Observations on certain forms of disease met with in general practice.

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The following pages were written while busily engaged in general practice. Employed all day in making distant visits to patients one could not be expected to be in that mental (or bodily) condition best fitted for writing anything original or learned. On returning home in the evening.

From the circumstances in which I was placed: instant access to Medical or Scientific libraries, at a distance from Hospital wards and post mortem boards theatres, and anything like experimenting on animals being impossible for various reasons, I was compelled to offer these observations on some of my cases which were the subject of daily study and reflection. In addition to Belzilium tremens, essential paralytic, of children and these forms of Bocchitis, I had intended making some remarks on some forms of herpes.
with the development of peculiar melancholic symptoms during the
continuation of the eruption.
Cardiac disease affecting the members of the same family
The doubtful value of ipecacuanha as a vermifuge and some of its
peculiar physiological effects actuated me after healing of delirium tremens
I found it impossible to mistake more
than the other two subjects.
Three cases of Delirium Tremens.

I. Delirium tremens with secular spectra; attempted suicide; recovery.

Mr. A. for many years has been addicted to intemperate habits, but never had an attack of delirium tremens before. His general health has always been very good; and his constitution vigorous. Ten weeks ago he sustained a severe railway injury which produced a very extensive lacerated wound over the fifth and sixth ribs of his left side. After a certain amount of Bippurin it healed pretty well and there was no more drinking for several weeks.

During the last fortnight, he has resumed his old habits with as much frequency and perhaps more regularity; his favourite liquor being whisky. On the evening of the 16th Sept. 1869, slept badly, having frightful dreams of men threatening his destruction; requiring to start up into the sitting posture to see if there is really
no one there. In the morning however, after getting up these things annoyed him little, his last manner was described as being more hurried and agitated than usual. I am thus, as on the previous two or three mornings, there was no appetite for breakfast. On visiting him on the morning of the 17 I found his condition as follows: His countenance were a pale & anxious expression, skin cool and moist; eyes of a peculiar dull appearance, rather fiery but not congested; conjunctivae of a yellowish tawdry tint; his pulse 98 SOFT & weak; His tongue was put out in a tremulous manner, a little red at the tip, and covered with a creamy fur. In pressing over the epigastric region a certain amount of tenderness was complained of, but no enlargement of the liver could be discovered. The pulmonary & cardiac organs were carefully examined and found normal; the urine did not contain albumen.
The bowels being constipated, the following powder was prescribed:

Aq.

Hydrarg. c. Crep. f. T
Bismuth. Subnit. f. X
Pub. Rhei f. XII

First pulse, intention pursued.

He was ordered nutritious diet, Beef tea, essence of meat, milk, and stimulants in every form to be carefully withdrawn. He says he sees no illusions now, but remembers distinctly what he saw during the night. On the morning of the 18th, he says he has passed a restless night, scarcely closing an eye. There is now considerable tremor and agitation of manner, and evidently has religious delusions; calls out frequently "I am saved" and "they want to kill me from my Saviour". At times he prays to be delivered from some dreadful forms that are pursuing him. He is inclined to relate to me his experiences of the previous night. He declares that little girls came tickling the soles of his feet; if he drew up
The one leg underneath the bedclothes, they tickled the other more diligently, then horrible creatures came close to his face and blew disagreeable smells on his从前。Dogs licked his face with a rusty cold tongue. Then sounds of music were heard underneath his window as if from a band playing tunes with which he was quite familiar. He then got out of bed and commenced reading, but current creatures covered the leaves and chattered in his ears to such an extent that reading was impossible.

This pulse is now too small to feel, his eyes fluttering and looking prominent. Bowels have been opened twice. He was recommended to go to bed to be kept quiet and not crossed and the following mixture was prescribed (from Dr. Graves):

Mr. Arthur Fitch & Mrs.

Fruct. spic. 3

Rex Mace 2

Sp. et tab. p. every two hours until nausea is produced.
On the 19th more restless than before, con-
tinuous terror, will scarcely remain in
bed praying and uttering all manner
of profane ejaculations; some devils trying
to get hold of these him; but he will
be delivered from them yet. The medicine
has not produced nausea, ordered to be
continued & given every half hour. This
expression is now that of extreme terror.
Continue half tea arrow-root &c.
At 9 p.m. it is with difficulty that he is
kept in the room; attempts coming down stairs
to escape the "devils who are coming down
through the ceiling armed with red hot
horns of iron & thrust him into hell."
A short later attendant is instructed who
is to remain with him all night & who
is only acquainted with the responsibility
of his duties. To have 13 of a grain of
Santon Emietie every hour; the windows
to be fastened down and nothing
dangerous left in his way or within
his reach.
I was called at 2 a.m. on the morning
the 28th of July A. E. who, the messenger informs me had cut his throat. He had quietly passed his attendant armed with a file. Rushed downstairs to a room in which he knew there were razors and one of them cut his throat. I found him lying in bed, his face bloodless, but his face arched, the floor of the room smeared. There was a deep gash in the neck immediately above the trachea and carotid under the floor of the mouth, but fortunately the carotids undivided. Hemorrhage was soon checked and the wound carefully stitched and dressed after which he had no difficulty in swallowing a little whisky and water administered to revive him from the fainting condition into which he had fallen.

All medicines to be omitted and nothing but Essence of meat, keep tea, milk and soups given. Pulse very frequent 120. Surface of the body cold, swarming to be applied to the extremities and chill to
he carefully watches as his delusions still continue. He says he has done it now because devils were taking him from his favour if they were still round him working with aletheia hands had many minutes he had to live.

At 9 a.m. he has still delusions of fancies they (the devils) are working to see him laid out on the stretcher that they may then remove him. 

Bacterin has now set in. piece of cotton strength 115 face not to pale has swallowed a good deal of beef tea; this is warm 

still discontinue medicines.

At 9 p.m. has slept two hours or more pulse 98 full soft; still tremors and delirious but much less frequent. Bowels have been opened but not purged, he hawkes up a good deal of mucus from the throat. Swallows without difficulty.

His very haggard drawn; to continue beef tea & nutrients.

Dr. has slept four or five hours pulse 96 no manner much changed tremors almost
entirely gone, but not out of bed this morning. Fainting fits were pursuing him, due to some difficulty in articulating from the constant hawking up of mucus. He says he wished himself dead rather than that the devils should get at him.

22nd Sept. Has slept all night and awoke free from delusions, complaining of stiff ness in the throat, but able to swallow well enough; bowels opened this morning and passing literally of milk, shelf tea & nourishing soups. The wound granulated healed well, without any further delusions.

May just add here that Mr. A. has recently (March 8th, 1869) recovered from a second attack of delirium tremens in which a purely eclectic mode of treatment was adopted. Recovery was complete in four days from the commencement of the symptoms. In this last attack there was a slight tendency of a hemicrural complication.
II. Mr B— Publican of sedentary habits and deficient energy, possessed of no aptitude for business, he has been seeking for a number of years, and has been several times on the verge of delirium tremens. During the last fortnight he has been indulging more freely than usual of which a report was made. He came under my observation on the 23 Sept. 1818; is a tall, robust looking fellow of fair complexion, but his countenance wears a dull expression, looking as if he was melancholic. He is restless excited, very tremulous, for the last two evenings he has slept none. He is conversing with imaginary persons and things at one time, fleeing from bulls, mice, cats & at another. His skin moist, tongue is coated, paw at the root & edges, the conjunctiva icteric, pulse 96 of moderate strength; and pain is elicited on pressure over the epigastrium, one cannot depend however on his answers, as there is no turning under the pressure.
A strong desire to break furniture is manifested from which however he is easily dissuaded. As his burns were confined he was ordered a gentle mercurial alteration, 6 gr. doses of Bromide of Potassium every three or four hours to a good morile to look after him, prevent his obtaining any stimulants and administer his soups to regularly. He was allowed to walk about the room, perfect freedom in his leisure at one time, more to roam up and down when he wished.

On the 24th at 9 a.m. I found him thin bailed with perspiration which smelled of whisky, still illusive delusions on varius matters; in the whole had passed a more quiet night, but has not slept any. He bawled have been opened the tongue is somewhat cleaner & there are less frequent tremors. To continue the Bromide of Potassium to have a diarrheic mixture containing the deeps comminute Rebecca.
the dyspnoeic, with warm applications to the feet.
25th On visiting him this morning he declares himself a different man; has slept three or four hours, during which he sweated a little. He had taken more food. His pain he says is dyspepsia and the tenors almost gone.
26th Did not sleep so well last night, he fancied he saw the devil whispering at him and beckoning to him. But with that exception was tolerably free from illusions. To continue the same treatment and ordered another dose of alternate medicine as the tongue was looking rawer at edges; the edges behind the skin had a somewhat oily appearance. He has slept almost whole night, the urine contains a deep sediment of lithiates; has continued free from all manner tenors gone of seemingly Compute menths.
Potas & Bromide; he given only at bedtime.
30th In his usual health, and送去
The following case occurred in the practice of an English surgeon whom I was assisting during the summer of 1866.

Mrs L—a confined sufferer was first seen on the 4th of August, with all the symptoms of delirium tremens. Horrible delusions existed, now fleeing from murdering enemies, at another time conversing with imaginary acquaintance. She persistently refuses to swallow "a draught of our nasty medicines" and wonders why we should be making her. From notes taken at that time her condition was as follows:—much tremor, staring, clear eye, moist slime, furrowed anorexia, a continual restlessness of manner. It was impossible to persuade her to take any medicines, a sedative draught was thrown repeatedly on the floor after promising to take it. As she hadn't slept for several nights & Mr L (the gentleman
whom I was assisting believing fully in the
efficacy of opium in procuring sleep &
inadequate care of the delirium, injected
one grain of Acetate of Morphia in Solution
under the Skin of the forearm with Woods
Springs. On the morning of the 6th there
was no amelioration of the Symptoms-

had not slept any it was resolved to
agreed to inject another grain of Morphia
in the afternoon. This was done & the result
was that she passed into a delirious Con-
dition, remaining quite motionless, the pulse
became frequent and irregular, the Counten-
ance assumed a livid, earthy hue, the
respiration became slower and gradually
stertorous loud râles heard all over the
chest, & pupils became contracted to a mere
point. The skin was covered with cold
perspiration, the extremities lip of the nose
gradually became cold & the patient died
Comatose in spite of all attempts at
resuscitation in eight hours after the
administration of the narcotic.
This form of disease has only been accurately described and recognized since the beginning of this century. When I mention the various names that have been employed by different authors to express what is meant by delirium tremens, it will be allowed that much difference of opinion has existed as to its nature, causation, pathology. It has been designated by the following names: "drama a tremulenta," "mania a potel," "mania posthumor," "phrenesia posthorum," "delirium cronicatum," "ebrius," "se hallucinatio adroporum," "meningitis phantomatophora," "ebrietus crionicatus," "ebrius visibilis," "delirium cerebrum tremor," "ebrius a quadro tremor," "delirium cum tremore," "ebrius febris folium," "ebrius intemeratus," "ebrietum visibilis," "ebrius nervorum chronicus," "esbusis nervosa," "neuroptica posthorum," "ebrietus cerebrorum abdominales," "ebrius capitis crapanosus," "ebrius posthorum nervosa," "ebrius cerebrorum tremens," "ebrius paroxysm," "ebrius visibilis." —

* Prof. Laycock
The term delirium tremens is, no doubt, pathologically incorrect, for incoherence of \textit{mood} may coexist in very dissimilar states of mind and body, springing from a diversity of causes, yet understood by it as an acute cerebral affection, causative of the indulgence in intoxicating liquors. Having for its principal symptoms delirium tremens, the term however that there are other cerebral affections in the course of which these symptoms are manifested in certain insipient forms of insanity, for example, but it has been so long assumed in the profession and known to the public as applicable to a disease originating solely from continued and excessive indulgence in alcohol. It is more than probable that a more general designation cannot be recognized without leading to confusion and error. The question arises, in treating of the pathology, how alcohol operates in inducing delirium tremens? We must endeavour to discover if there are any anatomical changes observed which...
may lead us to account for the symptoms. It is seldom now that one has an opportunity of tracing an uncomplicated case of delirium tremens; for it is rarely that it terminates fatally unless complicated with organic visceral disease or unless the old routine plan of enormous doses of quinine or morphia are being administered.

Dr. Abercrombie considered it as "the dangerous form of meningitis"; Dr. Bright classed amongst his cases of "arachnitis" & Craige Frank and others seem to have held similar opinions regarding its nature.

In these infrequent opportunities which have occurred of inspecting the head, in cases of uncomplicated delirium tremens, nothing has been discovered which unquestionably proved the disease to be symptomatic of meningitis or any modification of it. A slight amount of opacity of the arachnoid membrane or slight fulness of the vessels of the pia mater, with a small amount of serum in the cerebral ventricles, have undoubtedly
been seen at times, but never so pronounced as to indicate prevailing inflammation, and besides we must remember that these same changes are often found in those who have been intemperate, but who have never suffered from an attack of delirium tremens. The most careful examination of the brain and nervous system has detected no change which could with any degree of propriety be considered an efficient cause of the peculiar train of symptoms which characterize the disorder. In most cases however there is found old standing disease such as deprives organic changes in the heart liver lungs kidneys, but as these visceral diseases are very common and are not associated with the peculiar symptoms of delirium tremens, they cannot be considered as the cause of the singular nervous disturbance constituting that disease. The most careful inspection of the brain or its membranes gives us no real light on the nature of the disease but it teaches us that when delirium
tremendous is fatal, it is generally its consequence of tectural changes in important organs. It also proves to us that the mere suspicion of the brain by our unaided senses is, if exclusively adopted, an insufficient method of arriving at the true nature of the disease. Analytical chemistry and experimental physiology have given valuable additions to our knowledge of the actions of alcohol on the tissues, of its degrees of affinity for different textures and organs and of the manner in which it affects the blood. It is an undeniable fact, proved by numerous conclusive experiments, that alcohol like most other poisons, manifests an undoubted preference for one class of tissues and a tendency to attack one organ in the body above others. It has been discovered in notable quantities in the ventricles of the brain or its substance by the experiments of D. Percy clearly show that nervous tissue has a special attraction for alcohol, and a great power of condening, even its substance. and that th
Brain above all other organs is most rapidly and most frequently attacked by the poison. Dr. Percy injected into the stomach of a dog a quantity of alcohol sufficient to cause almost immediate death. He removed the brain as quickly as possible and proceeded to distil it and in doing so extracted a considerable quantity of alcohol more than he could obtain from any other part of the body of equal weight. More than could be distilled from an equal weight of blood. Dr. Percy's opinion therefore was, that a peculiar affinity existed between brain matter and alcohol. Dr. Carpenter in his work "On the use and abuse of alcoholic liquors in health and disease." concerning this says "The alcohol being thus specially drawn out of the circulating current by the nervous matter is incorporated with its substance in such a manner as even to change (when in sufficient amount) its physical as well as its chemical properties. It is important also to observe that this affinity is obvious, such as will occasion the"
Continual presence of alcohol in the blood, even in very minute proportion, to modify the nutrition of the nervous substance more than that of any other tissue, for the alcohol will seek (as it were) the nervous matter and will fatten upon it just as we see that other persons whose results become more obvious from stenosis (although the persons sleep in such minute quantities as not to be able to be stated detached by the most refined analyses) will localize themselves in particular organs or even in particular spots of the same organ.

Dr. Peddie remarks with reference to the special action of alcohol “If there is one disease more than another arising from the habitual excessive use of alcoholic drinks in which a peculiar toxicological effect is manifested, it is delirium tremens like plumbism, mercurialism, ergotism, or narcotism, alcoholism is manifestly specific in its nature. Every one allows that alcohol reached the brain with extreme rapidity; this is manifestly
Shorn by the rapidity of its effects on the minds of some people, it is now necessary to inquire through what channels, in what mode, it reaches how it operates on the nervous centres.

Since the theories of Bright and Abercrombie have become unpopular, the theory of the pathology which has been most generally accepted is that of Sir Thomas Watson, who says the disease consists in nervous irritation—nervous exhaustion goes along with and augments the nervous irritability. Although it is undoubtedly true that the nervous system is in an irritated and exhausted state, still this is no more than the expression of a truth and contains no answer to the question how alcohol induces this state and occasions the peculiar and characteristic signs of the disease. Numerous experiments have been performed with the view of showing how alcohol acts on the nervous centres. The performance of these experiments has led to the following opinions.
Some believe that the influence is conveyed to the brain through the nerves by Serrin, Dury, Lallemand. Some to the conclusion that alcohol acts primarily and directly through the nervous system. Others maintain that it acts primarily on the blood, that it is first absorbed, and that it does not manifest its effects on the brain until it has come in contact with that organ by the circulation. Others believe that it produces its effects in the nervous centres through both these channels that its influence at times reaches them through the nerves only that at others it first passes into the current of the circulatory vessels and by it is brought into contact with the brain. Dr. Meuschat in a series of papers entitled "Experimental inquiry into the action of alcohol on the nervous system" records numerous experiments on frogs, dogs, and led him to believe that the influence of alcohol on the nervous centres is transmitted through both channels already mentioned.

Dr. Meuschat performed these different experi-
of experiments; he first observed the effects of alcohol on the dog and frog in health.
In a second series of experiments on frogs he allowed the circulation to remain undisturbed but cut through the nervous centres distributed to the parts which he placed in contact with alcohol, while in a third set of experiments in both these animals, he arrested the circulation but carefully avoided injuring the nerves of the part to which he applied the alcohol. The conclusions arrived at were that alcohol acts on the nervous centres chiefly by absorption, but that it also exerts a slight but decided influence on the nervous centres through the nerves without the aid of the circulation. What the exact nature of the influence is which is transmitted along the nerves to the nervous centres we do not know, whether it is as has been suggested, of the nature of shock or whether it consists in peculiar molecular change chemical decompositions or chemical vital changes we cannot decide, but it is strange to observe how the influence
Transmitted through the nerves varies at different times and in different persons from causes of which we are utterly ignorant. Whether owing to the natural constitution or to accidental causes operating at the same time, the fact indubitable, that different portions of the nervous system possess various degrees of susceptibility to the influence of alcohol. Two men on same equal quantities of the same intoxicant liquid one of them is affected with marked sensorial disturbance at the loss or no impairment of the powers of locomotion, whilst in the other, the mental powers remain so intact that you never suspect intoxication until an attempt at walking, the staggering gait reveals that the alcohol has taken effect. Are these different manifestations owing to an influence transmitted through the nerve independently of the circulation, or are they the consequence of changes made in the blood by the continued presence of alcohol causing various degrees
of disturbance in different portions of the nervous mass, and dependent on variations in the rapidity with which the nutritive changes are going on. Those who deny that alcohol possesses a specific action of a poisonous character and consider delirium tremens to be the result of irritation and exhaustion of the nervous centres as from excessive stimulant do not require to prosecute more minute investigations as to the mode of the action of alcohol in the induction of that disease, because they consider the continued use of alcoholic stimulants to be the predisposing cause of the sudden withdrawal of them the immediate exciting cause of the disorder. It does not appear to me that the delirium is owing to the sudden withdrawal of the accustomed stimulus—it is found to be the direct result of a violent fit of drinking or of long continued steady tippling and not any refinement from intoxicating drink.
Two separate and distinct forms of delirium tremens are usually described: (1) Delirium épileptique or delirium convulsivum, an acute alcoholic delirium, the immediate effect of alcohol on the system, and (2) Delirium ætiologicum or the delirium of drunkards who habitually indulge to a large extent, but not to such a degree as to unfit them for the duties of their particular calling. This second form is usually observed to occur after or changes of regimen and is said to be the immediate consequence of the suspension of the accustomed stimulants. These cases may be accounted for without attributing them to deprivation of the accustomed stimulants and are explained in the same way as cases of traumatic delirium following bodily injuries or surgical operations. Besides the theory of privation or suspension of the stimuli being the exciting cause of the paroxysm is contested by actual fact. If it is true that delirium tremens occurs in persons who have been drinking for some short time, it is
also true that numerous attempts to cure
from evil habits become abortive, without
suffering in any degree from the disorder.
If the suspension of the ordinary stimulus
were the exciting cause, it ought to operate
equally powerfully in both instances.
This theory is also confirmed by the ex-
perience of many who have had opportu-
nities of watching the effect of suddenly
withdrawing alcoholic liquors from those
long accustomed to excess in indulgence in
them; this is forcibly seen in persons on
board ship. Mr. Pastle expressed his opin-
ion thus: "It is apparent that habitual
excess in the use of stimulants is alike the
exciting and the predisposing cause of
delirium tremens, and that if a suspension
or diminution of habitual supplies, be
at any time attended by symptoms of the
disease, these are not to be regarded as
resulting from change in the quantity
consumed but as occurring in spite of
such change. The error is a regular
one and has arisen from imperfect
Inquiry into the history of individual cases and incorrect observation regarding the circumstances connected with the deficient reaction or abstraction. When called to see a case of delirium tremens inquiring as to the habits of the patient we are frequently informed by his friends that for a long time he has taken large quantities of spirits or wine or malt or all of them and perhaps in addition, morphia or opium had been systematically consumed but that for some time (a few weeks perhaps) much less had been taken and within the last few days little or none and then the inference is drawn for us that the unfortunate patient has actually brought on the attack by meritorious efforts to free himself of a habit of which he had begun to be ashamed. Now all this is very plausible but not in accordance with the strict facts of the case as the individual himself, if put on his word of honour will probably confess. The statement ought to be that he was
formerly in the habit of consuming large quantities of his favourite stimulant, until he found that a much less dose began to affect the system, that their reduced the amount still further but experienced an equal if not greater constitutional effect therefrom. Thus from day to day, reduction was forced on him from his own sensations of gastric irritation, nervous excitement, muscular debility—these feelings having been in fact neither more nor less than the presynaptic symptoms of the attack of delirium tremens, and just what might have been expected, if, as I have ventured to assert, the alcoholic principle is to be viewed as a cumulative poison.

Those who reject the opinion that delirium tremens is a specific toxemia from alcoholism and consider it a mere nervous irritation and exhaustion consequent on the sudden want of a favourite stimulus, look down the "delirium cum tremore" (as it is
also called the "symptomatic" or "traumatic" delirium) which often follows serious accidents or severe surgical operations as identical both as regards its exciting cause and symptoms with the delirium hysterica and adduce it as a powerful support to the theory they entertain. They attribute the occurrence of the disorder under these circumstances to the sudden abstinence enforced in the treatment or to the want of the influence of the habitual stimulus either from the system being unable to receive it "tretani" or being in some way so modified that it will not yield to its power. Many high authorities support this theory. Sir Thomas Watson writes "it is a very common result of bodily injuries and accidents, and surgical operations, or I should rather say, that it often follows such diseases and casualties; for it is seen then, the consequence of the treatment regimen to which the patients are subjected, rather than of the surgical or medical complaint; and it is certainly more apt to occur..."
under these circumstances in old people, t.

in those who being younger are known to
have been intemperate.

D. Wood also writes, “The occurrence of an
accidental injury or of a violent disease
is apt to be the exciting cause of the
delirium, by interrupting the use of the
stimulus, causing its rejection by the stom-
ach, or rendering the system for a time
unsusceptible to its influence. S. Peabody
remarks: “There is in the habitual drunk-

der of a nervous temperament a tendency
to delirium tremens; it is in this irritable
state of the habitual drunkard’s constitution
although he may not be on the verge of delir-

ium tremens that alcohol from its presence
in the blood — in whatever way combined
and its interference with the nutrition of the
brain and nervous system will superimpose
on the receipt of an injury — say a gunshot
wound or a fracture — a delirium presen-
ing somewhat of the appearance of that
disease but which in reality has more of
a typhoid character. — it is not identical
with delirium tremens although some writers have considered it as such.

Differential diagnosis may rush us to the identity of delirium rustico and the "delirium traumaticum" of Dupuytren, among those who consider the former disease to be a specific type of disease, still there is but one opinion as to the immediate cause of the seizure after accidents and severe diseases. All agree that it is the shock to the system which causes the immediate outbreak, not the sudden refinement from stimulants enjoined in the treatment of which the sufferers are subjected or rendered imbibers from the particular condition at the time. The shock operating on a system already greatly disordered by the abuse of ardent spirits causes a more speedy manifestation of the disorder than would have been the case had no injury been sustained. The system in the habitual drinker is always tending towards a paroxysm, which however requires a certain continuance in intermittent habit.
for its due manifestation. The shock by
the additional disturbance it causes to the
nervous system renders the system unable any
longer to withstand the fit; mottos are
brought to a height and delirium tremens
ensues. Now I think that a great many
cases of the so-called delirium tremens
admit of a similar explanation. A man
has been shaky for years a confirmed
drinker, although seldom or never so drunk
as to unfit him for work. More or less
alcohol is always in the system, which in
consequence has become very "shaky," but
so long as no additional disturbance
of the nervous system occurs, the habitual
drinker although perhaps for long on the
brink of an attack, yet never suffers from
a decided paroxysm of delirium tremens.
By it however, he suffers from some degree
it may be slight or he is put under some
restraint or suffers some disgrace, which
from affecting his position and character
causes him considerable anxiety &
annoyance. For a little nothing en-
usual happens, but after a day or two
the man becomes more shaky and disturbed
in mind, and at last falls into an attack
of delirium tremens which is hastily attrib-
uted to the sudden change from habitual
intemperance to complete abstinence.
To the mental agitation and nervous tre-
motion caused by bodily disorder or
punishment, must be assigned the
immediate cause of the outburst, just
as the more decided shock consequent on
accidents or severe operations. There is this
difference, in the one the system is completely
saturated with alcohol and requires a
less additional disturbance to the nervous
system to induce the paroxism, than
does the other.
Concerning the power of other agents than
alcohol to induce a nervous condition
exactly identical with delirium tremens an
difference of opinion exists. On the one
hand Prof. Sayesck says "It is I
think well established that the excessive
use of opium or its salts, of tobacco

...
and run of certain bitters, usually thought harmless, will strike, though more rarely, the same class of affections; while in other countries, other drugs besides opium and tobacco are used abusively with similar consequences. Others say the delirium is very different, not of the same bouncy chattering nature, tremor more paroxysmal and greater heat and dryness of skin.

Dr. Mackenzie in the "Indian Annals" writes, "authors talk of delirium tremens coming on from moral causes, from excessive or restrained debauches, from abuse of laudanum or tobacco, but of these causes producing delirium tremens, I have no knowledge, although excess in the use of tobacco among Europeans in India is common and abuse of opium by natives more so." Dr. Paddie writes, "As regards the other causes, independently of alcoholic liquors, said to produce delirium tremens, the kind of delirium differs in each case or partakes more of the character of insanity; and there is also a corresponding diversity in the nature of
the watchfulness, the muscular tremors and other symptoms, all of which circumstances could be explained on different grounds." We therefore conclude that delirium tremens does not consist simply in nervous irritation and exhaustion from want of a previous stimulation of that the sudden withdrawal of alcoholic liquors is not the exciting cause of a paroxysm—also that under certain degrees of alcoholism a sudden shock or agitation of the nervous system, this not the exciting cause of a paroxysm, will hurry it on sooner than would otherwise have been the case if that it is a disorder induced by alcohol alone. The proper nutrition of the brain is interfered with, which implies that the poison must operate through the circulation. It is necessary to inquire what the changes are that the continued use of alcoholic liquors produces in the blood, through it in the whole body. When alcohol is absorbed into the vascular system, it retards the motion
of the blood producing a temporary increase of the heart's action and a congestion of the whole system of pulmonary vessels. That the use of Spirituous liquors retards the motion of the blood in the vessels is matter of physiological experiment & proved by pathological observations; we have thus a most favourable condition for the accumulation of fat in the blood. It is proved from abundant evidence that in certain cases a milky character is imparted to the serum, globules of fat being distinctly visible. It is computed that the blood becomes surcharged with unchanged & unoxidised material & contains at least 30 p.c. more carbon than normal. The way this comes about is as follows: alcohol is directly absorbed by the blood vessels without undergoing any change or decomposition. Part of it is eliminated very slowly as alcohol by the lungs, liver, kidneys, but it appears to remain in greatest amount at the liver and brain. Another portion is decomposed; its H. enters into O. and forms
water, which with acetic acid having been produced, carbonic acid and water are formed. Oxygen is thus diverted from its proper function, the exhalation of CO₂ at the lungs is diminished if less urea is excreted by the kidneys than normal, but the pulmonary aqueous vapour is not lessened. The water of the urine is diminished, the chlorine is greatly lessened as well as the acids and bases. All the evidence therefore points to the effect of alcohol as causing the retention of substances which ought to be eliminated, and this retention of the effete matter is still more intensified by the stimulant action of alcohol increasing for a limited time the frequency of function acts followed as it is by a corresponding depression. In this way impaired health is soon brought about, tending to wasting of the tissues generally; and so long as any alcohol remains in the blood, as alcohol a certain toxic or poisonous effect continues to be produced on the nervous system through which the poisoned blood
circulates. If a constant supply of alcohol is kept up, the phenomena of alcoholism becomes chronic or persistent, and acute paroxysms, generally in the form of delirium tremens supervene which is (according to Dr. Cutten) at once the most common and prominent symptom of alcoholism.

Different opinions have been expressed as to the exact element in the blood which interferes with the healthy nutrition of the brain, but whether it be as suggested by Dr. Morehead, alcohol as such, incorporated with the nervous matter, or as hinted by Dr. Todd, "a compound form of alcohol and perhaps some maddening matter generated in the system; it is sufficient for the forming of rational rules of practice to know that the blood is in a poisoned state, consisting very probably, in the presence of unchanged alcohol and of some matter generated or retained in the system by its influence. Alcoholic liquors may be taken to such an enormous extent, and with such brief intermissions of sobriety, that the blood becomes speedily
served to a degree incompatible with a healthy discharge of the cerebro-spinal functions, and a paroxysm of delirium tremens during the debauch is the consequence, or the intoxicating drink may have been taken daily, but in smaller quantity at the time and with longer periods of abstinence. The result of this steady drinking is that the system from the constant presence of the poison in the blood, is kept on the verge of delirium tremens into which it falls on the occurrence of any accidental disturbance of the nervous tissue. The poison has not accumulated to an extent sufficient for the development of delirium tremens, but the deficiency is compensated for, by the additional disturbing influence of some disease or casualty. It is a very unique circumstance that the toxic properties of alcohol although constantly manifesting their effects by organic changes in many important organs of the body, frequently display in the peculiar functional arrangement...
of the cerebral-spinal system constituting delirium tremens, have very little influence in predisposing to disease of the nervous system. Dr. Marcel found, in excluding every cause of alcoholism, that the predisposition from abuse of alcohol to nervous affections, was much less than to all other diseases taken collectively, compared with the corresponding predisposition to all other diseases considered individually, least of all with the exception of one group — he further remarks "it is a well known fact that the nervous system substance has the power to a certain extent of condensing within its tissue the alcohol which has been absorbed into the blood; and consequently, it would appear but natural, that alcohol interfering with the healthy nutrition of the nervous centres, the nervous system would have become thereby more liable to (non-alcoholic) disease."

Before entering on the important subject of the diagnosis of delirium tremens, it will be necessary to consider...
briefly the ordinary course of the disease. Prof. Haycock says "delirium tremens belongs to the class of self limiting disorders; Prof. Bennett gives as his opinion that "in the vast majority of cases of delirium tremens the poison becomes eliminated from the system in a certain time." Dr. Peddie notes "the paroxysm usually runs its course if uncomplicated and properly treated on the second or third day" the sometimes earlier, if it seldom extends beyond the fifth day. It then terminates in a profound sleep which may continue for many hours, from which if it even lasts for six hours, the patient awakes weak and languid but quite coherent." Simple uncomplicated delirium tremens" writes Dr. Wood "is not a dangerous disease, if generally subsides spontaneously, if under proper treatment almost always ends favourably". According to Dr. Ware "the natural tendency of the paroxysm is to terminate in a spontaneous and solitary sleep at the end of a certain period - in 60 to 70 hours"
In the reports of cases submitted to the public as evidences of the efficacy of various modes of treatment, sleep has not actually taken place sooner than it would have done in the natural course of the disease. Mr. Paget writes: "I can well remember when twenty-five or thirty years ago, delirium tremens was looked upon as a thing very likely to be fatal. It was treated with large quantities of stimulants and large quantities of opium, and this course of treatment was supposed to be necessary to cure it. Now we do not materially increase the quantity of stimulant when a man becomes the subject of delirium tremens—no, we give no excessive doses of laudanum. The thing that we specially look to in these cases, is that by any means the patient should be fed—fed by the rectum if they cannot be fed by the stomach."

The delirium of fever might under certain circumstances be mistaken for that under consideration, but the former
is more incoherent than that of the latter; and it does not possess the same fantastical forms, nor have the same peculiar variety of objects presented to the frenzied mind.

The delirium of fever is free from the terrors and muscular tremors that are so characteristic of delirium tremens; in the one there is much greater fluctuation of the physical powers and functions. A tongue covered with a hard dry brown fur & a vacant, feeble expression; in the other there is a tongue covered with a creamy moisture & a thin covered with a dull & moist perspiration. In fever the delirium doesn’t have self & selfish fears so markedly present, nor even can it be so easily controlled; the patient not getting to bed to showing his tongue as he so readily does on being requested in delirium tremens. If one knows the previous history, the diagnosis is rendered much easier. In acute fever the usual complaint and the etched centuriales (when present) will guide us, and in
Typhus we will expect to find greater fury of the delirium, the presence of the mulberry rash in most cases. During the course of the disease, delirium coming on late in course of fever and a temperature as indicated by the thermometer of 104° or 105°. I think in some very severe cases, altogether in compatible with that of delirium tremens. Meningitis has been mistaken for this disease. I believe considering delirium tremens as a dangerous form of it. In acute meningitis we expect much greater heat of head, flushing of the face, persistent conjunctival injection, characteristic vomiting, and intolerance of light. These are found in delirium tremens. The delirium is wild and furious instead of being busy and chattering. In delirium tremens he moves the more violent muscular contractions of the full hard and very frequent pulse of the meningeal affection. The age of the patient will in some cases prove an aid.
The diagnosis, it sometimes happens how ever that the two diseases are confounded and cases of delirium tremens following immediately a prolonged debauch & presenting symptoms of cerebral congestion or inflammation have somewhat of this complicated character.

Dr. Peddie writes there is a form of mania which is sometimes mistaken for delirium tremens but which must not be confounded with it although characterized by severe muscular tremor. It is nothing more nor less than a severe & protracted form of intoxication — an effect of the brain and membranes in which there is great vascular excitement resulting from the direct or immediate action of the alcoholic liquors. A physician even so careful and discriminating as Sir Thomas Benton has noticed two cases as instances of Delirium tremens, the first of which pertains more and the last entirely of the characters of the affective. I am now about to describe
It had been styled by Darwin the "Delirium Strisciæ." It originates from a single fit of intoxication or at least from a short course of intemperance (in vulgar parlance a "boozing" or " spree") engaged in by persons of a peculiar mental constitution and temperament which is most commonly induced by some depressing emotion. It is marked by an inextinguishable desire for more drink which when gratified excites to further imperious demands beguelling indecorous conduct and engendering passions so wild and furius that when the hereditary mental constitution is imperfect & the previous moral habits loose or degraded, not infrequently lead to the perpetration of violent & criminal acts. The other symptoms & circumstances characterizing the feverishness, are dry heat of skin, particularly of the scalp, general muscular tremors, flushed countenance, a sullen determined or fierce aspect, red fiery eyes, dry tongue, strongquick pulse & loss of appetite for everything.
But liquor— and that of the stronger kind, although in some instances bestowing ravenousness for anything or everything edible that comes in the way. This state may be brought on once in a lifetime from some accidental circumstance leading to an act of intoxication or it may be induced at particular periods distant perhaps months or years, as in the case of those unfortunate individuals to whom the name of depersonalized or "visionaries" has been applied. All who have witnessed the various forms of disease affecting the demented will readily distinguish genuine cases of delirium-tremens from this and other affections attended with delirium, as its characters are so well marked.

Insanity is much more gradual in its approach, less apt to see phantoms or be haunted with terrors; absent, or not nearly so frequent tremors, duration long and course in general altogether different. Mania is more incoherent and
more furious. The group of melancholias very closely resemble delirium tremens; the cause however is certainly different, but the symptoms are scarcely distinguishable except that in pure ordinary melancholia, the gastric, hepatic arrangement & other visceral affections are absent. In dementia with paralytic tremblings, there is something of resemblance but the whole course & progress of the disease is entirely different (for the insomnia particularly is absent). In some cases however (of the afterwounds referred to) the delirium tremens verge into insanity, then comes the value of a rational prognosis. The caustic symptoms & progress of cases of delirium tremens are usually so characteristic that errors in diagnosis are infrequent. The progress of this disease is in most of our ordinary text books but imperfectly set forth; no mention being made of the means of distinguishing what cases will go on well, what will end in insanity and what in death; hence how important...
is a proper accurate knowledge of the
diagnosis and prognosis of these affections.
According to Dr. Littler three persons out of
every four do well; but in Dr. Peadie's
practice out of eighty cases treated, the
result was uniform success. Prof. Laycock
mentions that of 120 cases under treatment,
progressing in degrees of severity, only one, the
subject of continuous epileptic fits, and
exhausted by sthenic and ataxic nervousness,
passed fatal. There is every reason to suspect
that under a rational pathology and
treatment (in the absence of complications)
the mortality in delirium tremens should be
that of Dr. Peadie's cases. While
Salmeil states the mortality at Dr. C.
Rouygard at 19 p.c. The late Sir Aley
Thelwall, in his report for 1853, gives
the following percentage of mortality from
delirium tremens amongst British troops
at different stations:
Great Britain: Infantry 17.6
Cavalry 12.8
Bermuda 15.0
In a report of cases admitted into the General Hospital in Calcutta during 1851, 1852, and 1853, delirium tremens occurred in women and men in the proportion of 1 in 25, and in regard to age, the table is as follows:

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Cases</th>
<th>Deaths</th>
<th>Percentage of Death</th>
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<tbody>
<tr>
<td>20 to 25</td>
<td>34</td>
<td>4</td>
<td>9.1</td>
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<tr>
<td>25 to 30</td>
<td>60</td>
<td>16</td>
<td>26.2</td>
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<td>30 to 35</td>
<td>48</td>
<td>11</td>
<td>22.9</td>
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<tr>
<td>35 to 40</td>
<td>76</td>
<td>7</td>
<td>9.2</td>
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<tr>
<td>40 to 45</td>
<td>62</td>
<td>4</td>
<td>6.6</td>
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<tr>
<td>45 to 50</td>
<td>23</td>
<td>4</td>
<td>17.3</td>
</tr>
<tr>
<td>50 to 60</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 to 70</td>
<td>5</td>
<td>1</td>
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The greatest mortality is between the ages of 25 to 40. There is no evidence to show that the season of the year affects a definite influence in the occurrence of the disease. Whereas the mortality very probably varies with the temperature, it being more than double in the eight hot months, as
Compared with the four cold months. The apparent cause of death was as follows. 33 of them (often with coma) eighteen of them (coma 11) by fits (probably a phthisic sometimes called Epileptic) on the night stool and one was found dead in bed. Convulsions occurred in 20 of the cases and one distinct case of paroxysmal opisthotonos was observed. The cause of death to be noticed (as was attempted in case of the A) is suicide, though may be regarded as a complication as under proper surveillance such an accident should not occur. Our prognosis must influence if the presence or otherwise of disease of such organs as lungs liver kidneys brain or large vessels is serious in current disease of any of these, e.g. a double pneumonia would cause the greatest concern as to the result. The following valuable prognostic rules I quote from Prof. Dyce's paper in the Edinburgh Medical Journal for 1862.
1. When the patient is gay in manner, agressive or furious that timid and apprehensive, or when the illusions and hallucinations are from the first joyous and pleasing or not distressing gloomy or monotonous, it is not a case of delirium tremens and the prognosis is doubtful. When other causes of cerebral disorder can be assigned besides drunkenness or there is a history of insanity, this diagnosis & prognosis is more certain.

2. When the hallucinations and delusions are characteristic in the beginning, the apprehensiveness & restlessness not strongly marked and the character of the mental disturbance gradually changes into the aggressive sullen or maniacal kind, the prognosis is unfavorable; the case is likely to end in chronic maniacal disease.

3. When the mental disorder is like that of acute mania, and the paroxysm has been excited by small doses of wine, spirits or opium in a person of very excitable habit or with a predisposition to insanity, or who
has previously experienced an injury to the head followed by a change in character, the prognosis is favourable, the case is likely to end in a few days under simple treatment. This kind of case is a species of recurrent maniacal delirium speckled with intoxicants. From other causes it is not uncommon in Asylums in cases of chronic remittent mania.

4. When furious delirium or maniacal excitement succeeds to a melancholic convulsion in a young patient, and it is ascertained that there has been an entire want of sleep and abstinence from food, the prognosis is favourable in the absence of cerebral pre-disposition in proportion to the youth of the patient. In cases of this kind the cerebral excitement is like that which occurs in starvation, and the intensity of the symptoms indicates the degree of imperfect nutrition of the brain and the blood which want of food and sleep greatly induces.
is imperfect, other things being equal, in proportion as age advances, the age becomes an important element in prognosis; for the older the patient the greater the probable danger to the brain, the less vigorous the restorative power of nature, such may end in chronic mania or dementia.

5. When in a melancholic or typical case with no serious complications, the illusions and hallucinations are as to true perceptions of touch or of common sensation, especially of the skin of the trunk, the prognosis is favourable and sleep may be expected to come on without a hypnotic; of this class are all the illusions which point to the skin, as of the beetles or of cockroaches crawling over it. When also they refer to the limbs and deeper parts, and are such as show that they are due to neurosis, the prognosis is favourable. If, however, the tactile sensory hallucinations are referred to the head, as of persons boring into the skull, or
flowing fluids, or putting things into the ears, the prognosis is more doubtful, there is danger that the case may end in insanity.

6. When the illusions and hallucinations are of a gloomy and monstrous character, yet the patient has neither terror of persecution nor tremors, and the drinking bout has been preceded by symptoms of insanity, the prognosis is unfavourable. The case is likely to become chronic as developed, insanity ending in dementia. This absence of fear or tremor when the hallucinations are such as ought to excite such fear is very characteristic of this class of cases.

7. When after a drinking bout or habitual intemperance, melancholia is accompanied by tremors, is developed with auditory and visual illusions but unaccompanied by tremors, and when at the same time, the feelings are involved so that the delusions are inexplicable suspicions, jealousies, etc, the patient is sullen, the prognosis is not favourable; the case is likely to terminate sooner or later.
Homicidal mania of a serious or incurable kind, according to the age and other conditions of the patient.

9. When in the last mentioned kind of case there is a history of sexual excesses, as well as of intemperance of the corporeal illusions are of an indescribable kind, referred in a vague way to the joints, limbs, and viscera. When auditory illusions of abusive voices are prominent, the prognosis is unfavourable, the case is likely to end in insanity with the delusions fixed.

9. When the patient is melancholic, has been a hard drinker and has experienced much gastric disorder or loss of appetite vomiting and intense epigastric burning, if there be no important cerebral or visceral complication, the case will end favourably in a week although the delirium and hallucinations may be of the most striking character.

90. When the patient has been a hard drinker & there is a complication, yet not important in itself, as a slight
gouty attacks, hepatic congestion, gastritis, bronchitis or influenza, a limited form of morbus a diarrhoea and the like, the case will terminate favourably within fourteen days, even although the delirium may be more aggressive than melancholic. Nevertheless a marked tendency to nausea or previous attacks of mental disorder will indicate caution.

II. The kind of intoxicant used may help the prognosis, when the type is primarily melancholic after the use of distilled drinks or "bitters" the prognosis is favourable. Cider seems to predispose to rheumatic complications. This and all the preceding statements have reference to the condition of the patient not less than twenty-four hours after he has ceased to take the intoxicant when therefore it does not directly modify the symptoms.

Concerning the treatment of delirium tremens there are certain general points to be attended to. In the first
Place in all cases of any suspected severity (and our prognostics will assist us in determining this), indeed in almost every case, it is highly advisable to precautions to have all means of self-destruction placed beyond the reach of the patient. A trustworthy attendant should be procured in cases where this is practicable. The windows ought to be properly fastened down, or razors and all dangerous instruments locked up in a place of security. The case of Mr. L. furnishes an example of taking such precautions.

Then the patient should be impressed to put to bed; this may be objected to but a little firmness generally succeeds. The apartment ought to be well ventilated and if during the winter a certain amount of fire attained but too high temperature must be avoided. If there is much heat of head, scald, or hands, they may be plunged into vinegar and water. All friends must be dismissed, they often, especially amongst the lower orders,
have stimulants concealed about their person, which by way of sympathy they administer to the patient in a clandestine manner. A firm but gentle and calm manner usually succeeds in making the patient yield to your requests. Unless in very severe cases where there is a tendency to a rather bold treatment, form of delirium which tends to physical mechanical restraint is unnecessary. But when any symptoms of a forcible design on his own person appear or a straight jacket or a small administration of chloroform would require to be had recourse to, something solid or gruels are to be offered. The essence of meat or the extract of meat made into soup answers very well. Everything noisy or perceptual must be forbidden in or near his room.

In most cases it will be found necessary to administer some potion also which will correct the state of the stomach.
as delirium tremens it will be necessary to wait until some of the alcohol is eliminated to make out his true condition. Then the state of the other organs should be looked to; in by far the greater number of cases there is gastrotics and evidenced by the pain on pressure over the epigastrum, of the constant gnawing there.

In such cases a pill composed of 1/4 of Atale of Silver is administered in bread. Curare combined or not with a little Caimal or Ipecacuanha. The icteric conjunctivae and bilious vomiting indicate a disturbed condition of the hepatic system to relieve which a gentle aperient of Strychno Ceb. Combined with some rhubarb & soda and.

Pears very well. Attention must likewise be directed to the lungs with reference to pneumonia. Some usual affections & to ascertain if such affections are present it is absolutely necessary to make a physical exploration of the chest as one cannot trust to the statements of the patient regarding Cough & being present.
On examination of the cardiac organ, the nature of the impulse, whether fatty degeneration may be dreaded — of the renal organs and their secretion, whether premonish the rest of its disease, whether any symptoms of retention supervene — the present mode of living — any depressing in reducing causes — the amount of which or other stimulant daily had recourse to — whether a first or recurrent attack, if the latter the treatment adopted — to determine these points is very desirable with reference to our prognosis and treatment.

It seems to be so strongly laid down in most of our standard works on the Principles & Practice of Medicine that opium in some form is the indispensable remedy in the treatment of delirium tremens that one might almost be accused of hardness in recommending anything but that so-called “sheet anchor.”

Almost every type in medicine has heard the aphorism “the man must sleep — he will die,” and opium had been
diligently administered as a matter of course to procure sleep, and considered a specific just as other specifics have been given e.g. in joint arthritism etc. The very limited experience I have had in the treatment of such cases & the information I have derived from the perusal of various papers & statistics of hospitals lead me to affirm that the opium treatment as usually recommended & followed out is not only inefficient to but positively dangerous injurious. The case of C. powerfully impresses that on my memory.

Opium is given by those who have such confidence in it to fulfill two indications. To obtain sleep, believing that is the grand point to be attained in the treatment of the disease. Sir Thomas Watson says the great remedy in delirium tremens is sleep and our most powerful means of inducing sleep are to be found in opium. The opium must be given in full doses and it must be fearlessly repeated if its desired effects do not soon follow.

The text continues with more detailed observations and analysis regarding the use and effects of opium in treating certain conditions, emphasizing the importance of the precise dosage and the potential hazards associated with its misuse.
After clearing out the bowels by a moderate purgative you may give three grains of
lodial opium; and if the patient show no indication to sleep after two or three
hours have elapsed you may begin to give one grain every hour until he sleeps.

Dr. Copeland in his Dictionary of Practical Medicine gives it as his opinion that
opium is "as necessary to the cure of
this disease as harsh and analagous
medicines are to the cure of ague." Dr.
Dickson in his "Elements of Medicine"
recommends "a teaspoonful of laudanum
every hour in ordinary cases until
sleep is induced. 20 grains in the belief
of its acting as a simple stimulus to
the nervous system x in the hope of its
preventing the failure of the nervous power
of its relieving the brain and soothing
the system until the ordinary course
of the disease is run; sleep returns in
the natural way." Dr. Wood of Philadephia
noted "It is highly desirable to find
some other stimulus (than alcohol)"
which may be sufficient to support the nervous system during the continuance of the disease—happily such a stimulus we have in opium. It affords a gentle support to the brain, quiets nervous disturbance, favours the return of sleep; he further he says "the object is not to force sleep at all events. It is not to pour in the narcotic in such quantities as completely to overwhelm the brain, if sound sleep cannot be induced at least to bring on a state of coma. It is sufficient for the object to keep the patient moderately under the influence of the narcotic so as to prevent his nervous powers from failing and patiently to wait till the disease ceases in its ordinary course and sound sleep returns." In his treatment he says "two grains of opium, half a grain of sulphate of morphia or an equivalent quantity of one of the liquid preparations of this drug are given every two hours and steadily persevered in until sleep takes place"
or a decided narcotic impression is produced. This quantity is seldom exceeded when after one or two doses the patient is found very susceptible to the influence of the narcotic, the intervals should be lengthened to three or four hours or more, or the quantity diminished. Upon his awaking from the first sleep, showed the least tendency to hallucinations reman or return, the medicine is to be given in quantities sufficient to control the tendency, to be gradually diminished or omitted, as the occasion for its use lessens or ceases. It is a most difficult matter, one would think, to give opinion in this complaint in that proper quantity which will support the system yet stop short of inducing a more or less decidedly narcotic effect. In the case of A. Opium seemed only to increase the agitation and hallucinations and in my opinion the seeming quiet resulting from its use is as often (perhaps often) due to symptoms of coma.
more or less marked. To a want of sleepe or a due knowledge of the course pathlogy and progress of delirium tremens is chiefly to be ascribed the repulse which the opium plan of treatment so generally enjoys. He notion that no alleviation in the patients condition can result until deep occurs, that "he must sleep or he will die," and that this sleep is the entire cause of the favourable change in the patients condition is a very prevalent one. I certainly carry with it much truth. I am inclined to believe that this want of sleep is not so dangerous as we are taught to believe from statements like the above. In mild forms of the complaint with little physical restlessness, the delirium is nothing more than a sort of dray dream, which may be allowed without very much risk. If sleep is so desirable I would venture to question its being produced by the opium. Whether or not symptoms of improvement did not manifest themselves guide...
independent of the peiiod at which that
drug was administered, or in other word
which was the first of the two, in the
order of occurrence. To arrive at any
just conclusion on this point we must
endeavour to find out how long the
medicine required to give, at what
period of the complaint it was first
prescribed and at what period in each
particular case sleep occurred. It will
be found that in all cases in which any
salutary changes are produced, these do not
occur until after repeated doses, each
of which greatly exceeds what we would
venture to give under any other circum-
stances. In these cases a very powerful
dose is usually commenced with, a second
as soon as found necessary, another
another are given, and at last sleep
comes on, but really not before the peiiod
at which it would have occurred in the
natural course of the disease. From the
few opportunities I have had of watching the
effects of opium, one convinced that
given in ordinary doses, it produces an effect directly contrary to what we desire it prevents sleep; and in my opinion the system withstands the soothing effects of the medicine, though given in doses sufficient under any circumstances to produce the most profound sleep, until the paroxysm terminates in the usual way. It is not sufficiently proved that quinine hurries the occurrence of sleep, or that it in any degree shortens the duration of the paroxysm, or that it in any way quiets the sufferer, until it is given to an extent really sufficient to occasion more or less coma. I would also question its power of enabling the system to bear up until the malady has run its course. Repeated doses are given and no abatement of muscular tremors or of the hallucinations takes place, until a quantity is given sufficient to produce more or less decidedly toxic effects. A case recorded by Prof. Laycock well exemplifies this (see Educ. Journal 1862)
where a believer in powerful doses of opium he had treated a case as follows:

"On the morning of the 30th I found him very excited. He had no sleep (on the preceding day 30 grains of opium had been taken at intervals of four hours from 8 a.m. to 4 p.m. or 3 in 8 hours). The bowels were well relieved the urine free; at 5 p.m. he took a tumbler of powdered opium with an ounce of camomile; at 9 p.m. 1/12 p.m. This dose was repeated. At 3 a.m. in the 1st he took a drachm (70 grains) of opium which was repeated at 6 a.m. 1 1/10 p.m. At this date seeing a report of some case strongly urging the claims of digitalis I gave him half an ounce of the extract and he repeated the dose in four hours, the only request being the second dose lowered the pulse from 120 to 80. He passed a very quieted night and at 8 a.m. on the 3rd I gave him a cold shower bath with a dose of half a drachm of opium combined with one grain of carbon.
At 12 a.m. he had two scruples of opium with a grain of Belladonna Emetic. At 8 p.m. a dose of opium with two grains of Belladonna Emetic. The shower bath was repeated for two minutes; he was also dry-cupped at the nape of the neck, and at 11 p.m. he took two doses of opium and two grains of Belladonna Emetic. He slept after this dose, for thirteen hours, awoke took a cup of beef tea with brandy in it, had the bowels well relaxed, and went to sleep again. From this date he slept more or less for the next twenty-four hours and at the end of that time was well.

The pathology of the influence of delirium tremens forbid the use of opium, because it tends to diminish the various secretions (except respiration), because it exerts a dangerous influence in large quantities over the intellectual faculties, from its inability in moderate doses to control the disorder, from its favoursing congestion and coma, from its disordering the stomach and blunting the appetite.
It is preventing the taking of food so soon as might have been the case had it not been prescribed.

The popularity of opium in the treatment of this disease is undoubtedly growing. It is doubtless that great authorities strongly advocate its employment, but there are many whose opinions demand the highest respect and who strongly argue against it. Prof. Raynow in referring to a case of Sir Thomas Watson's treated by large doses of opium says, "I humbly think that all the facts are in favour of the conclusion that in a case like that detailed by Dr. Watson, the drug is lethal." Dr. Whitaker remarks, "The two most fatal errors that can be committed in the treatment of delirium tremens are either to bleed the patient or give him opiate." Dr. Morehead in referring to the opium plans of treatment says, "a greater number thus treated terminate by convulsions and coma." Prof. Bennett in his "Principles" remarks, "Generally speaking if a good sleep can
he obtained it is ethereal and the patient at once recovers. Opium has been largely given to attain this result, but its supposed beneficial action is generally coincident with the muscular fatigue, jixunistic and tendency to refuse which accompany the elimination of the alcoholic poison. "Have no headache," wrote Dr. Rice, "by saying that in a large proportion of instances sleep would take place spontaneously at an earlier period and the subsequent condition of the patient be much more sound and safe by doing nothing at all than by the use of opiates. It is evident that if opium be used at all in delirium tremens it must be given in a large dose (in from two to three or more grains and repeated at intervals of a few hours); and it is thus generally given, the object being to overstep the stage of excitement and force on the desired sleep. Now the acknowledged effect of a large opiate on the encephalon is to occasion engorgement of its vessels.
More especially of the veins, and consequently the larger the more the greater will be the amount of dangerous compaction of the brain. What then must be the probable result in a disease in which there is already if not an approach to arachnitis at least a very excited action of the meninges and a preternatural loading of the vessels generally. The practice is one of the utmost hazard.

These remarks apply to quinine in whatever form administered, whether in the form of tincture as advocated by Druynstee, when any contraindication exists to giving it by the mouth, or of injection into the subcutaneous cellular tissue as was resorted to in Mr. C. acid. Mr. Macpherson, Law, Calhoun, others also testify to the use of quinine being either unnecessary or injurious in the treatment of delirium tremens; it is clearly manifest therefore that the high value attached to it by some in the treatment of this complaint
is far from warranted by the experience of many other high authorities.

A combination of opium and alcoholic stimulants was perhaps one of the most common and popular methods of treating the disease in this country. As Phillips in "Ranking's Abstract" says, "if a man has been accustomed to drink heavily of a malt liquor a draught of Laudanum will act much more beneficially if taken in a pint or pot of beer, than if taken alone; a similar remark may be applied to other spirituous liquors; in other cases its effects would be most certainly enhanced if it were as soon as possible sake associated with animal food." According to Dr. Billing "the only mode of remedy is by narcotics and stimulants." In which in addition to the construction of the sedative shade, a greater tendency to sleep is produced. Dr. Sulter in speaking of the value of opium in inducing sleep, says that it frequently fails to produce this effect.
in "habitual and Ducrated Alcohards" when the disease has followed the usual course of the usual quantity of Stimulus in the form of wine, brandy or malt liquor as circumstances may point out, it is sometimes attended with marked good effects in diminishing the restlessness, tremors, other urgent symptoms. Dr. Armstrong says "opium is the main remedy, and good mutton broth or beef-tea is the best diet; with a tolerable quantity of good malt liquor as common drink. Dr. Thomas Watson advises to put their spirits into a glass of gin or port of port.

The employment of two substances at one and the same time, producing directly opposite effects, the one soothing and calming the system (it is intended to do,
the other to stimulate and exhaust it seems a doubtful practice. From what I have previously mentioned regarding the dangers made of employing opium in the treatment of this disease, from what we know of the effects of alcohol in the system, a treatment consisting in the combination of these two agents at one time must be unwarranted and injurious, and it is not within its effects. Dr. Peadle says regarding it, the frequent sudden fatalities which I witnessed from arachnitis convulsiva & coma, when stimulants and opium were freely administered, the length of time ere recovery took place were in the most favourable instances of the malady when these agents were given more sparingly, more cautiously, long since convinced me that their tendency is highly dangerous. Dr. Morehead says I can say nothing of the treatment of delirium tremens, free opiates and stimulants, in temperate climates.
But I feel convinced that in the delirium tremens of Europeans in Bombay it is a cause of treatment attended with much hazard, which when systematically followed is certain of leading to unfortunate results.

A passing notice may be taken of the old venerable plan of treating this disease by copious bleedings, a plan which is now being revived by Dr. Ward Richardson. The case of Mr. A exhibits the effects of a very copious bleeding the certainly not in the usual way and the result was not in any degree beneficial or satisfactory. The supposed inflammatory nature of the disease led to this mode of treatment, many of the older authors considering it as Meningitis Arachnitis re Flumina may have recourse to blood-letting and the relief in the inflammatory nature of delirium tremens is a thing of the past. Still some are inclined to believe that this there is not intracranial
inflammation in the heart is a condition bordering on apoplexy or meningitis and consequently rest to remedies which will have the power of reducing this, whilst at the same time they are much less depressing than blood-letting. Amongst those who held such opinions pre-eminent—by may be mentioned Dr. Graves and Dr. Perrier. The former surmised the combination of Jantar Inmetic and opium of such singular service in the treatment of the delirium of fever, as led to try it in delirium tremens also. Although he considered it (O.T.) the independent of inflammation, he believed it to be accompanied by a certain amount of vascular excitement for which venesection would be dangerous owing to its depressing power, opium alone would be equally dangerous from its causing cerebral inanition. A combination of the two was thought the most judicious line of treatment. So at the commencement of the illness Jantar Inmetic first to cause a sedative
active. Then he began to add a little opium after a time, & gradually increased it until the Satur Smethe was dispensed with.

Dr. Price after trying this plan for some time came to the conclusion that the really useful agent was the Satur Smethe, before he was aware that it traversed emboidid it with opium or what Still Knapp and others had also recommended it. His doses of contimning were from a quarter to half a grain in simple solution every two hours, some times at shorter intervals according to the degree of excitement and irritability. This plan of treatment in Dr. Beadie's hands shows a great amount of success. "I have treated," he writes "upwards of eighty cases of genuine disease many of them severe ones with uniform success not only in regard to the speediness of the immediate recovery, but the comparatively thorough restoration to a healthy condition of body and mind."
as much as to at least as could possibly be expected in individuals, many of whom had been and were likely to again become habitual drunkards.” He further writes “The action of arnica appears to be chiefly sedative. Its direct influence is to reduce the vascular ex-
alimentation of the brain, soothe the nervous system and diminish muscular power, and its more indirect action is exerted on the functions of the skin, kidneys and intestinal canal. In two or three in-
stances only have I found it necessary to suspend its employment in consequence of diarrhoea and hemorrhagic discharge from the bowels, and in these cases sub-
stituted ipecacuanha and digitale with marked benefit; and I do not recollect of ever seeing it produce continued vomiting, although occasionally I have found the first or second dose eject from the stomach a quantity of bile. The antimonials course of treatment in moderation with the design I have
indicated, gently diminishes excited action, induces heaviness of muscle, general nervous exhaustion and mental languor. It thus removes all impediments to the occurrence of the cutaneous sleep. It prepares the way for it, not by forcing but by favouring it; and when the individual exhausted seeks his couch and finds repose, that goes on not as a drugged sleep but as a purely natural and profound repose, from which he awakes with restored reason and muscular control.

All this treatment by Sertar emetic is supported on the ground that if there is but a real meningitis, there is a condition of the meninges closely resembling it—bordering with it; that I think it presumed and requires proof. The changes described as having been seen on the few opportunities which have occurred of examining the head in encephalitis cases, are insufficient to warrant us ascribing the symptoms
of vascular excitement; and it ought to be remembered that conditions very similar have been found in the cerebral meninges of confirmed drunkards who never suffered from delirium tremens; and also in cases of undoubted cerebral depression a certain amount of serum is often found in the cavities of the brain. There are no symptoms which we might mistake for those of delirium tremens meningitis (as I have already described under the diagnosis). Opposite states of the brain are sometimes attended by a striking similarity of symptoms; thus in children infected by diarrhoea and nervous exhaustion or long continued exhausting illness, symptoms very much resembling those of inflammation of the meninges are produced. The one might be mistaken for the other unless careful observation is had recourse to. The action of the heart instead of being strong causing a firm bounding pulse, in delirium tremens is feeble.
the pulse frequent and small. Though numerous recoveries have resulted from this plan of treatment, tho’ it is deemed much superior, safer and more judicious than opium alone, yet cases yet in very well without it in anything but deliberate treatment. Dr. Bennett in his Principles and Practice of Medicine states, “In the vast majority of cases of delirium tremens the fever becomes diminished from the system in a certain time; whether admin-
istered in half or quarter grain doses assists this process as was at one time supposed is very doubtful.” The following record of twenty cases treated without any medicine and every one of them successful.

Another very powerful depressant remedy, namely, Digitalis has been advocated by some on similar grounds. Mrs. M. Jones of Jersey recommended the use of Ointure of Digitalis in doses of half an ounce to commence with. This is repeated in the same quantity
or in smaller amount at intervals according to the present circumstances. This gentle
man holds that small doses are of no
service, often causing intermittent of the
pulse; but in large doses the pulse gains
strength and regularity, the perspirations
fade off, the skin becomes warmer and
sleep is induced. Dr. A. H. Pearson, after
bleeding gave sixty drops every three hours
of the patient got well. In the hands
of some this remedy may have learned to
do well; others record their disappointment,
it is difficult to understand how it can act beneficially.

Dr. Haff treated delirious tremens by
with large doses of Sulfur Iodide for the
sake of its emetic action. He supposed
that excepting something relieved the mental
affliction and the central disturbance;
these being in most cases gastric dis-
arrangement. There is often a tolerance
of this drug in such cases, requiring
enormous doses to be given, in order
produce any effect. Some recommending
Four or five grains every hour to cause free sweating. Such treatment must tend greatly to reduce the patient's strength, favour cerebral congestion, and increase the chance of death by puerperal fever. In obstetric cases in young robust women in their first attack of delirium tremens where there is some chest complication especially pneumonic, smaller doses might be administered. In also in cases where the delirium was very violent, almost approaching mania in its character, laudanum has been given. In cases where the action was found unsuitable from giving rise of restlessness I declare bromide of potassium might be of some service. My experience of it is too limited even to recommend its use, but I think it merits trial. Then there are the expectant and eclectic methods of treatment. These have been recommended following...
In the same physicians, their choice on each occasion being determined by the circumstances of the case. They have been followed out alike by those who consider delirium tremens provoked from abstinence from the usual stimulus to the cerebral matter, and by those who consider it in no way connected with such abstinence. Dr. Rush, of Philadelphia, holding the former opinion but considering that the powers of nature are usually sufficient to restore the healthy balance tried his cases without either spirituous or opiate drugs. In some instances this treatment was purely eclectic in others purely expectorant. If the patient was suffering from the immediate effects of a debauch or no apparent indication existed an emetic was given, gentle laxatives were administered from time to time, nutritious and easily digested food prescribed in too much light or noise prohibited. In his Practice of Medicine he reports,
of 37 cases eighteen of which, classed as
intoxication not one died; although the
treatment was expectant or eclectic & did
not exclude a drop of spirits.
Prof. Sayrecht holding the latter opinion
advocated the expectant or eclectic plan as
the really rational treatment, and his
success was that only one was fatal
out of 28 cases and this one had been
previously treated with opium. Dr. Wood
states that the treatment pursued by
Dr. Welsh of Philadelphia consisted in
confining the patient in a dark cell
leaving the disease spontaneously to work
itself off. Dr. Welsh states that he is
satisfied that in cases of Delirium tre-
mens the patient so far as the paroxysm
alone is concerned should be left to
the resources of his own system, par-
ticularly that no attempt to force sleep
by any of the remedies which are usually
supposed to have that tendency.
The same plan has also been followed
by Calmeil and others, but a stuff
Frequent mention has been made of this mode of practice has also great authorities as supporters.

From a review of the former pages, we see what difference there is of opinion as to what is the most rational pathology to treatment of the disease in question.

No doubt each or any of the modes of treatment previously noticed could be favourably illustrated by the experience of its respective supporters. The truth of this will be best shown by referring to the subjoined statistics.

By purely stimulant plan

<table>
<thead>
<tr>
<th>Proportion of deaths relative to the Philadelphia Hospital from 1768 to 1833</th>
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<tr>
<td>Treatment by opium and alcohol</td>
</tr>
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</table>
| 403 | 101 | 25%

Sedative (mechanical in sedative)

Cases treated, results

cases treated, result

cases treated, result

upwards of 80 uniformly successful
Large doses of Digitalis} cases in which alone Results
by Mr. Cnr. it was used 67

Eclectic or Expectant } cases Result
plan of Prof. Laycock } 28 1 died from

When we consider the utterly confusing nature of the opinions expressed on every point connected with the disease, the many plans of treatment proposed and the discrepant results attributed to each by different authorities, it is very desirable that all who have any opportunity of familiarising themselves with the disorder should state their views as to its nature and proper management in order that from a large experience of varied opinion some rules might be deduced which would be generally applicable. — Reasoning in such a way has induced me to speak of these two or three cases (selected from several) as exhibiting the results of various forms of treatment.
tending to show that the eliminative mode is, from our knowledge of the etiology and pathology of the disease, the only rational one. In the case of A-hemorrhage resulting from the suicidal wound of the throat was equal in amount to what would have been abstraken in a tricuspid resection or yet the delirium and insomia continued as before. The same sort of success attended the exhibition of the Cortis-Smetric and opium treatment. It is not easy to discover why such antiphlogistic treatment should he best recourse to, as no signs of approaching vascular ephelment or inflammation are appreciable. Theory of inference alike go against the use of opium and alcoholic stimulants; the former failing to procure the result for which it is administered, the latter only increasing the toxemia.

In pursuing this exertant eliminative plan of treatment we considerable difficulties stand in the way of the
general practitioner. The very simplicity of it, is its greatest obstacle. The nature of the disease determines this: for we generally find our patient, restless, excited. Having sleepless nights, alarmed and terrifying the inmates of his house. His unworldly fears and unearthly terror are presented to them with all the aspect of reality, & we can readily imagine how they are feared & imagined with watching time they should expect of us some prompt interference. This will be the more apparent if signs of mania, or attempts at suicide or homicide have been tried or partially carried out. In opium morphine or some such sedative his friends have somehow or other been taught to believe. Erwitz the power to correct his mental derangement, soothe and calm his fears at the same time allay their own apprehensions. But the expectant elimination method demands that the practitioner to those about the patient should refer all his disturbed fancies and fears with
Easily compared and effect under care.
ful nursing and watching without knowing
when to wait with great confidence, "the
result of a treatment which promises to
immediate results". Such is the difficulty
and it is all the more so, because the
minds of the public generally it is
believed that delirium tremens is a
dangerous, fatal malady requiring
most urgent interference.

I am of opinion that in this disease
the blood is poisoned by alcohol either un-
changed or combined with some material
generated in the system; as it is therefore
rendered perfectly unfit for the proper
nutrition of the brain by long want of
proper food and by accumulated expecto-
ment. The first indication is therefore
to cut off the further supply of that
substance which has tainted and
spoiled the blood. So old broken-
down infant in men with typhoid symp-
toms. However, it might be advisable to
let them have a glass of sherry every
Having prevented the supply of the morbid agent to the system, there is still something more to be attempted. I believe it is in our power to go further and assist in the elimination of the morbid agent. We are not equipped with any agent which will immediately neutralize the effects of alcohol in the system. It restored the sufferer from his delirious condition to a state of quiescence of mind, and this is the less to be expected when we consider that whether alcohol itself exists in the blood, free or combined, yet that fluid has been rendered highly poisonous and quite unfitted for healthy nutrition, from the accumulation of effete matters therein. This accumulation is the result of the presence of alcohol in it (the blood) and cannot therefore look for much improvement until the blood has been freed to a certain extent of these injurious ingredients, and enriched wi
quality by the persevering exhibition of
proper food and so rendered more suitable
for purposes of nutrition. It seems therefore
our duty to assist the regulation of the
blood and support the system by nour-
ishing food. In every blood disorder we
can see more or less decided marks of
natural eliminative efforts, or attempts to
cast out of the system that by which its
healthy nutrition has been prevented.
In rheumatic fever, spots in the skin and
kidneys are the usual phenomena applied
to for the elimination of the poison, and
in delirium tremens we see what nature
in her own way, depurate the blood
by edenic cutaneous secretion, which
smells strongly of alcohol. This odour
is generally so strongly marked that
Dr. Arnot says in his definition of the
disease "the patient gives forth a peculiar
odour of a saccharated alcoholic description
more or less strong". The skin therefore
should be kept moderately warm by
an equable temperature and the
Perspirations by no means checked. We often observed in cases with a favourable termination, that after sound sleep had been established for some time, a remarkably profuse perspiration breaks out, and the patient for a considerable time lies literally bathed in it. In cases therefore where the temperature is low, and there is arrest of the cutaneous Ethaline stimulant diaphoretics are to be had recourse to, Aromatic Ammonia alone or in combination is generally very useful, either as liquid Ammonia Acetate or combined with Camphorated water both acting on the skin and gently stimulating the nerves system without injurious results. In almost every case there is Epsom Salt; this requires our attention before any nourishing food can be re-ceived. It is best combated by the administration of Arsenic Frascati fifty or sixty grains with a few grains of Colchicum or Ricinum as occasion requires, this generally relieves the dyspeptic
Draining as well. As I have previously mentioned, the hepatic system usually requires the administration of some gentle alternative medicine such as a combination of Hydriphyric Cacet and Rhubarb dust with a few grains of fennel added. The renal organs form another important channel, through which we can further regulate the system. They are easily called into action in most cases and any saline diuretic which is not irritating may be had recourse to. Strong nourishing soups, essence of meat, half tea and broth should be regularly administered; these will be the best means of counteracting exhaustion by preventing recourse to alcoholic stimulants.

This plan of treatment seems most naturally to result from a correct pathology of the disease, and commends itself as that best calculated to prevent concomitant coma and other dangerous complications.
Essential Paralysis of childhood.

Not infrequently do we meet with cases of paralysis in the adult concerning the history, origin and progress of which nothing further is known beyond the fact that the symptoms had their commencement in childhood. In such cases there is perfect general health, but when we come to examine the part affected we find it atrophied, deformed, and almost powerless. It is with something of regret that we witness a stout healthy adult, with a left arm of great muscular development, while his right is shortened, wasted and flabby to such a degree as almost to be hanging out of the sleeve cavity. Or it may be the bitemporal of the leg that are paralyzed rendering progress in difficult and the pursuit of ordinary avocations impracticable. The subjects of such deformity, will...
inform you, in answer to your inquiries as to past history, that the arm or leg as the case may be, had been in that condition so long as they could remember, while their parents will put it down to some supposed blow on, or injury to the head, which must have been received 
when very young.

Paralysis in childhood is, in a great many instances due to the same causes which operate in producing it in after life, but every now and then we meet with cases that cannot be so accounted for; where there is no history of any syphilitic taint, no tubercular diathesis, nothing pointing to any cerebral or spinal softening, or other organic cerebral change. In such cases the paralysis is called “essential” or “myogenic paralysis” from the fact, that nothing except this paralysis or wasting of the muscles has been observed.

The following case having come under my observation, I have considered it worthy of some remarks...
S.H. a healthy girl of four years, who had never required either a doctor or dose of medicine from her birth, came under my care on Oct. 17th. Her parents are both remarkably healthy people, there was never any consumption in either of their families, nor can the slightest trace of syphilis or any acridetic disease be ascertained. On the afternoon of the 16th. Sept. had been playing as usual out of doors on the banks of a little burn near her residence. She felt hot and that evening complained of being tired and was put to bed. Earlier than usual previously have taken some supper however, she got up in the morning as usual, no little difference being observed in her condition until the following afternoon, when feeling unwell and restless, she requested to be put to bed, after which she became thirsty and feverish remaining so for the remainder of the evening. She talked a good deal during her sleep, I am being taken up to her.
mother left feet forward (as was her custom) it was found the current stand; her legs doubling up under her. This was ascribed to her being not being thoroughly awakened and little attention was paid to it at that time. On getting up in the morning it was found the child move neither her upper nor lower extremities, nor had she the power of keeping her head erect. Later in the day the last power over both shoulders, for the head being raised from the pillow, either fell heavily forwards with the chin against the sternum or rolled over backwards with the occiput against the spine. At this time however she was quite conscious, cried when attempted to be moved, answered questions in a perfectly clear way. She had some milk to drink. There had been no vomiting nor sickness from the commencement of her ailment—no difficulty in articulating of respiration was quiet and easy. The circulation and other symptoms were normal. The power of motion was
more or less lost, but sensation did not seem at all impaired. The limbs were said to have been cold continued so although warm flannels he had been constantly applied. About a week after signs of improvement began to be observed, the commenc'd to know when the bowels were about to move and gradually command over the sphincters of bladder and rectum returned. It was more than a fortnight after that any improvement in the motor power of the limbs was appreciable. This was first observed in the flexor muscles of the lower extremities, gradually spreading to the other muscles until the legs could be drawn up and kicked about a little. The treatment that had been adopted consisted of purgatives, cold to the head, counter-irritation along the spine, friction and cold douching combined with Ladee of Potassium gluin internally.
When she came under my care on the 17th Oct., her condition was as follows: The face was chubby and of a healthy florid complexion. The eyes bright and the expression intelligent. She answered my questions without hesitation or difficulty. The head was flexed a little forward on the chest, and in looking at you she seemed as if leaning from under her eyebrows. The trunk appeared well nourished, but the muscles of the arm and forearm were very much atrophied. Both in the extensor and flexor surfaces felt cold soft and flabby on being handled. The biceps was almost completely atrophied. The measurement round that part of the arm being less than round the forearm over the supinator muscles. The head of the humerus was almost exposed from the glenoid cavity, from washing of the deltoid and Scapular muscles surrounding the joint. The fingers of both hands could be
Placed and extended considerably, but more three of the left than right. There was
distinct coldness of both upper extremities, the temperature at ascertained \(93^\circ F\) to \(96^\circ F\) at various parts of the arm. The whole arm presented an
appearance as if covered with brawny muscle (covered with nothing
more than integument) and a similar baking was observed in back,
cervical and sternum muscles.

The lower extremities were not
so much affected, and could be
played and extended with comparative
freedom; yet there was a vast diminution
in size and form from what we expect
to find in a vigorous healthy child of the same age. The gluteal muscles
were flattened, the quadriceps extensor
tendons notably, flabby soft and
reduced in size as were the muscles
of the calf. The child was unable to
stand, but could move its legs forward.
Tendle as in progression in a dragging sort of way when supported. Reflex movements were performed rather imperfectly. The temperature here was not so markedly reduced; in the brain the thermometer recorded 96.5°F and in the groin under the clothing 97°F. The anterior and outer surface of the leg felt very soft and cool, and the outlines of the tibia and fibula were very distinctly traceable. The limbs, upper and lower, were of the same length. The digestive functions were performed in a healthy manner, the bowels were opened every day, this having been the case since the first day of her illness. There was nothing more observed that seemed abnormal in S. Shea, no headache, no facial paralysis or twisting of the features in any way.

The mode of appearance of this form of paralysis is generally felt, much as I have described in the foregoing case. Feelings of malaise...
weakness and general indisposition as succeeded to feverish symptoms which however did not continue very long. The general health and condition of the post (in the case related never had required a dose of medicine) thus was having to account for the symptoms as injury, no manifest internal or external disturbance. The period of afebrile had passed. This was a little exposure to cold and the feet but for a little wet but that was a most usual occurrence, being also previously experienced with impunity. The age at which this disease is most likely to occur, varies from 9 months to four years. Mr. Broadhurst states that "this form of palsy is usually occurs before two years of age".

The feverish symptoms are usually present, though from their short duration and the constant tedious nature of the malady they may after a lapse of time, have been forgotten. In case
Where no febrile symptoms have been observed, the child has been suddenly found without power of one or many of its limbs. Laborde in his work on the "Paralysis of Infancy termed Essential" mentions that out of five cases he had observed, fever was present in four. So that in almost all cases he may say that fever is present. It may be transient, only continuing for a day or so and not well marked still, present. Vomiting or nervous disturbances do not accompany this form of paralysis. Laborde mentions that convulsions were present in one out of five cases at the commencement of the paralysis. These convulsions did not differ in any appreciable degree from what might be expected to occur, during teething, organic disease of the brain or from worms. The absence of these symptoms pointing to organic disease of the brain, absence of vomiting, of headache, of lumbering
and of that peculiar tutorial cry which frequently armed our suspicions of head central disease. When such is present there are no convulsions or vice versa. In the case of Mr. the febrile symptoms were present for 24 hours to the extent and intensity of the paralysis in most instances these are at their maximum when first observed, in the history recorded above such was not the case. The course of the paralysis was, first, of inferior extremities, then of the upper muscles of the neck, finally of the sphincters. The lower extremities are more frequent affected than the upper and remain long paralysed; the reverse was the case in the instance that came under my observation for not only were the lower limits of a higher temperature from the first, but also in their mode James was earlier observed. Russell Reynolds mentions "that it is rare to find paralysis of the sphincters," the
Instituted another peculiarity in the case referred to. Perhaps the most common form is paralysis of the lower extremities, which may become permanent; more frequently it passes away and leaves one extremity affected. A lower extremity is more frequently paralysed than an upper. The skin retains its sensibility and the organs of special sense remain unchanged. When the paralysis is neglected and left to follow its own course, the parts affected stop growing, become powerless, soft and shortened. This wasting comes on very shortly after the commencement of the attack; in the course of three or four weeks it is unmistakable, and can be detected by measurement as well as by the falling of change of temperature. Sometimes particular muscles or groups of muscles are affected, thus in the upper limb the muscles about the shoulder, and in the lower those by tension lying on
the outer surface of the fibula. Mr. Brodhurst refers his case in which in addition to the extensors of both legs the flexors of both feet, the deltoidei and rhomboides were paralyzed. The degree of paralysis varies from slight weakness and dragging of the part affected to complete powerlessness and immobility. J.H. when first examined could not move her fingers or a small stick and her parents informed me that when at her worst she could neither move nor lift her limbs.

The electric contractions of the muscles which are paralyzed is peculiar. An induced current which causes violent contraction of the healthy muscles awakens no movement in the muscles of the wasted limbs, and an interrupted battery current which is too weak to cause any contraction of the healthy muscle is sufficient to produce distinct action of the wasted muscles.

The sensibility of the skin over
the paralyzed limbs seems to be in no way affected, as is ascertained by testing with the compasses, pinching, pricking heat cold etc.
The reflex mobility of the paralyzed limbs is usually much impaired, in instances where the wasting is great and the paralysis nearly complete, it may be almost entirely abolished. In this case it was present to a certain extent, on tickling the soles of the feet the involuntarily drew them up. The temperature of the affected limbs is always lowered, more distinctly so as the paralysis is complete, this is most accurately observed by the use of the clinical thermometer.
The state of mind and general bodily health are unaffected in all the cases I have been referred to.

Concerning the pathological changes in this form of paralysis, the following have been observed and recorded:

The muscles and tendons are small.
and the former lose their characteristic structure. Until recently it has been assumed that nothing except these changes was formed abnormal. But M. Laborde had shown that there is a distinct change in certain patients of the spinal cord, that the anterior columns are more translucent than natural and present present a very appreciable greyish blue tincture to the naked eye. That a similar change may be observed, tho in a less degree in the lateral columns. The consistence of these tracts of nerve tissue is diminished; and on microscopic examination they may be observed a marked proliferation of the elements of the connective tissue cells and nuclei being disposed in the middle of a finely granular substance in which there are fibrils of extreme tenacity. In the parts which are most affected nervous tubules are either lost.
altogether or they present a variance of appearance, while the other portions of the spinal column preserve a perfect integrity.

Brünnich's "On the so-called Essential Paralysis of Children" in the Journal f. Kind. Med. May 1st, 1861. writes he does not believe in the existence of an idiopathic disease of this kind, says it is the result of a central or more rarely of a peripheral disturbance of the nervous system. In this opinion however, he is not supported by more eminent observers.

As to the diagnosis of this form of paralysis from mere symptomatology of organic cerebral disease, Beerbaum (zurn. f. Kind. 1857 thus writes) — The Symptomatic Paralyzes always depended on organic disturbance of the brain and cord. In the idiopathic form the nervous centres are free and unaltered. The intelligence, consciousness, functions of the senses are dis
in the symptomatic but not in the idiopathic form. Muscular atrophy in the case of idiopathic paralysis, and this is combined with deformity which is not the case in Symptomatic paralysis, nor is limitation of the affection to one muscle or one group of muscles ever observed in the Symptomatic form. There is no vomiting in this form of paralysis, no shivering, lassitude, nor the wailing cry of organic cerebral disease especially of a tubercular nature.

The treatment I found most effective was local measures and specially amongst these electricity. At the outset the febrile symptoms must be treated much as if arising during the commencement of any ordinary illness. Some mild saline diaphoretic does very well. The main object is to treat the muscles and to keep them at once. The importance of early treatment by having recourse to the judicious use of electricity cannot be overestimated.
West in his work on the Diseases of Children forcibly remarks, "There is very great danger of the paralysis continuing in such a degree as to cause much disfigurement or to interfere greatly with the usefulness of the limbs."

Out of 18 cases treated a cure was effected in 5. In four treatment was commenced within two or three days after the occurrence of the paralysis and continued uninterruptedly until the patient's recovery. In 8 the treatment after three weeks' in four partial improvement—In 8 of the cases in which no treatment was adopted, or not until after the lapse of a period of six months no improvement took place.

It would be difficult to find an argument to enforce the necessity for the early adoption of appropriate treatment, more cogent than is furnished by these facts. The evil results of neglecting it, too, are in some respects more serious in the child than in the adult. The muscles of a paralyzed limb are almost
always observed to waste, but in childhood the growth of the part becomes arrested and in the course of a year or two, it will be half or three quarters of an inch shorter than the corresponding member of the opposite side. I was gratified to find that in the case of the paralyzed muscles of both extremities contracted well on an electric current being passed through them. The contractions were most distinct and marked in the muscles of the lower extremity, but those of the upper limb also responded sufficiently to the action of galvanism to give one the most hopeful anticipation of improvement if not ultimate cure. After six weeks' exhibition of the galvanic current the little patient was able to stand when resting against a chair and could firmly place her feet down, as in natural progression; the limbs were fuller, not so flabby and the mother says she
has noticed much improvement. This is not so well marked in the upper extremity, but she can hold various objects in her hands securely now, and raise them in the direction of the mouth (treatments for example). Electric irritability still getting intensified gaitism was uninterruptedly continued, and at the end of two months from the commencement of treatment she could walk round a chair without assistance. The lower limbs then commenced to improve very much, the muscles of the calf increased in size and firmness, and a similar improvement (to a smaller extent) was observable in the muscles of the arms. Passive movements and friction with salt and water were diligently used recourse to as adjuncts, and at the end of December (ten weeks from commencing treatment) the power of raising the lower extremities had almost entirely returned. The limbs (lower) became firm, full and
and of normal temperature; the arms had also improved very much especial
ly the muscles about the shouldear joint - the deltoide, scapular muscles - and
the hand could be brought to the mouth. By the middle of January by
this time still remained a certain amount of weakness. From the im-
provement that took place up to this date the best results were an-
ticipated. Electrotherm was also del-
igently applied to the cervical muscles
maintaining the head erect and the
improvement was equally marked.
When last saw her, instead of the
helpless deformed creature she formerly
was, all that remained visible of
her former paralysis was a slight
weakness of her two upper limbs.
Injections were administered from
time to time in the shape of steel
wine and quinine, but the child's
general health had always been
so good that they might have
been dispensed with. In the treatment of such cases galvanism required to be persevered with most patiently when signs of contraction of the affected muscles are observed.

The prognosis is unfavourable when after six or eight applications of both paralytic and battery electricity, there has been no appearance of electric irritability and no good results may be expected from its continued use. In such cases the muscles have under gone such molecular and structural changes as have completely altered or destroyed their natural texture.

The grand point is that the nature of the disease should be early recognized and appropriate treatment be speedily had recourse to.
On some forms of Bronchitis

There is no form of disease the general practitioner is more frequently called upon to treat than Bronchitis. In the winter and spring months he may say that more than half his patients are suffering from it in different forms and different degrees. Such a disease, therefore, forms no inappropriate subject on which to make a few observations.

It is not my intention to discuss all the forms of bronchitis we see treated of in the various works of systematic writers—if it was possible, nor to go into anything like the literature of these forms I may take up, as this require more time than is at present at my disposal, but to offer some general remarks on certain of the forms occurring in the adult, and specially in some of those cases which are
modified by childhood and some of the
diseases of children.
I shall begin by cursorily relating the
usual course of an ordinary case of
bronchitis of average severity as we meet
with it in the adult. There is tolerably
smart fever, much cough, substernal
pain, rochus fibrosis, and succeeding
to this stage of dryness, expectoration
first of mucus then mucopurulent
matter; the symptoms and physical
signs abating after a few days case
and not likely but a tendency to the
disease being left behind. In such
a case the disease has affected the
larger bronchi extending perhaps to
those of the third and fourth rank
and the change in them has consisted
of engorgement and swelling of the mucous
membrane with a large amount of
alteration in
when the congestion and engorgement
have their seat higher up in the
glomerular passages, either in the
Lower part of the trachea itself, or some wheeze near its bifurcation, a manifestation of the nature of the disease is believed. The symptoms usually come on gradually. There is an absence of a definite onset. The cough is particularly characteristic. Coming on towards bedtime there is kept up an incessant tickling which induces a succession of short paroxysmal coughs, or little explosions of it very much resembling hooting-cough. The patient (who in the cases I have met with is generally at or past middle life) cannot get to the bottom of it and passes the greater part of his nights sitting up in bed. Pain is not usually complained of, unless it be over the insertions of the oblique and other muscles which have been called so violently into action in endeavouring to cough up what feels like a foreign body. The breathing is not much affected, and the expectoration usually scanty.
Onspanning the chest we are surprised to find auscultation affording so little evidence of the cause of so much irritation. Over the more peripheral parts of the chest, little beyond the normal vesicular breathing is heard; there may be slight, stertorous heard at some one point, but it is so limited and so trifling, that we look elsewhere for the origo malae. On placing the stethoscope over the superior sternal region, on a level with both the second rib, there is heard during a fit of coughing, snoring respiration with intensified tracheal breathing. The whole area over which such auscultatory signs are recognized may not much exceed the size of a florin, but I am persuaded that, from the absence of other pulmonary and vascular affections, as tubercle, aneurism, or rupture of the ramifications of the bronchi etc., a small inflammatory patch, causing much irritation, at or about the
Bacterial pneumonia gives rise to the tender-tissue symptoms above mentioned. Under proper treatment such cases soon get well, but if neglected they engender a condition of ill health, the result of sleepless nights and continual worry and anxiety, which may require to set the better of, and which may induce a subacute affection of the smaller bronchial ramifications.

Of all the forms of bronchitis, none excites more just alarm than that affecting the peripheral parts of the chest and termed Capillary bronchitis, its dangerous nature and severity symptoms are sufficiently well known and much dreaded. In some people, there seems a predisposition but which cannot be accounted for, a greater or lesser bronchial manifestation being suddenly affected and choked up with muco-purulent accumulation of mucus. Commencing like ordinary bronchitis.
In this form on examining the chest, the dry sounds of ronchus and sihics are not much heard and dont last long when present. Subsequent rills are discovered first over the back and lower part of the chest. Gradually extending over the upper clavicular, sub-clavicular, supra-epigastric, upper lateral, and axillary regions. As the disease progresses the face becomes pale, the lips assume a violet tinge, becoming livid, the eyes are prominent as if starting from the head, the expression is that of extreme anxiety, the nasi dilate, fall quickly, there is great restlessness and change of posture is frequent; he cant lie down but starts up for breath. The chest moves violently, and loud sounds of respiration are heard. Inspiration is exceedingly difficult, yellowish and cattens his froth. This is almost the only form of bronchitis in which head is myself & with the spumum, which may either be streaked
with it, or of a rusty colour. The nose is not much affected but dyspnoea makes speech short and peculiar; the words “dropping” from the lips. The pain is subternal & and the pulse from 130 to 150 frequent & weak. In some cases where the symptoms have been in evidence for some time and about to terminate fatally, there is gradual prostration of strength, the cough becomes less frequent, inspiratory time and more difficult, and ultimately ceases; then the respiration becomes stertorous, the countenance conjunctival become injected - orthopnoeac now impossible and the body lies flat in bed. The pulse may have eerie in frequency but it has fallen in strength and can't be counted thin becomes cold and clammy, then drowsiness and delirium - the hands moving to pro-thrashing at the bedclothes. Such are the symptoms resounding death by asphyxia - the
usual mode of death in cases of capillary bronchitis.

I have thus thought it necessary to describe the course and symptoms of capillary bronchitis, as it closely resembles a form in children, in order to the production of which, it is not necessary that the ultimate ramifications should affect. When the bronchi of the third or fourth rank only are affected in adults, we anticipate neither difficulty nor danger, and can predict that in a short time the disease will have resolved itself; but when the corresponding tubes in a child are affected, the case assumes a graver aspect. For the much greater severity of bronchitis in the child than in the adult there are obvious mechanical reasons. To reduce the calibre of an adult tube of a quarter of an inch, or more in diameter, by the thickening of its lining membrane is not necessarily to interfere seriously with its function as an air passage; but the same
absolute reduction of calibre, affecting the infantile tubes of half or less than half that diameter is nearly to occlude it altogether. In this latter fact difficult mechanical considerations we have the key to most that at first sight appears difficult in the bronchial affections of childhood.

Even slight degrees of children's bronchitis are apt to be accompanied by acute febrile symptoms, hacking cough, and sometimes even by convulsions. But when the smaller bronchial tubes are affected we have in fact all the symptoms of capillary bronchitis, as I have described it when occurring in the adult. In children it is not necessary that the ultimate ramifications should be affected to produce this same general disease. With them scarcely below the middle reach will suffice to give this kind of symptoms and accordingly bronchitis of more or less suffocative type is a much
more common disease in young children than at higher ages. What in adults is uncommon is with children a very frequent course: a child who only yesterday was in perfect health is found with great dyspnoea, breathing fifty or even more times in the minute, with pale ankles, cyanosis, flapping diaphragm, and a restlessness that comes of the attempt to force a new set of muscles into the service of inspiration. The cough is at first dry but afterwards gets hoarse with more copious secretion. What of it is expectorated however be cannot inspect as it is usually swallowed. On listening over the chest we hear various rattling and wheezing sounds and on percussion we either get negative results or a diffused increase of resonance. As the disease goes on unfavourably the child becomes of a livid blueness and frequently prostrates itself profusely, along with a instead of convulsions comes on a droney condition of the little patient dies.
asphyxiated. Then we find the bronchi choked, their swollen mucous membrane and puriform contents giving yellowish spots on section of the lung, and the morg of the course of the disease had not been the most rapid, he found much dulled, forming little cavities filled with mucus, pus cells, and ciliated epithelium. Habitually the air cells of the apex and edges of the upper lobes have an increased volume and almost certainly also, we have a beginning of the stage of collapse, to which I shall refer.

Bronchitis with collapse is most markedly seen in children who are vicinity, when the lung disease occurs in the course of whooping cough. The collapsed lobes looking like particles of sooty lung, sharply marked off from others that contain air or are seen emphysematous, are principally found at the extreme base and at the lower margin of the upper lobes, lie on a lower
level than the general surface of the lung and can usually be readily recog-
nized for what they are by the effect of inflation in restoring them wholly to the normal aspect. The symptoms to which this form of bronchitis gives rise of the first motion appearances may be illustrated by the following case of a child of two years old, in whom the disease supervened on whooping cough of three weeks duration. In addition to prostration and loss of flesh, the most prominent symptoms were the extreme lividity of the child and the hurried respiration. Patched dulness of the base of the right lung up to the scapula was soon detected. The rales that had reached elsewhere in the chest were accompanied at this spot by bronchial breathing, round the left side there was a similar dulness giving the resemblance of an increase of dulness in the heart area. The child refused food, had a good deal of fever, pulse 160.
Nephritis 60. The emetic gave relief for a time to certain of these symptoms; it brought away much mucous-purulent matter, the blueness of expectorating sounds was somewhat reduced. The restlessness was also less, but the vertigo that succeeded it was that of brain oppression while the pulse of respiration remained much as before. Two days later the severer symptoms having returned the emetic was repeated with little effect & the patient died after a severe paroxysm of cough. At the post mortem examination, the larger bronchi were found almost normal, the smaller particularly in the right lung had their mucous membrane red and swollen. Over the parts where dulness had been established during life, there was found considerable collapse of lobules, the right lower lobe being almost solid; and in the bluish depressed spots of collapse, there was observed numerous small yellow
points sordidly resulting from the passage of the bronchial contents into the pulmonary alveoli; other lobules particularly about the apices were emphysematosus. There was a little fibrinous exudation in the pleura.

The mechanism by which this collapse is brought about is as follows:—

A small bronchus gets its calibre reduced by the swelling of the mucous membrane and the exudation of secretion into it. The act of inspiration allows no air passing through the obstructed lobule, but drives the plug of mucus further and further towards the air cells. Expiratory efforts on the contrary, especially those of paroxysmal cough partly because they are stronger partly because they act from the smaller end of the tapering tube, do allow the escape of some of the air included in the pulmonary vesicles behind the affected bronchus. Thus the lobule by degrees gets empty. Then instead of air much purulent matter may
he sucked into the alveoli in the way that appears in the case narrated. But even in this stage infiltration of the lung may prove that the consolidation is due simply to the removal of the contained air of the lobule and not to its infiltration with any inflammatory product. The disease may not have yet passed collapse and yet the amount of local and general symptoms may be as in the case quoted, such as would readily suggest pneumonic consolidation. Collapse brought about in this manner by the thickening and plugging of the bronchi, may affect several lobules or a cluster of lobules according as several small tubes are separately affected or a single larger one gets impervious. In the diffused form of collapse the dullness on percussion is of course slighter than when many contiguous lobules get solidified and bronchial respiration and bronchophony are also lost. It is collapse due to plugging of
a bronchus of some size that comes to give the closest resemblance to pneumonitis. A further difference in the collapse of different cases is in regard of its duration; too seldom does it clear up speedily altogether; in other cases it remains with almost unaltered characters for several days and the chronic state may end in death without further ana
tomical change. But more usually other processes are set up in the collapsed lobules giving rise to lobular pneumonitis and its results.

Lobular pneumonitis is so intimately con
nected with it being to all intents a direct development of bronchitis, that in re
marking on the former, we cannot

naturally exclude the latter. However much it may resemble true lobular pneumonitis in its symptoms physical signs, it is essentially a distinct path-
ological condition, runs a different clinical course and has altogether a different significance. The lobular
Pneumonia of which I have been speaking is always a secondary disease either to these specific disorders which are accompanied by bronchitis, almost as one of their elements (in which each whooping cough, measles stand obviously first) or to bronchitis of a primary kind. So far as careful post mortem examination permits a generalization of the made, the course of the disease is invariably through collapse. I have mentioned in the case narrated how the transition began in the course of whooping cough. After a lobule has been supplied of air and after more or less of the bronchial contents have been forced by inspiratory action into the alveoli, the lobule itself passes into a state of active congestion and then of rehydration and by degrees the test of inflation gives only a partial result, and eventually no air can be forced into the lobule. Then it is found
not depressed below the general level but of increased volume, not bluish red but
frothy luing, but in the earlier stages brighter red and distinctly hyperaemic,
and afterwards of a dull brownish red,
not tough with scanty fluid on section,
but softened and yielding bloody serum
and in the same lung at a middle period
of the disease intermediate stages between
the two conditions are found. The
microscope shows in the earlier periods
of this consolidation the parenchyma
of the lung unchanged, but the alveoli
stuffed with cells and their epithelium
occasionally undergoing some fatty change.
Then these collapsed and inflamed
lobules coalesce into larger masses
which give rise to consolidation of
large portions of the lung especially
of the posterior surface. Not a
softening change goes on in these, the
centre of the lobule loses the dull
brown colour of the rest and becomes
grey of a different, the liquid part
Having all the characters of lues, or another process may set up in the occluded
bulla and a cheesy matter be formed
which under the microscope presents
various fatty elements and nuclei.
This occurs at a later stage of the
disease in unhealthy children in whom
however initial tubercle need not
necessarily exist.

It is now necessary to consider the mani-
festations during life of these various
pathological conditions. After collapse
has taken place we cannot point out
the exact spot where inflammation begins,
and not infrequently we cannot say
with certainty that is anything more
than collapse of the lung present even
though some of the symptoms seem about
to mention as indicating its development
into tuberular pneumonia are present.
First, there is observed indications of
increased volume of the lung instead of
diminution. In extensive collapse
in spite of some compensating end.
Physically the thorax suits considerably towards the sides get flattened, and a constriction is observed round the chest above the liver. When lobular pneumonia has supervened these evidences of lessened volume of the thoracic cavity get less marked. The there is extension of dulness, of the bronchial respiration, an extended area over which crepitations is heard, increased intensity of vocal fremitus and along with these increase of fever towards night. There is a probability of lobular pneumonia when collapse has been established for two or three days. When large bronchi are affected fluctuations of the physical signs rather indicate collapse than pneumonia. In consolidation, these fluctuations consist chiefly in altered pitch and amount of dulness and changes in the bronchial respiration & crepitant rales. The subsequent progress of lobular pneumonia may rather result in softening of the affected lobules, or the
formation in them of a cheesy matter which may either disseminate or get hardened and which may be readily mistaken for tubercle as Prof. Mottescar has able pointed out.

As to the prognosis of the bronchitis of children it is not to be lightly thought of, even the ordinary cataract which in an adult would never come under the doctor's care, had a great tendency to pass into a passive state in which indeed hardly any symptoms are perceived, but in which the smallest cause suffices to induce a discharge of severity.

In the unhealthy child under 18 months affected with bronchitis with evidence of collapsed lobules, we require the very careful in our prognosis. Convulsions always indicate a serious form of disease; so do crepitation of the surface intense feebleness of the pulse lividity or blueness about the eyes, fainting and other evidences of great general prostration. When there is superadded
Tubular pneumonia or an amount of collapse simulating it a further degree of gravity is impressed in the prognosis; and if a child has evidence of a softening process taking place in the course of tubular pneumonia a very unfavourable opinion must be given. Regarding the mortality in children's bronchitis it is difficult to get information that does not mislead. Rousseau states of 40 cases of bronchopneumonia being failed out of 42 that came under his care in the Hotel-Dieu, but we must remember that only the most serious cases would be sent to him. There in an advanced stage of the disease, Roblot and Barthez state that they lost all their cases of capillary bronchitis and the greater number of those attacked of bronchopneumonia in the Hospital St. Eugéne; but also state that in their other practice, they have saved nearly half of those who had capillary bronchitis and 7/3 of
of 8 cases that have come under my observation two were fatal and in these were present marked signs of lobular collapse, in which it was suspected, had supervened lobular pneumonia. The two fatal cases occurred during a concurrent whooping cough. After measles there is a greater probability of pneumonia but here especially the general health may remain broken, then we have to forebode either the deposit of true tubercular tubercle in the lung or else the persistence of a lobular exudation which may run the course of phthisis.

Concerning the therapeutic of Bronchitis affections, a routine treatment of Quill Speacuanha & Camphorated tincture of opinion is much too frequently recurred to without a due regard to the existing constitution, seat of the Bronchial
affective and other circumstances equally important. A mere name is "The Cough" and not a disease.

In that form of bronchitis, in which there is a small patch of irritation at or in the neighbourhood of the bifurcation, while the cough is incessant and the expectoration very thin, nothing produces better effects than the judicious administration of opiates such as the Irish Camphor tincture or Irish Opium Compound. A sedative ointment is bought about, the irritation is soothing down, the patient obtains relief without the aeration of the blood being at all interfered with. In all the other forms, where the smaller bronchi are affected, the exhibition of opium is not only unnecessary, but in most cases positively injurious. More especially is it so in that form called Croup.
where average sized tubes are affected with Smart fever and tight wheezing syllable sounds, no remedy has proved more beneficial in warming up the moist sounds and loosen the ex-pectoration than small and frequently repeated doses of Liquor Potassae, in conjunction with Spermum Salis or Vinum Antimonialae at occasion de-mands. Its good effects in rendering the secretion from the bronchial tubes mucous membrane less viscid and glairy, seem to be owing to its property of increasing the alkalinity of the blood and rendering its fibrin more Soluble. In numerous cases I have had occasion to test its superiority over the routine treatment of purgatives. It must be borne in mind, however, that it is only in the acute stage of the disease with tight wheezing syllable sounds that we must expect benefit from the administration of Liquor Potassae; Colonic Suppository thin page 149 should come in here
membrane that covers the tough mucous
that covered it before, as some have
held, I am not prepared to say; but
there is no doubt of the fact that
much improvement in the symptoms
results. The crepitation and rattling sounds
become less and seeming to lessen
successive dulness sometimes disappears
the child loses its pale bluish color
and soon after falls into a soothing
sleep. To produce an emetic action
springs of powdered Peru: Ipecacuanha:
may be given to a child under four
months, 10 grains when twelve months
old, a little less than an adult
child at 3 or 4 years old. With less
doses we are not only apt to fail
in producing vomiting, but often a
cathartic action is induced which
is most undesirable. The emetic may
be given every night a little before
the child's usual time for going to
sleep. In the severer cases, where
the patient is heavy and drowsy
Its breathing superficial and its mucous membrane bleb, emetics often act with difficulty and require not only to be given in large doses but to be combined with some stimulant.

The carbamate of ammonium is another valuable remedy. Like the potassee it loosens the contents of the tracheal tubes and assists the expectoration action of combined with Theacon in one or two grain doses, very diluted it produces the best results. In the earlier stages before Potassee may also be added the action of the mixture being on the muscular and secreting elements alike. While threatening asphyxia, ammonium from its stimulant action is the best additive to be made to the emetic. Regarding Thcllin I have not much to say, Theline it does not possess the expectorant properties in such a degree as are usually
attributed to it. Opium is inadmissible in the treatment of such cases, where accumulated secretion is present as the cause of the worst symptoms, or where there is a tendency towards asphyxia, a remedy which alwaysproxy and quiets respiratory acts must do positive harm.

Convalescence approaching with digestion, pretty fluid & tongue clean, tonics as Vinum Ferri. Ferri part. greatly improve the child's condition adding tone to the general system and pre-proching to some extent that passage to blood into the bronchial ramifications which often exists. Concerning the food of the child, that which is most nutritious and most digestible at the same time, is most appropriate. It requires to be given frequently in small quantities, if under a year nothing is better than the mothers milk, and if pure hurried respiration the child cannot both suck and breathe.
Some should be milked, and given with a spoon. When above a year old, cow's milk is given, alternately with the essence of meat, a kind of beef soup which is obtained byexpressing the juice of meat, &c. When I cannot speak in the favourable terms as a nutrient in this, I must weigh and consider. It seems much preferable to beef's extract of meat, the soup of which is little better than hot water flavoured with burnt sugar, requiring to be given in very much larger quantities than are usually directed, in order to have any nutrient properties whatever. Prof. Christian has examined analyses, the former and spoken very favourably of it.

As to external remedies, we have in them a valuable aid to our therapeutic agents. Counter irritation by Lanthannides & Croton oil is seldom necessary with children.
Having come on it is longer called for and its injudicious prolonged administration might be productive of more harm than good. We know that is a natural tendency in such cases to go on favourably but having carefully noted my experiences in cases described so far as I deemed judge of bronchitis of ordinary bronchitis similar so far as I could judge, some of which were treated with glycer Potaese combined with syrup; Aurantic; some with glycer and specieaez alone or combined with fruit Camphor & ace. Of some instant the administration of any medicines at all. Some bound to say that in those cases where glycer Potasce was administered, expectoration was much earlier and easier than those I the other modes of treatment, In my opinion of glycer Potasce glycer and specieaez forms the best expectorall mixture for those acute cases of bronchitis in which bronchii of the third or fourth rank
are affected with physical signs and symptoms as previously mentioned. The
influence of Grind of it serves as other
surface tends to improve the rather
harsh alkaline taste of the lye
potassa and when conjugated with
with Symp of orange peel forms a
impeccable mixture. Symp of Grind
is indissoluble owing to its acetic
acid forming with the alkaline, acetate
of potash. Every case of bronchitis
however requires to be carefully
examined, and treated according to
its individual signs and symptoms, not
and not according to any routine
system.

The management of bronchial affecting
in children demands more detailed
remarks. From what has been said as
to the tendency of these affections to
pass into more severe forms. We should
regard no degree of them as beneath
'reatment. I should even in particular
cases use special measures for predicating
against their recurrence. For example if a child had lately begun a cough with catarrh, or had lately had whooping cough, or if bronchitic affections were known in it to be particularly severe on former occasions, then it would be our duty in its ordinary life to protect it by warm clothing, other available measures. Instead of endeavouring to make it hardy by starving its chest, arms and legs, it should wear high flannel frocks, long stockings, drawers, and socks or worsted sleeves for the arms. If it cannot be carried or cannot walk, it should not be wheeled about in a perambulator, when it soon gets cold, but should rather remain indoors. The temperature of the sick room in treating such cases should range from 60° to 70° F. and should never be allowed to get situated, or little moisture in it being in many cases advisable. As to the medicinal treatment of bronchites
in children the class of anthaphatic remedies is seldom necessary. Blood letting either local or general has had its day and that day has passed. Astrinmials are only reserved for exceptional cases. In the emictic stage of a disease, recommended for adults, lair jutasee combined with quinacrine and other adjuvants is most desirable. When the bronchial mucous membranes are put under a secretory influence much rattling is heard over the chest, expectorates from a most valuable means of treatment. They cause an energetic action of the respiratory muscles and drive the contents of the larger tubes upward, while at the same time they have certainly an effect that must be called expectorant on the smaller tubes. Whether this is brought about by their irritating effect on the muscular fibres of the bronchi, or whether by their causing a fresh secretion from the mucous
Swedes meals combined with mustard as mustard, forms the most simple and perhaps the most efficacious that can be had recourse to. It may be applied three times a day or only morning and evening. Should it be hot, it should remain on for three quarters of an hour and then removed. On no account should it be allowed to remain applied all night, for getting cold and stopping down, it defeats the object for which it was intended.

No form of disease with which I am acquainted demands more patient watching, more careful and precise treatment, and more acute observation, than that I have just been attempting to describe. Not only from the frequency with which we meet it, but also from the severity it often rapidly assumes, the fact that it swells more than any other the mortality of the Registrar-general's reports.