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THE

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CEREBRAL TRANCE, OR LOSS OF CONSCIOUSNESS AND MEMORY IN INEBRIETY.

BY T. D. CROTHERS, M.D., HARTFORD, CONN.*

If we stop to consider a moment the profound degenerations caused by alcohol in all cases of inebriety, we are not surprised at any new manifestation, either psychical or physical, which appears in a clinical study of cases. Our knowledge of inebriety up to this time is very imperfect.

The very few cases which have been studied were all more or less chronic before they came under observation, with an obscure early history, often consisting of nothing more than some general statements of the drink paroxysms. Only from careful study and grouping of all the facts and causes which enter into the origin and development of inebriety can we expect to understand the many complex symptoms of this disorder. In the following pages, I propose to group the clinical histories of some cases which have fallen under my observation, which bring out prominently certain facts that

* Read before the tenth annual meeting of the American Association for the Cure of Inebriates at New York, May, 1879.

have never been mentioned before in the history of cases of inebriety. These cases present the phenomena of *cerebral automatism* or *trance*, which has been discussed by Dr. Carpenter a few years ago, in relation to somnambulism and allied topics; and more recently by Dr. Hughlings Jackson, in relation to epilepsy (see West Riding Hospital reports of 1877 and 1878); also by my friend, Dr. George L. Beard of New York, in a paper before the New York Medico-legal Society, on Cerebral Trance.

The history of the following cases are obviously more or less incomplete, because they were not studied in the earlier stages, and were not long enough under observation to understand all the conditions of causation and progress. In the clinical history of 300 cases of inebriety which I have made, these were particularly noted. There can be no question but that this special symptom was present in many of the cases, but escaped attention, or was of a transient character and concealed by more prominent symptoms, hence seemed of minor importance.

CASE I.

E—. Born in Ireland. Parents moderate drinkers; was engaged as a fireman on a North river steamer for several years after coming to this country. At the age of 21 he drank to intoxication. Had drank moderately from 16 years of age. When 24 he became a barkeeper, and soon after began a career as gambler, boxer, and friend of the prize-ring. He acted as a trainer for prize-fighters, drinking to intoxication at intervals, in the meantime using beer very freely. He prided himself on his strength, and used every means for physical development. When 30 years of age he went to San Francisco, and for the next five years was alternately a miner, speculator, gambler, and prize-fighter. Returning east, he kept a low hotel in Buffalo, then failed, and became a drummer for a liquor house. He drank all this time regularly, was more frequently intoxicated, had attacks of delirium tremens, and was either very happy or very irritable when under the influence of drink. When 38 years of age, he began to be stupid at times, and trembled excessively for a few hours before he could regain possession of himself after a paroxysm of drink; slept badly, and was anaemic.

One year after, his brother (who is a temperate man, and apparently very candid and truthful,) noticed that he seemed not to know what was going on when he had drank for some time, although he

appeared and talked in a rational way. He had no recollection of what had happened afterwards. From his own statement, which was confirmed by the observation of others, he would lose all consciousness of the present, and after a day or two awake quite as suddenly, and all the interval be a blank to him. In this interval he would transact business, and act as usual, his friends not noticing anything peculiar. On one occasion he acted as umpire at a sparring match, deciding correctly and giving satisfaction without any memory of it whatever. The last he remembered was a proposition that he should be umpire, which was followed by a glass of brandy, and a sudden oblivion of all other events of time and occasion. Going to Rochester once day, he drank hard, and lost all memory of events for three days following, when he awoke in a hotel in New York. His friends said he had a "fit," or short paroxysm of stupor and trembling, from which he recovered, and went about as usual, only a little more reticent; his eyes had a wild expression, and he frequently stopped and gazed as if wrapped up in some abstraction. He made sales and collections correctly for his employers during this time, but ate and drank very little. On another occasion (which was amply confirmed by other evidence) he went to New York to arrange for a sparring match, and after drinking, lost all recollection of any farther events. Had a paroxysm of trembling and stupor, awoke, went on with the business, acted as judge, and managed the exhibition well, and seemed in full possession of his faculties. Arranged for another match, and advised sensibly and clearly about it. He would not talk about other matters, and seemed lost when strange topics were mentioned. He affirmed that he was going to stop drinking, went to bed, and after a heavy sleep, awoke with no recollection of this time, which occupied over three days. Several other similar events took place, only not of so long duration. During the last year a marked failure of all his faculties was apparent. When he was admitted at Binghamton, he had a vague look; his eyes were largely dilated, associated with a marked abstractness of manner. He seemed in a daze, and moved about mechanically. Twenty hours after he awoke and inquired how and when he came, and said he remembered nothing from the time of going to bed, after having drank very hard, nearly three days before. He remained in the asylum only six weeks, then returned to Buffalo, and died three months later of some obscure affection of the brain. The sudden cutting off of memory and consciousness, and the automatic character of the actions after, not apparent to those about him, were the striking points of this case.

CASE II.

T. H——. Father healthy up to 30 years of age, when he became a drunkard and died soon after. Grandfather also died about the same time from inebriety contracted late in life. T. H. was a successful business man, and during the war he occupied a very responsible position, neces-

sitating many irregularities of living, from which he began to drink for temporary relief; at the age of 49 he began to use brandy regularly for its effects; later he was intoxicated, and showed a marked susceptibility to its effects. It was observed that after a few days' drinking he could resist and break away from its use for an interval of a few weeks; then the paroxysms would return and he would again be powerless to control himself. The free intervals grew shorter and the paroxysms more severe. Giving up business he attempted to stop drinking, without avail. In 1868 he was sent to Binghamton for six months, and returned home quite well, remaining so for three years. The death of his wife and grief caused him to drink again to excess, followed by an attack of delirium tremens, after which his friends noticed a change of disposition and a loss of memory, lasting for uncertain intervals. He would remain sober for a long time, and be very positive that he would always be so. Then he would become morose, irritable, and restless, and drink soon after, and could never realize that these emotions always preceded a paroxysm of drink. Two or more glasses of whiskey would make him oblivious to all memory of passing events. He would go at once to his son's store and aid him energetically, and show excellent judgment in advising him, giving but little evidence of his being under the influence of alcohol. He would insist on the most rigid rules of business and living, and act them out in his own life. His eyes were flashing and his manner was hurried and flushed, although sensible and clear. When he drank in the presence of strangers he insisted on great precision of etiquette, always frowning on any low, rough language. He drank usually strong brandies. When overcome by the effects, he showed great deliberation and forethought about his condition and where he should sleep, but when he awoke all memory of the past was gone. On one occasion, when drinking in New York, he remembered nothing beyond a certain point. In this time he witnessed an assault which ended in a murder—went before the coroner, testified clearly as to the facts, and gave no impression of his actual condition; but two days after he awoke with no recollection of this event, and could give no evidence to confirm his previous testimony. The lawyers thought it deception or an attempt to shield the prisoner, although he could have no possible motive. These periods of unconsciousness increased and followed every protracted debauch. His mind failed, and when the paroxysm was on him he drank brandy every two hours with the regularity of medicine. The periods of unconsciousness varied sometimes from two hours to three days, and were more frequent. He grows more and more irritable and full of changing emotions. His mind is more stupid and his memory is faulty on all events of every day life. To the casual observer he seems in full possession of all his senses, and even when drinking seems fully conscious of every event about him.

CASE III.

O——. Born of temperate parents, was indulged in luxurious food in early life and worked hard on the farm. At 15 had an attack of dyspepsia while at college; this trouble continued, and he suffered at intervals acutely. He began to study music, and at 20 became an organist, and worked very hard for the next four or five years, living more and more irregularly in all his habits. He used medicine of all kinds, had an attack of malaria, and finally found relief in patent bitters and compounds of whiskey, which he took very freely. From this time on he used spirits constantly, sometimes to intoxication, and always was more or less under the influence of it. At 30 years of age he was a drunkard, being intoxicated nearly every night, yet he followed his profession with assiduity. Many desperate exertions were made to relieve himself of this impulse to drink, which always ended in failure. He had an attack of alcoholic convulsions after a long debauch, and remained sober for over six months after; when he began to drink again he suddenly lost all memory of events, and many hours later awoke, finding he had gone about as usual without attracting any special attention from his friends. These periods of oblivion returned more frequently and seemed to follow every excess of drink. He drank less, but with no change. On one occasion he was to play at a concert; on the way to the hall he drank, and lost all memory of present events. To his friends he appeared dazed, although answering all questions, and playing with skill and a kind of wildness that was apparent only to his intimate friends. On another occasion, while playing an interlude at a funeral, he whispered to a friend to get him some whiskey or he would have to play "Yankee Doodle"—the impulse was so strong that he showed agony in restraining himself. The whiskey was procured and he went on more steadily, but at the close of the piece he dashed off in a most fantastic musical impromptu, after which he went home staggering and talking in a childish tone; was put to bed, and awoke next morning with no memory whatever of what had passed. At another time he lost all memory while on his way to church Sunday morning after he had drank quite freely, and on Tuesday afternoon, two days later, awoke in a city over a hundred miles away, and found he had been negotiating for the purchase of instruments with an organ manufactory. He had no memory or the least impression of anything which had taken place in the meantime. To his friends he appeared dull and abstract, sometimes failing to recognize them, and rarely ever speaking to any one unless on business. At a concert one night he created an immense sensation by his rapidly changing music, from grave to the most airy, light fantastic sounds. In habits he was variable, and his mind was visionary and changeable—full of whims, etc. At present this case has made little or no improvement, each paroxysm of drink being attended with this strange condition of automatic action.

CASE IV.

A——, merchant in active business, whose parents had both been temperate and healthy. He grew up on the sugar plantation of his uncle, and drank wine freely at the table after dinner. When 18 years old the war broke out, and he entered the southern army as a soldier. A few months later he was injured by a shell, and remained unconscious for many hours. After this he suffered severely from malaria, and was given large doses of quinine, which resulted in permanent deafness. He was discharged and went back to the plantation, and began to drink brandy after eating, regularly. After the war closed he went to New Orleans, and began business in a commission house. After an attack of yellow fever he drank steadily, with great relief from all the neuralgia and other entailments following the fever. He was easily depressed from slight causes, had a variable appetite, smoked incessantly, and lived with great irregularity. At times he was able to restrain his desire for alcohol, then all at once an impulse to drink would come over him that was irresistible. At 28 he noticed that memory of plans and events would suddenly leave him when he drank a certain amount, and only return after a longer or shorter interval. This increased, and after a time he found that he went about transacting business which he could not remember after. As an illustration: After a severe attack of drinking, he was at his desk making out a bill, when a sudden blank came over him. Two days later he awoke in his room, and found that he had gone on with business as usual, making many sales and manifesting good judgment. To his friends he was under the influence of drink, but not in any way peculiar. At another time he displayed a great deal of energy and tact in completing the sale of some cotton, and bought large quantities of rice with a reckless spirit that alarmed his friends, but which proved a good venture after. He had no consciousness of this event, or the slightest recollection of what he had done. His mind seemed to fail, and at times he was in a half-conscious condition and seemed not to realize where he was. He was a careful man and kept a daily record of events, but these periods were blanks which he never could recall. He remained in the asylum for six months, and recovered, and is now a planter in Georgia, in good health, not having relapsed for three years. In this case nothing peculiar or different from the others appeared, except a degree of mental strength that seemed out of proportion to his actual state when suffering in this way.

CASE V.

O. A—— was a captain in the army and a lawyer by profession. His early history was not ascertained. While leading his battery in an engagement he was wounded in the head by a fragment of a shell. He also suffered from a severe concussion from which he was made unconscious, which was followed by acute delirium, for nearly a month.

Recovering, he became a paroxysmal drunkard. Five years later he reformed and continued sober for two years. Then from grief and trouble drank again, and for a time was unconscious and lost memory of all events. A few months later drank again, and the same oblivion of memory of time and events followed, with no appearance of his condition to his friends. From this time on his wife made a careful study of these events, noting them with great accuracy. One of the most remarkable was as follows: While preparing a case for trial (in which he was deeply engaged, and had lain awake for several nights in nervous anticipation), he drank a few glasses of whiskey before going into the court-room, and became oblivious. Over thirty hours after he awoke with no recollection of what had happened. During this time he had conducted the trial with clearness, charged the jury, and made a good argument before the judge, then went home and wrote out a long argument for an appeal, went to sleep, and all this time was a blank. He not unfrequently went about for two days, to his friends perfectly conscious, although under the influence of liquor, and yet perfectly oblivious to everything. These blanks came and went without any premonition and suddenly. Sometimes he would appear dull and stupid, at other times very lively and extremely energetic. He would either seem to have a great purpose before him, or be without any object, but never appear devoid of the fullest consciousness of all passing events and circumstances. These occasions would come from different quantities of alcohol; sometimes a single glass, then a season of hard drinking would bring them on. He is very much broken in health; is nervous and anaemic; has distinct cravings for alcohol, which he cannot resist unless under peculiar circumstances. For over a year he has been sober, but walks and talks much during sleep.

CASE VI.

A. H—— is an editor, whose mother was an epileptic, and who began to drink from irregularities in the army. He drinks at distinct intervals, particularly if he is depressed, then recovers, and goes about clear and temperate. Periods of blanks in memory come on quite frequently now, in which he will go about able to do some business, although imperfectly, and have no recollection after. He can only write short paragraphs while in this condition; long articles are broken and full of changes. He will become oblivious suddenly at some unexpected moment, and from this time go on for hours, until he can have a sleep, before he recovers. I noted this condition very carefully some months ago. He had drank for four days steadily, then all at once put on this abstract air, and had a vague, pointless way of talking and acting. He would not hold any connected conversation on any topic but his everyday business; here his thoughts were clear and rational. He listened and took notes in a vague, uncertain way, and wrote in a mechanical

form and style. After, he could not recall the slightest hint of these events. This was like the others in all points, although the condition of unconsciousness was manifest in vagueness and uncertainty that could not be mistaken.

Another case has lately come under my care, whose history was made out by a physician, and is undoubtedly correct. He inherited a defective brain and nerve power, and drank constantly. At 20 he was a confirmed opium-eater, at 30 reformed, and at 35 began again to use stimulants very freely. His friends noticed that he was absent-minded at times, and not like himself. These periods were found to be blanks of memory, which he could not recall. On many occasions he went away, made business arrangements, and had no recollection of it after. It was noticed that he only performed or carried out what had been previously determined. As, for instance, his partner with him arranged to purchase a certain class of goods in the future. Two days after, while drinking and oblivious in memory, he went away and made the purchase, returned, and did not realize or know about it until informed by some friends. This man will play on the piano for hours, and appear sensible of the surroundings, and yet have no memory of it. An intimate friend of a noted Senator, now dead, mentioned a similar instance which occurred during the later years of the Senator's life, where, in making a tour of his district extending over three or four weeks, in which he spoke from four to six times a week, drinking nearly all the time, the last two weeks would be all oblivion to him, no recollection remaining, although he seemed as usual, made the same speeches, and appeared in no way different, except a little heavy and abstract. An eminent Baptist clergyman informed me that he had noted many instances of persons who, while the rite of baptism was being performed, were oblivious to all that was said and done. This he ascribed to nervous fear, but it was noted by an automatic condition of mind and body very similar to some of the cases mentioned above. In a recent article by Dr. C. A. Hughes of St. Louis, on "Cerebral automatism arising from an epileptic origin," mention is made of cases having similar conditions, with

observations that bear directly on this subject, from which I quote: "I was once consulted by an individual who, while standing at the desk engaged in writing a note, was taken with an epileptic attack, but nevertheless he affixed his signature and the date to the note accurately, without any memory after a certain part of the letter. He considered in his mind what he should say, then all was a blank; twenty minutes after he read what he had written, which was correct. Here the mind had gone on automatically. Many paralytic cases have distinct periods of unconsciousness, which are only to be discovered by a careful observation and inquiry.

I had another case still more significant. A young lady who had epileptic fits at the menstrual period would, after the paroxysm, remain unconscious for two or more days, and during this time would do the most elaborate embroidery, and paint different things, yet have no recollection after. The only thing peculiar was her determined aversion to see any company, otherwise she seemed in full possession of all her faculties."

Dr. Hammond has mentioned a case of a man who for eight days continued in an epileptic trance, and went about automatically, doing business, and calling on his friends with absolutely no recollection of it after. From his appearance and conversation, nothing strange was noted. Dr. Carpenter relates the following incident, to show that the mind in health may be so absorbed as to lose all memory of the present, or consciousness of the surroundings. "John Stewart Mill would very often be so absorbed in some topic as to be utterly oblivious of anything which happened in his walk from his office to his home, a distance of two miles. On one occasion, an accident occurred, and he was delayed by the crowd for nearly an hour, yet he never realized anything about it, or had any recollection of what had taken place. The walking and surroundings of the man was not recognized by the higher cerebral centers. As in somnambulism, the brain and higher cerebral centers act automatically, and the memory fails to register the events."

An instance is recorded by Dr. Forbes Winslow, of a somnambulist, who, while walking about, his night-dress caught fire, and with excellent judgment and coolness he threw himself on the bed and extinguished the flames, resumed his walk, and next morning had no memory of the event, and wondered greatly how his dress had become so charred. This was a clear case of cerebral automatism or trance, where the knowledge of right and wrong seemed present, although consciousness was obliterated. Here the higher cerebral centers seem to follow the lead of the lower. The most common illustration of this condition are the blanks of memory in epileptics. Here the patient will stop short, stare fixedly for a few moments, then recover and go on with no memory of this blank. In the later stages this sudden blank will be followed by confusion and apathy for hours or days, and when the consciousness returns, little or no memory of these periods will remain, and during this time the patient may do business, and act rationally, so as to excite no suspicion of his real condition. In other cases nothing unusual will be noticed, unless the patient is provoked, when he will manifest a decided mental disturbance.

Dr. Thorne of London relates a case of an old army-officer in the quartermaster's department, who for days after a *grand mal*, would go on with his work with great exactness, and give no indications of his condition, other than heaviness and a vacant look, but if opposed, he would be wildly dangerous and insane; after an interval of some ten days he would recover his senses, and have no recollection of anything that had passed.

Dr. J. Hughlings Jackson, in a long paper "on temporary mental disorders after epileptic paroxysms," in the West Riding Reports for 1875, says, "I think it probable that there is a transitory epileptic paroxysm in every case of mental automatism occurring in epileptics before their mental automatism sets in. During this paroxysm an internal discharge, too slight to cause obvious external effects, but strong enough to put out of use for a time more or less of the highest nerve centers. In other words, loss of control of the lower cen-

ters permits the automatic action. Often, after slight epileptic seizures, automatic actions may be developed, as, for example, playing a well practiced tune, the playing may go on while the person is more or less unconscious."

Dr. Jackson mentions a case of a gentleman who frequently lost all memory of events for hours, and did not seem peculiar to his friends, except by wanting to pay twice for anything he had bought, having forgot the first payment, and showing a degree of forgetfulness that was strange. The form of automatism depends on the disposition of the man. He might have a train of murderous thoughts which he would proceed to execute. Or he might have conceived the most absurd irrational theories, which would have involved him in crime, and for which he would have been punished, and of which he was thoroughly unconscious at the time. Here all the materials for crime are abundant, and the patient would be held responsible, although in no way conscious of his actions. A sudden paralysis of the cerebral functions, or, as Dr. Hughlings Jackson puts it, "conditions of hyperæmia, vasomotor paralysis from reflex action, and from lesions of the controlling centers." Lunatics who have recovered after a long attack of insanity very often have little or no recollection of the events which have transpired during this time, although they have appeared to have lucid intervals, and acted and talked quite rationally.

There are certain conditions of the brain in which the action of the higher centers may be more or less automatic, and go on without even the intervention of consciousness. A constant repetition of certain mental actions results in it becoming registered organically in the brain centers, and after a time these thoughts, which were first performed consciously by the individual, ultimately become reflex and respond to the recognized stimulus without consciousness, independent of any effort or intervention of former stimulus. My friend, Dr. Beard of New York, has discussed this subject so clearly in a paper entitled, "Scientific Basis of Delusions," read before the New York Medico-Legal Society, that I take pleasure in quoting several passages which clearly explain many of

these phenomena and similar conditions under the name of cerebral trance.

"The theory of the nature of this trance is that it is a functional disease of the nervous system, in which the cerebral activity is concentrated in some limited region of the brain, with suspension of the activity of the rest of the brain, and consequent loss of volition. Like other functional nervous diseases it may be induced either physically or psychically; that is by influences that act on the nervous system, or on the mind; more frequently the latter, sometimes both combined. . . .

"Among the physical causes are injuries to the brain, the exhaustion of protracted disease, or of starvation, or of over exertion, anæsthetics, alcohol, and many drugs, and certain cerebral diseases. . . . In sleep walking the cerebral activity, which during ordinary sleep is more or less lowered throughout the brain, is suddenly concentrated in some limited region; the subject is then under dominion of this restricted region of the brain; the activity of the rest of the brain being suspended, he runs and walks about like an automaton. The popular term, absent-minded, as applied to those who become so absorbed in thought as to be unconscious as to what is going on about them, expresses with partial correctness the real state of the brain during an attack of this kind. In nearly all conditions of trance the subject, on coming out of a trance, has no recollection of his experience in it, but in some cases, on again entering into the trance he resumes the experience of his previous attack where he left off, as though no active life had intervened."

Numerous instances are given by Dr. Beard to illustrate this double consciousness or condition of trance, which are more or less independent of each other. The fact is made prominent that the activity of the brain is not always sufficient to impress all the faculties so that memory will register the events; hence no recollection of those events which take place at this time will follow. The practical explication of these facts will be of the utmost importance medico-legally. In three murder trials occurring in Connecticut during a few

years past, the defense indicated continued drunkenness and general abstractness of manner for a long time before the tragedy, and the prisoner stoutly disclaimed all knowledge of memory of the events. These were undoubtedly cases of suspended memory and cerebral trance, and as such the measure of responsibility would have been greatly lessened.

Dr. Carpenter, in his discussion of automatic cerebration, remarks as follows: "I have noticed some cases of drunkenness which were clearly traced to inherited neurosis, where a suspension of memory or consciousness was noted, which came on unexpectedly, and then the patient was a victim to morbid impulses which he never realized, or had any recollection after."

There can be no doubt (in my opinion) that in many cases where crime is committed this condition can be traced. I hope to make further studies in this direction at an early day. There are two theories which may explain many of these conditions. One that is a semi-epileptic condition which rarely goes on to convulsions, and if it does the prominence of the later symptoms overshadow all the earlier ones, so that they are forgotten. The other, that it is some local paralysis or cerebral trance of certain brain centers, coming both from reflex and direct irritant action of alcohol. In all cases, a condition of cerebral automatism and trance is present. This I believe is the first clinical grouping of these cases, and an attempt to show that such symptoms may be present in many cases of inebriety not now observed, also to explain phenomena that would otherwise be very obscure. In a recapitulation the following may be mentioned:

1st. Loss of memory and consciousness may come on in inebriety, and the patient give little or no evidence of his actual condition.

2d. This symptom is common to epilepsy, and other conditions of the brain, arising from various causes not well understood.

3d. It is practically of the greatest moment to distinguish the presence of this state in instances of contested cases where crime or important events have followed.

4th. All cases of crime, with a history of inebriety, should be carefully studied for evidence of this condition, which, if present, will open a new field of medico-legal study of great practical importance.

TOBACCO ON THE TEETH.

Dr. Hepburn recently read a paper on the effects of tobacco, which presents some views not generally understood, and worthy of some consideration.

The action of nicotine is thought to be of much benefit to the teeth. The alkalinity of the smoke must necessarily neutralize any acid secretion which may be present in the mouth, and the antiseptic property of the nicotine tends to arrest putrefactive changes in various cavities. The dark deposit on the teeth of some habitual smokers, he believes, is largely composed of the carbon with which the tobacco smoke is impregnated. This deposit takes place in some localities, in which caries are apt to arise. The stain will penetrate through the minutest cracks, unless careful attention be given to cleanliness.

He believes that the painless necrosis of carious teeth in smokers is due to this cause.

It is a curious fact that many of these statements have been used to defend the use of alcohol.

Some years ago an article appeared in the London Lancet, urging that alcohol, of all other substances, was best to preserve the teeth, and reasoning that with good teeth digestion would be perfect, and health would always follow. These statements are given as indicating that tobacco has its scientific defenders as well as alcohol.

In one hundred and forty-five cases of epilepsy tabulated in France, an irresistible craving for alcohol was present as a prominent symptom in ninety-five of the cases.

INSANE DRUNKARDS—THEIR MEDICO-LEGAL RELATIONS.*

BY T. W. FISHER, M.D. (HARV.), OF BOSTON, MASS.

The principle that all intoxicated persons are responsible for their acts, stands directly in the way of any restraint which might otherwise be exercised to prevent deeds of violence. Great leniency is and always has been shown towards the act of getting drunk, in which, it seems to me, lies all the guilt which can fairly be imputed to the drunkard. When intoxicated his acts are in a great measure automatic. . . . That the English law is still applied in all its severity in this country the following will show (Boston Medical and Surgical Journal, Nov. 21, 1878). The recent trial of Kennedy, the wife-murderer, in Chicago, furnishes a novel medico-legal development. The plea of insanity was entered by the defense. The medical experts, Drs. Lyman and Brower, swore that they believed the man insane, and that in all likelihood he was insane at the time of the homicide. It was in evidence that the defendant had frequently taken spirits of camphor in considerable quantity, to drive away, as he said, an evil spirit that dogged him. The judge charged that if the defendant was insane at the time of the homicide, he was to be acquitted, unless the insanity was due to the use of alcohol, in which case the verdict must be murder in the first degree. He did not say drunkenness, which seems not to have been proved, but insanity. The jury were also to state whether the evidence had established the present insanity of the prisoner. The verdict was "murder in the first degree;" that the punishment should be hanging, and that the defend-

* Extract from a paper read before the Massachusetts Medical Society on "Insane Drunkards."

ant at the time of trial was insane. As a sequel, the culprit, the next night after his trial, committed suicide in jail "by cutting his throat with a razor he had found in the corridor."

Dr. Ray says (Medical Jurisprudence of Insanity, p. 580), the decision of Mr. Justice Story in the case of Commonwealth *vs.* Drew has settled the law concerning homicides by insane drunkards in this country. Judge Story decided that the prisoner, having committed the homicide while suffering from delirium tremens, should be exonerated on the ground that he had drunk nothing during the attack; and that insanity, whose remote cause, even as little remote as three days, was habitual drunkenness, was a sufficient excuse for crime. If, however, the prisoner had been in the condition of mania a potu, and had slept more or less, and continued to drink during the attack, this excuse would not avail, although he might have been equally insane and irresponsible. It is possible for a person to be insane and intoxicated at the same time, but this state the law does not seem to take into account. In my own experience, courts and juries in New England generally find some way to exempt obviously insane drunkards from the full penalty of the law in capital cases, but not by yielding the principle of responsibility. Sometimes the prisoner is allowed to plead guilty to murder in the second degree, as in the following case: Peter Mohony of South Boston had been struck on the head in a drunken quarrel, and lay in wait a short time after to attack his assailant, as is supposed, but killed by mistake a person entirely unknown to him. I was requested to examine him, with the late Dr. Tyler, by the Attorney-General. I learned that he had received, twenty-seven years previously, a severe blow on the head from a falling plank, there being at the time of examination a decided enlargement on the left side at the point struck. In the army he was thrown from his horse and stunned. He had been for years very sensitive to the effects of heat. He had a purulent discharge from the left ear, with pain extending up towards the old wound, with deafness and subjective noises. All the head symptoms were aggravated by liquor, which he took in large quantities periodically.

In the intervals he was sober, industrious, and of a peaceable disposition; but when drunk, violent and dangerous. Had been sent to Deer Island for dangerous assaults, and had often been frenzied by liquor, in which state he had sometimes delusions of fighting with imaginary enemies. His family left him at such times, and secreted themselves till the attack had passed. He usually forgot what had taken place, and inquired particularly as to his conduct. Had expressed the opinion that he ought to be shut up, lest he should do serious injury to those around him. It was our opinion, submitted in writing, that at the time of the homicide he was in a semi-conscious, delirious, and irresponsible state of mind, due to the effect of liquor on a diseased brain, and that he had no recollection of events immediately preceding or for some time after the homicide. He was allowed to plead guilty of murder in the second degree.

The mental state of insane drunkards is not always carefully investigated as I think it should be, and it is not unlikely that they occasionally suffer the extreme penalty of the law for acts as automatic as those of epileptic fury. . . . Most of the recognized cases of dipsomania are of fair social standing, and have friends interested in them and aware of their personal peculiarities and family history. The few cases occurring soon come to be well-known to the authorities, as they constantly reappear on the scene, and produce by repetition the numerical effect of a stage army. I will mention briefly a single case of this class. Mr. A., now forty-eight years of age, is of good physical development and fair health. His mother was melancholy and suicidal. He has always been an efficient salesman, commanding a good salary when sober. Of his early drinking habits I am uninformed, but at the age of twenty-seven he was admitted to the Boston Lunatic Hospital for an attack of drinking. Since 1858, he has been committed to the insane asylum seventeen times, and to Deer Island four times, an average of once a year. The longest period of detention was two hundred and twenty-five days, the shortest, thirteen; the average, eighty-three. The necessity of supporting a family

required his discharge after short terms of seclusion. The longest interval was four years, during which time he was not arrested. This statement does not represent the exact number or duration of his attacks, but is an approximation. Each attack was accompanied by an exaltation of feeling, and a tendency to extravagant statements amounting to transient delusion. There were at times apparently insane acts, such as preaching at the corners of the streets. In the early part of his career, he would usually hire a horse and buggy, though he never drove at other times, and drive out to the Lunatic Hospital to make a friendly call. Sometimes he could be persuaded to remain, at others, he would go away only to be regularly committed the next day. All his symptoms, mental and nervous, disappeared after a day or two in the hospital. The only evidence of excitement on several occasions was a loud crowing in the middle of the night. At one admission he was found to be in a condition of extreme depression. He had not been drinking, and he had drank nothing for six months previously. He nearly lost his life this time from the exhaustion of melancholia, with carbuncle and *fistula in ano.*

I have observed frequently that an inherited tendency to melancholia may lead to dipsomania. The case of a prominent merchant of Boston who committed suicide was a curious combination of drink-craving and melancholy. Of two brothers, both in the same hospital, one was melancholy, the other a dipsomaniac, and both voluntarily secluded. The same causes which in one patient induce melancholia, in another induce an attack of drinking. In fact, cerebral exhaustion, however caused, more often leads to irresistible drink-craving than is generally supposed; and in some cases the patient's statements of his own mental and nervous condition are above suspicion. It has always been easier to see dipsomania when it occurs in persons of intelligence and refinement, especially in women of good character, than in the opposite class and sex. Few dipsomaniacs have the moral strength to remain voluntarily in an asylum, though many consent to go there. They are often, as Dr. Clouston

calls them, "facile, sensual, irresolute liars, devoid of the rudiments of conscience, self-control, or true affection." I might give many detailed accounts of individuals of this class, but forbear It has always been difficult to get an insane drunkard safely and legally committed to a hospital for the insane against his will. These patients seldom have delirium tremens, and in fact are so skillful as never to be seen drunk in public. They cannot be sentenced as common drunkards, since they maintain an appearance of sobriety which deceives strangers, while their immediate friends and relatives are so well aware of the morbid nature of the habit that they are unwilling or afraid to testify against them. It is a common threat of the insane drunkard to his wife, "If you have me shut up I will kill you." Besides a month at Deer Island is not worth the trouble and risk of the attempt. If able to pay, and willing to go, such a patient might be kept for a short time in the Washingtonian Home, or some similar establishment on the voluntary plan. But this kind of temporary detention only restores and confirms the confirmed inebriate for renewed indulgence.

No doubt some cases are reformed by the Christian influences of these establishments, but few dipsomaniacs are cured by moral means. The disease has a deep root in the nervous constitution of the individual which cannot be eradicated in this way. That this difficulty in disposing of insane drunkards exists elsewhere is shown in the biography of a Frenchman of this class, in a recent number of the *Archives Generales.* This person was repeatedly committed for drunkenness, larceny, acts of violence, desertion, vagabondage, and insanity, to many different public institutions, including asylums for the insane. His general condition remaining the same, he was dealt with according to the particular kind of misconduct manifested at the time of his arrest.

Nations differ in their methods of dealing with the confirmed inebriate. The English and American theory of complete responsibility for criminal acts, which strange to say, does not extend to their civil acts, has never prevailed on

the continent except in France, and that country has recently taken civil rights from the drunkard. It seems rather inconsistent to hold, as we do, that a drunkard may commit a crime, but cannot make a contract; and also, that under our laws a drunkard may be put under guardianship as a spendthrift, and his estate taken from him, when he cannot be restrained for his own good or the safety of his family. His property is held of more consequence than his own life, or the lives of his family. Great as is the task of getting the insane drunkard committed to an insane hospital, the difficulty in keeping him is still greater. This arises from the transient character of the prominent symptoms, which are only brought out under the paralyzing influence of alcohol. As one writer has said, the dipsomaniac is only sane while in the hospital. Although in his extremity, under arrest for disturbance of the peace, and perhaps suffering mentally and physically from the immediate effects of drink, he acquiesces in his commitment. In a surprisingly short time he is on his feet under perfect control, looking around for a lawyer to help him swear that his confused recollection of the circumstances of his commitment is the true version. No hospital can hold him a moment against his legal protest, and he is discharged as a matter of course. Some superintendents having an active sympathy for such unfortunates, and an appreciation of their mental soundness, will make every effort to keep them long enough to effect some improvement. There is no doubt that with proper management and prolonged detention, a few of these patients may recover. Others, either ignoring the existence of insanity in the particular case, or annoyed at the trouble dipsomaniacs always give, advise or permit their immediate discharge. This want of uniformity in theory and practice reacts unfavorably on the committing magistrate, who naturally feels the uselessness of committing patients whose speedy discharge is probable, and is led to doubt the presence of mental disease in all cases of insanity, of whatever form, if complicated with drinking. A single adverse decision is enough to deter physicians from again certifying in a similar case.

The final result is that certain families are at once in danger of personal violence, and perhaps of suits "on speculation," or in revenge for past commitments, in which the certifying physicians are to be included. An insane drunkard, with homicidal propensities, is more independent of legal restraint than any other person in the community. The attacks of drinking in true dipsomania have many of the features of a transient mania. The term recurrent mania from drink would apply in most cases, and commitment to an asylum would be warranted by this condition independently of any theory of its causation. The same trouble in retaining the patient would, however, exist unless some murderous assault had been committed, in which case the fear of a criminal prosecution might have a restraining effect. In the absence of actual homicidal violence, no considerations of the patient's welfare, of the security of his property, or the safety of his family if they attempted to thwart his insane purposes, would be likely to prevail. The public is shocked at each new victim of insane violence, and shudders at the unending procession of suicides, but is strangely insensible to the existence of *potential* homicides and suicides who meet us at every turn. We store our explosives in remote and secure places under the strict ban of the law, but cherish in our midst the insane drunkard sure to become explosive at every debauch. This tendency to become homicidal is often well known to the drunkard's family, to the police, and to the bar-keeper who sells the dangerous excitant; and yet nothing can be done to prevent, but everything to punish the inevitable and foreseen act of violence. In a recent case it required a ripening process of three months before the patient could be put under restraint. In the meantime he made several dangerous assaults, and twice broke into his brother's house. He always had a pistol conveniently at hand, and was constantly threatening to kill or prosecute all who interfered with his right to do as he pleased. He was persuaded to enter the Washingtonian Home, and remained a short time, going and coming at will. He was sent to Deer Island on one occasion, when there appeared to be a slight delirium, but he was released in two or

three days apparently rational, and threatening to appeal to the law, which really was on his side. He found some one willing to marry him in a comparatively calm interval, but soon left home after assaulting his wife, and was arrested in New York for assault and sent to Boston. During all this time he never appeared to be drunk in the ordinary sense, but was in a state of deceptive calm or suppressed excitement, without delusion, and able to assume a plausible manner at any time. The police and the parties assaulted would not complain of him because they believed him insane—and perhaps they feared his threatened revenge at the end of the brief term of commitment he might have been sentenced to. His family were in the same fear, and did not want him punished but restrained for a long period. He finally went to the Danvers Hospital by his own consent, and remained several months. It ought to be possible, in view of this and similar cases, to devise some means of protecting the families of insane drunkards. City and State commissions have investigated the subject, and agree with the universal opinion of those best informed, that long periods of seclusion are absolutely necessary. . . . . Insane drunkards would be undesirable inmates of our insane hospitals, if there was no legal difficulty in retaining them. They need little medical treatment, but require prolonged restraint, varied employments, and moral discipline. It will, I think, prove more practicable to include dipsomaniacs with habitual drunkards, not clearly coming under that head, than to insist on treating the former in hospitals for the insane as Dr. Bucknill advises.

The State should establish an inebriate asylum having ample facilities for remunerative employment, to which, after a most thorough judicial investigation, confirmed, habitual drunkards, sane or insane, might be committed for terms of not less than one, nor more than three years. If any should prove insane enough to require asylum treatment, they could be easily transferred for that purpose. I am sure a definite period of detention would suit dipsomaniacs better than the uncertain term of the inmates of insane asylums. One of

this class, who had been three times in a hospital, requested a definite sentence to the House of Correction for a crime committed during his last attack. The report of the State Board of Health for 1879 contains the following statement of opinion: "That the present treatment of drunkenness by short sentences is in the highest degree unsatisfactory is generally admitted; that many reforms or cures are possible, has been amply demonstrated, at least in selected cases, by our best inebriate asylums; and it seems highly desirable that in proper circumstances the laws should authorize committals of drunkards for treatment in the same way as the insane. A more severe public judgment of drunkenness in recent times has undoubtedly tended to very much decrease its prevalence."

Spontaneous combustion of inebriates, according to Dr. Ogston, is not uncommon He mentions having seen alcohol present in the tissue to such an extent as to burst into a flame when a match was applied. The phenomena attending the so-called spontaneous combustion of drunkards prove how thoroughly the body may become saturated with alcohol or its immediate products. It may be remarked of these cases that the subjects of them all were persons addicted to the abuse of spirituous liquors, that they were generally corpulent, and that the combustion of their bodies was nearly total, while the adjacent objects were slightly or not at all injured. The examples of this curious mode of death are too numerous and too well authenticated to prevent any doubt as to their reality; but they were, in fact, examples of increased combustibleness of the human body, due to its saturation by alcohol.—Dr. Battles, *Ohio Medical Recorder.*

The theory that vice and sin was the cause of inebriety has done more to precipitate the drunkard into incurable conditions, and present obstacles to his recovery, than all other theories combined. It has prevented any inquiry into the true condition of inebriates, and ignored all physical causes.

CHRONIC TOBACCO INEBRIETY.

BY DR. A. B. ARNOLD OF BALTIMORE, M.D., PROF. OF CLINICAL DISEASES OF THE NERVOUS SYSTEM.

There exists considerable diversity of opinion respecting the effects of the habitual use of tobacco. Exact observations upon this point are still wanting. Those who deprecate even the most moderate indulgence in the weed seem to be influenced by the fact that nicotine is one of the most virulent of vegetable poisons ; while others doubt the occurrence of a morbid condition resulting from this practice, because it is not readily recognizable in ordinary cases of smoking, chewing, and snuffing. Although it must be admitted that in the great majority of instances these modes of using tobacco are but seldom followed by serious impairment of health, it is, on the other hand, undeniable that certain well marked symptoms arise from the continued consumption of small doses, that deserve to be designated as cases of chronic tobacco poisoning. A brief account of the results obtained by poisoning animals with nicotine, and by watching persons under the influence of dangerous doses of tobacco, will show more definitely the morbid tendencies of this noxious agent. At first there is a short stage of excitement, which is soon succeeded by a deep depression of the nervous system, characterized sometimes by chronic and tonic spasms. This is followed by extreme relaxation of the voluntary muscles, abolition of reflex action and of electric excitability, stupor, insensibility, contraction, and finally dilatation of the pupils. The respiration is shallow, and a thoracic constriction is felt. Failure of the heart's action, preceded by a short period of cardiac excitement supervenes, and also griping or crampy

pain of the bowels, frequently followed by bloody stools. These symptoms indicate serious implication of the centers of respiration and circulation, leading to paralysis, the immediate cause of death being asphyxia. The novice, when indulging in his first cigar, suffers from the effects of nicotine in a moderate degree, but in no less decided a manner; indeed, he closely presents the picture of seasickness. Nausea, giddiness, and a sensation of tightness across the chest which soon amounts to dyspnœa, and a kind of pain resembling angina pectoris are the first symptoms. Then ensue extreme pallor of the face, a cold sweat on the forehead, flickering before the eyes, singing in the ears, slight tremors, headache, colicky pains, labored respiration, a small, rapid, irregular pulse, somnolence, faintness and a feeling of general misery, or of impending dissolution. A copious flow of saliva, vomiting, and frequently free evacuations from the bowels soon give relief. The tolerance of repeated and increasing quantities of tobacco which is rapidly established is an interesting phenomenon, and explains the apparent immunity from its effects. Traube experimented with an injection containing one twenty-fourth of a drop of nicotine, and four days afterwards it required a whole drop to produce effects similar to those of the first dose. One of the most marked symptoms in these experiments was increased muscular excitability, which on larger doses developed tetanic contraction and muscular tremor. It is impossible to study the effects of nicotine upon the sensorium in animals, but there cannot be a doubt that tobacco exerts a direct influence upon the hemispheres. This is evidenced by the calming or soothing effects which small quantities produce upon the mind; and the occurrence of a species of inebriety that may terminate in stupor and insensibility when excessive quantities are used. The vertigo and want of coördination of the voluntary muscles must be referred to disturbance of the central ganglia. The implication of the spinal cord is shown by the tremor and tonic spasms; and the interference with the respiration and circulation proceed from the abnormal condition of the medulla oblongata. Claude Bernard has

shown that the motor nerves completely lose their electric excitability when large doses of nicotine are given.

According to Vulpian and Jullens, the striped muscles do not appear to be affected, for when their nerves were cut during the stage of paralysis from nicotine, it was still possible to evoke muscular contraction by mechanical stimulants. The unstriped muscles evince even a greater susceptibility to the influence of tobacco than the striped. It is highly probable that the asthmatic symptoms result from spasmodic constriction of the small bronchial tubes; and it is quite certain that the vomiting, the enteralgia, the augmental peristaltic action of the bowels, and occasionally the frequent micturition and uterine colic are due to an increased arterial tension, which has been experimentally demonstrated.

It thus appears that the sympathetic ganglia are likewise influenced by the use of tobacco. Robin ascribes the fatal result from nicotine poisoning to the inability of the blood to absorb oxygen, but this can hardly be the correct explanation, for artificial respiration sometimes succeeds in averting death; and furthermore the convulsions and the paralytic condition of the respiratory muscles permit a sufficient interchange of gases. The action of the heart is eminently influenced by the toxic effect of nicotine, and has for this reason attracted much attention. In very small doses it causes a remarkable slowness of the cardiac impulse, which may cease altogether during the diastole. After a short time, when large and sometimes even small doses are used, an increase in the force and frequency of cardiac contractions takes place. This is succeeded by a gradual weakness, retardation and irregularity of the pulsations until they cease entirely; but the heart continues to beat for five or six minutes after the respiration has stopped. Recent pathological experiments have led to the conclusion that the heart symptoms in nicotine poisoning are due to the disturbed inhibitory function of the vagus nerve, and an abnormal state of the musculo-motor ganglia of the heart. Some of the secretions are undoubtedly augmented under the influence of nicotine. This is observable in the increased flow of saliva,

the more copious discharge of bronchial mucous, and the freer transpiration from the skin. It is next of importance to consider whether the symptoms characteristic of acute nicotine poisoning are manifested, though in a far more moderate degree, in the habitual use of tobacco in any of its forms, or from the inhalation of the dust, to which workmen in tobacco establishments are exposed. From all accounts it appears that smoking is the readiest way of absorbing the largest amount of nicotine, especially if the smoke be inhaled, as is the fashion among those who use cigarettes. Chewing is not a very obnoxious mode of indulging in tobacco, for the nicotine is readily dissolved in the saliva, and thus the greater part of it is thrown out with the spittle. According to general experience, it seems that the habit of snuffing is the least injurious mode of using tobacco. The continued irritation of the nasal mucous membrane appears to cause changes in its structure which, in the course of time, prevents the entrance of nicotine into the system. Nor are there any reliable observations which would confirm the belief in the resulting noxious effects of tobacco inhalation in the preparation of its various fabrics. There certainly exists a unanimity of opinion among observers, that the prolonged and large consumption of tobacco by smoking gives rise to unmistakable symptoms of chronic tobacco poisoning.

In a number of such published cases we find particular mention of physical disturbances, characterized by hebetude and incapability for sustained mental activity, or an exhibition of unusual timidity and pusilanimity of conduct. Opthalmological journals report instances of defects and disturbances of vision which are ascribed to the use of tobacco. Hutchinson, in his hospital reports, gives cases of amblyopia from this source which were accompanied by somnolence, vertigo, and headache. Opthalmoscopic examination detected paleness of the disk, diminished caliber of the arterial branches, and in advanced cases atrophy of the optic nerve, terminating in complete blindness. Wecker observed restoration of sight in those cases where tobacco smoking was abandoned, and asserts that the cure was assisted by strychnia in the tem-

poral region, and the application of the interrupted current. Raymond ascribes these cases of amblyopia to the combined effects of tobacco and alcoholic stimulants. Hyperesthesia of the different sensory nerves is very common, and it is well known that tobacco smokers suffer from neuralgia. Motor disturbances of every description have been traced to the immoderate use of tobacco, such as muscular weakness, especially of the lower extremities, tremor, ataxic movements, and cramps in different portions of the muscular apparatus. For the past few years I myself have been much addicted to smoking, which brought in its train a variety of symptoms of a very unpleasant character. In my case, the effects of tobacco were apt to be felt more particularly when lying down to sleep, consisting of the most part in increased action of the heart, throbbing of the temporal arteries, and flushes of heat over the head and face. But the most troublesome symptom, which fortunately made its appearance not quite so often, was a choking sensation of an alarming character, though only of a moment's duration. Probably it was caused by spasm of the glottis. Occasionally I was startled, just when drowsiness came over me, by a sensation as if some one had given me a hard slap upon the side of the head. At longer intervals I suffered in the morning, while yet in bed, from cramps of the calf of the right leg and in the sole of the foot on the same side. Stretching of the limb, I found, favored the occurrence of these local spasms. Distention of the stomach with flatus was another annoying symptom, to which I ascribed the dyspnœa from which I suffered much. It seemed to me that eructations, which I learned to bring on at any time, very frequently prevented the occurrence of some of the symptoms I have mentioned, especially the sudden onset of the choking sensation. Perhaps the latter phenomenon is a reflex action from gastric irritation. My appetite has never suffered, though I discharge quite a quantity of saliva during the act of smoking. The best reason I can assign for my belief that these symptoms were caused by tobacco, is the fact that on abandoning its use I was free from them. Lately I began to smoke cigarettes for the purpose of limit-

ing the quantity of tobacco used; the evil effects of my previous immoderate indulgence are thereby not lessened, which warns me to abandon the habit entirely. The depressing effect of the inordinate use of tobacco upon the generative function is an old observation; indeed, it was considered the best antiphrodisiac remedy in the Italian convents of a past age. Wright, Clemens, and Foussard recently reported cases of impotency caused by the excessive use of tobacco. The latter authority describes a very annoying species of dyspnœa, generally occurring in the evening, which is not an infrequent effect of smoking. All accounts agree that disturbances of the heart's action is the most common of all symptoms in chronic tobacco poisoning. Richardson affirms that it aggravates the intermittence of the pulse which results from cardiac troubles. Retardation of the pulse under the influence of tobacco is probably due to its depressing effects upon the general nervous system. Angina pectoris may also be counted among the occasional effects of tobacco. Colicky pains, and sometimes violent cramps of the intestines, may be traced to the same cause. The popular belief that use of tobacco leads to dyspepsia does not seem to be well founded; at least in carefully observed cases of chronic tobacco poisoning, indigestion has not been noticed as one of its characteristic features. Chronic laryngitis is mostly observed among cigarette smokers, and is probably due to the inhalation of the fumes. The question whether the use of the tobacco-pipe may cause cancer of the lips and tongue has been again discussed by eminent surgeons. In view of the relative infrequency of this affection, which often locates itself in other parts than the mouth, and further, as persons suffer from cancer of the lips and tongue who never use tobacco, other factors must be presumed to co-operate in the production of the disease, although the existence of fissures and sores on the lips would commend total abstinence. Recent investigations respecting the chemical constituents of tobacco fumes confirm the older view of the presence of nicotine. It has, however, been ascertained that the nicotine appears mostly in the form of salts, having picoline for their

base. Other substances of a similar composition are generated in the act of smoking, which seem to form under the influence of the varying quantity of water in the tobacco and its mode of combustion. Thus the use of the pipe develops the highly diffusible and narcotic pyridin, while cigar smoking gives rise to larger quantities of colidin. There exists only one remedy for the cure of chronic tobacco poisoning, but that is so prompt and efficacious that none other is needed. Unfortunately there exists also a very great and frequently an insurmountable prejudice among smokers against its employment. It is the abstinence from tobacco. —*Maryland Medical Journal.*

In inebriety there is always present motor, psychical, or sensory symptoms, according to the region of the brain and nervous system most affected. Many of the disputed questions of cerebral localization loom up with startling distinctness in these cases.

The mind of every person under the influence of alcohol is deranged and altered. The cerebral circulation is changed both in rapidity and quality of blood. The presence of alcohol in the blood affects the cerebral activity, and we have marked changes at once. The entire nature of the individual has dropped down, exaggerations and depressions of both the mental and physical become prominent. So far, no examination or analysis can determine how the poisoned blood alters the mental condition, and no physician or court of law can make any boundary lines that will indicate the integrity of the brain in these cases.

Many who pronounce so positively on the character of inebriety do so from a consciousness of being able to control themselves, and suppose every one has a like will-power. The natural result of this narrow view is the disposition to punish inebriety as a crime, and thus literally precipitate the poor victim into a more hopeless condition.

Abstracts and Reviews.

INEBRIETY AND ALLIED NERVOUS DISEASES IN AMERICA.

The following is a condensed summary of a very valuable paper on the above subject, read before the British Medical Association, at their last meeting, by Dr. George M. Beard of New York city.

The doctor stated that his interest in the subject was purely scientific; that he had been led to study the subject simply because it belonged to neurology—a department of science to which his life was devoted. Inebriety he defined as a functional disease of the nervous system; the chief, though not the only feature of which is an irresistible desire for stimulants and narcotics, such as alcoholic liquors, opium, chloral, etc. Other accompanying and preceding symptoms are mental depression, mental irritability, insomnia, tremors, hallucinations, severe neurasthenia (nervous exhaustion), and in some cases alcoholic trance. The disease inebriety is distinguished from the vice of drunkenness in four ways: first, by its irresistibleness; secondly, by its periodicity or intermittent character; thirdly, by its transmissiveness; and fourthly, by the above nervous symptoms associated with it. The vice of drunkenness is objective; the disease inebriety is subjective. The disease inebriety has much the same relation to the habit of drunkenness that some forms of insanity have to eccentricity. The chief predisposing cause of inebriety is civilization. Savages, semi-savages, and barbarians drink far more than enlightened nations, and the disease inebriety is always less frequent where the habit of drinking is most common. The chief exciting causes of inebriety are alcoholic liquors, opium, chloral, etc. Another

exciting cause is neurasthenia, or nervous exhaustion, particularly the form cerebrasthenia, or exhaustion of the brain. Brain-exhaustion, which follows loss of property, bereavement, or sunstroke, may excite inebriety in one who is predisposed to that disease. In America, sunstroke is a frequent exciting cause. Injuries to the brain, as railway accidents and the like, may excite the disease; so also may salt air; some inebriates cannot go to sea nor near the sea coast without suffering an attack, with accompanying symptoms such as headache, neuralgia, nervousness, etc.

Inebriety is more common in America than in any other country, mainly from climatic reasons—dryness of the air, and extremes of heat and cold. For the same reason other functional nervous diseases of the family to which inebriety belongs, such as neurasthenia, general neuralgia, and hay-fever, are more common in the northern and eastern parts of America than in the southern. Like every nervous disease of the family to which it belongs, it pretty steadily diminishes as we go south—go to the Gulf States; yet there is more total abstinence in the north than in the south. There is no country in the world where there is so much total abstinence from drinking, and at the same time so much inebriety, as among the people of the northern and eastern parts of the United States. The habit of drinking has been diminishing for the last half quarter of a century among the better classes, but the disease inebriety has been increasing at the same time among the same classes. Inebriety is to-day treated on the same principle as other nervous diseases of the same family to which it belongs; that is, first, by keeping the patient away from exciting causes, and secondly, by fortifying the system with sedatives and tonics. For very many cases asylums are indispensable, and legislation is needed, and in America is exercised, to give power of holding such cases. The best law, on the whole, is the law of the State of Connecticut, which is very similar to the "Habitual Drunkard's Act," which has just been passed by the English Parliament.

The best remedies for fortifying the system and breaking

up the habit of drinking are bromides in very large doses (3i to 3ii), especially bromide of sodium; electricity in general and central applications (general faradisation and central galvanisation), strychnine, quinine, and cinchona, iron, cod-liver oil in emulsion, the preparations of zinc (oxide, bromide, and valerinate), with warm baths. This system of treatment for opium inebriety, combined with the gradual withdrawing of the drug, has been wonderfully successful in America.

The American Association for the Cure of Inebriates was organized in 1870. There are in the United States twenty-six asylums in practical operation, and charters for fourteen more that are yet to be built. The movement has been carried on against the opposition of all forms of ignorance and non-expertness, but is every year making progress. The QUARTERLY JOURNAL OF INEBRIETY has been in existence three years. Of those who are committed to asylums, about one-third are cured; and probably in the next century, when there shall have been greater progress made in the treatment, and patients shall come to the asylums earlier in the disease, and there shall be greater knowledge and experience in the management of asylums, the results will be better. In regard to the criticisms of Dr. Bucknill, it would seem that some of his strictures are just; but they are only one side of a complex story. Asylums are not all alike, and all are imperfect; but every year they must be making progress in their management and in their theory of the disease. It was clear that Dr. Bucknill did not have any just notion of what inebriety was, nor of the distinctions between that disease and the habit of drunkenness. His ideas, also, of what asylums ought to accomplish were too high. Inebriate asylums are not specifics for inebriety, any more than insane asylums are specifics for insanity; but when they are empowered with legal authority, and wisely managed, they are the best means known for the treatment of this terrible and increasing disease. Both in asylums and out of asylums, more attention should be given to the sedative and tonic treatment above described than it has yet received. Too

exclusive dependence is placed in America and Europe on the mere removal from the one exciting cause by confinement. In this respect there is room for progress and for careful experiments, which will soon be made.

TEA DRINKING ON THE NUTRITION OF THE EYEBALL.

At the last meeting of the British Medical Association, Dr. Wolfe of Glasgow read a paper in the section of Ophthalmology on the above topic. He spoke of the first effect as one of softening of the vitreous humor, which became filled with floating particles of pigment. It had come under his notice in persons who at first sight seemed to have very little in common. He had found it among—1. The mining population, who pass a deal of time underground. 2. Washerwomen. 3. Middle-aged laborers, masons, and out-door workers. 4. Shop and factory girls. 5. Not a few belonging to the upper classes. His attention was specially directed to the affection by its frequent occurrence among Australians who came to consult him. He could discover no assignable cause for the disease, either in the tissues themselves or in the history of the patient; and it was only on directing his inquiries to their diet, and finding that they all agreed in consuming large quantities of tea, that he came to suspect its agency. A comparison of the numerous cases of opacity of the vitreous humor occurring among tea-drinking populations, with its less frequency in France, Germany, and America, and its rarity among the Turks, tended to confirm his suspicions. Physiology did not suggest an explanation, but chemistry pointed to theine and tannic acid as most likely to cause disease. Theine might be left out of consideration, being identical with caffeine, which was innocuous; so there only remained tannic acid. This precipitated albuminoids from their solutions; hence it probably acted injuriously by precipitating some of the most important constituents of the food, and also by affecting the mucous membrane of the

stomach and alimentary canal, and thus preventing digestion and assimilation. Some observations had been made as to the effects of tea drinking on the healing of wounds and ulcers, by a Glasgow surgeon, who had noticed that, in persons addicted to this habit, they took on a sort of scorbutic character. Physicians also ascribed numerous cases of rebellious dyspepsia to the use of tea. The disease of the vitreous humor above alluded to could hardly be an isolated pathological fact, but must be associated with deleterious changes in other parts of the economy, and probably only made its appearance in organs which had a predisposition to be so affected. Without venturing upon any theory as to the action of tea on the vitreous humor, he would point out that the first expression of acute irritation of the fifth nerve in sympathetic ophthalmia was opacity of the vitreous humor and detachment of pigment from the whole uveal tract. So it was possible that chronic irritation of the same nerve might give rise to such changes in the nutrition of the eyeball as to bring about the condition under consideration. He commended this subject to the notice of general practitioners, who had better opportunities of judging of it than he had.

A PRACTICAL POINT IN THE TREATMENT OF ALCOHOLIC POISONING.

Dr. Hamilton, in a late number of the London *Lancet*, relates the case of a confirmed inebriate who was unconscious from the effects of alcohol, and where all efforts had failed in restoration. A condition of profound narcotism, which was rapidly merging unto death, was present. A strong solution of ammonia was injected into the medio-cephalic vein, resulting in rapid recovery. The doctor then gives at some length the opinions for this treatment, indicating its perfectly reasonable *rationale*. He says, "The idea that ammonia, generated in the blood is for the purpose of acting as a solvent, that is for the holding together the other constituents, seems probable from the fact that the rapid escape of ammonia by

evaporation from freshly drawn blood, and its dissipation in the atmosphere proceeds *pari passu* with the coagulation of the blood. It seems to show that they stand in the relation of cause and effect.

The immediate tendency of the blood to coagulate as soon as it is withdrawn from the body—that is, for its component parts to separate—certainly leads to the conclusion that its several constituents are only very lightly held together, even when within the body. That temperature, motion, and the exclusion of air, either separately or in conjunction, are the chief agents in sustaining the fluidity of the blood, is very doubtful; for when we see the wide range of temperature with the sometimes sudden alternations to which the blood is subjected, and when, again, we find it can also more than double its speed without influencing its consistence, we can hardly think that these two—motion and temperature—are the controlling powers sustaining its fluidity. To what extent the impairment of this essential condition for carrying on of life, namely, the perfect fluidity of the blood, occurs, and under what circumstances, has not been made the subject of investigation; but that there are some forms of dying, whose *modus operandi* is through a gradual thickening of the blood, producing a slow and yet slower circulation until complete stoppage occurs, is probable, although an examination of the blood-vessels after death does not reveal it. It is no sufficient answer to this supposition to say we ought to find them choked and full of clotted blood. Arguing from the fact that two minutes suffice for the complete coagulation of freshly drawn blood from a living subject, and that the subsequent steps in the process of disintegration of that blood are equally rapid, we ought rather to conclude that the condition of the blood in the veins and capillaries of a person who has been dead but an hour is probably very considerably altered from what it was at the moment of death, and that the arteries being empty, and viscid blood being found in the veins, are no evidences of what was the actual condition of the circulating fluid when the heart ceased to pulsate and the lungs to respire. In apoplexy and in fractures of the skull

with effusion of blood, where it was formerly thought that the clot of blood was by its pressure alone the cause of death, it is more probable that a progressive clotting of the blood in all the vessels in the neighborhood sets in, and the circulation of the blood becomes arrested from this cause over an ever-widening area, until death ensues. The engorged state of all the blood vessels of the brain found after death favors this view. In such cases death has occurred too soon for the further disintegration of the blood and the escape of its serum, but there are numerous other diseases where the arrest of the circulation or an impediment to it leads to a separation of the fibrin and serum and the infiltration of the latter into the tissues or into cavities. Serous apoplexy, ascites, and anasarca are familiar instances. The property of holding together in uniform admixture the constituents of the blood must be lodged in certain elements which are themselves the product of nutrition. This being so, we may go further and assert that there occur certain conditions of the blood as the result of abnormal nutrition or of blood-poisoning where these necessary elements are deficient, or at least not present in sufficient quantity to hold intermixed the other constituents. Is this what happens in alcoholic and narcotic poisoning? Are nitrogen and hydrogen combined in the form of ammonia, the elements wanting?

Inebriety is emphatically a hereditary malady, which is constantly increasing; the ignorance of the general public and the absence of all restrictions, or isolation of a class are steadily building up the conditions which perpetuate the disorder down the future. Inebriates in every community marry, and raise up other generations that are freighted with diseased tendencies which they are powerless to resist.

In this way a false sentiment, that refuses to regard inebriety a disease, is tolerating a system not only cruel to the individual, but sapping the vigor and future energy of our race.

MEDICO-LEGAL DIFFICULTIES IN ALCOHOLIC INSANITY.

Dr. Gairdner, President of the Glasgow Medical Society, lately delivered an address on "Alcoholic Insanity," from which we make the following extracts:

Considerable space in the beginning of the lecture was devoted to the law of drunkenness.

The points Dr. Gairdner wished to bring out by these quotations were, that the English law and custom recognized fully the resemblance, and indeed identity of the state of drunkenness with a true insanity or *dementia*, as (Sir Mathew Hale puts it), in almost all respects except its origin and its transitory duration; that, nevertheless, the difference arising from its being a voluntary *dementia* gave rise to a completely reversed relation of it to crime as a defense; that in this respect the English advisedly differed from the Roman law, especially in the case of capital punishment; that the English law advisedly aimed at punishing drunkenness, not through the act of drunkenness itself, but through the consequences of the act, and this even while it recognized the fact of these criminal consequences being (as the old commentator Plowden has it) done *ignoranter;* that under certain circumstances (not, perhaps, very exactly defined) the excuse of ignorance and insanity extended even to acts of drunkenness; that the remoter results of habitual drunkenness were, under certain circumstances, recognized as being of the nature of an habitual or fixed phrenzy—true legal insanity, carrying all the legal consequences of an insanity, even though this madness was contracted by the vice and will of the party. The distinction in law shown to be established between artificially induced morbid states and morbid diseases proper, was a principle in accordance not only with the genius of the law, but with the habits of thought of the physician in dealing with bodily disease. But the peculiar difficulty in the case of alcoholic insanity (understanding by that term broadly all the phases of disturbance of the mind arising from the abuse of stimulants) was, that the diagnosis between the artificially induced state and the state

not artificially induced landed us in such an extreme contrast of legal results that, whereas an insanity, technically recognized as such, conduced to or necessitated an acquittal absolutely, an induced state, even if accompanied by as complete and absolute loss of self-control, did not in the slightest degree tend to acquittal, but rather (if Coke be right) to an aggravation of the legal offense. In fact, to put it broadly and yet truly, the law refrained from punishing drunkenness as an offense *per se* to the point of being almost an invitation to the offense; while, on the other hand, it visited the consequences of drunkenness, even if taking place under conditions of mind that would otherwise exempt from criminal responsibility altogether, with the full measure of legal sentence and penalty. And this difficulty was greatly increased when, from an individual act of drunkenness, one proceeded to the whole train of physical and moral evils which a skilled medical observer easily recognized as springing from many such acts—the habits acquired, the complications arising, the diseases (unequivocally such) both of body and of mind connected with long-continued or habitual drunkenness. For the medical man, who was bound to study and deal with these as at all events approximating to the realm of disease, or at least required to be viewed in relation to "care and treatment," was completely paralyzed in his efforts to impose a limit on the ruin wrought by the habitual drunkard when he was informed:—1. That up to the very verge of the drunken paroxysm, and also in the intervals of many such paroxysms, the drunkard was to be considered as having a full measure of self-control, so that he could by no means be legally restrained from getting drunk, and that as often as he pleased. 2. That in the actual paroxysm, he was legally responsible to the full amount for everything that he did in the way of crime or violence; and 3. That, even if he should under pressure of necessity, or in a fit of remorse, abandon voluntarily his position as a free agent, it would be restored to him by the law whenever he pleased, and this, too, any number of times, and in the face of any amount of evidence of the ruin arising from such

restored liberty. But he held that, amid the long train of evils arising from habitual drunkenness, it was impossible to draw the line practically and at the same time fairly between sanity and insanity absolutely, so that individuals should be ruled as absolutely on the one side as the other of the line. And accordingly he held that the law erred:—1. In not giving effect to drunkenness, or at least to habitual drunkenness, as an anti-social habit or offense *per se.* 2. In not allowing the ruin that arises from such habits to be checked by provisions taken in accordance with the proved incapacity of the habitual drunkard for self-control; and 3. In not permitting an intermediate verdict between guilty absolutely, and not guilty by reason of insanity.

In the remaining portion of his address, Dr. Gairdner adverted to the various forms of drink-madness familiar to the physician, from the acute, often febrile, delirium tremens, to the most chronic and inveterate degenerations produced by, or concurring with alcoholism, and presenting almost every type of insane mind observed in asylums, from mania to extreme dementia and general paralysis. He regarded the influence of hereditary tendencies to mental disease as being often clearly shown forth in these cases, and held that there was a marked difference between the amount of responsibility of a man who, by merely vicious or unruly instincts, allowed himself to be dragged knowingly into the abyss, and one who, either inheriting or having acquired the fatal infirmity of an unstable if not positively unsound nervous system as a foundation on which all manner of diseases might be built up, was precipitated into a deeper and deeper degradation of physical and moral ruin by the facilities presented to him for getting and abusing drink, from even the ordinary use of which he above all men ought to have been restrained long before such consequences occurred.

Dr. Yellowlees thought the abuse of alcohol was a subject on which the profession was specially bound to speak out, and agreed with Dr. Gairdner that when a drunkard was not only injuring himself, but was a nuisance and a danger to others, he ought to be punished without waiting till his drunkenness had produced some greater crime. He said drunk-

enness might be a cause, an early symptom, or a result of insanity. He agreed generally with Dr. Gairdner as to the forms of insanity caused by drunkenness, but gave more prominence to the "insanity of intemperance" as defined and classified by Dr. Skae, of which, he said, suspicion, jealousy, and temporary hallucinations of the senses were the chief symptoms. He also adverted to the cases in which the evil wrought by habitual intemperance appears in later life, even after years of abstinence, when some emotional cause upsets the brain which former excesses had weakened, and induces melancholia of an unfavorable type. Sometimes drinking was merely one of the early signs of insanity, and one of the indications of the general loss of control which often preceded it. In such cases it was frequently and erroneously assigned as the cause. The drinking which resulted from mental disorder was, he said, the true dipsomania. It usually followed and grew out of the vice of drunkenness, and hence the hesitation often felt in calling it disease; but it might arise from quite other causes, such as an injury to the head or a sudden shock. Its three forms, acute, periodic, and constant, were referred to, and also the moral deterioration which was so invariable and characteristic a feature. As to criminal responsibility, no definite line could ever be drawn between sanity and insanity, for none existed in nature; it was a gradual slope which connected the two territories. There were all degrees of insanity; the law should, therefore, recognize degrees of responsibility and impose corresponding gradations of penalty. When a prisoner's condition was such that he could not be acquitted on the ground of insanity, and yet the jury were satisfied as to the presence of a mental disorder, they should declare him "entitled to mercy on the ground of his mental condition," and the judge should determine what mitigation of punishment such mental condition demanded.

The Brain—a journal of neurology—McMillan & Co., New York, publishers, comes freighted with a most excellent invoice of original papers and clinical studies.

The closing numbers of the *Popular Science Monthly* for the year 1879 indicate clearly that it is one of the best monthlies published. Presenting the most valuable thoughts of the greatest scientific men in the world in a popular style, it has won its way into the homes and hearts of thousands of readers. To every thinking man and woman it is almost indispensable. D. Appleton & Co. of N. Y. are the publishers.

The National Quarterly Review, for October, retains its national reputation as one of the best American quarterlies published. D. A. Gorton & Co., New York, publishers.

From the annual oration before Louisiana State Medical Society by Dr. S. E. Chaille, Professor of Physiology and Pathological Anatomy of the Medical Department of the University of Louisiana, occur the following eloquent sentences:

"When will this State aid in rescuing thousands of wives more wretched than widows, thousands of children more wretched than orphans, from incurable drunkards, by providing Inebriate Asylums?"

"Science is ever progressing, so the British Medical Association is constantly finding old structures to demolish, new edifices to erect. Among these it will soon demolish our present cruel methods of dealing with inebriates, and build up Inebriate Asylums with other means to control habitual drunkards."

A curious case has been contested in New Orleans, of a gentleman who from misfortune began to drink, and finally, after an attack of delirium tremens, died suddenly. The physician gave a certificate of albuminaria, and the insurance company contested it on the ground of intemperance. At the time of being insured the patient was temperate, but after, from misfortune, he drank hard and died. The question of the disease of inebriety will be a prominent feature of the case.

Editorial.

OUR PRINCIPLES.

We have lately received a number of papers which have been presented to different societies, and newspaper articles (on inebriety and its treatment), with a request from the authors and others that we notice them in our journal, or give our views on the merits of the theories which they advocate. We are always pleased to receive copies of everything written on inebriety, no matter of what character, and shall take great pains to have them properly filed away in our library, and acknowledge the favor to the author; but we cannot open the columns of the JOURNAL to questions that have been settled long ago; nor is it profitable to discuss theories and statements which have no basis in well-founded facts.

The want of accurate, scientific investigation into the disease of inebriety makes it impossible to define where responsibility begins and ends, or where vice and disease unite, or what special treatment will meet all the indications of each case. The results of the most advanced study and clinical experience of this disorder, extending over a quarter of a century, are most aptly condensed in the declaration of principles upon which our association is founded. This we present to our readers as the only basis of facts from which further studies can be made.

1. Inebriety is a disease.
2. It is curable as other diseases are.
3. The constitutional tendency to this disease may be either inherited or acquired; but the disease is always induced by the habitual use of alcohol or other narcotic substances.
4. Alcohol has its place in the arts and sciences, but as

a medicine it is classed among the poisons, and its internal use is always more or less dangerous, and should be prescribed with caution.

5. All methods hitherto employed for the treatment of inebriety that have not recognized the disordered physical condition caused by alcohol, opium, or other narcotics, have proved inadequate to its cure; hence the establishment of HOSPITALS for the specific treatment of inebriety, in which such conditions are recognized, becomes an urgent demand of the age.

6. In view of these facts, and the signal success of the treatment in inebriate asylums, this Association urges that every large city should have its local and temporary home (or hospital) for both the reception and care of inebriates; and that every State should have one or more hospitals for their more permanent detention and treatment.

7. Facts and experience indicate clearly that it is the duty of the civil authorities to recognize inebriety as a disease, and to provide means in hospitals and homes for its scientific treatment, in place of the penal methods of fines and imprisonment hitherto in use, with all its attendant evils.

8. Finally, the officers of such hospitals and homes should have ample legal power of control over their patients, and authority to retain them a sufficient length of time for their permanent cure.

To ignore all these facts, and attempt to define the many phases of this disease and the specific treatment demanded, based on mere opinions or theories, is simply confusing, and in no way contributes to our knowledge of the subject. Papers by learned lunacy specialists, or able jurists, or enthusiastic clergymen, or medical men, made up from theories and quotations from authorities equally unreliable, and founded on mere passing impressions, are only of value as evidence of the interest this subject is attracting. All controversy over the different phases of this disease, or the value of some distinct plan of treatment, can only be settled by the conclusions from the study of many facts gathered through long years of observation.

The disease of inebriety is complex, and its symptomology is a strange blending of both the physical and pscyhical, extending along the border-lands of sanity, hence it cannot be understood except by long, patient study.

Our Journal aims to present the facts which shall seem well founded, and beyond the question of doubt.

No subject is more important, and opens a wider field for original investigation, with grander promises of usefulness and rewards to the patient, laborious student. T. D. C.

WELCOME TO DR. ALFORD.

Dr. Alford, the Secretary of the English society for promoting legislation for the control and cure of Habitual Drunkards, has been traveling on an informal tour of study and observation through this country and Canada. His object has been to ascertain the best plans for the organization and management of inebriate asylums under the new law lately passed by the British House of Commons (and noted in this journal).

It is gratifying to mention that Dr. Alford's visit to this country has been purely in the interest of science, and without prejudice or preconceived opinions.

He landed at Quebec, visiting all the principal cities, asylums, and hospitals in Canada, making a tour through the Western States, returning by the way of Washington and Richmond, to Philadelphia, New York, and Boston, sailing from New York on his return voyage.

On the occasion of his visit to the Kings County Home, Fort Hamilton, New York, Rev. Mr. Willett, the Superintendent, gave a private dinner party, to which a few friends of the cause were invited.

After a pleasant and very informal conversation, in which Dr. Alford gave the result of his observations in the different asylums in the country, followed by a general expression of opinions by those present, Dr. Parrish moved the following preamble and resolutions, which were passed unanimously:

WHEREAS, The presence among us of Mr. Stephen J. Alford, F. R. C. S., of London, is a source of much pleasure to the friends of the cause he represents in this country, and

WHEREAS, It is due to him that there should be an expression of our unshaken conviction of the necessity for, and our abiding confidence in the usefulness of institutions for the custody and recovery of inebriates; therefore,

Resolved, that notwithstanding the embarrassments to which some of our institutions have been subjected for want of abundant pecuniary means, the work they have done has been quite as much as was anticipated, and the results of said work have been satisfactorily determined to be at least thirty-five per centum of recoveries from confirmed inebriety.

Resolved, That we recognize that those who endeavor to reform inebriates by moral and religious means exclusively, and those who recognize a diseased condition in the same class of cases, and who combine both moral and physical methods, are alike engaged in the same field, with the same purpose.

Resolved, That we congratulate the British Society for promoting legislation on the success which has so far attended their labors, and desire thus to express our high respect, and our readiness to coöperate with them in all consistent ways to promote the objects which we in common have in view.

Resolved, That the visit of Dr. Alford has been the means of bringing into closer sympathy the friends of the cause in Great Britain and this country, and that though we are separated by the ocean, we are nevertheless one in sentiment and in labor, and with a common reliance upon Divine aid, we confidently anticipate a continued growth and development of the cause.

The change of the time of publishing our journal, from December 1st to January 1st, will be of advantage to both subscribers and exchanges. Beginning the new year with a new volume, and a rapidly growing list of subscribers, we congratulate our many friends on the grand possibilities awaiting farther research in this new field.

Clinical Notes and Comments.

THE CARE OF HABITUAL DRUNKARDS.

The question of what should be done with habitual drunkards is still a very unsettled one, and is rightly claiming the attention of medical and legislative bodies. In this country the prevalent opinion among those especially interested in the matter is that inebriety is a disease rather than a vice, and that its victims should be regarded and disposed of in much the same way as insane persons. Inebriates, it is claimed, are not in many cases to be considered responsible for their actions, and should therefore be taken care of by the State and placed in asylums appropriate for their treatment. There are, we believe, but two asylums for inebriates in this country where the theory that drunkenness is a disease is not adopted as the basis of management; and we have several States where this placing of the inebriate on the same footing with the lunatic has been more or less adopted. In Connecticut the idea is completely embodied in the law, and habitual inebriates can be committed by the court, upon proper evidence, to an asylum. In this State the law is less radical; nevertheless it provides that persons who have become incompetent, through habitual drunkenness, to take charge of their affairs, shall be put in charge of the court. Several other States have laws which, in like manner, class the victims of alcohol with idiots, lunatics, and persons of unsound mind. The practical importance of definitely determining whether drunkenness be a disease, or only a cause of disease, is not so great as specialists would have us think. When a man has become a dipsomaniac, has ruined himself and family, and is both a nuisance and a danger to society, he needs to be taken care of, without regard to pathological

distinctions. Before settling the pathology of inebriety, therefore, we can urge the propriety of legal provisions for its victims. The British Medical Association is working in the right direction. Present asylums may be poor, and the difficulties of obtaining proper legislation for inebriates great, but this does not affect the fact that persons whom alcohol has unfitted for every social and domestic duty, and who are degraded and made violent by its indulgence, need and should have State or local supervision, accompanied by such measures as will not punish and still further degrade, but will tend to cure and restore them to usefulness.—*Medical Record.*

ABSINTHE.

There cannot, I fear, be a doubt that in large and closely packed towns and cities the consumption of absinthe is on the increase. In London it is decidedly on the increase. It is not possible to find a street in some parts of the metropolis in which the word "absinthe" does not meet the eye in the windows of houses devoted to the sale of other intoxicating and lethal drinks. Much of this advertisement of an unusually dangerous poison is made from ignorance of its nature as much as from cupidity. The suggestion for offering absinthe is that is an agreeable bitter, that it gives an appetite, and that it gives tone to weak digestions. It is proffered much in the same manner as gin and bitters, and as in some private houses sherry and bitters are proffered. If you ask a seller of absinthe what he vends it for, he tells you, "As a tonic to help digestion." There is no more terrible mistake than this statement. Absinthe, as it is made in France, whence it is imported, is a mixture of essence of wormwood (*absinthium*), sweet-flag, anise-seed, angelica-root, and alcohol. It is colored green with the leaves or the juice of smallage, spinach, or nettles. It is commonly adulterated. M. Derheims found it adulterated with sulphate of copper, blue vitriol, which substance is added in order to give the required greenish color or tint, as well as to

afford a slight causticity, which to depraved tastes is considered the right thing to taste and swallow. M. Stanislas Martin stated that he found chloride of antimony, commonly called butter of antimony, as another adulteration used also to give the color. Chevalier doubts this latter adulteration, but the adulteration with the sulphate of copper is not disputed. The proportion of essence of wormwood to the alcohol is five drachms of the essence to one hundred quarts of alcohol. The action of absinthe on those who become habituated to its use is most deleterious. The bitterness increases the craving or desire, and the confirmed *habitué* is soon unable to take food until he is duly primed for it by the deadly provocative. On the nervous system the influence of the absinthium essence is different from the action of alcohol. The absinthium acts rather after the manner of nicotine; but it is slower in taking effect than the alcohol which accompanies it into the organism. There is therefore felt by the drinker, first, the exciting, relaxing influence of the alcohol, and afterward the constringing, suppressing influence of the secondary and more slowly acting poison. The sufferer, for he must be so called, is left cold, tremulous, unsteady of movement, and nauseated. If his dose be large, these phenomena are exaggerated, and the voluntary muscles, bereft of the control of the will, are thrown into epileptiform convulsions, attended with unconsciousness and with an oblivion to all surrounding objects, which I have known to last for six or seven hours. In the worst examples of poisoning from absinthe the person becomes a confirmed epileptic. In addition to these general indications of evil, there are certain local indications not less severe, not less dangerous. The effect which the absinthe exerts in a direct way on the stomach would alone be sufficiently pernicious. It controls for mischief the natural power of the stomach to secrete healthy digestive fluid. It interferes with the solvent power of that fluid itself, so that taken in what is considered to be a moderate quantity, one or two wineglassfuls in the course of the day, it soon establishes in the victim subjected to it a permanent dyspepsia. The appetite is so perverted that all desire for food is quenched until the desire is feebly whipped

up by another draught of the destroyer. In a word, a more consummate devil of destruction could not be concocted than this destructive agent, absinthe. It is doubly lethal, and ought to be put down peremptorily in all places where it is sold. Our magistrates have full power to deal with this poison, if they had the discretion and the courage to use their power. They could prohibit the license to all who sell the poison. Beyond this there is another power that ought to come into play. Absinthe should be under the control of the Sale of Poisons Act, and no person ought to be able to get it in any form at all without signing a book and going through all the necessary formality for the purchase of a poison. To move the country to a due regard for its own interests, as well as for the interests of the ignorant and deluded toxicomaniacs who indulge in absinthe, is the duty of all honest and truthful men.

But when we turn to the other argument—when we reason that these lethal agents induce a physical and mental aberration which they afterward maintain—when we but whisper the word toxicomania as the exposition of their influence, all is clear enough. We leave the purely natural world of life to enter the aberrant world, and all there is as it would be to eyes from which the scales of superstition have fallen. These agents play no part in natural function or construction, but add a part which is obviously an aberration. If into a steady-going locomotive-engine the engineer infused some gallons of brandy, he would do something that would be conspicuous enough, but he would not thereby play a natural part in the working of that engine. He would only add a part which would be an aberration. There might be more rapid pulsation and motion for a brief period truly, but the pressure would be unequal, the working-gear unsteady, and by much repetition of the same act there might be accident, apoplexy, stroke, even in an engine, and there certainly would be a wearing out which would lead to a limited future. So with the body under these lethal spells: we may add a part, or we may take a part away, but we can not by them maintain the uniform and natural law of life.—*Dr. Richardson.*

DIPSOMANIA.

It is now openly admitted by the medical faculty, that this last culminating *furor bibendi* has "its cause, symptoms, diagnosis, and treatment as clearly marked as that of pneumonia." Recognition of it in this character is known to have been recorded as early as 1817, by a physician of the name of Salvatori—one of the few men connected with the French army who remained in Moscow after the retreat. He gives the same diagnosis of the approaching periodical fit of craving as would be given now-a-days, the languor, the discomfort, the failing appetite, the restless sleep, the growing indefinable misery which comes upon the victim like an armed man, and renders life a burden. At this stage the fatal cup presents the only form of relief. He is driven to it by an irresistible force, rewarding him for a time. His depression ceases, his nausea vanishes. If he never sleeps, he feels none the worse; if he is perpetually in movement he is conscious of no fatigue. The first few days are all excitement and joy, ending generally in violence, storming, and rage; and then the reaction sets in—the headache, the thirst, the visions, the wandering, the gloom, the detestation of strong drink, and the condemnation of himself—and as surely as all these, the certainty of a fresh fall. For each attack leaves that which smoulders only to burst out with increasing heat; each is in turn cause and effect, heir and progenitor.

Now, the difference between this and other forms of illness of a preventable kind consists in the fact that it overpowers the will. If a man suffers from bronchitis, he is careful not to expose himself; if he has a bad digestion, he avoids a certain diet. If he has brought misery on himself by folly or wickedness, he *can*, under certain conditions, repent and reform. Our mortal lot is a heritage of moral and physical fallibility, indissolubly connected.

Most human error is accompanied by physical conditions which minister to it; most physical derangement has its root, if we could trace it, in some foregone moral dereliction. The words of our Lord give to sin and disease a mysterious identity, saying to the sick of the palsy, "Thy sins be

forgiven thee;" and to the impotent man, "Sin no more." But He spoke to those capable of choosing the better part. It is not so with the dipsomaniac. "Sin no more" is vainly said to him. His will being in bondage, he can as little repent as stand still. No matter what the class or the mind—high or low, cultivated or illiterate, refined or depraved; whether the statesman or the laborer, the lady or her fallen sister—the pathological results are the same. The Baronet's answer to the most urgent medical expostulation is, "If a bottle of brandy stood on one side and the pit of hell yawned on the other, and if I knew I should be pushed in as sure as I took another glass, I could not refrain." The poor man's answer is, "if a knife were at my throat, I must have it"—meaning the drink.

The man, therefore, who *cannot* refrain from that which renders him periodically mad is as irresponsible as the chronically insane, and must be treated accordingly. His own will being in abeyance, it is only by the act of another's will, and that supported by the law of the land, that he can be rescued, and his family relieved. This rescue can take no other form than that presented by a refuge or asylum, where the patient may be placed and detained, not only till the old habit be broken, but a new and better habit formed; till the disease in the brain has died out, and fresh blood, free from alcoholic taint, made. For this beneficent purpose, only attainable by entire abstinence, a period of detention is required, varying from one to three years—a treatment, we need hardly say, impossible to carry out without the authority of the law. Many a poor wretch, in the brief period of remorse, will voluntarily, nay eagerly, enter an asylum, and submit to a system which promises to break his bonds, but it is equally certain that he will not voluntarily remain long enough to insure that end. The recurrent summons to the service of his Zamiel returns, with all its miserable tyranny, and then only the absent bottle and closed door can avail.—*Dr. Peddie.*

ABUSE OF CHLORAL HYDRATE.

There is another subject of public interest connected with the employment of chloral hydrate. I refer to the increasing habitual use of it as a narcotic. As there are alcoholic intemperances and opium-eaters, so now there are those who, beginning to take chloral hydrate to relieve pain or to procure sleep, get into the fixed habit of taking it several times daily, and in full doses. I would state from this public place as earnestly and as forcibly as I can, that this growing practice is alike injurious to the mental, the moral, and the purely physical life, and that the confirmed habit of taking chloral hydrate leads to inevitable and confirmed disease. Under it the digestion gets impaired; natural tendency to sleep and natural sleep is impaired; the blood is changed in quality, its plastic properties and its capacity for oxidation being reduced; the secretions are depraved, and the nervous system losing its regulating, controlling power, the muscles become unsteady, the heart irregular and intermittent, and the mind excited, uncertain, and unstable. To crown the mischief, in not a few cases already the habitual dose has been the last—involuntary or rather unintentional suicide closing the scene. I press these facts on the public attention not one moment too soon, and I add to them the further facts that hydrate of chloral is purely and absolutely a medicine, and that, whenever its administration is not guided by medical science and experience, it ceases to be a boon, and becomes a curse to mankind.

The persons who become habituated to chloral hydrate are of two or three classes, as a rule. Some have originally taken the narcotic to relieve pain, using it in the earliest application of it for a true medicinal and legitimate object, probably under medical direction. Finding that it gave relief and repose, they have continued the use of it, and at last have got so abnormally under its influence that they cannot get to sleep if they fail to resort to it. A second class of persons who take to chloral are alcoholic inebriates who have arrived at that stage of alcoholism when sleep is always disturbed, and often nearly impossible. These persons at first wake

many times in the night with coldness of the lower limbs, cold sweatings, startings, and restless dreamings. In a little time they become nervous about submitting themselves to sleep, and before long habituate themselves to watchfulness and restlessness, until a confirmed insomnia is the result. Worn out with sleeplessness, and failing to find any relief that is satisfactory or safe in their false friend alcohol, they turn to chloral, and in it find for a season the oblivion which they desire and which they call rest. It is a kind of rest, and is no doubt better than no rest at all; but it leads to the unhealthy states that we are now conversant with, and it rather promotes than destroys the craving for alcohol. In short, the man who takes to chloral after alcohol enlists two cravings for a single craving, and is double-shotted in the worst sense. A third class of men who become habituated to the use of chloral are men of extremely nervous and excitable temperament, who by nature, and often by the labors in which they are occupied, become bad sleepers. A little thing in the course of their daily routine oppresses them. What to other men is passing annoyance, thrown off with the next step, is to these men a worry and anxiety of hours. They are over-susceptible of what is said of them, and of their work, however good their work may be. They are too elated when praised, and too depressed when not praised or dispraised. They fail to play character-parts on the stage of this world, and as they lie down to rest they take all their cares and anxieties into bed with them, in the liveliest state of perturbation. Unable in this condition to sleep, and not knowing a more natural remedy, they resort to the use of such an instrument as chloral hydrate. They begin with a moderate dose, increase the dose as occasion seems to demand, and at last, in what they consider a safe and moderate system of employing it, they depend on the narcotic for their falsified repose. "RICHARDSON."

RESULTS FROM EXPERIMENTS WITH ALCOHOL.

By subjecting animals of different species to the action of alcohol, I made clear what had only been surmised previously, that alcohol reduces the animal temperature. I also found that, like nitrate of amyl, alcohol produces what is called its stimulant action by paralyzing the vessels of the minute circulation. By the same course of experiment I learned that the exposure of an animal to a degree of cold that is perfectly harmless when the animal is free of alcohol, is certainly fatal when the animal is narcotized from the action of alcohol. By pursuing the research so as to include in it the heavier alcohols, such as butylic alcohol, and amylic alcohol (fusel oil), I learned for the first time that the more injurious effects of some of the common alcoholic drinks sold for the uses of man are due to their exceedingly injurious compounds; and by observing the action of alcohol, when the action is long-continued, on the visceral organs, the various organic changes it specially engenders independently of all other coincidental causes of disease, were actually determined.

In a word, all my researches of a physiological kind on the action of alcohol, from which so much has been gathered in respect to the utter uselessness and the great harmfulness of that potent poison, have been made from its effects upon the lower animals. Its effects in reducing temperature, in reducing vascular tension, in reducing muscular power, in destroying the action of the animal membranes, in impairing the structures of vital organs, could never have been certainly demonstrated if the lower animals had not formed the field of experimental investigation. In these experiments the lower animals suffered neither more or less than millions of those human animals who indulge in alcohol, and I am sorry to say, like the human animals many of them became too fond of the agent that was producing their certain deterioration. I can but feel sure that a great number of facts of the most practical kind sprang from these researches on alcohol. To them also should be added one other addition

to physiology. I traced out, in watching the effects of the behavior of the heavier alcohol from the lighter of the series, the singular law that the physiological action of an organic chemical substance is intensified by the increase of its specific weight. Thus butylic alcohol is more pronounced in its action than methylic, chloroform than chloride of methyl, and so on through all the series of organic compounds.

BICHARDSON.

OPIUM-EATING IN INDIA.

Mr. Vincent Richards has lately made a careful examination of the use of opium in Orissa, India, where it is very prevalent, and has greatly increased since the famine of 1866.

The following are the conclusions at which he arrived, as given in the *Indian Medical Gazette:* (1.) That opium is taken habitually by about eight to ten per cent. of the adult population of *Balasare*, and that the average daily allowance for a man is seven grains, and for a woman five grains. (2.) That moderation is the rule. (3.) That moderate doses include from two to sixteen grains per diem, according to circumstances. (4.) That opium-eating is much more common in unhealthy than in healthy localities, even though they are situated in the same district. (5.) That the drug is sometimes taken in very large doses—thirty grains and upwards—without producing any very serious ill-effects, much depending on the constitution of the individual, and his habituation to its use. (6.) That whatever the effects of the excessive use of the drug may be, when taken in moderation it is positively beneficial where such diseases as fever, elephantiasis, rheumatism, etc., are present, and when food is scarce. (7.) That the effects of even the most excessive use of opium are harmless, both to the individual and to society, compared to the excessive use of alcohol.

These conclusions are not confirmed by the experience of investigators in this country or Europe, and sounds very much like a defence of opium.

INEBRIETY IN PARENTS A CAUSE OF EPILEPSY IN THEIR CHILDREN.

Dr. Martin, in *Ann. Med. Psycol.*, gives an account of the investigations made by himself on the influence of intemperate habits of parents on their offspring as regards the production of epilepsy, while *interne* at the Salpêtrière. Out of one hundred and thirty to one hundred and fifty patients in the department of insane epileptics of that institution, he was able to obtain data as to heredity in eighty-three. Twelve of these cases are briefly detailed, and an analysis of the whole is given. He divides them into two classes: in the first, comprising sixty patients, or over two-thirds of the whole, intemperate habits in the parents was an established certainty; in the second class of these patients the intemperance of the parents was dubious in some, and in others could not be suspected. The sixty of the first class had had two hundred and forty-four brothers and sisters; of this number forty-eight were affected with convulsions from early infancy, one hundred and thirty-two were dead in 1874, and one hundred and twelve only were still living, nearly all young, and many of them with damaged nervous organizations. The twenty-three epileptics of the second class had had eighty-three brothers and sisters, among whom only ten had had convulsions, and forty-six were still living. In these figures, of course, the patients themselves are not included. Of these eighty-three epileptics, all from different families, the particulars as to the origin of the disease could be obtained in seventy-eight, and it was found that fifty of them had first had *eclamptic convulsions*, quite distinct from epilepsy. Thus in eighty-three families there had been four hundred and ten children. One hundred and eight of these, that is, more than one-fourth, had had convulsions; in 1874 one hundred and sixty-nine were dead, and two hundred and forty-one living; but of these latter, eighty-three, or more than a third, were epileptic. . . . The author remarks on the small proportion of diseases of the nervous system in the above, and hence concludes that to alcoholism alone must be attributed the epilepsy of the children. The large propor-

tion of the circulatory disorders (including under this apoplexy and heart troubles) which are directly favored by intemperance, is also a striking fact. He concludes as follows: "We have therefore demonstrated that alcoholism in the ancestors is an extraordinarily frequent cause of eclampsia and epilepsy in their descendants; and if, as we have said in a former article, epileptics have only few children, and further, that these are almost inevitably affected by the most serious nervous disorders, we perceive what formidable evils alcoholism of the parents transmits to their posterity."

PATHOLOGICAL HINTS.

Every impulse along the nerve-fibers, and every act of the will-power is attended with some material change of the cells and fibers.

This change is always impairment of structure, or wearing out of both tissue and power, according to the duration and intensity of its action.

Increased activity will always be followed by a corresponding waste or loss of power. This is indicated by a sense of fatigue or exhaustion.

Alcohol always increases the heart's action, quickening the flow of thought, and producing violent action of both nerve cells and fibers.

The vaso-motor paralysis which always follows the injection of alcohol causes changes of structure and function, which are never repaired as long as alcohol is used, but grow wider and more removed from the normal condition of health.

The equilibrium between waste and repair is broken up, and exhaustion and perversion increase rapidly from day to day.

The first toxic effect of alcohol, particularly when the system is thoroughly narcotized or impressed by alcohol, is always the beginning of inebriety. Perversions which commenced then, and changes of nerve-structure are never re-

moved, but like the entailments of malaria and syphilis, are likely to break out from the slightest exciting causes. The person who has been once intoxicated is always threatened with inebriety, and no matter what his will-power may be, is less safe from future attacks than the person who has never drank.

The hypersthesias and exaggerations of nerve power under the influence of alcohol are simply remonstrances of a suffering, exhausted nerve-tissue, seeking rest and repair.

T. D. C.

ORIGIN OF ALCOHOL.

The process of distillation by which alcohol was obtained from fermented liquors was utterly unknown until about the middle of the eleventh century, when it was introduced into Europe by some Arabian alchemists. It does not appear that it was used, however, except for certain mechanical and chemical purposes, and also in the manufacture of a kind of paste with which the ladies painted themselves that they might appear more beautiful, until the sixteenth century. The Black Plague was then sweeping over Europe—sometimes called the Black Death—probably the same disease that is now threatening Europe from Russia. It started in China or India, and ravaged all Europe. It is estimated that ninety millions were swept away by its ravages. The *aqua vitæ*, or water of life, as it is called, was introduced at that time as an experiment, in order to stay the ravages of this awful disease. During the reign of William and Mary an act was passed encouraging the manufacture of spirits. Soon after, and as a natural consequence, intemperance and profligacy prevailed to such an extent that the retailers in intoxicating drinks put up signs in public places, informing the people that they might get drunk for a penny, and have some straw to get sober on. In 1751 it was given to the English soldiers as a cordial, and we learn also that for some time previous it had been used among the laborers in the Hungarian mines. Alcohol was then made mostly of grapes, and

sold in Italy and Spain at first as a medicine. The Genoese afterward made it from grain, and sold it in bottles labeled "Water of Life."

During the reign of Henry VII. brandy was unknown in Ireland, but hardly had it been introduced when its alarming effect induced the government to pass a law forbiding its manufacture. In spite of all efforts to the contrary, however, the use of alcohol has spread until it has become a universal curse, and its history is written in the wretchedness, the tears, the groans, the poverty, and murder of thousands.

It has marched over the land with the tread of a giant, leaving the impress of its footsteps in the bones, sinews, and life-blood of the people.—DR. WILLARD PARKER.

NERVOUSNESS.

Note also our sensitiveness to stimulants and narcotics, as alcohols and tobacco, and even tea and coffee. Not only our fathers, but our mothers, could drink freely of wines and strong liquors, and even smoke as much as they wished, without developing any of the nervousness of our time. At the present time a very considerable proportion of the population of this country are unable to smoke, or chew, or drink even mild wine, or tea or coffee—especially the latter—without making themselves perceptibly worse thereby. I find that a very considerable number of my nervous patients have been compelled, before I saw them, to give up their coffee and tobacco. All this is modern and preëminently American Likewise the idiosyncrasies of patients in regard to the action of medicines and the effects of drugs and various external irritants have, during the last half century, multiplied in variety and phase, and greatly augmented in number. There are thousands who cannot bear opium—who are kept awake instead of being put to sleep by it. The ordinary dose for an adult is sufficient to deprive them of a night's repose. One very eminent physician finds that even chocolate, one of the mildest beverages, is a poison to him; and another expe-

rienced physician, who consulted me one time in regard to himself, could not, he said, bear anything that I prescribed. I spoke of iron; he said iron, even in small doses, made his head ache; and when I tried it, even with other medicines, it produced that effect. I suggested quinine; he said quinine made him crazy. I tried a zinc combination; it disturbed his stomach. And yet this man, so variously sensitive, was actively engaged in one of our most laborious professions.

DR. G. L. BEARD.

It is difficult to say where acute inebriety ends and chronic inebriety begins; but there are such boundary lines, although they may be imperceptibly shaded one into the other.

The inebriate diathesis is only the acute and chronic disease, toned down and merged into a predisposition which is more or less obscure.

If we were more acute in our observations, the special signs of the disorder would be unmistakable. Many morbid changes are going on in the body, which give only faint indications of their presence; others are not cognizable to the senses. But there are many good reasons for believing that an inebriate diathesis or predisposition carries along with it manifestations which may be recognized months, and even years, before the full development of the disorder.

T. D. C.

Dr. Manning, inspector of insane for New South Wales, Australia, writes to Dr. Tuke of England, that "one of the prolific causes of insanity in these colonies is inebriety. The inebriety comes very often from the bad quality of food. Salt beef, poor tea, no milk, and an indigestible cake of flour and water, without any vegetables, are the common diet of hundreds. The digestive powers are soon ruined, and a terrible craving for drink follows, and from both the mind is rapidly lost. The isolation from the comforts of home and society, and the hardships incident to the peculiar life, are the active causes precipitating both inebriety and insanity."

A SUBSTITUTE FOR ALCOHOL AS A MENSTRUUM.

The *Pharmacist* of Chicago has an excellent article by Dr. Halberg on the above subject, which is significant of change and progress among the druggists. The following extracts are worthy of much attention:

"Alcohol in different proportions has been used for a long time as a menstruum and preservative of nearly all the vegetable remedies.

"Modern pharmacy recognizes the want of stability of the more dilute preparations, and the danger in many cases associated with the taking of alcohol into the system for any length of time.

"The injudicious use of alcohol, prescribed as a medicine, has been a starting point in many lamentable cases of inebriety, as shown by the best physiological observers. There can be no doubt that such cases are of more frequent occurrence than we are aware of. Inherited conditions of organism may exist which give direction to weakened functional activities, resulting in inebriety with unfortunate certainty. The medical prescription containing a great amount of alcohol to such persons becomes the exciting cause, awakening and fixing conditions which may not break out at first, but sooner or later will manifest themselves.

"The disease of alcoholism may be compared to malaria, which having once pervaded the system, leaves a peculiar predisposition, which only awaits a train of exciting causes to spring into activity.

"In view of these facts, which are generally accepted as such, would it not be best to err on the side of exclusiveness, as far as alcohol is concerned, if another agent could take its place as a preservative and vehicle of remedies without giving rise to objections necessarily pertaining to alcoholic medication.

"The value of sugar-of-milk in the administration of remedies has suggested its application as a substitute for any other preservative and vehicle.

"The following are its peculiar advantages. It does not

ferment in the stomach. It does not precipitate the pepsin and albuminous matter in gastric juice. It promotes rapid assimilation, and is not objectionable where an alcoholic medicine would be contra-indicated."

The author discusses at some length the value of sugar-of-milk, and thinks it will take the place of alcohol to a large extent in the future.

EXPERIENCE IN THE ENGLISH HOSPITALS.

Dr. Webster, the medical officer of the Union Infirmary, London, makes a report of the results of the non-alcoholic treatment of disease. Several of the hospital boards have limited the use of all forms of alcohol to cases of emergency where sudden stimulant action is needed. A comparison of the results of these hospitals with those in which alcohol is in daily use show a decrease of the death-rate from five to eight per cent. In a year's experience, one of the many facts is mentioned as follows: "Prior to their removal to St. Georges Infirmary, more than thirty women had been bedridden for various spaces of time, ranging from one to seventeen years. They had all been supplied daily with brandy or beer, or both. The whole are now able to leave their beds. Many are able to walk about, some to work; appetites have been developed for solid food, and an interest is once more taken in the surroundings. This can all be ascribed to the altered moral condition or state, better physical energy, and improved food assimilation, brought about by the withdrawal of alcohol. The demand for extra bread increased, and altogether a marked change was apparent in one year."

A *new theory of inebriety* has been started by a German physician, in which it is urged that the diseased cravings for drink are caused by the unnatural abstraction from what are termed solids of the aqueous element they contain,—uncooked beef, for example, containing from seventy to eighty per cent., and some vegetables even a larger proportion, of water. There would be less thirst, and consequently less desire for drink, if our food were consumed in its natural state, without first being subjected to the action of fire.

THE TOXIC EFFECTS OF TEA.

Dr. W. J. Morton of New York recently read a very suggestive paper on the above subject, before the American Neurological Association, at its regular meeting.

The conclusions which he reaches are not altogether new, but as the result of experiments made upon himself are entitled to more than usual consideration.

In a rèsume, he finds that the "immediate effects of moderate doses of tea in the case of a healthy person is an elevation of pulse, increase of respiration, agreeable exhilaration of mind and body, a feeling of contentment and placidity, an increase of intellectual and physical vigor, with no noticeable reaction. An excessive dose was followed immediately by a rapid elevation of pulse, a marked increase of respiration (one third more), an increase of temperature, and no period of exhilaration, but immediate and severe headache, dimness of vision, ringing in the ears, dullness and confusion of ideas. Following this is a severe reaction, exhaustion of mind and body, tremulousness and nervousness, and dread of impending harm, that cannot be relieved by taking more tea.

The effects of continuous doses was an increase of all these symptoms, with extreme susceptibility to outside impressions, constipation, diminution in the amount of urea, and an increase in the sulphates, phosphates, and chlorides.

The doctor concludes his paper with the following summary:

1. That as in any other drug there is a proper and improper use of it.

2. That in moderation, it was a mild and pleasant stimulant, followed by no harmful reaction.

3. Its continued and moderate use led to a very serious group of symptoms, such as headache, vertigo, ringing in the ears, tremulousness, nervousness, general exhaustion of mind and body, with disinclination to mental and physical exertion, increased and irregular action of the heart, and dyspepsia.

4. The mental symptoms were not to be attributed to dyspepsia.

5. It diminished the amount of urine, and retarded the metamorphosis of tissue.

6. Many of the symptoms of immoderate tea-drinking were such as might occur without suspicion of the real cause.

In the general discussions which followed the reading of this paper, Dr. Hammond mentioned neuralgia as one of the disorders following tea-drinking. Dr. Morton asserted that among tea-tasters the craving for alcohol, so common among them, was not uniformly felt, and that the danger from drinking was appreciated by these men.

This statement is at variance with other authorities, who assert that tea-tasters, as a rule, have a morbid craving for alcohol, or its compounds, accompanied with the delusion that it is a passing impulse, always within their control.

Excessive tea-drinkers always use some form of alcohol after a time, and a class of very complicated nervous symptoms follow, which cannot be clearly classified. The use of tea and coffee to excess are always associated with inebriety at some stage of the disease. The relation of the disorders of tea-drinking and inebriety would form a very interesting study for the future.

In a report by Dr. Dennis, on the condition of persons engaged in the making of hats, to ascertain how far this business was especially dangerous to health, it was found that fully three-fourths of the cases of illness and disease were owing to inebriety.

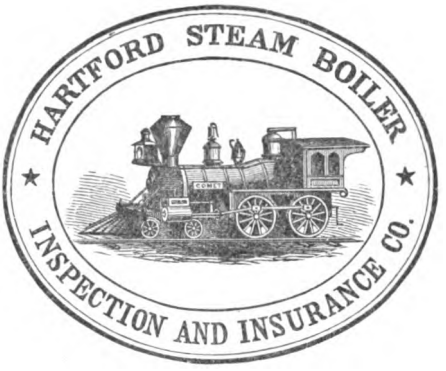
The special causes of this were not ascertained; bad air and insufficient exercise, changing conditions of heat and cold, are probably among the many causes. Minute particles of mercury from the materials used fill the rooms, and in many cases are followed by marked symptoms of poisoning. In all probability these sources of debility are among the indirect causes, bringing on debility and nerve exhaustion, which reacts in nutritive perversions.

Dr. D. A. Gorton, editor of the *National Quarterly Review*, writes: I have prescribed the VITALIZED PHOSPHITES of Dr. Crosby, and do not hesitate to give it my endorsement. I regard it as very valuable in the treatment of nervous diseases. It is used very largely by the profession for the cure of all forms of nervous complaints and debility, in the impaired or insufficient growth of children, and for loss of memory, whether caused by disease or overwork.

ALCOHOLIC MEDICATION AS A CAUSE OF INTEMPERANCE. —The responsibility which physicians are under, in favoring the use of alcoholic medicines, is of no small importance. So much the more is this to be deplored as a great many of our remedies *can be prepared without any alcohol*, as this often may be replaced by milk-sugar, which serves to modify the taste, as well as render the preparation stable and convenient in form.

The Wheeler Chemical Works of Chicago have introduced preparations termed "Saccharated Extracts," embracing most of the vegetable remedies. A praiseworthy feature here is that one standard of strength has been adopted throughout, viz.: of the drug from which the extract is made. We think the cause of temperance would be materially benefited if this form of medication could, as it undoubtedly deserves, supersede the many intoxicating medicinal beverages so popular at the present day.

We deem it our privilege and duty to recommend these remedies to our friends, believing that in their use the temperance physician will be practising in accordance with his conscientious convictions.



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WOVEN WIRE MATTRESS CO.,
HARTFORD, CONN.

Attention is called to the following Testimonials:

FROM THE REPORT OF THE EXECUTIVE COMMITTEE OF THE HARTFORD HOSPITAL,
April 10th, 1871.

The hospital is now supplied with the Woven Wire Mattress, with iron frame. There are many reasons why the wire mattress is peculiarly adapted to hospitals. This mattress with iron frame costs less than a good hair mattress. They require no covering but blankets to protect the patient from the wire. They are elastic and yield to the form of the body like a water bed. Every patient can have a perfectly clean bed when admitted.

They are free from vermin of every kind. They are durable, and never settle nor sag. The wire mattress has been in use for a long time in the hospital with perfect satisfaction, and aid much in the recovery of the patients by the cleanliness and comfort which they contribute to their occupants.

FROM THE REPORT OF THE EXECUTIVE COMMITTEE OF THE HARTFORD HOSPITAL,
April 12th, 1875.

The Woven Wire Mattress has been in use in the hospital during the last five years. They have exceeded our highest expectations. In order to have the full benefit, in a sanitary point of view, they must not be used with a mattress of any kind. They make a perfect bed in a hospital by placing two double blankets over the wire. In this manner over one hundred are in constan use with perfect ease and satisfaction to its occupant. By so doing, every patient on entering the wards is placed on a clean bed.

INSTITUTION FOR THE RELIEF OF THE RUPTURED AND CRIPPLED,
NEW YORK, Jan. 8, 1870.

I consider the WOVEN WIRE MATTRESS one of the most invaluable inventions of the day, as it contributes so largely to the relief and comfort of the sick. The wire fabric, of which it is formed, yields uniformly to the body, obviating undue pressure on the prominent parts of the emaciated patient. Two thicknesses of a comfortable are a sufficient protection to the patient from the wire fabric, and is all that is required for warmth in a temperature of sixty degrees. This light covering is readily removed and washed in extraordinary cases, and the facility afforded for changing the bedding obviates the necessity for disinfectants. This information may be used by the Company, wherever it will tend to the comfort of the sick, at home or in the hospital or for family use, as I consider the MATTRESS not only a comfortable bed, but a means of maintaining good health.

DR. JAMES KNIGHT,
Physician and Surgeon to the Institution

CONNECTICUT INDUSTRIAL SCHOOL FOR GIRLS,
MIDDLETOWN, CT., Feb. 24, 1876.

WOVEN WIRE MATTRESS CO.,

Gentlemen: We last year furnished Eighty (80) rooms with the Mattresses of the Woven Wire Mattress Co., of Hartford, Ct., and find them in every way satisfactory and pleasing.

We expect to provide the same for our new "Allyn Home" when completed.

MARY E. ROCKWELL, *Ass't Sup't.*

BUTLER HOSPITAL, PROVIDENCE, R. I., Feb. 25, 1876.

WOVEN WIRE MATTRESS CO., HARTFORD, CONN.,

Gents: We already have a supply of the Woven Wire Mattresses, some of which having been in use for six years at least. In comfort, convenience, and durability, they far exceed my expectations, and I consider them unequalled by any other device for the purpose.

Yours very truly,
JOHN W. SAWYER, M. D.

INSANE ASYLUM OF NORTH CAROLINA, RALEIGH, N. C., March 27, 1876.

WOVEN WIRE MATTRESS CO.,

Gentlemen: The use of the bedstead recently received from the Woven Wire Mattress Co., convinces me of their superiority over any iron bedstead with which I am acquainted for hospital use.

Yours truly, EUGENE GRISSON, Sup't.

OFFICE OF THE SOUTH CAROLINA LUNATIC ASYLUM, J. F. ENSOR, M. D., *Sup't.*
COLUMBIA, S. C., 7th April, 1876.

THE WOVEN WIRE MATTRESS CO., HARTFORD, CONN.,

Gentlemen: Your iron bedstead for hospital use, with Woven Wire Mattresses, have now been in use in this institution for several months. From our experience with them I do not hesitate to say that for neatness, durability, and comfort, they are superior to any bedstead ever before presented to the public, for use in Hotels, Hospitals, and all other public institutions.

Yours respectfully,
J. F. ENSOR, M. D., *Sup't.*

WALNUT HILL,

HARTFORD, CONN.

THIS INSTITUTION WAS INCORPORATED IN 1874,

FOR THE TREAMENT OF

Inebriates and Opium Cases,

And is admirably situated in the suburbs of Hartford, removed from temptation and surrounded with every appointment of a quiet, attractive home.

Its management is based on the principles which science and experience have fully confirmed, that inebriety is both a physical and mental disease, curable as other diseases are, requiring special treatment in Asylums, and in all cases *relieved* and *benefited* by such treatment.

Inebriate Asylums are No Longer an Experiment;

Statistics indicate that the number of patients who come for treatment, and honestly desire to be cured, and who succeed, are constantly increasing.

OPIUM CASES

Are taken, and SPECIAL FACILITIES provided for their successful treatment.

Every case is managed with particular reference to its condition and wants.

The charges for board and treatment will vary with the exigencies of each case.

All inquiries and applications for admission should be addressed to

T. D. CROTHERS, M. D.,
SUPERINTENDENT,
WALNUT HILL, HARTFORD, CONN.

THE JOURNAL

OF

NERVOUS AND MENTAL DISEASE,

PUBLISHED QUARTERLY.

TERMS: FIVE DOLLARS PER ANNUM, IN ADVANCE.

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Our JOURNAL is projected with the purpose of discussing and advancing a knowledge of the nervous system under all its relations, and in the most practical way. It is not to be regarded as a SPECIAL journal in the ordinary restricted sense of the word. Having so wide a range of practical relations, it would seem that there could scarcely be found a physician who would not need the aid that should be afforded by some such publication. We but speak the truth when we say that there is not another periodical whether general or special, whether in this country or abroad, that occupies this truly important field in the same manner, or with the same thoroughness, and with so distinctly a practical aim, as we propose for our JOURNAL in the future.

In every part no pains will be spared to made it all that could reasonably be desired. In respect to the first department or that for

ORIGINAL COMMUNICATIONS,

we are gratified in being able to announce to our readers that we shall henceforth present them with articles from a larger number than ever before of the most eminent members of the profession in this country. This department of the JOURNAL promises not to be inferior to that of any in the country in point of freshness and excellence.

THE DEPARTMENT FOR REVIEWS

o re ceive increased attention, while the

PERISCOPE

will fairly and fully reflect the progress of Neurological Science in all parts of the world. We are happy to be enabled to state that we shall continue to have the editorial co-operation of the eminent gentlemen whose names appear on its cover, viz., Dr. W. A. Hammond of New York, Dr. S. Weir Mitchell of Philadelphia.

Subscriptions and all business connected with the JOURNAL, may be addressed either to Dr. J. S. Jewell, at 70 E. Monroe Street, Chicago, or to the Eastern publishers, G. P. Putnam's Sons, 182 Fifth Avenue, New York. Respectfully,

J. S. JEWELL, M. D.,
H. M. BANNISTER, M. D., } *Editors.*

WASHINGTONIAN HOME
OF CHICAGO.

AN ASYLUM FOR THE REFORMATION OF INEBRIATES,

(ESTABLISHED IN 1863,)

566, 568, 570, and 572 West Madison St. (Opp. Union Park),

CHICAGO, ILLINOIS.

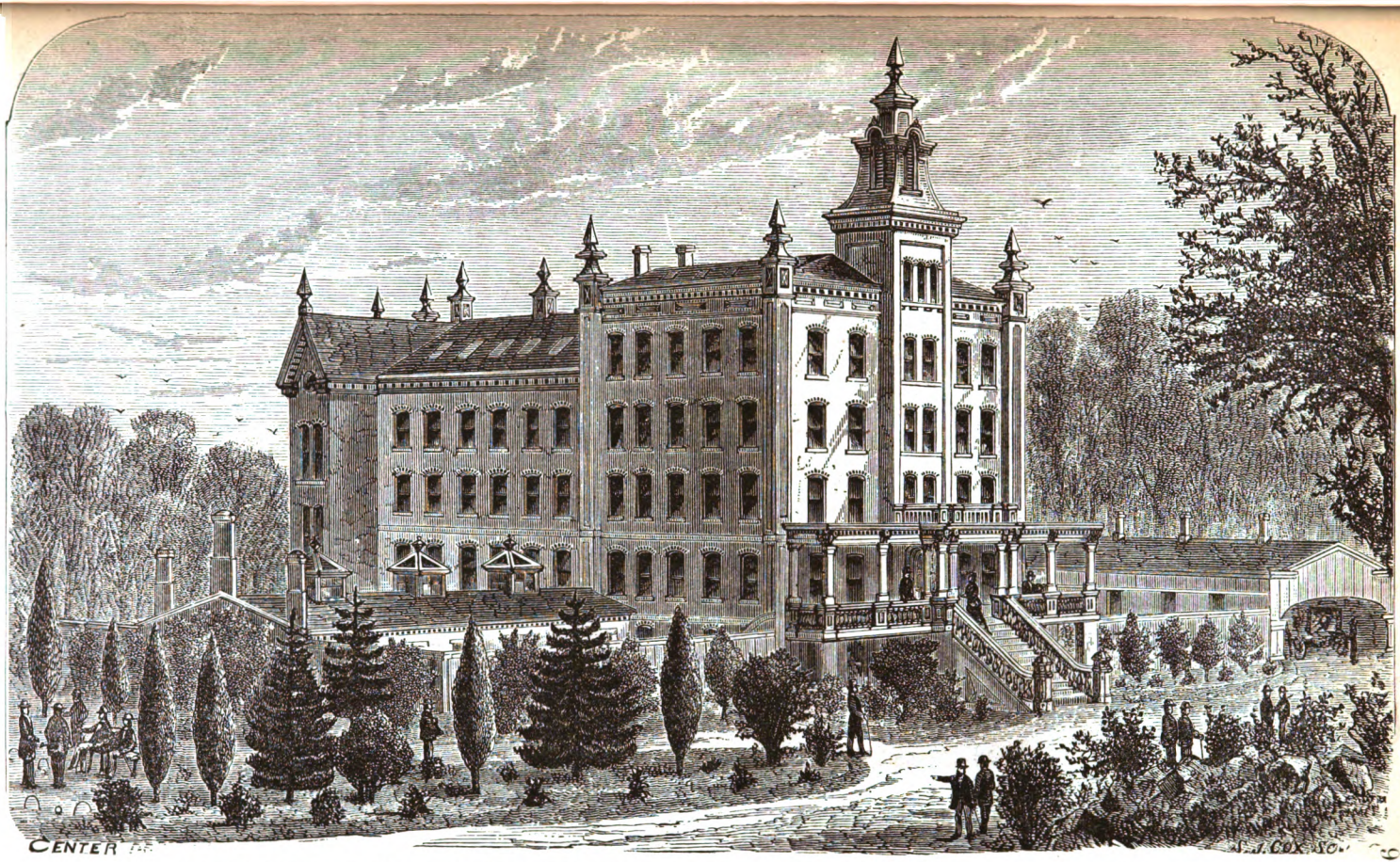
The new building erected in 1875 has a frontage of 106 feet, with a rear or chapel building 45x70. The main building above the stores contains the Superintendent's apartments, office, parlors. dispensary, reading room and library, service room, gymnasium, printing office, 66 sleeping rooms, 45 being double, bath rooms, etc. The rear building contains the dining room, kitchen, laundry, a chapel seating 500, hospital, convalescent room, padded room, amusement room, etc., affording accommodations for over 100 inmates, and being in all respects as pleasant as any institution or asylum in the country.

The Institution is under the immediate oversight and control of the Executive Committee appointed by a Board of thirty Directors. The Superintendent and Matron reside in the Home and give their entire attention to the care and interests of the inmates, aided by the daily visits of the Attending Physician.

A monthly paper of eight pages is published by the Home about the middle of each month, devoted to the interest of the Institution and temperance generally. All communications and subscriptions for the paper should be addressed to THE WASHINGTONIAN, 566 West Madison street, Chicago, Ill.

Applications for admission, either personally or by letter, or any further information in regard to the Institution, should be made directly to the Superintendent of Washingtonian Home, 566, 568, 570, 572, West Madison street, Chicago, Ill.

N. S. DAVIS, M. D., President. H. C. MOREY, Secretary.
D. WILKINS, Superintendent. CHAS. W. EARLE, Physician.



OCEAN VIEW OF "THE INEBRIATES' HOME," FORT HAMILTON, N. Y. (INCORPORATED 1866.)

The Inebriates' Home,

FORT HAMILTON, N. Y.

This is the Best Constructed and the Best Furnished Institution for the Care and

Treatment of Inebriety and the Opium Habit

IN EXISTENCE.

VIEW FROM ENTRANCE OF PARK GROUNDS.

The Treatment of the Opium Habit a Specialty.

President and Consulting Physician—THEODORE L. MASON, M. D., also President of the "American Association for the Cure of Inebriates," and the "Collegiate Department of the Long Island College Hospital." *Attendant Physician*—L. D. MASON, M. D., assisted by a staff of resident physicians. *Superintendent and Secretary*—REV. J. WILLETT.

THE BUILDINGS are constructed for this special purpose, and they are more complete and better adapted for the treatment of Dipsomania and the Opium Habit than those of any similar institution in existence. They are situated on one of the most attractive points on the Bay of New York, and stand on a high bluff within one thousand feet of the Narrows. The sea and land views are unsurpassed in extent and grandeur. The enclosed Park Grounds are extensive.

There are separate dining-rooms, lodging-rooms and parlors, billiard and bath-rooms. There is also a lecture-room for religious services, read-

ings, concerts, etc. All the New York morning and several other newspapers and periodicals are regularly taken. For the treatment of the better class of female patients a floor is set apart, handsomely furnished, having separate approaches, effectually secluding the sexes from each other.

THE MANAGEMENT is systematic, thorough and adequate. There has been no change in the staff of medical or other active officers since the inauguration of the Home, eleven years ago.

THE CLASSIFICATION of patients originated with and is peculiar to this institution. Being determined and regulated upon a strictly commercial basis, it is made to depend upon the character of the lodging, board and other accommodations which the patients or their friends are willing to pay for, and is accomplished in such a manner as to completely isolate the boarders from the free patients in the County or State wards of the Home.

By this equitable arrangement we are enabled to offer board, washing and medical attendance at rates varying from $5 to $35 per week. Those paying $14 and upwards, according to size and situation of quarters selected, are provided with a single apartment and a seat at table in private dining-room—the accommodations in the select rooms and the table being in every respect equal to those of a first class hotel. Rooms in suit may be had upon terms to be agreed upon.

REMARKABLE IMMUNITY FROM DEATH.—The total death-rate since the opening has been one-half of one per cent., or one death for every two hundred patients. The total deaths of legitimate cases for treatment in the Home have been only one case in eight hundred during the same period. The rest were dying when admitted.

TREATMENT OF THE SICK.—One of the essential characteristics of the institution is its ample provision for the isolation, when necessary, of new inmates from the convalescent patients until they are sobered down and the sickness consequent upon their late debauch has passed away. In the treatment of the victims of the Opium Habit the seclusion and repose of our hospital arrangements frequently prove to be essential to present relief and final cure. In connection with this department we have always at command a large staff of careful nurses, who are placed under the direction of experienced officers. Our hospital department is reduced to an exact system, and its discipline is thorough. Our methods of restraint and management in delirium tremens cases are of the most efficient and humane character. There is the absence of the straight-jacket and every other instrument of torture which tends to impede the free circulation of the blood, and thereby intensify the sufferings of the patient, and padded rooms are substituted by a commanding but nevertheless humane system of personal restraint.

THE RESTRAINTS.—Our system of restraint is compatible with the fullest liberty for each boarder patient to avail himself of all the recreation, amusement and enjoyment which the billiard-room, park and ball grounds, readings, lectures, concerts and musical exercises, etc., coupled with the society of intelligent and agreeable fellow-inmates, can impart; but this liberty does not embrace leave and license to go and come to and from the neighboring cities, villages, etc. Many of our boarder patients have consisted of former inmates of other kindred institutions, who have been placed under our care because our system of restraint to the grounds of the Home has commended itself to their friends when those confidential experiments have failed.

THE DISCIPLINE.—The established code of discipline is comprehended in the observance of "THE LAW OF PROPRIETY," as universally understood

by gentlemen and ladies in the guidance and control of well-regulated family and social relationships. The Superintendent and officers lay it down as a rule that they can only govern wisely by avoiding any unnecessary appearance of authority, and at the same time maintaining mild but firm discipline whenever the occasion demands. What is most needed is a method of discipline which will inspire confidence and lead to self-reliance and the restoration of will-power.

HOW TO OBTAIN ADMISSION.

THE design of the Institution is to treat patients, men and women, who have contracted the habit of inebriety, from whatever cause, whether from the use of alcoholic, vinous or other liquors, or opium, or other narcotic or intoxicating or stupefying substances, with a view to cure and reformation. Persons suffering from chronic affections, or other diseases than those immediately produced by inebriety, or the infirmities of age, are not received into this institution. Cure and reformation are the only purposes kept in view in the reception and detention of patients.

In order to prevent the reception of improper cases, the consent of the duly authorized officers is in every instance made a pre-requisite to the admission of a patient.

VOLUNTARY APPLICANTS for admission may submit their request in the following form:

To the Superintendent of the Inebriates' Home, Fort Hamilton, N. Y.:

SIR:—Having unfortunately indulged in the use of_____ until such practice has become a confirmed habit, which I cannot control, and which I feel powerless to overcome without assistance, and being convinced that such aid can only be obtained by submitting myself to restraint, I hereby voluntarily apply for admission as a patient to "The Inebriates' Home for Kings County," stipulating that if I am received into said institution, I will remain a patient therein for such time as the officers thereof shall deem requisite for my benefit, not exceeding the term of six months, and pay, or cause to be paid, to said Institution three months' board in advance, at such rate as may be agreed upon; promising to obey all the rules, regulations and orders that may be in force in said institution at any time during my residence therein, and to submit to such restraint and treatment as the Superintendent thereof may deem necessary in my case. (Signed.)

INVOLUNTARY CASES.—In all cases where the inebriate declines to enter the Home voluntarily, the nearest relatives or friends may take action either before any Justice of the Peace having jurisdiction where he or she resides, (within the State of New York,) or by a process of any County Court or the Supreme Court of said State. Where there is no property at stake, summary proceedings before a magistrate are the quickest and least expensive measures to secure removal to the Home. This action is authorized by Section 2, of Chapter 797, of an Act passed June 18, 1873.

Where the case is urgent, the Supreme and County Courts have the power to commit temporarily to the Home while proceedings are pending.

Full directions, with the requisite blank forms, together with such information as may be necessary can be obtained on application to the Superintendent, at Fort Hamilton, N. Y.

☞ Two daily mails, and telegraphic communication to all parts of the country.

HOW TO REACH THE INSTITUTION FROM NEW YORK.

Cross the East River to Brooklyn on Fulton Ferry Boat and proceed either by Court st. OR Third ave. Horse Cars; or, cross from South Ferry on Hamilton Avenue Boat and proceed by Fort Hamilton Cars.

THE INEBRIATES' HOME,

FORT HAMILTON, L. I., N. Y.,

Is the best constructed and the best furnished Institution for the care and treatment of Inebriates in existence.

The Buildings,

which are new, were erected for and are well adapted to the special purpose of the Home. They are situated on one of the most attractive points on the Bay of New York. They stand on a high bluff within one thousand feet of the Narrows, and the park grounds are extensive.

The Management

is systematic, thorough, and adequate. There has been no change of Superintendent or in the staff of medical or other active officers since the inauguration of the Home.

The Classification

is more perfect, and the beneficial results are fully equal to those of any other kindred institution.

Boarder Patients

are classified according to accommodations required, and the charges are proportionately adjusted. Their department is divided up into several floors, each containing such accommodations as the patients or their friends are willing to pay for. There are separate dining-rooms, lodging-rooms and parlors, billiard and bath-rooms. There is also a lecture-room for religious services, readings, concerts, &c. Several daily journals and periodicals are regularly taken, a library is in process of accumulation, and all the appointments for the exercise and the amusement of patients, and which contribute greatly to their cure, are provided.

Female Patients.

For the treatment of the better class of FEMALE PATIENTS an entire floor is set apart, handsomely furnished, having separate approaches, effectually isolating the sexes, and under the charge of the Matron and Assistant Matron, together with a staff of efficient female nurses.

Remarkable Immunity from Death.

The total death-rate of all the patients who have entered the Home since the opening, upwards of nine years ago, has been one-half per cent., or one death for every two hundred patients, and the average time of residence in the institution has been upwards of six months. The total deaths of legitimate cases for treatment in the Home has been only one-eighth per cent., or one case in eight hundred, during the same period. The average annual death-rate in our large cities ranges from two to three per cent. of the population.

Patients are received either on their voluntary application, or by due process of law. The charter confers power to retain all patients entering the Home.

For mode and terms of admission, apply to Rev. J. WILLETT, the Superintendent, at the Institution, Fort Hamilton (L. I.), N. Y.

SEE PAGE 1.