by ardent spirits, or by a simultaneous use of both, though we shall sometimes fail by not being able to ascertain, before it is too late, the requisite dose.

4. That it often supervenes on a system labouring under acute inflammation, the progress of which it will sooner or later suspend, so that opium may be given in the necessary doses. That though it arrests inflammatory action, it does not remove the effects thereof, which is the work of time.

5. That suspending inflammatory action as it does, those authors who speak of pain in the head with fiery eyes, requiring the loss of twenty to one hundred ounces of blood, have confounded the disease with temulent excitement.

6. That there are not two varieties of the disease, one to be cured by opium and another by evacuation, one the consequence of too little, and the other of too much stimulus.

7. That evacuations, of whatever kind, have no tendency to cure this disease; they cure temulent delirium or its inflammatory consequences.

8. That mild cases have often been cured by various means, which fact has been the cause of many errors; that the worst cases are incurable without opium or spirits in enormous doses.

9. That there is a delirium frequently arising from drunkenness, which

is often attended by convulsions, fits of drowsiness, flushed face, and inflamed eyes, with angry passions, noise and turbulence, in a few cases with trembling, and in many, with too much watchfulness; which delirium is often postponed for a day or more after the patients have quitted their spirits, but it is radically the inflammatory state of the system thereby induced. This, we believe, is often taken for delirium tremens, though it is easily distinguished therefrom, and requires a very different treatment. When this is subdued by the proper means, true delirium tremens sometimes supervenes.

ART. V. *Remarks on Pneumothorax, with cases, and an experimental inquiry into the causes of the metallic sounds heard in that disease.*

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THE sounds which are heard during auscultation in cases of pneumothorax, especially when life has been prolonged for a considerable time under the disease, have a character, of which the term metallic is eminently descriptive. This character may be recognised not only in the respiration and cough, but frequently also in the voice and the succussion and percussion of the chest. The sound is either sharp and tinkling, or it is prolonged, reverberating and ringing, according to the kind of action under which it is produced. In both cases the mechanical condition of the chest is apparently the same.

The sounds of pneumothorax, as will appear from the experiments detailed at the end of this article, are divisible, with relation to their causes, into those of impulse, and those of reverberation. The first requires the presence of liquid, the second may take place with only the presence of air. The first includes all the varieties of metallic tinkling which are heard in respiration, which also take place after speaking and coughing, and which may be abundantly produced in many cases by succussion of the chest. When well developed it is sharp, silvery and musical, resembling the snapping of short brass wires in certain children's toys. The second class, that of reverberating sounds, includes the varieties of amphoric breathing, and may be imitated by inflating a recent bladder to a considerable degree of tension, or less perfectly by blowing into a glass, or metallic vessel. When a sudden impetus is given to it by coughing, this sound becomes more intense, ringing and metallic. The voice also at times acquires the metallic resonance. If percussion be performed on the distended chest, while the ear is applied to its parietes, a ringing sound is communicated having more or less of a metallic character.

Metallic tinkling of the chest, although one of the most marked of the